

2014-15

Product Selection Guide

Choose TriQuint's Innovative RF Solutions



TriQuint 
Reach Further • Reach Faster™

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Our guide lists over 750 standard products and highlights more than 140 newly released and announced products, showcased in our New Products section.

Products are organized by key market applications and product types (filter & duplexer offerings only). We've also incorporated block diagrams identifying TriQuint product functionality with blue symbols and TriQuint integrated product functions in green blocks to indicate where TriQuint solutions exist.



We invite you to visit our website at triquint.com to obtain full product specifications. TriQuint's online resource section offers additional insights for simplifying RF connectivity through a growing collection of technical resources. While visiting our website, click on 'Newsletter Signup' to receive TriQuint's quarterly e-newsletter and new product announcements.

TriQuint also offers convenient online product purchasing. Visit the online store at <http://store.triquint.com> to see the latest products, samples and evaluation boards available across a variety of mobile device, network infrastructure and defense applications. TriQuint products are also available through our worldwide sales, representative and distribution networks.

About TriQuint

TriQuint's innovative, high-performance solutions are Accelerating the Next Generation of RF.

Committed to innovation and speed, TriQuint designs, develops and manufactures advanced RF solutions. We reach further, with solutions that boost performance and extend range while reducing size, cost and bill of materials. We reach faster, utilizing our broad technology portfolio to simplify complex RF challenges and enable our customers a better time to market. Customers count on TriQuint to solve their toughest RF challenges, today and tomorrow.

TriQuint's advanced research and extensive government grants have bolstered our technology portfolio. In the last three decades we've pioneered and refined industry-leading power and filter processes, including gallium arsenide (GaAs), gallium nitride (GaN), surface acoustic wave (SAW), and bulk acoustic wave (BAW) technologies. TriQuint uniquely integrates many of the world's most advanced RF solutions to deliver solid customer value. These solutions can enable quicker design turns, streamlined manufacturing and lower overall system costs. TriQuint high-efficiency solutions can extend battery life in mobile devices and can reduce electrical consumption in networks, defense and aerospace systems.



Our product portfolio of power, control and acoustic filter technologies serves the world's leading communications and defense companies. Customers can access our award-winning RF solutions through standard products like those in this catalog and custom designs fabricated in our advanced foundries. TriQuint also offers in-house assembly services that can place die-level devices into single and multi-chip packages.

TriQuint was founded on RF innovation which continues today through our advanced technology programs that are setting new benchmarks in high-performance GaN solutions. Our acoustic filter technologies embrace the latest temperature compensation techniques and wafer level packaging. We are well positioned to serve the growing needs of wireless, fiber optic, telecom, CATV and defense / aerospace manufacturers around the world.

Key advantages of GaAs, GaN, SAW and BAW technologies:

- GaAs can operate efficiently at higher breakdown voltages compared to silicon-based semiconductor technologies while generating less noise in frequencies in excess of 250 MHz. GaAs offers high efficiency, linearity and good wideband performance.
- GaN offers greater power handling and density than GaAs across a wider frequency range. Intrinsic GaN technology advantages enable unprecedented performance, or at a given power level, a solution using fewer or smaller devices. GaN offers excellent efficiency, linearity and noise figures, plus greater wideband capability.
- SAW filter technology offers excellent performance and economy through 2.5 GHz. Our temperature-compensated SAW products expand this versatile technology's capabilities to meet more demanding performance requirements for new and emerging applications.
- BAW filters offer superior low-loss and strong ESD performance as well as greater resistance to temperature effects from 2.5 to 6 GHz and beyond. BAW is ideal for the toughest interference challenges, such as LTE and co-existence filter requirements, as well as mission-critical defense and aerospace applications where precise performance is most valued.



Attenuators

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Bits	Control Voltage (V)	Package Style
TGL6425-SCC	0.5 - 18.5 GHz Digital Attenuator	Digital	0.5 to 18	4	15.5	20	5	0, -5	Die

CATV Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style	Applications
TAT8857A1H	CATV Infrastructure Power Doubler	40 to 1000	21 to 27	31	52	4	24	350	SOIC-16W	Infrastructure
TAT6281	50 - 1000 MHz FTTH Integrated Variable Gain Receiver	50 to 1000	33	-	-	-	5	300	6 x 6 mm	Receiver
TAT7427B-T1	75 Ohm, 50 - 1000 MHz Single Ended RF Amp	50 to 1000	18.5	-	39	2.5	8	145	SOT-89	Single Ended Home Amplifier
TAT7430B-T1	75 Ohm, 50 - 1000 MHz Single Ended RF Amplifier	50 to 1000	22	22	41	2	5 to 8	190	SOT-89	Single Ended Home Amplifier
TAT8858A1H	CATV Infrastructure Push Pull Amp	50 to 1000	27 to 34	28	44	3	24	270	SOIC-16W	Infrastructure
TAT9988	GaN CATV MMIC Power Doubler	50 to 1200	24	-	53	3.5	24	445	5 x 7 mm	Infrastructure
TAT7461-x	75 Ohm, 50 - 1,000 MHz Single Ended RF Amplifier	50 to 1,000	16	24	39	2.5	5	115	SOT-89	Single Ended Home Amplifier

CATV Hybrid Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	RF Output / Tilt (dBmV / dB)	CSO (dBc)	CTB (dBc)	Voltage (V)	Current (mA)	Package Style	Applications
TAT8884HO	CATV High Output GaAs Power Doubler Hybrid	50 to 1,000	25.7	50 / 13.5	-75	-74	24	440	SOT115J	Power Doubler
TAT8888	CATV High Output GaN Power Doubler Hybrid	50 to 1,000	24	61 / 18	-65	-65	24	440	SOT115J	Power Doubler

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
T1G2028536-FL	285 W, 36 V DC - 2 GHz, GaN RF Power Transistor	DC to 2	19	-	54.2	-	54	36	576	NI-780
T1G2028536-FS	285 W, 36 V DC - 2 GHz, GaN RF Power Transistor	DC to 2	19	-	54.2	-	54	36	576	NI-780
T1G3000532-SM	5 W, 32 V, DC - 3 GHz GaN RF Power Transistor	DC to 3	16	-	37	-	50	32	25	5 x 5 mm
T1G4004532-FL	45 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	19	-	46.4	-	52	32	220	NI-360
T1G4004532-FS	45 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	19	-	46.4	-	52	32	220	NI-360
T1G4012036-FL	120 W Peak, 24 W Average Power, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	-	50.8	-	52	36	360	NI-360
T1G4012036-FS	120 W Peak, 24 W Average Power, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	-	50.8	-	52	36	360	NI-360
T1G4020036-FL	2 x 120 W, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	-	54	-	52	36	520	NI-650
T1G4020036-FS	2 x 120 W, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	-	54	-	52	36	520	NI-650

Discrete Transistors (Cont.)

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
T1G6001032-SM	10 W, 32 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	19	–	40	–	54	32	50	5 x 5 mm
T2G6001528-SG	15 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15.5	–	42.3	–	70	28	100	NI-200
TGA2601-SM	800 - 3000 MHz High IP3 Dual pHEMT	0.8 to 3	19 to 24	23	–	0.7	–	4	100	4 x 4 mm

Driver Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TQP3301	8 W Linear Amplifier	400 to 2,700	17.4	40	52	4.7	5	500	4 x 5
TGA3500-SM	Wide Band Driver Amplifier	2,000 to 12,000	34	21	29	3	5	200	QFN 8 x 8 mm

Duplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
TQQ1013	Band 13 LTE SE/SE Duplexer	SAW	777 to 787, 746 to 756	–	2.4	SE/SE	2.5 x 2
TQQ2504	B4, B25 LTE SE/SE Duplexer	SAW/BAW	1,850 to 1,915	65	2	SE/SE	3.6 x 2 x 0.9
TQM976027	B7 BAW Duplexer	BAW	2,500 to 2,570, 2,620 to 2,690	70	9	SE/SE	2 x 1.6

Frequency Converters/Mixers

Part	Description	RF (GHz)	IF (GHz)	LO (GHz)	Gain (dB)	Output IP3 (dBm)	NF (dB)	Output P1dB (dBm)	LO Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGC2610-SM	Ku-Band Downconverter	10 to 15.4	DC to 4	6 to 19	14	16	1.5	7	0 to 8	4	160	5 x 5 mm
TGC4405	17 - 27 GHz Upconverter	17 to 27	0.5 to 3	8 to 13	13	–	–	–	2 to 5	5	425	Die
TGC4405-SM	17 - 27 GHz Packaged Upconverter	17 to 27	0.5 to 3	8 to 13	13	28	–	–	2	5	425	4 x 4 mm
TGC4546-SM	37 - 46 GHz Upconverter	37 to 46	DC to 3.5	8.35 to 11.5	12	26	18.5	21	2 to 8	5	430	5 x 5 mm
TGC4671	71 - 86 GHz Sub-Harmonic Image Reject Mixer	71 to 86	DC to 7	31 to 42	-12	–	–	–	15	–	–	Die

Gain Block Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package (mm)
TQL9047	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	21.2	35.5	1.6	5	70	2 x 2
TQL9048	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	22	40.5	1.7	5	130	2 x 2

Limiters

Part	Description	Frequency (GHz)	Insertion Loss (dB)	Flat Leakage (dBm)	Package Style
TGL2205	S and C-Band 100 W VPIN Limiter	1 to 6	< 0.5	–	Die
TGL2206	S-Band 100 W VPIN Limiter	2 to 4.5	< 0.5	–	Die
TGL2207	S and C-Band 100 W VPIN Limiter	2 to 5	< 0.5	–	Die
TGL2208-SM	2 - 20 GHz Dual-Stage VPIN Limiter	2 to 20	< 1	< 18	QFN 3 x 3 mm 14L

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TQL9042	Ultra Low Noise, High Linearity LNA with Bypass Function	0.5 to 2	0.42	19	36	23	5	70	3 x 3 mm
TQL9043	Ultra Low Noise, High Linearity LNA with Bypass Function	1.5 to 4	0.6	17.5	33	19.4	5	80	3 x 3 mm
TQL9044	Ultra Low Noise, High Linearity LNA with Bypass Function	1.5 to 4	0.6	19.4	34.5	20.4	5	70	3 x 3 mm
TGA2611	2 - 6 GHz GaN LNA	2 to 6	1	25	32	22	10	110	Die
TGA2611-SM	2 - 6 GHz GaN LNA	2 to 6	1.2	25	32	22	10	100	4 x 4 mm Overmold QFN
TGA2567-SM	2 - 20 GHz LNA Amplifier	2 to 20	2	17	29	19	5	100	QFN 4 x 4 mm 24L
TGA2613	S-Band High-Linearity LNA	2.5 to 4	2.5	12.5	29	29	6	320	Die
TGA2614	S-Band High Gain LNA	2.7 to 3.8	0.9	18	33	20	6	110	Die
TGA2614-SM	S-Band High Gain LNA	2.7 to 3.8	1.2	17	33	19	6	120	QFN 5 x 5 mm 32L
TGM2543-SM	4 - 20 GHz Limiter/Low Noise Amplifier	4 to 20	2	17	28	21	5	100	7 x 7 mm
TGA2612	6 - 12 GHz GaN LNA	6 to 12	1.8	22	29	20	10	100	Die

Modulator Drivers

Part	Description	Frequency (GHz)	Vpp (V)	Gain (dB)	3 dB Bandwidth (GHz)	Voltage (V)	Current (mA)	Package (mm)
TGA4195-SM	11.3 Gb/s EML Driver, Diff In/Diff Out	DC to 10	6	26	8	3.3	0.65	4 x 4
TGA4840-SM	28 Gb/s CFP2 Modulator Driver	DC to 25	1 to 2	9	25	3.3	50	4 x 3
TGA4892-SL	200 Gb/s 16 QAM Linear Dual Driver, SE In/SE Out	DC to 27	3 to 5	24	25	5 to 7	500	13 x 10.6
TGA4893-SL	200 Gb/s 16 QAM Linear Dual Driver, Diff In/SE Out	DC to 30	4 to 5	24	25	5	500	16.1 x 10.6
TGA4894-SL	100 Gb/s Linear Dual Driver, SE In/SE Out	DC to 30	5 to 8	33	25	5 to 7	650	16.1 x 10.6
TGA4947-MOD	Quad Channel 100 Gb/s Modulator Driver	DC to 35	3 to 9	27	32	5 to 6	1,100	45 x 33.4

Multi-Mode, Multi-Band Power Amplifier (MMPA) Modules

Part	Description	Bands	Features	Package (mm)
TQP9051	TRIUMF™ ET/APT-MIPI MMPA	GSM850/900, DCS/PCS & WCDMA & LTE B1, B2, B3, B4, B5, B8, B26	High/Low Power Modes	5 x 7 x 1
TQP9059	TRIUMF™ Advanced ET/APT-MIPI MMPA	GSM850/900, DCS/PCS & WCDMA & LTE B1, B2, B3, B4, B5, B8, B17, B20, B26	High/Low Power Modes	5 x 7 x 1
TQP9059S	TRIUMF™ Advanced ET/APT-MIPI MMPA	GSM850/900, DCS/PCS & WCDMA & LTE B1, B2, B3, B4, B5, B8, B20, B26	High/Low Power Modes	5 x 7 x 1
TQP9058H	TRIUMF™ Quad Band GSM-EDGE & Penta Band W/CDMA/HSPA+/LTE	GSM 850/900, DCS/PCS, & WCDMA & LTE B1, B2, B3/4, B5, B8	High/Low Power Modes	7 x 5 x 1

Oscillators

Part	Description	Frequency (GHz)	Power (dBm)	Phase Noise (dBc/Hz)	Voltage (V)	Current (mA)	Package Style
TGV2204-FC	19 GHz VCO with Prescaler	18.5 to 19.5	7	-105 @ 1 MHz	5	158	Die

Phase Shifters

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	RMS Amplitude Error (dB)	RMS Phase Error (Degrees)	Bits	Control Voltage (V)	Package Style
TGP2105	6 - 18 GHz 6-Bit Digital Phase Shifter (+Vc)	Digital	6 to 18	< 10	0.45	4	6	0, 5	Die

Phase Shifters (Cont.)

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	RMS Amplitude Error (dB)	RMS Phase Error (Degrees)	Bits	Control Voltage (V)	Package Style
TGP2105-SM	6 - 18 GHz 6-Bit Digital Phase Shifter (+Vc)	Digital	6 to 18	< 10	0.45	4	6	0, 5	QFN 5 x 5 mm 32L
TGP2107	6 - 18 GHz 6-Bit Digital Phase Shifter (-Vc)	Digital	6 to 18	< 10	0.55	5	6	-5, 0	Die
TGP2107-SM	6 - 18 GHz 6-Bit Digital Phase Shifter (-Vc)	Digital	6 to 18	< 10	0.55	5	6	-5, 0	QFN 5 x 5 mm 32L

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2237	0.03 - 2.5 GHz 10 W GaN Power Amplifier	0.03 to 2.5	40	19	-	> 52	30	360
TGA2237-SM	0.03 - 2.5 GHz 10 W GaN Power Amplifier	0.03 to 2.5	40	19	-	> 50	30	360
TGA2216-SM	0.1 - 3 GHz 12 W GaN Power Amplifier	0.1 to 3	40.5	21	-	> 40	40	360
TGA2216	0.1 - 3 GHz 12 W GaN Power Amplifier	0.1 to 3	41	22	-	> 40	48	360
TGA2578	2 - 6 GHz 30 W Power Amplifier	2 to 6	45	27	-	40	28	400
TGA2573-2-TS	2 - 18 GHz, 10 W GaN Amplifier on Carrier	2 to 18	40	10	-	20	30	500
TGA2576-2-FL	2.5 - 6 GHz 40 W GaN Power Amplifier	2.5 to 6	46.5	29	-	36	30	1550
TGA2576-FS	2.5 - 6 GHz 40 W GaN Power Amplifier	2.5 to 6	46.5	29	-	35	30	1550
TGA2583	2.7 - 3.7 GHz 10 W GaN Power Amplifier	2.7 to 3.7	40	33	-	54	25	175
TGA2583	2.7 - 3.7 GHz 10 W GaN Power Amplifier	2.7 to 3.7	40	33	-	54	25	175
TGA2583-SM	2.7 - 3.7 GHz 10 W GaN Power Amplifier	2.7 to 3.7	41	33	-	> 50	25	175
TGA2585	2.7 - 3.7 GHz 18 W GaN Power Amplifier	2.7 to 3.7	42.8	33	-	54	28	225
TGA2585-SM	2.7 - 3.7 GHz 18 W GaN Power Amplifier	2.7 to 3.7	42.8	32	-	> 50	28	225
TGA2813	3.1 - 3.6 GHz 100 W GaN Power Amplifier	3.1 to 3.6	50.7	22	-	55	30	150
TGA2814	3.1 - 3.6 GHz 80 W GaN Power Amplifier	3.1 to 3.6	49.5	22	-	56	30	125
TGA2590	6 - 12 GHz 30 W GaN Power Amplifier	6 to 12	45	29	-	28	25	1100
TGA2501-GSG	2.8 W 6 - 18 GHz Power Amplifier	6 to 18	34.5	26	-	20	8	1200
TGA2517-GSG	14 W X-Band Power Amplifier	7.5 to 11.5	41.6	30	-	28	12	3000
TGA2586-FL	7.9 - 8.4 GHz 50 W GaN Power Amplifier	7.9 to 8.4	47	14	-	36	24	2240
TGA2622	9 - 10 GHz 40 W GaN Power Amplifier	9 to 10	46	32	-	> 46	28	290
TGA2624	9 - 10 GHz 18 W GaN Power Amplifier	9 to 10	42.5	35	-	40	28	365
TGA2312-FL	X-Band 60 W GaN Power Amplifier	9 to 10	48	13	-	38	24	2400
TGA2704-SM	8 W, 9 - 11 GHz Power Amplifier	9 to 11	39	21	-	-	9	1050
TGA2710-SM	8 W, 9.5 - 11.5 GHz Power Amplifier	9.5 to 11.5	39	22	-	-	9	1050
TGA2623	10 - 11 GHz 35 W GaN Power Amplifier	10 to 11	45.5	35	-	> 47	28	290
TGA2625	10 - 11 GHz 18 W GaN Power Amplifier	10 to 11	42.5	34	-	40	28	365
TGA2565-SM	11-17 GHz Medium Power Amplifier	11 to 17	27	27	-	-	6	210
TGA2536-FL	5 W Ku-Band Power Amplifier	13.5 to 16	37	25	-	20	8	2600
TGA2559-FL	4 W Ku-Band Power Amplifier	14 to 16	36	24	-	30	6	1000
TGA2572-2-FL	16 W Ku-Band GaN Power Amplifier	14 to 16	42	25	-	20	30	2000
TGA4536-SM	K-Band Power Amplifier	24.2 to 26.5	34	18	7	20	6	1430
TGA4544-SM	K-Band Power Amplifier	26 to 31	31.5	23	5	-	6	1100
TGA2594	27 - 31 GHz 5 W GaN Power Amplifier	27 to 31	37	23	-	28	20	140
TGA2595	27.5 - 31 GHz 9 W Power Amplifier	27.5 to 31	39.5	23	-	24	20	280
TGA4537-SM	K-Band Power Amplifier	29 to 35	32	18	6	15	6	1100
TGA2575-TS	Ka-Band 3 W Power Amplifier On Carrier	32 to 38	35.5	19	-	22	6	2100

Power Amplifier Modules

Part	Description	Standards	Bands	Pout (dBm)	Gain (dB)	PAE (%)	Package (mm)
TGA2450-SM	2100 MHz 2.5 W Small Cell PA Module	W-CDMA, LTE	1, 4, 10	42.5	35	35	20 x 20
TGP2451-SM	1900 MHz 2.5 W Small Cell PA Module	W-CDMA, LTE	2, 25, 36	43	35	38	20 x 20
TGP2453-SM	1800 MHz 2.5 W Small Cell PA Module	W-CDMA, LTE	3, 9	43	34	35	20 x 20

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
857193	725.5 MHz SAW Band 28 Uplink Filter	SAW	725.5	45	4	SE/SE	3 x 3
857217	742.5 MHz SAW Filter	SAW	742.5	27	2.5	SE/SE	3 x 3
857216	1,030 MHz SAW Filter	SAW	1,030	10	2.3	SE/SE	3 x 3
857215	1,090 MHz SAW Filter	SAW	1,090	10	2.6	SE/SE	3 x 3
880272	1,227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	30	2.25	SE/SE	3.26 x 1.6
880366	1,227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	12	1.5	SE/SE	3.26 x 1.6
880098	1,575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	20	4 Max	SE/SE	3.71 x 2.57
880404	1,575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	35	1.5	SE/SE	3.71 x 2.57
857207	1,585.66 MHz SAW Filter	SAW	1,585.66	41	1.45	SE/BAL	1.4 x 1.2
856815	1,650.75 MHz SAW Filter	SAW	1,650.75	48.5	2.5	SE/SE	3 x 3
TQQ7303	1,747.5 MHz BAW Band 3 Uplink Filter	BAW	1,747.5	75	3.5	SE/SE	3 x 3
TQQ0302	Band 3 Uplink RF Filter	BAW	1,747.5	75	3.5	SE/SE	3 x 3
TQQ0303	Band 3 Downlink RF Filter	BAW	1,842.5	75	5	SE/SE	3 x 3
885069	2,350 MHz BAW Band 40 Filter	BAW	2,350	100	3	SE/SE	1.4 x 1.2
885062	2440 MHz BAW Filter - ISM Passband for WLAN/LTE Coexistence	BAW	2,440	82	1.6	SE/SE	1.4 x 1.2
885071	2440 MHz BAW Filter - ISM Passband for WLAN/LTE Coexistence	BAW	2,440	82	1.6	SE/SE	1.4 x 1.2
885070	2436 MHz BAW Filter - ISM Passband for WiFi Bandedge and LTE Coexistence	BAW	2,436	72	0.7	SE/SE	1.7x1.3
TQQ7307	2,535 MHz BAW Band 7 Uplink Filter	BAW	2,535	70	3.5	SE/SE	3 x 3
TQQ0041	B41 Rx BAW Filter	BAW	2,580	196	3.5	SE/SE	2 x 2
885026	B38 Tx/Rx Filter	BAW	2,595	50	1.4	SE/SE	1.4 x 1.2
885043	B38/B40 Tx Diplexed BAW Filter	BAW	2,595, 2,350	100	3.5	SE/SE	1.7 x 1.3

Spatium™ Amplifiers

Part	Description	Frequency (GHz)	Psat (W)	Power Gain (dB)	Small Signal Gain (dB)	Power (dBm)	PAE (%)	Voltage (V)	ECCN	Package (mm)
KU250W-1416	14.4 - 16 GHz 250 W Ku-Band GaN Spatium™ Solid-State Power Amplifier	14.4 to 16	250	22	25	54	20	30	ITAR	176 x 61 x 61
KA150W-2730	27 - 30 GHz 150 W Spatium™ Solid-State Power Amplifier	27 to 30	150	15	22	52	28	20	3A001 .b.4.b	104 x 74 x 61
KA130W-2730	27 - 30 GHz 130 W Ka-Band GaN SSPA	27 to 30	130	14	> 20	51.14	> 15	20	3A001 b.4.b	104 x 74 x 61
KA130W-3031	30 - 31 GHz 130 W Ka-Band GaN SSPA	30 to 31	130	14	> 20	51.14	> 15	20	3A001 b.4.b	104 x 74 x 61

Spatium™ Bench Top Amplifiers

Part	Description	Frequency (GHz)	Psat (W)	Power Gain (dB)	Small Signal Gain (dB)	Power (dBm)	PAE (%)	Voltage (V)	ECCN	Package (mm)
RM022020	2 - 20 GHz 20 W Spatium™ Bench Top Power Amplifier	2 to 20	15	43	45	41.7	8	90 to 264	3A001.b.4.b	482 x 236 x 145

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TQP4M0013	High Isolation Absorptive SPST Switch	0.1 to 4	0.55	50	35	3.3	0.08	2 x 2 mm
TQC0015	High Isolation Absorptive SPDT Switch	0.1 to 6	0.5	60	33	3.3	0.1	4 x 4
TGS2354	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	Die
TGS2354-SM	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	4 x 4 mm QFN
TGS2355	0.5 - 6 GHz 80 W GaN SPDT Switch	0.5 to 6	< 1.25	> 80	> 40	0, -40	< 1	Die
TGS2352-2-SM	0.5 - 12 GHz High Power SPDT Reflective Switch	0.5 to 12	< 1	-35	20	0 to -40	—	QFN

Switches (Cont.)

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGS2353-2-SM	0.5 - 18 GHz High Power SPDT Reflective Switch	0.5 to 18	< 1.5	-30	10	0 to -40	–	QFN
TGS4307	77 GHz Transceiver Switch	70 to 85	2.5	40	–	1.3	40	Die

Transimpedance Amplifiers

Part	Description	Bandwidth (GHz)	Differential Transimpedance Gain (ohm)	Differential Output Vpp (mV)	Equivalent Input Noise (pA/rtHz)	Voltage (V)	Current (mA)
TGA4871	4-Channel 28 Gb/s Limiting TIA	30	6000	600	15	3.3	300
TGA4872	Dual 32 Gb/s Linear Transimpedance Amplifier with AGC	30	7000	200 to 900	20	3.3	175
TGA4874	Quad 32 Gb/s Linear Transimpedance Amplifier with AGC + Optional SPI Control	30	7000	200 to 900	20	3.3	350
TGA4866	44.6 Gb/s Limiting Transimpedance Amplifier	40	2,800	600	15	3.3	75

Transmit Modules

Part	Description	Bands	Features	Package (mm)
TQF9089	QUANTUM Tx™ Quad-Band WCDMA/ LTE/GPRS SP8T Transmit Module	QDE + QB	Integrated QB GSM/GPRS & 4 WCDMA Antenna Switch Ports, Low Rx Insertion Loss	6 x 5 x 1

Variable Gain Amplifiers

Part	Description	Frequency (MHz)	Attenuation Range (dB)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package (mm)
TQC9305	Digital Variable Gain Amplifier with Shutdown Mode	700 to 3,600	31.5	13	23	39.7	3.1	5	130	5 x 5
TGA4541-SM	Ka-Band Variable Gain Driver Amplifier	28,000 to 31,000	30	32	23	31	–	5	330	6 x 6

WLAN Front End Modules

Part	Description	Frequency (GHz)	802.11 Standards	Typ Pout 1.78% EVM (dBm)	Typ Pout 3.0% EVM (dBm)	Tx Gain (dB)	Rx Gain (dB)	Rx NF (dB)	Nom Bias Voltage (V)	Current (mA)	Package (mm)
TQF7062	802.11a/n/ac Power Amplifier, LNA with Bypass, SP2T Switch	4.9 to 5.925	a/n/ac	19	20.5	36	13	2.5	3.6	290	2.5 x 2.5 x 0.4
TQP5523	5 GHz WLAN 802.11a/n/ac Power Amplifier (+22dBm)	4.9 to 5.925	a/n/ac	22	24	32	–	–	3.3, 5	315	4 x 4 x 0.85
TQP5525	5 GHz WLAN 802.11a/n/ac Power Amplifier (+24dBm)	4.9 to 5.925	a/n/ac	24	26	32	–	–	3.3, 5	550	4 x 4 x 0.85
TQL1600	5 GHz WLAN Switch / LNA Front End Module	5.15 to 5.875	a/n/ac	–	–	–	13	2.5	3.3, 5	8	2.5 x 2.5 x 0.45

Many listings in this product guide support both commercial and defense applications. The tables in this section are a partial listing of devices suitable for specific defense/aerospace applications. We have included product solutions based on RF GaN technology in this section. Although located here for easy reference, GaN products have wide-ranging applications across many commercial markets. Products listed throughout this guide may be specially screened to meet unique customer requirements including 100% electrical screening and visual inspection to either MILSTD-883 Class B or Class S. Please contact TriQuint with your requirements: info-defense@triquint.com.

Attenuators

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Bits	Control Voltage (V)	Package Style
TGL4203-SM	DC - 30 GHz Wideband Analog Attenuator	Analog	DC to 30	1.5	16	20	6	-1 to 0	Die
TGL4201-00	Wideband Fixed 0 dB Attenuator	Analog	DC to 50	0	–	20	–	Passive	Die
TGL4201-02	Wideband Fixed 2 dB Attenuator	Analog	DC to 50	2	–	20	–	Passive	Die
TGL4201-03	Wideband Fixed 3 dB Attenuator	Analog	DC to 50	3	–	20	–	Passive	Die
TGL4201-06	Wideband Fixed 6 dB Attenuator	Analog	DC to 50	6	–	20	–	Passive	Die
TGL4201-10	Wideband Fixed 10 dB Attenuator	Analog	DC to 50	10	–	20	–	Passive	Die
TGL4203	50 GHz Wideband Analog Attenuator	Analog	DC to 50	2	17	15	–	-1 to 0	Die
TQP4M9071	Parallel Controlled 6 Bit, 31.5 dB Digital Step Attenuator	Digital	0 to 4	1.6	31.5	30	6	5	4 x 4 mm
TQP4M9072	Serial Controlled 6 Bit, 31.5 dB Digital Step Attenuator	Digital	0 to 4	1.6	31.5	30	6	5	4 x 4 mm
TQP4M9083	High Linearity Serial Controlled 7 Bit, 31.75 dB Digital Step Attenuator	Digital	0.4 to 3.5	1.5	31.75	30	7	5	4 x 4 mm

CATV Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package (mm)	Applications
TGA2803-SM	CATV TIA / Gain Block	40 to 1,000	20	28	45	1.5	8	350	4 x 4	Receiver
TGA2806-SM	CATV Linear Amplifier	40 to 1,000	20	28	45	1.7	8	380	5 x 5	General Purpose Dual

Diplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
890086**	1176.45 / 1575.42 MHz High Attenuation SAW Diplexer	SAW	1,176.45, 1,575.42	20.46	3.5	SE/SE	5 x 5
890087**	1176.45 / 1575.42 MHz Low Loss SAW Diplexer	SAW	1,176.45, 1,575.42	20.46	0.9	SE/SE	5 x 5
890084**	1227.6 / 1575.42 MHz High Attenuation SAW Diplexer	SAW	1,227.6, 1,575.42	20.46	3.5	SE/SE	5 x 5
890085**	1227.6 / 1575.42 MHz Low Loss SAW Diplexer	SAW	1,227.6, 1,575.42	20.46	0.9	SE/SE	5 x 5

NOTES: ** = Preview

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
T1G2028536-FL**	285 W, 36 V DC - 2 GHz, GaN RF Power Transistor	DC to 2	19	–	54.2	–	54	36	576	NI-780
T1G2028536-FS**	285 W, 36 V DC - 2 GHz, GaN RF Power Transistor	DC to 2	19	–	54.2	–	54	36	576	NI-780
T1G3000532-SM**	5 W, 32 V, DC - 3 GHz GaN RF Power Transistor	DC to 3	16	–	37	–	50	32	25	5 x 5 mm
T1G4012036-FL**	120 W Peak, 24 W Average Power, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	–	50.8	–	52	36	360	NI-360
T1G4012036-FS**	120 W Peak, 24 W Average Power, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	–	50.8	–	52	36	360	NI-360

Discrete Transistors (Cont.)

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
T1G4020036-FL**	2x120 W, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	–	54	–	52	36	520	NI-650
T1G4020036-FS**	2x120 W, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	–	54	–	52	36	520	NI-650
T1G4004532-FL**	45 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	19	–	46.4	–	52	32	220	NI-360
T1G4004532-FS**	45 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	19	–	46.4	–	52	32	220	NI-360
T2G4003532-FS	30 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16.5	–	44.5	–	49	32	150	NI-360
T2G4003532-FL	30 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16.5	–	44.5	–	49	32	150	NI-360
T2G4005528-FS	55 W, 28 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	15	–	47.2	–	> 50	28	200	NI-360
TGF2021-04-SD	DC - 4 GHz Packaged Power pHEMT	DC to 4	16	26.5	–	0.6	–	5	150	SOT-89
T1G6001032-SM**	10 W, 32 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	19	–	40	–	54	32	50	5 x 5 mm
T2G6001528-SG**	15 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15.5	–	42.3	–	70	28	100	NI-200
T2G6000528-Q3	7 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15.5	–	39.5	–	50	28	50	NI-200
T2G6001528-Q3	18 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15	–	42.5	–	> 50	28	50	NI-200
T2G6003028-FL	30 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	14	–	45	–	50	28	200	NI-200
T2G6003028-FS	30 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	14	–	45	–	50	28	200	NI-200
TGF2021-01	X-Band Discrete Power pHEMT	DC to 12	11	–	> 30	–	59	8 to 12	75 to 125	Die
TGF2021-02	X-Band Discrete Power pHEMT	DC to 12	11	–	> 33	–	59	8 to 12	150 to 250	Die
TGF2021-04	X-Band Discrete Power pHEMT	DC to 12	11	–	> 36	–	59	8 to 12	300 to 500	Die
TGF2021-08	X-Band Discrete Power pHEMT	DC to 12	11	–	> 39	–	59	8 to 12	600 to 1,000	Die
TGF2021-12	X-Band Discrete Power pHEMT	DC to 12	11	–	> 42	–	58	8 to 12	900 to 1,500	Die
TGF2023-2-01	6 W Discrete Power GaN on SiC HEMT	DC to 18	18	–	38	–	71.6	12 to 32	25 to 125	Die
TGF2023-2-02	12 W Discrete Power GaN on SiC HEMT	DC to 18	21	–	40.1	–	73.3	12 to 32	50 to 250	Die
TGF2023-2-05	25 W Discrete Power GaN on SiC HEMT	DC to 18	18	–	43	–	78.3	12 to 32	100 to 500	Die
TGF2023-2-10	50 W Discrete Power GaN on SiC HEMT	DC to 18	19.8	–	47.3	–	69.5	12 to 32	200 to 1,000	Die
TGF2023-2-20	90 W Discrete Power GaN on SiC HEMT	DC to 18	19.2	–	50.5	–	70.5	12 to 32	400 to 2,000	Die
TGF2018	180 um Discrete GaAs pHEMT	DC to 20	14	–	22	1	55	8	29	Die
TGF2022-06	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 28	–	58	8 to 12	45 to 75	Die
TGF2022-12	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 31	–	58	8 to 12	90 to 150	Die
TGF2022-24	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 34	–	58	8 to 12	180 to 300	Die
TGF2022-48	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 37	–	58	8 to 12	360 to 600	Die
TGF2022-60	Ku-Band Discrete Power pHEMT	DC to 20	12	–	> 38	–	57	8 to 12	448 to 752	Die
TGF2025	250 um Discrete GaAs pHEMT	DC to 20	14	–	25	0.9	58	8	41	Die
TGF2040	400 um Discrete GaAs pHEMT	DC to 20	13	–	26	1.1	55	8	65	Die
TGF2060	600 um Discrete GaAs pHEMT	DC to 20	12	–	28	1.4	55	8	97	Die
TGF2080	800 um Discrete GaAs pHEMT	DC to 20	11.5	–	29.5	–	56	8	129	Die
TGF2120	1200 um Discrete GaAs pHEMT	DC to 20	11	31	–	–	57	8	194	Die
TGF2160	1600 um Discrete GaAs pHEMT	DC to 20	10.4	32.5	–	–	63	8	258	Die
TGF4350	0.3 mm, 0.25-µm mmW pHEMT 2MI	DC to 22	13 @ 10 GHz	–	16	0.8 @ 10 GHz	–	3	15	Die

NOTES: ** = Preview

Driver Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TGA3500-SM**	Wide Band Driver Amplifier	2,000 to 12,000	34	21	29	3	5	200	QFN 8 x 8 mm

NOTES: ** = Preview

Frequency Converters/Mixers

Part	Description	RF (GHz)	IF (GHz)	LO (GHz)	Gain (dB)	Output IP3 (dBm)	NF (dB)	Output P1dB (dBm)	LO Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGC4403	8 - 15 GHz Doubler with Amplifier	16 to 30	8 to 15	–	20	–	–	20	–	5	150	Die
TGC4403-SM	8 - 15 GHz Packaged Doubler with Amplifier	16 to 30	8 to 15	–	18	–	–	20	–	5	150	4 x 4 mm
TGC4402	17 - 27 GHz Upconverting Mixer	17 to 27	0.5 to 3	14 to 28	-9	10	9	–	17	-0.9	–	Die
TGC4405-SM*	17 - 27 GHz Packaged Upconverter	17 to 27	0.5 to 3	8 to 13	13	28	–	–	2	5	425	4 x 4 mm
TGC4610-SM	K-Band Downconverter	17 to 27	DC to 4	6.5 to 15.5	15	18	2.5	–	5.5	3	228	5 x 5 mm
TGC4402-SM	18 - 26 GHz Packaged Upconverting Mixer	18 to 26	0.5 to 3	16 to 26	-9	10	9	–	19	-0.9	–	4 x 4 mm
TGC1430F	Doubler	20 to 40	–	–	-12	–	–	–	–	–	–	Die
TGC4407-SM	Ka-Band Upconverter	21.5 to 32.5	DC to 7	11 to 16	-9	4	9	-5	0 to 7.5	5	65	3 x 3 mm
TGC4406-SM	28 - 34 GHz Packaged Doubler with Amplifier	28 to 34	14 to 17	–	15	–	–	20	–	5	150	4 x 4 mm
TGC4546-SM*	37 - 46 GHz Upconverter	37 to 46	DC to 3.5	8.35 to 11.5	12	26	18.5	21	2 to 8	5	430	5 x 5 mm

NOTES: * = New

Large Couplers

Part	Description	Frequency (GHz)	Insertion Loss (dB)	Package Style
TGB2001	Large Coupler	12 to 21	< 0.25	Die
TGB4001	Large Coupler	18 to 32	< 0.25	Die
TGB4002	Large Coupler	27 to 45	< 0.25	Die

Limiters

Part	Description	Frequency (GHz)	Insertion Loss (dB)	Flat Leakage (dBm)	Package Style
TGL2205**	S and C-Band 100 W VPIN Limiter	1 to 6	< 0.5	–	Die
TGL2206**	S-Band 100 W VPIN Limiter	2 to 4.5	< 0.5	–	Die
TGL2207**	S and C-Band 100 W VPIN Limiter	2 to 5	< 0.5	–	Die
TGL2208-SM*	2 - 20 GHz Dual-Stage VPIN Limiter	2 to 20	< 1	< 18	QFN 3 x 3 mm 14L

NOTES: * = New, ** = Preview

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TQP3M9036	Ultra Low Noise, High Linearity LNA	0.4 to 2	0.45	19	35	20	5	65	2 x 2 mm
TQP3M9008	High Linearity Low Noise Gain Block	0.05 to 4	1.3	20.6	35.5	20	5	85	SOT-89
TQP3M9009	High Linearity Low Noise Gain Block	0.05 to 4	1.3	21.8	39.5	22	5	125	SOT-89
TQP3M9018	High Linearity Low Noise Gain Block	0.05 to 4	1.3	20.5	36	20	5	85	3 x 3 mm
TQP3M9019	High Linearity Low Noise Gain Block	0.05 to 4	1.3	22	39.5	22	5	125	3 x 3 mm
TQP3M9037	Ultra Low Noise, High Linearity LNA	1.5 to 4	0.4	20	35	20	5	65	2 x 2 mm
TQP3M9028	High Linearity Low Noise Gain Block	50 to 4,000	14.7	20.7	40	2	5	85	SOT-89
TQP3M9038	High Linearity LNA Gain Block	50 to 4,000	14.9	21.6	39.5	2	5	85	3 x 3 mm
TQL9047*	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	21.2	35.5	1.6	5	70	2 x 2 mm
TQL9048*	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	22	40.5	1.7	5	130	2 x 2 mm
TGA2611**	2 - 6 GHz GaN LNA	2 to 6	1	25	32	22	10	110	Die
TGA2611-SM**	2 - 6 GHz GaN LNA	2 to 6	1.2	25	32	22	10	100	4 x 4 mm Overmold QFN
TGA2525	2 - 18 GHz Low Noise Amplifier with AGC	2 to 18	2	17	29	22	5	75	Die
TGA2513-SM	Wideband Low Noise Amplifier	2 to 20	2.5	17	–	16	5	75	4 x 4 mm

Low Noise Amplifiers (Cont.)

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TGA2526	2 - 20 GHz Low Noise Amplifier with AGC	2 to 20	2.5	17.5	29	22	5	100	Die
TGA2567-SM*	2 - 20 GHz LNA Amplifier	2 to 20	2	17	29	19	5	100	QFN 4 x 4 mm 24L
TGA2513	Wideband Low Noise Amplifier	2 to 23	2	17	–	16	5	75	Die
TGA2613**	S-Band High-Linearity LNA	2.5 to 4	2.5	12.5	29	29	6	320	Die
TGA2614**	S-Band High Gain LNA	2.7 to 3.8	0.9	18	33	20	6	110	Die
TGA2614-SM**	S-Band High Gain LNA	2.7 to 3.8	1.2	17	33	19	6	120	QFN 5 x 5 mm 32L
TGA2512-1-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	16	12	5	160	4 x 4 mm
TGA2512-2-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	24	12	5	160	4 x 4 mm
TGA2512	X-Band Low Noise Amplifier	5 to 15	1.4	27	24	13	5	160	Die
TGA2612**	6 - 12 GHz GaN LNA	6 to 12	1.8	22	29	20	10	100	Die
TGA2511	X-Band Low Noise Amplifier	6 to 14	1.3	20	24	12	5	160	Die
TGA4506	K-Band Low Noise Amplifier	20 to 27	2.2	21	–	12	3.5	60	Die
TGA4507	Ka-Band Low Noise Amplifier	28 to 36	2.3	22	–	12	3	60	Die
TGA4508	Ka-Band Low Noise Amplifier	30 to 42	2.8	21	–	14	3	40	Die
TGA4600	60 GHz Low Noise Amplifier	57 to 65	4	13	–	–	3	41	Die

NOTES: * = New, ** = Preview

Modulator Drivers

Part	Description	Frequency (GHz)	Vpp (V)	Gain (dB)	3 dB Bandwidth (GHz)	Voltage (V)	Current (mA)	Package Style
TGA4832	DC - 35 GHz Wideband Amplifier	DC to 35	4	12	35	5	135	Die
TGA4830	CFP Low Power Driver	DC to 40	2.5	13	40	5	50	Die
TGA4803	DC to > 50 GHz Medium Power Amplifier with AGC	DC to 50+	3.5	8	> 50	6.5	100	Die

Oscillators

Part	Description	Frequency (GHz)	Power (dBm)	Phase Noise (dBc/Hz)	Voltage (V)	Current (mA)	Package (mm)
TGV2561-SM	8.9 - 9.8 GHz VCO with Divide by 2	8.9 to 9.8	16	-114 @ 100 kHz	5	195	5 x 5
TGV2562-SM	9.5 - 10.3 GHz VCO with Divide by 2	9.5 to 10.3	15	-113 @ 100 kHz	5	195	5 x 5
TGV2563-SM	9.7 - 10.8 GHz VCO with Divide by 2	9.7 to 10.8	11	-111 @ 100 kHz	5	175	5 x 5
TGV2564-SM	10.3 - 11.1 GHz VCO with Divide by 2	10.3 to 11.1	10	-111 @ 100 kHz	5	175	5 x 5
TGV2539-SM	10.7 - 11.5 GHz VCO with Divide by 2	10.7 to 11.5	10	-111 @ 100 kHz	5	185	5 x 5
TGV2565-SM	11.3 - 12.3 GHz VCO with Divide by 2	11.3 to 12.3	11	-111 @ 100 kHz	5	180	5 x 5
TGV2584-SM	12.6 - 13.8 GHz VCO with Divide by 2	12.6 to 13.8	10	-110 @ 100 kHz	5	180	5 x 5
TGV2566-SM	13.4 - 14.4 GHz VCO with Divide by 2	13.4 to 14.4	9	-110 @ 100 kHz	5	175	5 x 5

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2237**	0.03 - 2.5 GHz 10 W GaN Power Amplifier	0.03 to 2.5	40	19	–	> 52	30	360
TGA2237-SM**	0.03 - 2.5 GHz 10 W GaN Power Amplifier	0.03 to 2.5	40	19	–	> 50	30	360
TGA2216**	0.1 - 3.0 GHz 12 W GaN Power Amplifier	0.1 to 3	41	22	–	> 40	48	360
TGA2216-SM**	0.1 - 3.0 GHz 12 W GaN Power Amplifier	0.1 to 3	40.5	21	–	> 40	40	360
TGA2578**	2-6 GHz 30 W Power Amplifier	2 to 6	45	27	–	40	28	400
TGA2576-2-FL**	2.5 - 6 GHz 40 W GaN Power Amplifier	2.5 to 6	46.5	29	–	36	30	1,550
TGA2583-SM**	2.7 - 3.7 GHz 10 W GaN Power Amplifier	2.7 to 3.7	41	33	–	> 50	25	175
TGA2585-SM**	2.7 - 3.7 GHz 18 W GaN Power Amplifier	2.7 to 3.7	42.8	32	–	> 50	28	225
TGA2706-SM	2 W C-Band Packaged Power Amplifier	5.5 to 8.5	34	31	7	–	6	1,260
TGA2701-SM	3 W C-Band Packaged Power Amplifier	5.9 to 8.5	35	18	–	37	6	1,000
TGA2701	7 - 8.5 GHz High Power Amplifier	7 to 8.5	37	21	–	> 40	5 to 7	1,050

Power Amplifiers (Cont.)

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2586-FL**	7.9 - 8.4 GHz 50 W GaN Power Amplifier	7.9 to 8.4	47	14	–	36	24	2,240
TGA2700	X-Band Driver Amplifier	8 to 13	30	25	–		9	300
TGA2622**	9 - 10 GHz 40 W GaN Power Amplifier	9 to 10	46	32	–	> 46	28	290
TGA2624**	9 - 10 GHz 18 W GaN Power Amplifier	9 to 10	42.5	35	–	40	28	365
TGA2312-FL*	X-Band 60 W GaN Power Amplifier	9 to 10	48	13	–	38	24	2,400
TGA2704	9 - 10.5 GHz High Power Amplifier	9 to 10.5	38	20	–	> 40	7 to 9	1,050
TGA2704-SM**	8 W, 9 - 11 GHz Power Amplifier	9 to 11	39	21	–	–	9	1,050
TGA2710-SM**	8 W, 9.5 - 11.5 GHz Power Amplifier	9.5 to 11.5	39	22	–	–	9	1,050
TGA2623**	10 - 11 GHz 35 W GaN Power Amplifier	10 to 11	45.5	35	–	> 47	28	290
TGA2625**	10 - 11 GHz 18 W GaN Power Amplifier	10 to 11	42.5	34	–	40	28	365
TGA2535-SM	X-Band Power Amplifier	10 to 12	34.5	25	–	30	6	1,300
TGA2710	10.5 - 12 GHz High Power Amplifier	10.5 to 12	38	19	–	> 40	7 to 9	1,050
TGA2524-SM	Ku-Band Power Amplifier	12 to 16	26.5	23	7	–	5	320
TGA2533-SM	Ku-Band Power Amplifier	12.5 to 15.5	34.5	27	–	–	6	1,300
TGA2510	2 W Ku-Band Power Amplifier	12.5 to 17	34	26	–	–	7.5	650
TGA2510-TS	2 W Ku-Band Power Amplifier	12.5 to 17	34	26	–	–	7.5	650
TGA2533	Ku-Band Power Amplifier	12.7 to 15.4	35	28	6	–	6	1,300
TGA2514-FL	6.5 W Ku-Band Power Amplifier	13 to 16	38	24	–	–	8	2,600
TGA2505	Ku-Band High Power Amplifier	13 to 17	34	25	–	–	7	640
TGA2902-1-SCC-SG	2 W Packaged Amplifier	13 to 17	34	26	–	–	7.5	650
TGA2514	6.5 W Ku-Band Power Amplifier	13 to 18	38	24	–	–	8	2,600
TGA2536-FL**	5 W Ku-Band Power Amplifier	13.5 to 16	37	25	–	20	8	2,600
TGA2579-2-FL	20 W Ku-Band GaN Power Amplifier	14 to 15.35	43	35	–	27	25	1,000
TGA2559-FL**	4 W Ku-Band Power Amplifier	14 to 16	36	24	–	30	6	1,000
TGA2572-2-FL**	16 W Ku-Band GaN Power Amplifier	14 to 16	42	25	–	20	30	2,000
TGA2521-SM	17 - 24 GHz Linear Driver Amplifier	17 to 24	25	20	5	–	5	320
TGA2522-SM	17 - 24 GHz Power Amplifier	17 to 24	28	17	–	–	5	712
TGA4531	K-Band High Linearity Power Amplifier	17 to 24	32	23	6	–	7	720
TGA4502-SCC	Ka-Band High Power Amplifier	17 to 27	29	22	–	–	7	760
TGA4030-SM	17 - 37 GHz Medium Power Amplifier/Multiplier	17 to 37	19	20	–	–	5	140
TGA4031-SM	17 - 40 GHz Medium Power Amplifier/Multiplier	17 to 40	19	22	–	–	5	140
TGA4040	17 - 43 GHz Medium Power Amplifier/Multiplier	17 to 43	22	25	–	–	5	140
TGA4532	K-Band Power Amplifier	17.5 to 20	32.5	23	6	–	6	900
TGA4532-SM	K-Band Power Amplifier	17.7 to 19.7	32.5	23	7	–	6	900
TGA4022	K-Band High Power Amplifier	18 to 23	32.5	26	–	–	7	840
TGA1135B-SCC	K-Band High Power Amplifier	18 to 27	30	14	–	–	5 to 7	540
TGA1073G-SCC	K-Band Medium Power Amplifier	19 to 27	25	22	–	–	5 to 7	220
TGA4036	19 - 38 GHz Medium Power Amplifier	19 to 38	22	20	–	–	5	160
TGA4533-SM	K-Band Power Amplifier	21.2 to 23.6	32	22	6	–	6	880
TGA4536-SM*	K-Band Power Amplifier	24.2 to 26.5	34	18	7	20	6	1,430
TGA4902-SM	Ka-Band Packaged Medium Power Amplifier	25 to 35	25	18	–	–	6	220
TGA1073A-SCC	Ka-Band Medium Power Amplifier	26 to 35	25	19	–	–	5 to 7	220
TGA2594**	27 - 31 GHz 5 W GaN Power Amplifier	27 to 31	37	23	–	28	20	140
TGA1073B-SCC	Ka-Band High Power Amplifier	27 to 32	28.5	25	–	–	6 to 8	420
TGA4903-SM	Ka-Band Medium Power Amplifier	27 to 32	24	15	–	–	5	170
TGA2595**	27.5 - 31 GHz 9 W Power Amplifier	27.5 to 31	39.5	23	–	24	20	280
TGA4539-SM	1 W Ka-Band Power Amplifier	28 to 30	30.5	20	–	–	6	420
TGA4512-SM	Ka-Band Driver Amplifier	28 to 32	17	14.5	7.5	–	6	80
TGA4537-SM**	K-Band Power Amplifier	29 to 35	32	18	6	15	6	1,100
TGA4510	29 - 37 GHz Driver Amplifier	29 to 37	16	16	–	–	6	60
TGA4516	2 W Ka-Band Power Amplifier	30 to 40	33	18	–	–	6	1,050
TGA4516-TS	2 W Ka-Band Power Amplifier	30 to 40	33	18	–	–	6	1,050
TGA4514	2 W Ka-Band Power Amplifier	31 to 35	33.5	19	–	–	6 to 7	1,150

Power Amplifiers (Cont.)

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA4517	Ka-Band Power Amplifier	31 to 37	35	15	–	–	6	2,000
TGA2575	3 W Ka-Band Power Amplifier	32 to 38	35.5	19	–	22	6	2,100
TGA2575-TS**	Ka-Band 3 W Power Amplifier On Carrier	32 to 38	35.5	19	–	22	6	2,100
TGA4521	32 - 45 GHz Wideband Driver Amplifier	32 to 45	24	15	–	–	6	200
TGA1141	Ka-Band High Power Amplifier	33 to 36	31	17	–	–	6 to 7	880
TGA4522	33 - 47 GHz Wideband Driver Amplifier	33 to 47	27	14	–	–	6	400
TGA1073C-SCC	Ka-Band High Power Amplifier	36 to 40	26	15	–	–	5 to 7	240
TGA1171-SCC	Ka-Band High Power Amplifier	36 to 40	30	14	–	–	6 to 7	500
TGA4538	37 - 40 GHz Power Amplifier	37 to 40	29.5	24	–	–	5	600
TGA4542	37 - 40 GHz Power Amplifier	37 to 40	32.4	26	–	18	6	900
TGA4043	Q-Band Power Amplifier	40 to 45	29	10	–	–	7	500
TGA4543	40.5 - 43.5 GHz Power Amplifier	40.5 to 43.5	30	23	–	–	6	900
TGA4042	Q-Band Driver Amplifier	41 to 45	18	14	–	–	6	168
TGA4046	2 W Q-Band High Power Amplifier	41 to 46	33	16	–	–	6	2,000

NOTES: * = New, ** = Preview

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856980	70 MHz IF SAW Filter	SAW	70	2.5	9	SE/SE	13.3 x 6.5
856980	70 MHz IF SAW Filter	SAW	70	2.5	9	SE/SE	13.3 x 6.5
857174	70 MHz SAW Filter	SAW	70	4.9	25.5 Max	SE/SE	19 x 6.5
857175	70 MHz SAW Filter	SAW	70	5.7	21	SE/SE	19 x 6.5
857176	140 MHz SAW Filter	SAW	140	28.5	19.75	SE/SE	9 x 7.01
857177	140 MHz SAW Filter	SAW	140	1.5	23.5	SE/SE	19 x 6.5
857191	810 MHz SAW Filter	SAW	810	5	4.6	SE/SE	3 x 3
857162	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	700	30	SE/SE	25.4 x 12.7
857163	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	430	23.3	SE/SE	25.4 x 12.7
857164	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	353.5	21.25	SE/SE	25.4 x 12.7
857169	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	705	35.3	SE/SE	25.4 x 12.7
880367	1030 MHz SSR/IFF BAW Filter	BAW	1,030	14	3	SE/SE	3.71 x 2.57
857179	1090 MHz SAW Filter	SAW	1,090	10	5.6	BAL/BAL	3.8 x 3.8
880374	1090 MHz SSR/IFF BAW Filter	BAW	1,090	16	3	SE/SE	3.71 x 2.57
880364	1176 MHz GPS L5 BAW Filter	BAW	1,176	30	2.5	SE/SE	3.26 x 1.6
880060	1227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	25	1.8	SE/SE	3.26 x 1.6
880272*	1227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	30	2.25	SE/SE	3.26 x 1.6
880368	1280 MHz L-Band BAW Filter	BAW	1,280	19	4	SE/SE	3.71 x 2.57
880094	1575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	30	1.8	SE/SE	3.26 x 1.6
880273	1575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	40	2.35	SE/SE	3.26 x 1.6
880126	2106 MHz RF BAW Filter	BAW	2,106	35	4 Max	SE/SE	3.26 x 1.6
880148	2324 MHz RF BAW Filter	BAW	2,324	38	3	SE/SE	3.71 x 2.57
880157	2560 MHz S-Band BAW Filter	BAW	2,560	30	3.8	SE/SE	3.71 x 2.57

NOTES: * = New

Spatium™ Amplifiers

Part	Description	Frequency (GHz)	Psat (W)	Power Gain (dB)	Small Signal Gain (dB)	Power (dBm)	PAE (%)	Voltage (V)	ECCN	Package (mm)
KU250W-1416*	14.4 - 16 GHz 250 W Ku-Band GaN Spatium™ Solid-State Power Amplifier	14.4 to 16	250	22	25	54	20	30	ITAR	176 x 61 x 61
KA150W-2730*	27 - 30 GHz 150 W Spatium™ Solid-State Power Amplifier	27 to 30	150	15	22	52	28	20	3A001.b.4.b	104 x 74 x 61
KA130W-2730*	27 - 30 GHz 130 W Ka-Band GaN SSPA	27 to 30	130	14	> 20	51.14	> 15	20	3A001b.4.b	104 x 74 x 61
KA130W-3031*	30 - 31 GHz 130 W Ka-Band GaN SSPA	30 to 31	130	14	> 20	51.14	> 15	20	3A001b.4.b	104 x 74 x 61

NOTES: * = New

Spatium™ Bench Top Amplifiers

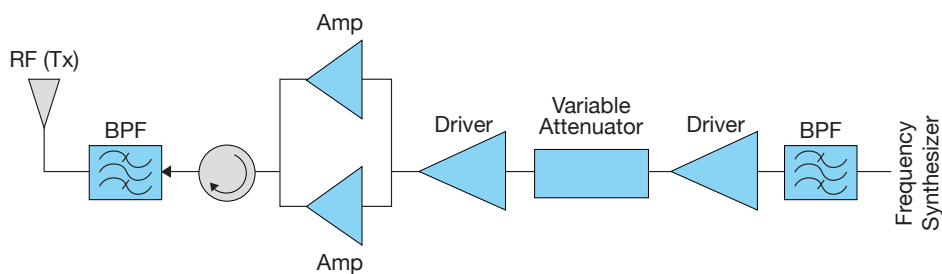
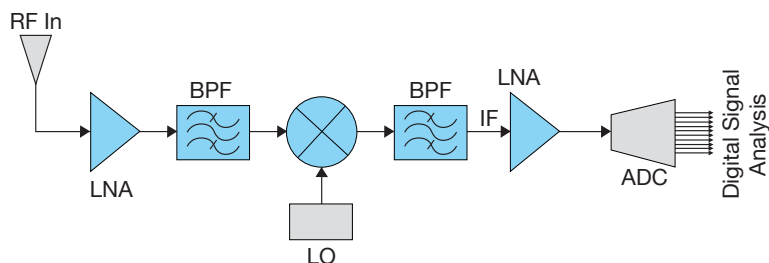
Part	Description	Frequency (GHz)	Psat (W)	Power Gain (dB)	Small Signal Gain (dB)	Power (dBm)	PAE (%)	Prime Power (VAC)	ECCN	Package (mm)
RM022020*	2 - 20 GHz 20 W Spatium™ Bench Top Power Amplifier	2 to 20	15	43	45	41.7	8	90 to 264	3A001.b.4.b	482 x 236 x 145

NOTES: * = New

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGS2303	SP3T VPIN	0.2 to 20	0.5	35	–	–	10	Die
TGS2304-SCC	SP4T VPIN	0.2 to 20	0.6	38	23	–	10	Die
TGS2354**	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	Die
TGS2354-SM**	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	4 x 4 mm QFN
TGS2355**	0.5 - 6 GHz 80 W GaN SPDT Switch	0.5 to 6	< 1.25	> 80	> 40	0, -40	< 1	Die
TGS2352-2-SM**	0.5 to 12 GHz High Power SPDT Reflective Switch	0.5 to 12	< 1	-35	20	0 to -40	–	QFN
TGS2353-2-SM**	0.5 to 18 GHz High Power SPDT Reflective Switch	0.5 to 18	< 1.5	-30	10	0 to -40	–	QFN
TGS2313	4 - 18 GHz VPIN SP3T Switch	4 to 18	1	35	20	2.7, -2.7	20	Die
TGS2302	4 - 20 GHz VPIN SPDT Switch	4 to 20	0.9	35	20	2.7, -2.7	20	Die
TGS4302	High Power Ka-Band SPDT Switch	27 to 46	0.9	27	> 33	5, -5	20	Die
TGS4304	High Power Ka-Band Absorptive SPDT Switch	32 to 40	0.9	35	> 33	5, -5	30	Die

NOTES: ** = Preview

**Signal Jammer****Digital Receiver****Discrete Transistors**

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
T1G2028536-FL**	285 W, 36 V DC - 2 GHz, GaN RF Power Transistor	DC to 2	19	–	54.2	–	54	36	576	NI-780
T1G2028536-FS**	285 W, 36 V DC - 2 GHz, GaN RF Power Transistor	DC to 2	19	–	54.2	–	54	36	576	NI-780
T1G3000532-SM**	5 W, 32 V, DC - 3 GHz GaN RF Power Transistor	DC to 3	16	–	37	–	50	32	25	5 x 5 mm
T1G4012036-FL**	120 W Peak, 24 W Average Power, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	–	50.8	–	52	36	360	NI-360
T1G4012036-FS**	120 W Peak, 24 W Average Power, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	–	50.8	–	52	36	360	NI-360
T1G4020036-FL**	2 x 120 W, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	–	54	–	52	36	520	NI-650
T1G4020036-FS**	2 x 120 W, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	–	54	–	52	36	520	NI-650
T1G4004532-FL**	45 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	19	–	46.4	–	52	32	220	NI-360
T1G4004532-FS**	45 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	19	–	46.4	–	52	32	220	NI-360
T2G4003532-FL	30 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16.5	–	44.5	–	49	32	150	NI-360
T2G4003532-FS	30 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16.5	–	44.5	–	49	32	150	NI-360
TGF2021-04-SD	DC - 4 GHz Packaged Power pHEMT	DC to 4	16	26.5	–	0.6	–	5	150	SOT-89
T1G6001032-SM**	10 W, 32 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	19	–	40	–	54	32	50	5 x 5 mm
T2G6001528-SG**	15 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15.5	–	42.3	–	70	28	100	NI-200
T2G6000528-Q3	7 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15.5	–	39.5	–	50	28	50	NI-200
T2G6001528-Q3	18 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15	–	42.5	–	> 50	28	50	NI-200
T2G6003028-FL	30 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	14	–	45	–	50	28	200	NI-200
T2G6003028-FS	30 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	14	–	45	–	50	28	200	NI-200

Discrete Transistors (Cont.)

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
TGF2021-01	X-Band Discrete Power pHEMT	DC to 12	11	–	> 30	–	59	8 to 12	75 to 125	Die
TGF2021-02	X-Band Discrete Power pHEMT	DC to 12	11	–	> 33	–	59	8 to 12	150 to 250	Die
TGF2021-04	X-Band Discrete Power pHEMT	DC to 12	11	–	> 36	–	59	8 to 12	300 to 500	Die
TGF2021-08	X-Band Discrete Power pHEMT	DC to 12	11	–	> 39	–	59	8 to 12	600 to 1,000	Die
TGF2021-12	X-Band Discrete Power pHEMT	DC to 12	11	–	> 42	–	58	8 to 12	900 to 1,500	Die
TGF2023-2-01	6 W Discrete Power GaN on SiC HEMT	DC to 18	18	–	38	–	71.6	12 to 32	25 to 125	Die
TGF2023-2-02	12 W Discrete Power GaN on SiC HEMT	DC to 18	21	–	40.1	–	73.3	12 to 32	50 to 250	Die
TGF2023-2-05	25 W Discrete Power GaN on SiC HEMT	DC to 18	18	–	43	–	78.3	12 to 32	100 to 500	Die
TGF2023-2-10	50 W Discrete Power GaN on SiC HEMT	DC to 18	19.8	–	47.3	–	69.5	12 to 32	200 to 1,000	Die
TGF2023-2-20	90 W Discrete Power GaN on SiC HEMT	DC to 18	19.2	–	50.5	–	70.5	12 to 32	400 to 2,000	Die
TGF2022-06	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 28	–	58	8 to 12	45 to 75	Die
TGF2022-12	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 31	–	58	8 to 12	90 to 150	Die
TGF2022-24	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 34	–	58	8 to 12	180 to 300	Die
TGF2022-48	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 37	–	58	8 to 12	360 to 600	Die
TGF2022-60	Ku-Band Discrete Power pHEMT	DC to 20	12	–	> 38	–	57	8 to 12	448 to 752	Die
TGF2040	400 µm Discrete GaAs pHEMT	DC to 20	13	–	26	1.1	55	8	65	Die
TGF2060	600 µm Discrete GaAs pHEMT	DC to 20	12	–	28	1.4	55	8	97	Die
TGF2080	800 µm Discrete GaAs pHEMT	DC to 20	11.5	–	29.5	–	56	8	129	Die
TGF2120	1200 µm Discrete GaAs pHEMT	DC to 20	11	31	–	–	57	8	194	Die
TGF2160	1600 µm Discrete GaAs pHEMT	DC to 20	10.4	32.5	–	–	63	8	258	Die
TGF4350	0.3 mm, 0.25-µm mmW pHEMT 2MI	DC to 22	13 @ 10 GHz	–	16	0.8 @ 10 GHz	–	3	15	Die

NOTES: ** = *Preview***Limiters**

Part	Description	Frequency (GHz)	Insertion Loss (dB)	Flat Leakage (dBm)	Package Style
TGL2208-SM*	2-20 GHz Dual-Stage VPIN Limiter	2 to 20	< 1.0	< 18	QFN 3x3 mm 14L

NOTES: * = *New***Low Noise Amplifiers**

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TGA2567-SM*	2 - 20 GHz LNA Amplifier	2 to 20	2	17	29	19	5	100	QFN 4 x 4 mm 24L
TGA4508	Ka-Band Low Noise Amplifier	30 to 42	2.8	21	–	14	3	40	Die

NOTES: * = *New*

Modulator Drivers

Part	Description	Frequency (GHz)	V _{pp} (V)	Gain (dB)	3 dB Bandwidth (GHz)	Voltage (V)	Current (mA)	Package Style
TGA4832	DC - 35 GHz Wideband Amplifier	DC to 35	4	12	35	5	135	Die
TGA4830	CFP Low Power Driver	DC to 40	2.5	13	40	5	50	Die
TGA4803	DC to > 50 GHz Medium Power Amplifier with AGC	DC to 50+	3.5	8	> 50	6.5	100	Die

Oscillators

Part	Description	Frequency (GHz)	Power (dBm)	Phase Noise (dBc/Hz)	Voltage (V)	Current (mA)	Package (mm)
TGV2561-SM	8.9 - 9.8 GHz VCO with Divide by 2	8.9 to 9.8	16	-114 @ 100 kHz	5	195	5 x 5
TGV2562-SM	9.5 - 10.3 GHz VCO with Divide by 2	9.5 to 10.3	15	-113 @ 100 kHz	5	195	5 x 5
TGV2563-SM	9.7 - 10.8 GHz VCO with Divide by 2	9.7 to 10.8	11	-111 @ 100 kHz	5	175	5 x 5
TGV2564-SM	10.3 - 11.1 GHz VCO with Divide by 2	10.3 to 11.1	10	-111 @ 100 kHz	5	175	5 x 5
TGV2539-SM	10.7 - 11.5 GHz VCO with Divide by 2	10.7 to 11.5	10	-111 @ 100 kHz	5	185	5 x 5
TGV2565-SM	11.3 - 12.3 GHz VCO with Divide by 2	11.3 to 12.3	11	-111 @ 100 kHz	5	180	5 x 5
TGV2584-SM	12.6 - 13.8 GHz VCO with Divide by 2	12.6 to 13.8	10	-110 @ 100 kHz	5	180	5 x 5
TGV2566-SM	13.4 - 14.4 GHz VCO with Divide by 2	13.4 to 14.4	9	-110 @ 100 kHz	5	175	5 x 5

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2237**	0.03 - 2.5 GHz 10 W GaN Power Amplifier	0.03 to 2.5	40	19	—	> 52	30	360
TGA2237-SM**	0.03 - 2.5 GHz 10W GaN Power Amplifier	0.03 to 2.5	40	19	—	> 50	30	360
TGA2216**	0.1 - 3 GHz 12 W GaN Power Amplifier	0.1 to 3	41	22	—	> 40	48	360
TGA2216-SM**	0.1 - 3 GHz 12W GaN Power Amplifier	0.1 to 3	40.5	21	—	> 40	40	360
TGA2578**	2 - 6 GHz 30 W Power Amplifier	2 to 6	45	27	—	40	28	400
TGA2573-2	2 - 18 GHz, 10 W GaN Amplifier	2 to 18	40	10	—	20	30	500
TGA2573-2-TS**	2 - 18 GHz, 10 W GaN Amplifier on Carrier	2 to 18	40	10	—	20	30	500
TGA2509-FL	Wideband Packaged High Power Amplifier with AGC	2 to 20	29	15	—	—	12	1,100
TGA2509	Wideband 1 W High Power Amplifier with AGC	2 to 22	30	17	—	—	12	1,100
TGA2576-2-FL**	2.5 - 6 GHz 40 W GaN Power Amplifier	2.5 to 6	46.5	29	—	36	30	1,550
TGA2590**	6 - 12 GHz 30 W GaN Power Amplifier	6 to 12	45	29	—	28	25	1100
TGA2501	High Power Amplifier	6 to 18	34.5	24	—	20	8	1,200
TGA2501-GSG**	2.8 W 6 - 18 GHz Power Amplifier	6 to 18	34.5	26	—	20	8	1,200
TGA2501-TS	6 - 18 GHz, 2.8 W Power Amplifier	6 to 18	34.5	24	—	25	8	1,200
TGA9092-SCC	Power Amplifier (Per Channel)	6 to 18	34.5	24	—	20	8	1,200
TGA2586-FL**	7.9 - 8.4 GHz 50 W GaN Power Amplifier	7.9 to 8.4	47	14	—	36	24	2,240
TGA2312-FL*	X-Band 60 W GaN Power Amplifier	9 to 10	48	13	—	38	24	2,400
TGA2579-2-FL	20 W Ku-Band GaN Power Amplifier	14 to 15.35	43	35	—	27	25	1,000
TGA4030-SM	17 - 37 GHz Medium Power Amplifier/Multiplier	17 to 37	19	20	—	—	5	140
TGA4031-SM	17 - 40 GHz Medium Power Amplifier/Multiplier	17 to 40	19	22	—	—	5	140
TGA4040	17 - 43 GHz Medium Power Amplifier/Multiplier	17 to 43	22	25	—	—	5	140
TGA4036	19 - 38 GHz Medium Power Amplifier	19 to 38	22	20	—	—	5	160
TGA4536-SM*	K-Band Power Amplifier	24.2 to 26.5	34	18	7	20	6	1,430
TGA2594**	27 - 31 GHz 5 W GaN Power Amplifier	27 to 31	37	23	—	28	20	140
TGA2595**	27.5 - 31 GHz 9 W Power Amplifier	27.5 to 31	39.5	23	—	24	20	280
TGA4537-SM**	K-Band Power Amplifier	29 to 35	32	18	6	15	6	1,100
TGA4516	2 W Ka-Band Power Amplifier	30 to 40	33	18	—	—	6	1,050
TGA4516-TS	2 W Ka-Band Power Amplifier	30 to 40	33	18	—	—	6	1,050

NOTES: * = New, ** = Preview

Spatium™ Amplifiers

Part	Description	Frequency (GHz)	Psat (W)	Power Gain (dB)	Small Signal Gain (dB)	Power (dBm)	PAE (%)	Voltage (V)	ECCN	Package (mm)
KA130W-2730*	27 - 30 GHz 130 W Ka-Band GaN SSPA	27 to 30	130	14	> 20	51.14	> 15	20	3A001b.4.b	104 x 74 x 61
KA150W-2730*	27 - 30 GHz 150 W Spatium™ Solid-State Power Amplifier	27 to 30	150	15	22	52	28	20	3A001.b.4.b	104 x 74 x 61
KA130W-3031*	30 - 31 GHz 130 W Ka-Band GaN SSPA	30 to 31	130	14	> 20	51.14	> 15	20	3A001b.4.b	104 x 74 x 61

NOTES: * = New

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGS2303	SP3T VPIN	0.2 to 20	0.5	35	–	–	10	Die
TGS2304-SCC	SP4T VPIN	0.2 to 20	0.6	38	23	–	10	Die
TGS2354**	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	Die
TGS2354-SM**	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	4 x 4 mm QFN
TGS2355**	0.5 - 6 GHz 80 W GaN SPDT Switch	0.5 to 6	< 1.25	> 80	> 40	0, -40	< 1	Die
TGS2352-2-SM**	0.5 to 12 GHz High Power SPDT Reflective Switch	0.5 to 12	< 1	-35	20	0 to -40	–	QFN
TGS2353-2-SM**	0.5 to 18 GHz High Power SPDT Reflective Switch	0.5 to 18	< 1.5	-30	10	0 to -40	–	QFN
TGS2313	4 - 18 GHz VPIN SP3T Switch	4 to 18	1.0	35	20	2.7, -2.7	20	Die
TGS2302	4 - 20 GHz VPIN SPDT Switch	4 to 20	0.9	35	20	2.7, -2.7	20	Die
TGS4302	High Power Ka-Band SPDT Switch	27 to 46	0.9	27	> 33	5, -5	20	Die
TGS4304	High Power Ka-Band Absorptive SPDT Switch	32 to 40	0.9	35	> 33	5, -5	30	Die

NOTES: ** = Preview

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	Psat (dBm)	PAE (%)	Voltage (V)	Current (mA)	Package Style
T1G2028536-FL**	285 W, 36 V DC - 2 GHz, GaN RF Power Transistor	DC to 2	19	54.2	54	36	576	NI-780
T1G2028536-FS**	285 W, 36 V DC - 2 GHz, GaN RF Power Transistor	DC to 2	19	54.2	54	36	576	NI-780
T1G3000532-SM**	5 W, 32 V, DC - 3 GHz GaN RF Power Transistor	DC to 3	16	37	50	32	25	5 x 5 mm
T1G4012036-FL**	120 W Peak, 24 W Average Power, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	50.8	52	36	360	NI-360
T1G4020036-FL**	2 x 120 W, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	54	52	36	520	NI-650
T1G4020036-FS**	2 x 120 W, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	54	52	36	520	NI-650
T1G4004532-FL**	45 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	19	46.4	52	32	220	NI-360
T1G4004532-FS**	45 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	19	46.4	52	32	220	NI-360
T2G4003532-FL	30 W, 32 V, DC-3.5 GHz GaN RF Power Transistor	DC to 3.5	16.5	44.5	49	32	150	NI-360
T2G4003532-FS	30 W, 32 V, DC-3.5 GHz GaN RF Power Transistor	DC to 3.5	16.5	44.5	49	32	150	NI-360

Discrete Transistors (Cont.)

Part	Description	Frequency (GHz)	Linear Gain (dB)	Psat (dBm)	PAE (%)	Voltage (V)	Current (mA)	Package Style
T2G4005528-FS	55 W, 28 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	15	47.2	> 50	28	200	NI-360
T1G6001032-SM**	10 W, 32 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	19	40	54	32	50	5 x 5 mm
T2G6001528-SG**	15 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15.5	42.3	70	28	100	NI-200
T2G6000528-Q3	7 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15.5	39.5	50	28	50	NI-200
T2G6001528-Q3	18 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15	42.5	> 50	28	50	NI-200
T2G6003028-FL	30 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	14	45	50	28	200	NI-200
T2G6003028-FS	30 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	14	45	50	28	200	NI-200
TGF2023-2-01	6 W Discrete Power GaN on SiC HEMT	DC to 18	18	38	71.6	12 to 32	25 to 125	Die
TGF2023-2-02	12 W Discrete Power GaN on SiC HEMT	DC to 18	21	40.1	73.3	12 to 32	50 to 250	Die
TGF2023-2-05	25 W Discrete Power GaN on SiC HEMT	DC to 18	18	43	78.3	12 to 32	100 to 500	Die
TGF2023-2-10	50 W Discrete Power GaN on SiC HEMT	DC to 18	19.8	47.3	69.5	12 to 32	200 to 1,000	Die
TGF2023-2-20	90 W Discrete Power GaN on SiC HEMT	DC to 18	19.2	50.5	70.5	12 to 32	400 to 2,000	Die

NOTES: ** = Preview

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TGA2611**	2 - 6 GHz GaN LNA	2 to 6	1.5	25	32	22	10	110	Die
TGA2611-SM**	2 - 6 GHz GaN LNA	2 to 6	1.2	25	32	22	10	100	4 x 4 mm Overmold QFN
TGA2612**	6 - 12 GHz GaN LNA	6 to 12	1.8	22	29	20	10	100	Die

NOTES: ** = Preview

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2237**	0.03 - 2.5 GHz 10 W GaN Power Amplifier	0.03 to 2.5	40	19	> 52	30	360
TGA2237-SM**	0.03 - 2.5 GHz 10 W GaN Power Amplifier	0.03 to 2.5	40	19	> 50	30	360
TGA2216**	0.1 - 3 GHz 12 W GaN Power Amplifier	0.1 to 3	41	22	> 40	48	360
TGA2216-SM**	0.1 - 3 GHz 12 W GaN Power Amplifier	0.1 to 3	40.5	21	> 40	40	360
TGA2578**	2 - 6 GHz 30 W Power Amplifier	2 to 6	45	27	40	28	400
TGA2573-2-TS**	2 - 18 GHz, 10 W GaN Amplifier on Carrier	2 to 18	40	10	20	30	500
TGA2576-2-FL**	2.5 - 6 GHz 40 W GaN Power Amplifier	2.5 to 6	46.5	29	36	30	1,550
TGA2576-FS**	2.5 - 6 GHz 40 W GaN Power Amplifier	2.5 to 6	46.5	29	35	30	1550
TGA2583**	2.7 - 3.7 GHz 10 W GaN Power Amplifier	2.7 to 3.7	40	33	54	25	175
TGA2585**	2.7 - 3.7 GHz 18 W GaN Power Amplifier	2.7 to 3.7	42.8	33	54	28	225
TGA2583-SM**	2.7 - 3.7 GHz 10 W GaN Power Amplifier	2.7 to 3.7	41	33	>50	25	175
TGA2585-SM**	2.7 - 3.7 GHz 18 W GaN Power Amplifier	2.7 to 3.7	42.8	32	>50	28	225
TGA2813**	3.1 - 3.6 GHz 100 W GaN Power Amplifier	3.1 to 3.6	50.7	22	55	30	150
TGA2814**	3.1 - 3.6 GHz 80 W GaN Power Amplifier	3.1 to 3.6	49.5	22	56	30	125
TGA2590**	6 - 12 GHz 30 W GaN Power Amplifier	6 to 12	45	29	28	25	1100
TGA2586-FL**	7.9 - 8.4 GHz 50 W GaN Power Amplifier	7.9 to 8.4	47	14	36	24	2,240
TGA2312-FL*	X-Band 60 W GaN Power Amplifier	9 to 10	48	13	38	24	2,400
TGA2622**	9 - 10 GHz 40 W GaN Power Amplifier	9 to 10	46	32	> 46	28	290
TGA2624**	9 - 10 GHz 18 W GaN Power Amplifier	9 to 10	42.5	35	40	28	365

Power Amplifiers (Cont.)

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2623**	10 -11 GHz 35 W GaN Power Amplifier	10 to 11	45.5	35	> 47	28	290
TGA2625**	10 - 11 GHz 18 W GaN Power Amplifier	10 to 11	42.5	34	40	28	365
TGA2579-2-FL	20 W Ku-Band GaN Power Amplifier	14 to 15.35	43	35	27	25	1,000
TGA2572-2-FL**	16 W Ku-Band GaN Power Amplifier	14 to 16	42	25	20	30	2,000
TGA2594**	27 - 31 GHz 5 W GaN Power Amplifier	27 to 31	37	23	28	20	140
TGA2595**	27.5 - 31 GHz 9 W Power Amplifier	27.5 to 31	39.5	23	24	20	280

NOTES: * = New, ** = Preview

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGS2354**	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	Die
TGS2354-SM**	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	4 x 4 mm QFN
TGS2355**	0.5 - 6 GHz 80 W GaN SPDT Switch	0.5 to 6	< 1.25	> 80	> 40	0, -40	< 1	Die
TGS2352-2-SM**	0.5 - 12 GHz High Power SPDT Reflective Switch	0.5 to 12	< 1	-35	20	0 to -40	-	QFN
TGS2353-2-SM**	0.5 - 18 GHz High Power SPDT Reflective Switch	0.5 to 18	< 1.5	-30	10	0 to -40	-	QFN

NOTES: ** = Preview

Attenuators

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Control Voltage (V)	Package Style
TGL4203-SM	DC - 30 GHz Wideband Analog Attenuator	Analog	DC to 30	1.5	16	20	-1 to 0	Die
TGL4201-00	Wideband Fixed 0 dB Attenuator	Analog	DC to 50	0	-	20	Passive	Die
TGL4201-02	Wideband Fixed 2 dB Attenuator	Analog	DC to 50	2	-	20	Passive	Die
TGL4201-03	Wideband Fixed 3 dB Attenuator	Analog	DC to 50	3	-	20	Passive	Die
TGL4201-06	Wideband Fixed 6 dB Attenuator	Analog	DC to 50	6	-	20	Passive	Die
TGL4201-10	Wideband Fixed 10 dB Attenuator	Analog	DC to 50	10	-	20	Passive	Die
TGL4203	50 GHz Wideband Analog Attenuator	Analog	DC to 50	2	17	15	-1 to 0	Die

CATV Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package (mm)	Applications
TGA2803-SM	CATV TIA / Gain Block	40 to 1,000	20	28	45	1.5	8	350	4 x 4	Receiver
TGA2806-SM	CATV Linear Amplifier	40 to 1,000	20	28	45	1.7	8	380	5 x 5	General Purpose Dual

Diplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
890086**	1176.45/1575.42 MHz High Attenuation SAW Diplexer	SAW	1,176.45, 1,575.42	20.46	3.5	SE/SE	5 x 5
890087**	1176.45/1575.42 MHz Low Loss SAW Diplexer	SAW	1,176.45, 1,575.42	20.46	0.9	SE/SE	5 x 5

Diplexers (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
890084**	1227.6/1575.42 MHz High Attenuation SAW Diplexer	SAW	1,227.6, 1,575.42	20.46	3.5	SE/SE	5 x 5
890085**	1227.6/1575.42 MHz Low Loss SAW Diplexer	SAW	1,227.6, 1,575.42	20.46	0.9	SE/SE	5 x 5

NOTES: ** = Preview

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
TGF2021-04-SD	DC - 4 GHz Packaged Power pHEMT	DC to 4	16	26.5	–	0.6	–	5	150	SOT-89
TGF2021-01	X-Band Discrete Power pHEMT	DC to 12	11	–	> 30	–	59	8 to 12	75 to 125	Die
TGF2021-02	X-Band Discrete Power pHEMT	DC to 12	11	–	> 33	–	59	8 to 12	150 to 250	Die
TGF2021-04	X-Band Discrete Power pHEMT	DC to 12	11	–	> 36	–	59	8 to 12	300 to 500	Die
TGF2021-08	X-Band Discrete Power pHEMT	DC to 12	11	–	> 39	–	59	8 to 12	600 to 1,000	Die
TGF2021-12	X-Band Discrete Power pHEMT	DC to 12	11	–	> 42	–	58	8 to 12	900 to 1,500	Die
TGF2018	180 um Discrete GaAs pHEMT	DC to 20	14	–	22	1	55	8	29	Die
TGF2022-06	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 28	–	58	8 to 12	45 to 75	Die
TGF2022-12	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 31	–	58	8 to 12	90 to 150	Die
TGF2022-24	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 34	–	58	8 to 12	180 to 300	Die
TGF2022-48	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 37	–	58	8 to 12	360 to 600	Die
TGF2022-60	Ku-Band Discrete Power pHEMT	DC to 20	12	–	> 38	–	57	8 to 12	448 to 752	Die
TGF2025	250 um Discrete GaAs pHEMT	DC to 20	14	–	25	0.9	58	8	41	Die
TGF2040	400 um Discrete GaAs pHEMT	DC to 20	13	–	26	1.1	55	8	65	Die
TGF2060	600 um Discrete GaAs pHEMT	DC to 20	12	–	28	1.4	55	8	97	Die
TGF2080	800 um Discrete GaAs pHEMT	DC to 20	11.5	–	29.5	–	56	8	129	Die
TGF2120	1200 um Discrete GaAs pHEMT	DC to 20	11	31	–	–	57	8	194	Die
TGF2160	1600 um Discrete GaAs pHEMT	DC to 20	10.4	32.5	–	–	63	8	258	Die
TGF4350	0.3 mm, 0.25-μm mmW pHEMT 2MI	DC to 22	13 @ 10 GHz	–	16	0.8 @ 10 GHz	–	3	15	Die

Driver Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TGA3500-SM**	Wide Band Driver Amplifier	2,000 to 12,000	34	21	29	3	5	200	QFN 8 x 8 mm

NOTES: ** = Preview

Frequency Converters / Mixers

Part	Description	RF (GHz)	IF (GHz)	LO (GHz)	Gain (dB)	Output IP3 (dBm)	NF (dB)	Output P1dB (dBm)	LO Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGC4403	8 - 15 GHz Doubler with Amplifier	16 to 30	8 to 15	–	20	–	–	20		5	150	Die
TGC4403-SM	8 - 15 GHz Packaged Doubler with Amplifier	16 to 30	8 to 15	–	18	–	–	20		5	150	4 x 4 mm
TGC4610-SM	K-Band Downconverter	17 to 27	DC to 4	6.5 to 15.5	15	18	2.5	–	5.5	3	228	5 x 5 mm
TGC4402	17 - 27 GHz Upconverting Mixer	17 to 27	0.5 to 3	14 to 28	-9	10	9	–	17	-0.9	–	Die
TGC4405*	17 - 27 GHz Upconverter	17 to 27	0.5 to 3	8 to 13	13	–	–		2 to 5	5	425	Die
TGC4405-SM*	17 - 27 GHz Packaged Upconverter	17 to 27	0.5 to 3	8 to 13	13	28	–	–	2	5	425	4 x 4 mm
TGC4402-SM	18 - 26 GHz Packaged Upconverting Mixer	18 to 26	0.5 to 3	16 to 26	-9	10	9	–	19	-0.9	–	4 x 4 mm
TGC1430F	Doubler	20 to 40	–	–	-12	–	–	–	–	–	–	Die
TGC4407-SM	Ka-Band Upconverter	21.5 to 32.5	DC to 7	11 to 16	-9	4	9	-5	0 to 7.5	5	65	3 x 3 mm
TGC4406-SM	28 - 34 GHz Packaged Doubler with Amplifier	28 to 34	14 to 17	–	15	–		20	–	5	150	4 x 4 mm
TGC4546-SM*	37 - 46 GHz Upconverter	37 to 46	DC to 3.5	8.35 to 11.5	12	26	18.5	21	2 to 8	5	430	5 x 5 mm

NOTES: * = New

Gain Block Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TQP369180	Cascadable Gain Block	DC to 6,000	15.7	15.2	29.8	3.6	5	45	SOT-89
TQP369181	Cascadable Gain Block	DC to 6,000	15.6	15.2	30	3.6	5	45	SOT-363
TQP369182	Cascadable Gain Block	DC to 6,000	22.3	16.1	29.6	3.8	5	45	SOT-89
TQP369184	Cascadable Gain Block	DC to 6,000	22	16.2	29.8	3.8	5	45	SOT-363
TQP369185	Cascadable Gain Block	DC to 6,000	19	19.6	31.7	4.7	5	75	SOT-89

Large Couplers

Part	Description	Frequency (GHz)	Insertion Loss (dB)	Package Style
TGB2001	Large Coupler	12 to 21	< 0.25	Die
TGB4001	Large Coupler	18 to 32	< 0.25	Die
TGB4002	Large Coupler	27 to 45	< 0.25	Die

Limiters

Part	Description	Frequency (GHz)	Insertion Loss (dB)	Flat Leakage (dBm)	Bias (V)	Package Style
TGL2205**	S and C-Band 100 W VPIN Limiter	1 to 6	< 0.5	–	–	Die
TGL2206**	S-Band 100 W VPIN Limiter	2 to 4.5	< 0.5	–	–	Die
TGL2207**	S and C-Band 100 W VPIN Limiter	2 to 5	< 0.5	–	–	Die
TGL2201-SM	Wideband Dual-Stage VPIN Limiter	2 to 12	< 0.5	< 18	Passive	3 x 3 mm
TGL2208-SM*	2 - 20 GHz Dual-Stage VPIN Limiter	2 to 20	< 1.0	< 18	–	QFN 3 x 3 mm 14L
TGL2201	Wideband VPIN Limiter	3 to 25	< 0.5	< 18	Passive	Die

NOTES: * = New, ** = Preview

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TGA2611**	2 - 6 GHz GaN LNA	2 to 6	1.5	25	32	22	10	110	Die
TGA2611-SM**	2 - 6 GHz GaN LNA	2 to 6	1.2	25	32	22	10	100	4 x 4 mm Overmold QFN
TGA2525	2 - 18 GHz Low Noise Amplifier with AGC	2 to 18	2	17	29	22	5	75	Die
TGA2513-SM	Wideband Low Noise Amplifier	2 to 20	2.5	17	–	16	5	75	4 x 4 mm
TGA2526	2 - 20 GHz Low Noise Amplifier with AGC	2 to 20	2.5	17.5	29	22	5	100	Die
TGA2567-SM*	2 - 20 GHz LNA Amplifier	2 to 20	2	17	29	19	5	100	QFN 4 x 4 mm 24L
TGA2513	Wideband Low Noise Amplifier	2 to 23	2	17	–	16	5	75	Die
TGA2613**	S-Band High-Linearity LNA	2.5 to 4	2.5	12.5	29	29	6	320	Die
TGA2614**	S-Band High Gain LNA	2.7 to 3.8	0.9	18	33	20	6	110	Die
TGA2614-SM**	S-Band High Gain LNA	2.7 to 3.8	1.2	17	33	19	6	120	QFN 5 x 5 mm 32L
TGA2512-1-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	16	12	5	160	4 x 4 mm
TGA2512-2-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	24	12	5	160	4 x 4 mm
TGM2543-SM**	4 - 20 GHz Limiter/Low Noise Amplifier	4 to 20	2	17	28	21	5	100	7 x 7 mm
TGA2512	X-Band Low Noise Amplifier	5 to 15	1.4	27	24	13	5	160	Die
TGA2612**	6 - 12 GHz GaN LNA	6 to 12	1.8	22	29	20	10	100	Die
TGA2511	X-Band Low Noise Amplifier	6 to 14	1.3	20	24	12	5	160	Die
TGA4506	K-Band Low Noise Amplifier	20 to 27	2.2	21	–	12	3.5	60	Die
TGA4507	Ka-Band Low Noise Amplifier	28 to 36	2.3	22	–	12	3	60	Die
TGA4508	Ka-Band Low Noise Amplifier	30 to 42	2.8	21	–	14	3	40	Die

NOTES: ** = Preview

Modulator Drivers

Part	Description	Frequency (GHz)	Vpp (V)	Gain (dB)	3 dB Bandwidth (GHz)	Voltage (V)	Current (mA)	Package Style
TGA4832	DC - 35 GHz Wideband Amplifier	DC to 35	4	12	35	5	135	Die
TGA4830	CFP Low Power Driver	DC to 40	2.5	13	40	5	50	Die

Phase Shifters

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	RMS Amplitude Error (dB)	RMS Phase Error (Degrees)	Bits	Control Voltage (V)	Package Style
TGP2105**	6 - 18 GHz 6-Bit Digital Phase Shifter (+Vc)	Digital	6 to 18	< 10	0.45	4	6	0, 5	Die
TGP2105-SM**	6 - 18 GHz 6-Bit Digital Phase Shifter (+Vc)	Digital	6 to 18	< 10	0.45	4	6	0, 5	QFN 5 x 5 mm 32L
TGP2107**	6 - 18 GHz 6-Bit Digital Phase Shifter (-Vc)	Digital	6 to 18	< 10	0.55	5	6	-5, 0	Die
TGP2107-SM**	6 - 18 GHz 6-Bit Digital Phase Shifter (-Vc)	Digital	6 to 18	< 10	0.55	5	6	-5, 0	QFN 5 x 5 mm 32L
TGP2100	30 GHz 5 Bit Phase Shifter	Digital	28 to 32	6	0.5	5	5	0, 5	Die
TGP2104	30 - 40 GHz 180 Degree Phase Shifter	Digital	30 to 40	3.5	0.3	10	1	0, 5	Die
TGP2102	35 GHz 5 Bit Phase Shifter	Digital	32 to 37	7	0.4	3.5	5	-5, 0	Die

NOTES: ** = Preview

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2237-SM**	0.03 - 2.5 GHz 10 W GaN Power Amplifier	0.03 to 2.5	40	19	–	> 50	30	360
TGA2216-SM**	0.1 - 3 GHz 12 W GaN Power Amplifier	0.1 to 3	40.5	21	–	> 40	40	360

Power Amplifiers (Cont.)

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2573-2	2 - 18 GHz, 10 W GaN Amplifier	2 to 18	40	10	—	20	30	500
TGA2573-2-TS**	2 - 18 GHz, 10 W GaN Amplifier on Carrier	2 to 18	40	10	—	20	30	500
TGA2509-FL	Wideband Packaged High Power Amplifier with AGC	2 to 20	29	15	—	—	12	1,100
TGA2509	Wideband 1 W High Power Amplifier with AGC	2 to 22	30	17	—	—	12	1,100
TGA2576-FS**	2.5 - 6 GHz 40 W GaN Power Amplifier	2.5 to 6	46.5	29	—	35	30	1550
TGA2583-SM**	2.7 - 3.7 GHz 10 W GaN Power Amplifier	2.7 to 3.7	41	33	—	> 50	25	175
TGA2585-SM**	2.7 - 3.7 GHz 18 W GaN Power Amplifier	2.7 to 3.7	42.8	32	—	> 50	28	225
TGA2706-SM	2 W C-Band Packaged Power Amplifier	5.5 to 8.5	34	31	7	—	6	1,260
TGA2701-SM	3 W C-Band Packaged Power Amplifier	5.9 to 8.5	35	18	—	37	6	1,000
TGA2590**	6 - 12 GHz 30 W GaN Power Amplifier	6 to 12	45	29	—	28	25	1100
TGA2501	High Power Amplifier	6 to 18	34.5	24	—	20	8	1,200
TGA2501-GSG**	2.8 W 6 - 18 GHz Power Amplifier	6 to 18	34.5	26	—	20	8	1,200
TGA2501-TS	6 - 18 GHz, 2.8 W Power Amplifier	6 to 18	34.5	24	—	25	8	1,200
TGA9092-SCC	Power Amplifier (per channel)	6 to 18	34.5	24	—	20	8	1,200
TGA9083-SCC	Power Amplifier - pHEMT	6.5 to 11.5	37, 39	19	—	40, 35	7 to 9	1,200
TGA2701	7 - 8.5 GHz High Power Amplifier	7 to 8.5	37	21	—	> 40	5 to 7	1,050
TGA2517	16 W X-Band Power Amplifier	7.5 to 11.5	42	28	—	35	9 to 12	2,000
TGA2517-GSG**	14 W X-Band Power Amplifier	7.5 to 11.5	41.6	30	—	28	12	3,000
TGA2700	X-Band Driver Amplifier	8 to 13	30	25	—	—	9	300
TGA2622**	9 - 10 GHz 40 W GaN Power Amplifier	9 to 10	46	32	—	> 46	28	290
TGA2624**	9 - 10 GHz 18 W GaN Power Amplifier	9 to 10	42.5	35	—	40	28	365
TGA2704	9 - 10.5 GHz High Power Amplifier	9 to 10.5	38	20	—	> 40	7 to 9	1,050
TGA2704-SM**	8 W, 9 - 11 GHz Power Amplifier	9 to 11	39	21	—	—	9	1,050
TGA2710-SM**	8 W, 9.5 - 11.5 GHz Power Amplifier	9.5 to 11.5	39	22	—	—	9	1,050
TGA2535-SM	X-Band Power Amplifier	10 to 12	34.5	25	—	30	6	1,300
TGA2710	10.5 - 12 GHz High Power Amplifier	10.5 to 12	38	19	—	> 40	7 to 9	1,050
TGA2565-SM*	11-17 GHz Medium Power Amplifier	11 to 17	27	27	—	—	6	210
TGA2524-SM	Ku-Band Power Amplifier	12 to 16	26.5	23	7	—	5	320
TGA2527-SM	Ku-Band Power Amplifier	12.5 to 15.5	31.5	25	7.5	—	6	650
TGA2533-SM	Ku-Band Power Amplifier	12.5 to 15.5	34.5	27	—	—	6	1,300
TGA2510	2 W Ku-Band Power Amplifier	12.5 to 17	34	26	—	—	7.5	650
TGA2510-TS	2 W Ku-Band Power Amplifier	12.5 to 17	34	26	—	—	7.5	650
TGA2533	Ku-Band Power Amplifier	12.7 to 15.4	35	28	6	—	6	1,300
TGA2514-FL	6.5 W Ku-Band Power Amplifier	13 to 16	38	24	—	—	8	2,600
TGA2505	Ku-Band High Power Amplifier	13 to 17	34	25	—	—	7	640
TGA2902-1-SCC-SG	2 W Packaged Amplifier	13 to 17	34	26	—	—	7.5	650
TGA2514	6.5 W Ku-Band Power Amplifier	13 to 18	38	24	—	—	8	2,600
TGA2559-FL**	4 W Ku-Band Power Amplifier	14 to 16	36	24	—	30	6	1,000
TGA2521-SM	17 - 24 GHz Linear Driver Amplifier	17 to 24	25	20	5	—	5	320
TGA2522-SM	17 - 24 GHz Power Amplifier	17 to 24	28	17	—	—	5	712
TGA4531	K-Band High Linearity Power Amplifier	17 to 24	32	23	6	—	7	720
TGA4502-SCC	Ka-Band High Power Amplifier	17 to 27	29	22	—	—	7	760
TGA4030-SM	17 - 37 GHz Medium Power Amplifier / Multiplier	17 to 37	19	20	—	—	5	140
TGA4031-SM	17 - 40 GHz Medium Power Amplifier / Multiplier	17 to 40	19	22	—	—	5	140
TGA4040	17 - 43 GHz Medium Power Amplifier / Multiplier	17 to 43	22	25	—	—	5	140
TGA4532	K-Band Power Amplifier	17.5 to 20	32.5	23	6	—	6	900
TGA4532-SM	K-Band Power Amplifier	17.7 to 19.7	32.5	23	7	—	6	900
TGA4022	K-Band High Power Amplifier	18 to 23	32.5	26	—	—	7	840
TGA1135B-SCC	K-Band High Power Amplifier	18 to 27	30	14	—	—	5 to 7	540
TGA1073G-SCC	K-Band Medium Power Amplifier	19 to 27	25	22	—	—	5 to 7	220
TGA4036	19 - 38 GHz Medium Power Amplifier	19 to 38	22	20	—	—	5	160
TGA4533-SM	K-Band Power Amplifier	21.2 to 23.6	32	22	6	—	6	880
TGA4902-SM	Ka-Band Packaged Medium Power Amplifier	25 to 35	25	18	—	—	6	220
TGA1073A-SCC	Ka-Band Medium Power Amplifier	26 to 35	25	19	—	—	5 to 7	220
TGA1073B-SCC	Ka-Band High Power Amplifier	27 to 32	28.5	25	—	—	6 to 8	420
TGA4903-SM	Ka-Band Medium Power Amplifier	27 to 32	24	15	—	—	5	170
TGA4539-SM	1 W Ka-Band Power Amplifier	28 to 30	30.5	20	—	—	6	420

Power Amplifiers (Cont.)

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA4512-SM	Ka-Band Driver Amplifier	28 to 32	17	14.5	7.5	–	6	80
TGA4516	2 W Ka-Band Power Amplifier	30 to 40	33	18	–	–	6	1,050
TGA4516-TS	2 W Ka-Band Power Amplifier	30 to 40	33	18	–	–	6	1,050
TGA4514	2 W Ka-Band Power Amplifier	31 to 35	33.5	19	–	–	6 to 7	1,150
TGA4517	Ka-Band Power Amplifier	31 to 37	35	15	–	–	6	2,000
TGA4521	32 - 45 GHz Wideband Driver Amplifier	32 to 45	24	15	–	–	6	200
TGA1141	Ka-Band High Power Amplifier	33 to 36	31	17	–	–	6 to 7	880
TGA4522	33 - 47 GHz Wideband Driver Amplifier	33 to 47	27	14	–	–	6	400
TGA1073C-SCC	Ka-Band High Power Amplifier	36 to 40	26	15	–	–	5 to 7	240
TGA1171-SCC	Ka-Band High Power Amplifier	36 to 40	30	14	–	–	6 to 7	500
TGA4538	37 - 40 GHz Power Amplifier	37 to 40	29.5	24	–	–	5	600
TGA4043	Q-Band Power Amplifier	40 to 45	29	10	–	–	7	500
TGA4042	Q-Band Driver Amplifier	41 to 45	18	14	–	–	6	168
TGA4046	2 W Q-Band High Power Amplifier	41 to 46	33	16	–	–	6	2,000

NOTES: * = New, ** = Preview

SAW/BAW Filters

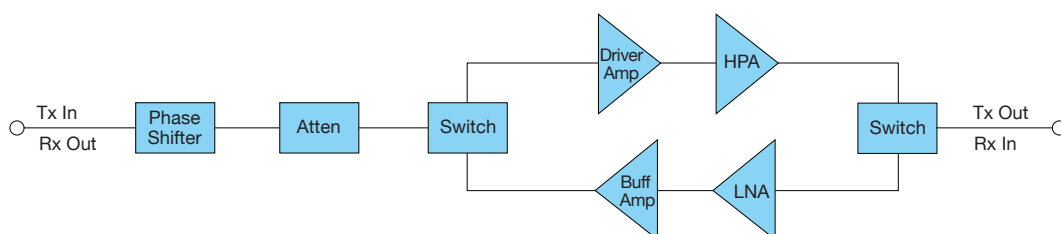
Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856980	70 MHz IF SAW Filter	SAW	70	2.5	9	SE/SE	13.3 x 6.5
857174	70 MHz SAW Filter	SAW	70	4.9	25.5 Max	SE/SE	19 x 6.5
857175	70 MHz SAW Filter	SAW	70	5.7	21	SE/SE	19 x 6.5
857176	140 MHz SAW Filter	SAW	140	28.5	19.75	SE/SE	9 x 7.01
857177	140 MHz SAW Filter	SAW	140	1.5	23.5	SE/SE	19 x 6.5
856288	Filter - GPS IF	SAW	465	6	1.43	SE/SE	3 x 3
857191	810 MHz SAW Filter	SAW	810	5	4.6	SE/SE	3 x 3
857162	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	700	30	SE/SE	25.4 x 12.7
857163	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	430	23.3	SE/SE	25.4 x 12.7
857164	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	353.5	21.25	SE/SE	25.4 x 12.7
857165	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	703	31	SE/SE	25.4 x 12.7
857166	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	700	31.75	SE/SE	25.4 x 12.7
857167	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	705	33.7	SE/SE	25.4 x 12.7
857168	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	707	34.6	SE/SE	25.4 x 12.7
857169	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	705	35.3	SE/SE	25.4 x 12.7
880367	1,030 MHz SSR/IFF BAW Filter	BAW	1,030	14	3	SE/SE	3.71 x 2.57
880374	1,090 MHz SSR/IFF BAW Filter	BAW	1,090	16	3	SE/SE	3.71 x 2.57
856440	Filter - GPS L5 RF	SAW	1,176	35	2.4	SE/SE	2 x 1.5
880364	1,176 MHz GPS L5 BAW Filter	BAW	1,176	30	2.5	SE/SE	3.26 x 1.6
857143	1176.45 MHz SAW Filter	SAW	1,176.45	20.46	0.5	SE/SE	1.4 x 1.2
857144	1176.45 MHz SAW Filter	SAW	1,176.45	20.46	2	SE/SE	1.4 x 1.2
857141	1227.6 MHz SAW Filter	SAW	1,227.60	20.46	0.5	SE/SE	1.4 x 1.2
857142	1227.6 MHz SAW Filter	SAW	1,227.60	20.46	2.1	SE/SE	1.4 x 1.2
880060	1,227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	25	1.8	SE/SE	3.26 x 1.6
880272*	1,227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	30	2.25	SE/SE	3.26 x 1.6
880368	1,280 MHz L-Band BAW Filter	BAW	1,280	19	4	SE/SE	3.71 x 2.57
856561	GPS SAW Filter, SE/SE	SAW	1,575.42	2	0.75	SE/SE	1.4 x 1.2 x 0.46
856576	GPS SAW Filter, SE/BAL	SAW	1,575.42	2	1.1	SE/BAL	1.4 x 1.2
857139	1575.42 MHz SAW Filter	SAW	1,575.42	20.46	0.6	SE/SE	1.4 x 1.2
857140	1575.42 MHz SAW Filter	SAW	1,575.42	20.46	2.6	SE/SE	1.4 x 1.2
880094	1,575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	30	1.8	SE/SE	3.26 x 1.6
880273	1,575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	40	2.35	SE/SE	3.26 x 1.6
857207*	1,585.66 MHz SAW Filter	SAW	1,585.66	41	1.45	SE/BAL	1.4 x 1.2
880157	2,560 MHz S-Band BAW Filter	BAW	2,560	30	3.8	SE/SE	3.71 x 2.57

NOTES: * = New

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGS2303	SP3T VPIN	0.2 to 20	0.5	35	–	–	10	Die
TGS2304-SCC	SP4T VPIN	0.2 to 20	0.6	38	23	–	10	Die
TGS2354**	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	Die
TGS2354-SM**	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	4 x 4 mm QFN
TGS2355**	0.5 - 6 GHz 80 W GaN SPDT Switch	0.5 to 6	< 1.25	> 80	> 40	0, -40	< 1	Die
TGS2352-2-SM**	0.5 - 12 GHz High Power SPDT Reflective Switch	0.5 to 12	< 1	-35	20	0 to -40	–	QFN
TGS2353-2-SM**	0.5 - 18 GHz High Power SPDT Reflective Switch	0.5 to 18	< 1.5	-30	10	0 to -40	–	QFN
TGS2302	4 - 20 GHz VPIN SPDT Switch	4 to 20	0.9	35	20	2.7, -2.7	20	Die
TGS2313	4 - 18 GHz VPIN SP3T Switch	4 to 18	1	35	20	2.7, -2.7	20	Die
TGS4302	High Power Ka-Band SPDT Switch	27 to 46	0.9	27	> 33	5, -5	20	Die
TGS4304	High Power Ka-Band Absorptive SPDT Switch	32 to 40	0.9	35	> 33	5, -5	30	Die

NOTES: ** = Preview



Radar Block Diagram

Attenuators

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Control Voltage (V)	Package Style
TGL4203-SM	DC - 30 GHz Wideband Analog Attenuator	Analog	DC to 30	1.5	16	20	-1 to 0	Die
TGL4201-00	Wideband Fixed 0 dB Attenuator	Analog	DC to 50	0	–	20	Passive	Die
TGL4201-02	Wideband Fixed 2 dB Attenuator	Analog	DC to 50	2	–	20	Passive	Die
TGL4201-03	Wideband Fixed 3 dB Attenuator	Analog	DC to 50	3	–	20	Passive	Die
TGL4201-06	Wideband Fixed 6 dB Attenuator	Analog	DC to 50	6	–	20	Passive	Die
TGL4201-10	Wideband Fixed 10 dB Attenuator	Analog	DC to 50	10	–	20	Passive	Die
TGL4203	50 GHz Wideband Analog Attenuator	Analog	DC to 50	2	17	15	-1 to 0	Die

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
T1G2028536-FL**	285 W, 36 V DC - 2 GHz, GaN RF Power Transistor	DC to 2	19	–	54.2	–	54	36	576	NI-780
T1G2028536-FS**	285 W, 36 V DC - 2 GHz, GaN RF Power Transistor	DC to 2	19	–	54.2	–	54	36	576	NI-780
T1G3000532-SM**	5 W, 32 V, DC - 3 GHz GaN RF Power Transistor	DC to 3	16	–	37	–	50	32	25	5 x 5 mm
T1G4012036-FS**	120 W Peak, 24 W Average Power, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	–	50.8	–	52	36	360	NI-360
T1G4012036-FL**	120 W Peak, 24 W Average Power, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	–	50.8	–	52	36	360	NI-360

Discrete Transistors (Cont.)

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
T1G4020036-FL**	2 x 120 W, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	-	54	-	52	36	520	NI-650
T1G4020036-FS**	2 x 120 W, 36 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16	-	54	-	52	36	520	NI-650
T1G4004532-FL**	45 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	19	-	46.4	-	52	32	220	NI-360
T1G4004532-FS**	45 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	19	-	46.4	-	52	32	220	NI-360
T2G4003532-FL	30 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16.5	-	44.5	-	49	32	150	NI-360
T2G4003532-FS	30 W, 32 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	16.5	-	44.5	-	49	32	150	NI-360
T2G4005528-FS	55 W, 28 V, DC - 3.5 GHz GaN RF Power Transistor	DC to 3.5	15	-	47.2	-	> 50	28	200	NI-360
TGF2021-04-SD	DC - 4 GHz Packaged Power pHEMT	DC to 4	16	26.5	-	0.6	-	5	150	SOT-89
T1G6001032-SM**	10 W, 32 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	19	-	40	-	54	32	50	5 x 5 mm
T2G6001528-SG**	15 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15.5	-	42.3	-	70	28	100	NI-200
T2G6000528-Q3	7 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15.5	-	39.5	-	50	28	50	NI-200
T2G6001528-Q3	18 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	15	-	42.5	-	> 50	28	50	NI-200
T2G6003028-FL	30 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	14	-	45	-	50	28	200	NI-200
T2G6003028-FS	30 W, 28 V, DC - 6 GHz GaN RF Power Transistor	DC to 6	14	-	45	-	50	28	200	NI-200
TGF2021-01	X-Band Discrete Power pHEMT	DC to 12	11	-	> 30	-	59	8 to 12	75 to 125	Die
TGF2021-02	X-Band Discrete Power pHEMT	DC to 12	11	-	> 33	-	59	8 to 12	150 to 250	Die
TGF2021-04	X-Band Discrete Power pHEMT	DC to 12	11	-	> 36	-	59	8 to 12	300 to 500	Die
TGF2021-08	X-Band Discrete Power pHEMT	DC to 12	11	-	> 39	-	59	8 to 12	600 to 1,000	Die
TGF2021-12	X-Band Discrete Power pHEMT	DC to 12	11	-	> 42	-	58	8 to 12	900 to 1,500	Die
TGF2023-2-01	6 W Discrete Power GaN on SiC HEMT	DC to 18	18	-	38	-	71.6	12 to 32	25 to 125	Die
TGF2023-2-02	12 W Discrete Power GaN on SiC HEMT	DC to 18	21	-	40.1	-	73.3	12 to 32	50 to 250	Die
TGF2023-2-05	25 W Discrete Power GaN on SiC HEMT	DC to 18	18	-	43	-	78.3	12 to 32	100 to 500	Die
TGF2023-2-10	50 W Discrete Power GaN on SiC HEMT	DC to 18	19.8	-	47.3	-	69.5	12 to 32	200 to 1,000	Die
TGF2023-2-20	90 W Discrete Power GaN on SiC HEMT	DC to 18	19.2	-	50.5	-	70.5	12 to 32	400 to 2,000	Die
TGF2018	180 um Discrete GaAs pHEMT	DC to 20	14	-	22	1	55	8	29	Die
TGF2022-06	Ku-Band Discrete Power pHEMT	DC to 20	13	-	> 28	-	58	8 to 12	45 to 75	Die
TGF2022-12	Ku-Band Discrete Power pHEMT	DC to 20	13	-	> 31	-	58	8 to 12	90 to 150	Die
TGF2022-24	Ku-Band Discrete Power pHEMT	DC to 20	13	-	> 34	-	58	8 to 12	180 to 300	Die
TGF2022-48	Ku-Band Discrete Power pHEMT	DC to 20	13	-	> 37	-	58	8 to 12	360 to 600	Die
TGF2022-60	Ku-Band Discrete Power pHEMT	DC to 20	12	-	> 38	-	57	8 to 12	448 to 752	Die
TGF2025	250 um Discrete GaAs pHEMT	DC to 20	14	-	25	0.9	58	8	41	Die
TGF2040	400 um Discrete GaAs pHEMT	DC to 20	13	-	26	1.1	55	8	65	Die
TGF2060	600 um Discrete GaAs pHEMT	DC to 20	12	-	28	1.4	55	8	97	Die
TGF2080	800 um Discrete GaAs pHEMT	DC to 20	11.5	-	29.5	-	56	8	129	Die
TGF2120	1200 um Discrete GaAs pHEMT	DC to 20	11	31	-	-	57	8	194	Die
TGF2160	1600 um Discrete GaAs pHEMT	DC to 20	10.4	32.5	-	-	63	8	258	Die
TGF4350	0.3 mm, 0.25-um mmW pHEMT 2MI	DC to 22	13 @ 10 GHz	-	16	0.8 @ 10 GHz	-	3	15	Die

NOTES: ** = Preview

Driver Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TGA3500-SM**	Wide Band Driver Amplifier	2,000 to 12,000	34	21	29	3	5	200	QFN 8 x 8 mm

NOTES: ** = Preview

Frequency Converters / Mixers

Part	Description	RF (GHz)	Gain (dB)	Package Style
TGC1430F	Doubler	20 to 40	-12	Die

Lange Couplers

Part	Description	Frequency (GHz)	Insertion Loss (dB)	Package Style
TGB2001	Lange Coupler	12 to 21	< 0.25	Die
TGB4001	Lange Coupler	18 to 32	< 0.25	Die
TGB4002	Lange Coupler	27 to 45	< 0.25	Die

Limiters

Part	Description	Frequency (GHz)	Insertion Loss (dB)	Flat Leakage (dBm)	Bias (V)	Package Style
TGL2205**	S and C-Band 100 W VPIN Limiter	1 to 6	< 0.5	–	–	Die
TGL2206**	S-Band 100 W VPIN Limiter	2 to 4.5	< 0.5	–	–	Die
TGL2207**	S and C-Band 100 W VPIN Limiter	2 to 5	< 0.5	–	–	Die
TGL2201-SM	Wideband Dual-Stage VPIN Limiter	2 to 12	< 0.5	< 18	Passive	3 x 3 mm
TGL2208-SM*	2 - 20 GHz Dual-Stage VPIN Limiter	2 to 20	< 1.0	< 18	–	QFN 3 x 3 mm 14L
TGL2201	Wideband VPIN Limiter	3 to 25	< 0.5	< 18	Passive	Die

NOTES: * = New, ** = Preview

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TGA2611**	2 - 6 GHz GaN LNA	2 to 6	1.5	25	32	22	10	110	Die
TGA2611-SM**	2 - 6 GHz GaN LNA	2 to 6	1.2	25	32	22	10	100	4 x 4 mm Overmold QFN
TGA2525	2 - 18 GHz Low Noise Amplifier with AGC	2 to 18	2	17	29	22	5	75	Die
TGA2513-SM	Wideband Low Noise Amplifier	2 to 20	2.5	17	–	16	5	75	4 x 4 mm
TGA2526	2 - 20 GHz Low Noise Amplifier with AGC	2 to 20	2.5	17.5	29	22	5	100	Die
TGA2567-SM*	2 - 20 GHz LNA Amplifier	2 to 20	2	17	29	19	5	100	QFN 4 x 4 mm 24L
TGA2513	Wideband Low Noise Amplifier	2 to 23	2	17	–	16	5	75	Die
TGA2613**	S-Band High-Linearity LNA	2.5 to 4	2.5	12.5	29	29	6	320	Die
TGA2614**	S-Band High Gain LNA	2.7 to 3.8	0.9	18	33	20	6	110	Die
TGA2614-SM**	S-Band High Gain LNA	2.7 to 3.8	1.2	17	33	19	6	120	QFN 5 x 5 mm 32L
TGA2512-1-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	16	12	5	160	4 x 4 mm
TGA2512-2-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	24	12	5	160	4 x 4 mm
TGM2543-SM**	4 - 20 GHz Limiter/Low Noise Amplifier	4 to 20	2	17	28	21	5	100	7 x 7 mm
TGA2512	X-Band Low Noise Amplifier	5 to 15	1.4	27	24	13	5	160	Die
TGA2612**	6 - 12 GHz GaN LNA	6 to 12	1.8	22	29	20	10	100	Die
TGA2511	X-Band Low Noise Amplifier	6 to 14	1.3	20	24	12	5	160	Die
TGA4507	Ka-Band Low Noise Amplifier	28 to 36	2.3	22	–	12	3	60	Die
TGA4508	Ka-Band Low Noise Amplifier	30 to 42	2.8	21	–	14	3	40	Die
TGA4600	60 GHz Low Noise Amplifier	57 to 65	4	13	–	–	3	41	Die

NOTES: * = New, ** = Preview

Modulator Drivers

Part	Description	Frequency (GHz)	Vpp (V)	Gain (dB)	3 dB Bandwidth (GHz)	Voltage (V)	Current (mA)	Package Style
TGA4832	DC - 35 GHz Wideband Amplifier	DC to 35	4	12	35	5	135	Die
TGA4830	CFP Low Power Driver	DC to 40	2.5	13	40	5	50	Die

Phase Shifters

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	RMS Amplitude Error (dB)	RMS Phase Error (Degrees)	Bits	Control Voltage (V)	Package Style
TGP2105**	6 - 18 GHz 6-Bit Digital Phase Shifter (+Vc)	Digital	6 to 18	< 10	0.45	4	6	0, 5	Die
TGP2105-SM**	6 - 18 GHz 6-Bit Digital Phase Shifter (+Vc)	Digital	6 to 18	< 10	0.45	4	6	0, 5	QFN 5 x 5 mm 32L
TGP2107**	6 - 18 GHz 6-Bit Digital Phase Shifter (-Vc)	Digital	6 to 18	< 10	0.55	5	6	-5, 0	Die
TGP2107-SM**	6 - 18 GHz 6-Bit Digital Phase Shifter (-Vc)	Digital	6 to 18	< 10	0.55	5	6	-5, 0	QFN 5 x 5 mm 32L
TGP2100	30 GHz 5 Bit Phase Shifter	Digital	28 to 32	6	0.5	5	5	0, 5	Die
TGP2104	30 - 40 GHz 180 Degree Phase Shifter	Digital	30 to 40	3.5	0.3	10	1	0, 5	Die
TGP2102	35 GHz 5 Bit Phase Shifter	Digital	32 to 37	7	0.4	3.5	5	-5, 0	Die

NOTES: ** = Preview

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2237**	0.03 - 2.5 GHz 10 W GaN Power Amplifier	0.03 to 2.5	40	19	—	> 52	30	360
TGA2237-SM**	0.03 - 2.5 GHz 10 W GaN Power Amplifier	0.03 to 2.5	40	19	—	> 50	30	360
TGA2216**	0.1 - 3 GHz 12 W GaN Power Amplifier	0.1 to 3	41	22	—	> 40	48	360
TGA2216-SM**	0.1 - 3 GHz 12 W GaN Power Amplifier	0.1 to 3	40.5	21	—	> 40	40	360
TGA2578**	2 - 6 GHz 30 W Power Amplifier	2 to 6	45	27	—	40	28	400
TGA2509-FL	Wideband Packaged High Power Amplifier with AGC	2 to 20	29	15	—	—	12	1,100
TGA2509	Wideband 1 W High Power Amplifier with AGC	2 to 22	30	17	—	—	12	1,100
TGA2576-2-FL**	2.5 - 6 GHz 40 W GaN Power Amplifier	2.5 to 6	46.5	29	—	36	30	1,550
TGA2576-FS**	2.5 - 6 GHz 40 W GaN Power Amplifier	2.5 to 6	46.5	29	—	35	30	1,550
TGA2583**	2.7 - 3.7 GHz 10 W GaN Power Amplifier	2.7 to 3.7	40	33	—	54	25	175
TGA2585**	2.7 - 3.7 GHz 18 W GaN Power Amplifier	2.7 to 3.7	42.8	33	—	54	28	225
TGA2583-SM**	2.7 - 3.7 GHz 10 W GaN Power Amplifier	2.7 to 3.7	41	33	—	> 50	25	175
TGA2585-SM**	2.7 - 3.7 GHz 18 W GaN Power Amplifier	2.7 to 3.7	42.8	32	—	> 50	28	225
TGA2813**	3.1 - 3.6 GHz 100 W GaN Power Amplifier	3.1 to 3.6	50.7	22	—	55	30	150
TGA2814**	3.1 - 3.6 GHz 80 W GaN Power Amplifier	3.1 to 3.6	49.5	22	—	56	30	125
TGA2706-SM	2 W C-Band Packaged Power Amplifier	5.5 to 8.5	34	31	7	—	6	1,260
TGA2701-SM	3 W C-Band Packaged Power Amplifier	5.9 to 8.5	35	18	—	37	6	1,000
TGA2590**	6 - 12 GHz 30 W GaN Power Amplifier	6 to 12	45	29	—	28	25	1,100
TGA2501	High Power Amplifier	6 to 18	34.5	24	—	20	8	1,200
TGA2501-GSG**	2.8 W 6 - 18 GHz Power Amplifier	6 to 18	34.5	26	—	20	8	1,200
TGA9092-SCC	Power Amplifier (Per hannel)	6 to 18	34.5	24	—	20	8	1,200
TGA9083-SCC	Power Amplifier - pHEMT	6.5 to 11.5	37, 39	19	—	40, 35	7 to 9	1,200
TGA2701	7 - 8.5 GHz High Power Amplifier	7 to 8.5	37	21	—	> 40	5 to 7	1,050
TGA2517	16 W X-Band Power Amplifier	7.5 to 11.5	42	28	—	35	9 to 12	2,000
TGA2517-GSG**	14 W X-Band Power Amplifier	7.5 to 11.5	41.6	30	—	28	12	3,000
TGA2517-TS	16 W X-Band Power Amplifier on Thermal Spreader	7.5 to 11.5	42	28	—	35	9 to 12	2,000
TGA2586-FL**	7.9 - 8.4 GHz 50 W GaN Power Amplifier	7.9 to 8.4	47	14	—	36	24	2,240
TGA2700	X-Band Driver Amplifier	8 to 13	30	25	—	—	9	300
TGA2622**	9 - 10 GHz 40 W GaN Power Amplifier	9 to 10	46	32	—	> 46	28	290
TGA2624**	9 - 10 GHz 18 W GaN Power Amplifier	9 to 10	42.5	35	—	40	28	365
TGA2312-FL*	X-Band 60 W GaN Power Amplifier	9 to 10	48	13	—	38	24	2,400
TGA2704	9 - 10.5 GHz High Power Amplifier	9 to 10.5	38	20	—	> 40	7 to 9	1,050
TGA2704-SM**	8 W, 9 - 11 GHz Power Amplifier	9 to 11	39	21	—	—	9	1,050
TGA2710-SM**	8 W, 9.5 - 11.5 GHz Power Amplifier	9.5 to 11.5	39	22	—	—	9	1,050
TGA2623**	10 - 11 GHz 35 W GaN Power Amplifier	10 to 11	45.5	35	—	> 47	28	290
TGA2625**	10 - 11 GHz 18 W GaN Power Amplifier	10 to 11	42.5	34	—	40	28	365
TGA2535-SM	X-Band Power Amplifier	10 to 12	34.5	25	—	30	6	1,300
TGA2710	10.5 - 12 GHz High Power Amplifier	10.5 to 12	38	19	—	> 40	7 to 9	1,050

Power Amplifiers (Cont.)

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2533	Ku-Band Power Amplifier	12.7 to 15.4	35	28	6	–	6	1,300
TGA2514-FL	6.5 W Ku-Band Power Amplifier	13 to 16	38	24	–	–	8	2,600
TGA2902-1-SCC-SG	2 W Packaged Amplifier	13 to 17	34	26	–	–	7.5	650
TGA2514	6.5 W Ku-Band Power Amplifier	13 to 18	38	24	–	–	8	2,600
TGA2559-FL**	4 W Ku-Band Power Amplifier	14 to 16	36	24	–	30	6	1,000
TGA2572-2-FL**	16 W Ku-Band GaN Power Amplifier	14 to 16	42	25	–	20	30	2,000
TGA2521-SM	17 - 24 GHz Linear Driver Amplifier	17 to 24	25	20	5	–	5	320
TGA2522-SM	17 - 24 GHz Power Amplifier	17 to 24	28	17	–	–	5	712
TGA4531	K-Band High Linearity Power Amplifier	17 to 24	32	23	6	–	7	720
TGA4030-SM	17 - 37 GHz Medium Power Amplifier/Multiplier	17 to 37	19	20	–	–	5	140
TGA4031-SM	17 - 40 GHz Medium Power Amplifier/Multiplier	17 to 40	19	22	–	–	5	140
TGA4040	17 - 43 GHz Medium Power Amplifier/Multiplier	17 to 43	22	25	–	–	5	140
TGA4036	19 - 38 GHz Medium Power Amplifier	19 to 38	22	20	–	–	5	160
TGA4902-SM	Ka-Band Packaged Medium Power Amplifier	25 to 35	25	18	–	–	6	220
TGA2594**	27 - 31 GHz 5 W GaN Power Amplifier	27 to 31	37	23	–	28	20	140
TGA2595**	27.5 - 31 GHz 9 W Power Amplifier	27.5 to 31	39.5	23	–	24	20	280
TGA4539-SM	1 W Ka-Band Power Amplifier	28 to 30	30.5	20	–	–	6	420
TGA4516	2 W Ka-Band Power Amplifier	30 to 40	33	18	–	–	6	1,050
TGA4516-TS	2 W Ka-Band Power Amplifier	30 to 40	33	18	–	–	6	1,050
TGA4514	2 W Ka-Band Power Amplifier	31 to 35	33.5	19	–	–	6 to 7	1,150
TGA4517	Ka-Band Power Amplifier	31 to 37	35	15	–	–	6	2,000
TGA4521	32 - 45 GHz Wideband Driver Amplifier	32 to 45	24	15	–	–	6	200
TGA1141	Ka-Band High Power Amplifier	33 to 36	31	17	–	–	6 to 7	880
TGA4522	33 - 47 GHz Wideband Driver Amplifier	33 to 47	27	14	–	–	6	400
TGA4043	Q-Band Power Amplifier	40 to 45	29	10	–	–	7	500
TGA4042	Q-Band Driver Amplifier	41 to 45	18	14	–	–	6	168

NOTES: * = New, ** = Preview

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856980	70 MHz IF SAW Filter	SAW	70	2.5	9	SE/SE	13.3 x 6.5
857174	70 MHz SAW Filter	SAW	70	4.9	25.5 Max	SE/SE	19 x 6.5
857175	70 MHz SAW Filter	SAW	70	5.7	21	SE/SE	19 x 6.5
857176	140 MHz SAW Filter	SAW	140	28.5	19.75	SE/SE	9 x 7.01
857177	140 MHz SAW Filter	SAW	140	1.5	23.5	SE/SE	19 x 6.5
857162	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	700	30	SE/SE	25.4 x 12.7
857163	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	430	23.3	SE/SE	25.4 x 12.7
857164	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	353.5	21.25	SE/SE	25.4 x 12.7
857165	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	703	31	SE/SE	25.4 x 12.7
857166	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	700	31.75	SE/SE	25.4 x 12.7
857167	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	705	33.7	SE/SE	25.4 x 12.7
857168	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	707	34.6	SE/SE	25.4 x 12.7
857169	1,000 MHz Non Dispersive SAW Delay Line	SAW	1,000	705	35.3	SE/SE	25.4 x 12.7
880367	1,030 MHz SSR/IFF BAW Filter	BAW	1,030	14	3	SE/SE	3.71 x 2.57
880374	1,090 MHz SSR/IFF BAW Filter	BAW	1,090	16	3	SE/SE	3.71 x 2.57
880364	1,176 MHz GPS L5 BAW Filter	BAW	1,176	30	2.5	SE/SE	3.26 x 1.6
880060	1,227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	25	1.8	SE/SE	3.26 x 1.6
880368	1,280 MHz L-Band BAW Filter	BAW	1,280	19	4	SE/SE	3.71 x 2.57
880094	1,575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	30	1.8	SE/SE	3.26 x 1.6
880157	2,560 MHz S-Band BAW Filter	BAW	2,560	30	3.8	SE/SE	3.71 x 2.57

Spatium™ Amplifiers

Part	Description	Frequency (GHz)	Psat (W)	Power Gain (dB)	Small Signal Gain (dB)	Power (dBm)	PAE (%)	Voltage (V)	ECCN	Size (mm)
KA130W-2730*	27 - 30 GHz 130 W Ka-Band GaN SSPA	27 to 30	130	14	> 20	51.14	> 15	20	3A001b.4.b	104 x 74 x 61
KA150W-2730*	27 - 30 GHz 150 W Spatium™ Solid-State Power Amplifier	27 to 30	150	15	22	52	28	20	3A001.b.4.b	104 x 74 x 61
KA130W-3031*	30 - 31 GHz 130 W Ka-Band GaN SSPA	30 to 31	130	14	> 20	51.14	> 15	20	3A001b.4.b	104 x 74 x 61

NOTES: * = New

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGS2303	SP3T VPIN	0.2 to 20	0.5	35	–	–	10	Die
TGS2304-SCC	SP4T VPIN	0.2 to 20	0.6	38	23	–	10	Die
TGS2354**	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	Die
TGS2354-SM**	0.5 - 6 GHz 40 W GaN SPDT Switch	0.5 to 6	< 1	40	> 25	0, -40	< 1	4 x 4 mm QFN
TGS2355**	0.5 - 6 GHz 80 W GaN SPDT Switch	0.5 to 6	< 1.25	> 80	> 40	0, -40	< 1	Die
TGS2352-2-SM**	0.5 - 12 GHz High Power SPDT Reflective Switch	0.5 to 12	< 1	-35	20	0 to -40	–	QFN
TGS2353-2-SM**	0.5 - 18 GHz High Power SPDT Reflective Switch	0.5 to 18	< 1.5	-30	10	0 to -40	–	QFN
TGS2313	4 - 18 GHz VPIN SP3T Switch	4 to 18	1.0	35	20	2.7, -2.7	20	Die
TGS2302	4 - 20 GHz VPIN SPDT Switch	4 to 20	0.9	35	20	2.7, -2.7	20	Die
TGS4302	High Power Ka-Band SPDT Switch	27 to 46	0.9	27	> 33	5, -5	20	Die
TGS4304	High Power Ka-Band Absorptive SPDT Switch	32 to 40	0.9	35	> 33	5, -5	30	Die

NOTES: ** = Preview

TriQuint has a rich history and strong track record of supplying highly reliable active and passive devices for space and aerospace programs including satellite and planetary missions. TriQuint supports MIL-STD-883 and performs 100% element electrical results, burn-in, 1000 hour life test and wafer-level lot acceptance testing for space qualification. Refer to our technical library on triquint.com to learn about our qualification processes. Most products throughout this Product Selection Guide may be considered for qualification. The tables below contain a sub-set of our products, fabricated with various production processes, that have been space qualified. Contact TriQuint prior to designing any of these parts into your space application as certain conditions apply. Write to us at info-defense@triquint.com to request more information.

Space Qualified

Attenuators

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Control Voltage (V)	Package Style
TGL4203	50 GHz Wideband Analog Attenuator	Analog	DC to 50	2	17	15	-1 to 0	Die

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TGA4506	K-Band Low Noise Amplifier	20 to 27	2.2	21	12	3.5	60	Die
TGA4508	Ka-Band Low Noise Amplifier	30 to 42	2.8	21	14	3	40	Die

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA9083-SCC	Power Amplifier - pHEMT	6.5 to 11.5	37, 39	19	40, 35	7 to 9	1,200
TGA2704	9 - 10.5 GHz High Power Amplifier	9 to 10.5	38	20	> 40	7 to 9	1,050
TGA4036	19 - 38 GHz Medium Power Amplifier	19 to 38	22	20	–	5	160
TGA4517	Ka-Band Power Amplifier	31 to 37	35	15	–	6	2,000
TGA4521	32 - 45 GHz Wideband Driver Amplifier	32 to 45	24	15	–	6	200
TGA1171-SCC	Ka-Band High Power Amplifier	36 to 40	30	14	–	6 to 7	500

Space Recommended

Bessel Filters & Through Lines

Part	Description	3 dB Frequency Cut-Off (GHz)	Group Delay (psec)	Return Loss (dB)	Package Style
TGB2010-00	Bessel Filter (Thru)	Thru	< ±1.25	> 15	Die
TGB2010-06	6 GHz Bessel Filter	6	< ±1.25	> 15	Die
TGB2010-07	7 GHz Bessel Filter	7	< ±1.25	> 15	Die
TGB2010-08	8 GHz Bessel Filter	8	< ±1.25	> 15	Die
TGB2010-09	9 GHz Bessel Filter	9	< ±1.25	> 15	Die
TGB2010-10	10 GHz Bessel Filter	10	< ±1.25	> 15	Die
TGB2010-11	11 GHz Bessel Filter	11	< ±1.25	> 15	Die

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	P _{sat} (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
TGF2021-01	X-Band Discrete Power pHEMT	DC to 12	11	> 30	–	59	8 to 12	75 to 125	Die
TGF2021-02	X-Band Discrete Power pHEMT	DC to 12	11	> 33	–	59	8 to 12	150 to 250	Die
TGF2021-04	X-Band Discrete Power pHEMT	DC to 12	11	> 36	–	59	8 to 12	300 to 500	Die
TGF2021-08	X-Band Discrete Power pHEMT	DC to 12	11	> 39	–	59	8 to 12	600 to 1,000	Die
TGF2021-12	X-Band Discrete Power pHEMT	DC to 12	11	> 42	–	58	8 to 12	900 to 1,500	Die
TGF2022-06	Ku-Band Discrete Power pHEMT	DC to 20	13	> 28	–	58	8 to 12	45 to 75	Die
TGF2022-12	Ku-Band Discrete Power pHEMT	DC to 20	13	> 31	–	58	8 to 12	90 to 150	Die
TGF2022-24	Ku-Band Discrete Power pHEMT	DC to 20	13	> 34	–	58	8 to 12	180 to 300	Die
TGF2022-48	Ku-Band Discrete Power pHEMT	DC to 20	13	> 37	–	58	8 to 12	360 to 600	Die
TGF2022-60	Ku-Band Discrete Power pHEMT	DC to 20	12	> 38	–	57	8 to 12	448 to 752	Die
TGF4350	0.3 mm, 0.25-μm mmW pHEMT 2MI	DC to 22	13 @ 10 GHz	16	0.8 @ 10 GHz	–	3	15	Die

Frequency Converters/Mixers

Part	Description	RF (GHz)	IF (GHz)	LO (GHz)	Gain (dB)	Output IP3 (dBm)	NF (dB)	Output P1dB (dBm)	LO Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGC4403	8 - 15 GHz Doubler with Amplifier	16 to 30	8 to 15	–	20	–	–	20	–	5	150	Die
TGC4402	17 - 27 GHz Upconverting Mixer	17 to 27	0.5 to 3	14 to 28	-9	10	9	–	17	-0.9	–	Die
TGC4405*	17 - 27 GHz Upconverter	17 to 27	0.5 to 3	8 to 13	13	–	–	–	2 to 5	5	425	Die
TGC1430F	Doubler	20 to 40	–	–	-12	–	–	–	–	–	–	Die
TGC4703-FC	19 - 38 GHz Doubler	38 to 38.5	19 to 19.25	–	8	–	–	14	–	3.5	65	Die
TGC4702-FC	77 GHz Downconverting IQ Mixer	75 to 82	DC to 0.1	75 to 82	-12	–	–	–	11	1.1	1	Die
TGC4704-FC	38 - 77 GHz Doubler and Medium Power Amplifier	76 to 77	38 to 38.5	–	5	–	–	14	–	3.75	180	Die

NOTES: * = New

Lange Couplers

Part	Description	Frequency (GHz)	Insertion Loss (dB)	Package Style
TGB2001	Lange Coupler	12 to 21	< 0.25	Die
TGB4001	Lange Coupler	18 to 32	< 0.25	Die
TGB4002	Lange Coupler	27 to 45	< 0.25	Die

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TGA2611**	2 - 6 GHz GaN LNA	2 to 6	1.5	25	32	22	10	110	Die
TGA2611-SM**	2 - 6 GHz GaN LNA	2 to 6	1.2	25	32	22	10	100	4x4mm Overmold QFN
TGA2525	2 - 18 GHz Low Noise Amplifier with AGC	2 to 18	2	17	29	22	5	75	Die
TGA2513-SM	Wideband Low Noise Amplifier	2 to 20	2.5	17	–	16	5	75	4 x 4 mm
TGA2526	2 - 20 GHz Low Noise Amplifier with AGC	2 to 20	2.5	17.5	29	22	5	100	Die
TGA2567-SM*	2 - 20 GHz LNA Amplifier	2 to 20	2	17	29	19	5	100	QFN 4 x 4 mm 24L
TGA2513	Wideband Low Noise Amplifier	2 to 23	2	17	–	16	5	75	Die
TGA2613**	S-Band High-Linearity LNA	2.5 to 4	2.5	12.5	29	29	6	320	Die
TGA2614**	S-Band High Gain LNA	2.7 to 3.8	0.9	18	33	20	6	110	Die
TGA2614-SM**	S-Band High Gain LNA	2.7 to 3.8	1.2	17	33	19	6	120	QFN 5x5 mm 32L
TGA2512-1-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	16	12	5	160	4 x 4 mm
TGA2512-2-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	24	12	5	160	4 x 4 mm
TGM2543-SM**	4 - 20 GHz Limiter/Low Noise Amplifier	4 to 20	2	17	28	21	5	100	7 x 7 mm
TGA2512	X-Band Low Noise Amplifier	5 to 15	1.4	27	24	13	5	160	Die
TGA2612**	6 - 12 GHz GaN LNA	6 to 12	1.8	22	29	20	10	100	Die
TGA2511	X-Band Low Noise Amplifier	6 to 14	1.3	20	24	12	5	160	Die

NOTES: * = New, ** = Preview

Modulator Drivers

Part	Description	Frequency (GHz)	Vpp (V)	Gain (dB)	3 dB Bandwidth (GHz)	Voltage (V)	Current (mA)	Package Style
TGA4830	CFP Low Power Driver	DC to 40	2.5	13	40	5	50	Die
TGA4803	DC to >50 GHz Medium Power Amplifier with AGC	DC to 50+	3.5	8	> 50	6.5	100	Die

Phase Shifters

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	RMS Amplitude Error (dB)	RMS Phase Error (Degrees)	Bits	Control Voltage (V)	Package Style
TGP2100	30 GHz 5 Bit Phase Shifter	Digital	28 to 32	6	0.5	5	5	0, 5	Die
TGP2104	30 - 40 GHz 180 Degree Phase Shifter	Digital	30 to 40	3.5	0.3	10	1	0, 5	Die
TGP2102	35 GHz 5 Bit Phase Shifter	Digital	32 to 37	7	0.4	3.5	5	-5, 0	Die

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2573-2	2 - 18 GHz, 10 W GaN Amplifier	2 to 18	40	10	–	20	30	500
TGA2509	Wideband 1 W High Power Amplifier with AGC	2 to 22	30	17	–	–	12	1,100
TGA2501	High Power Amplifier	6 to 18	34.5	24	–	20	8	1,200
TGA2701	7 - 8.5 GHz High Power Amplifier	7 to 8.5	37	21	–	> 40	5 to 7	1,050
TGA2517	16 W X-Band Power Amplifier	7.5 to 11.5	42	28	–	35	9 to 12	2,000
TGA2586-FL**	7.9 - 8.4 GHz 50 W GaN Power Amplifier	7.9 to 8.4	47	14	–	36	24	2,240
TGA2700	X-Band Driver Amplifier	8 to 13	30	25	–	–	9	300

Power Amplifiers (Cont.)

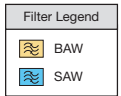
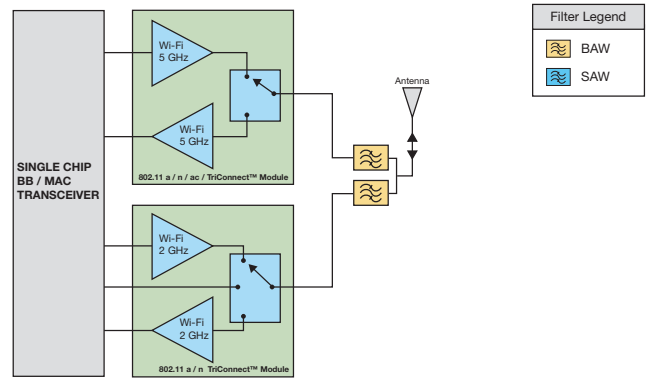
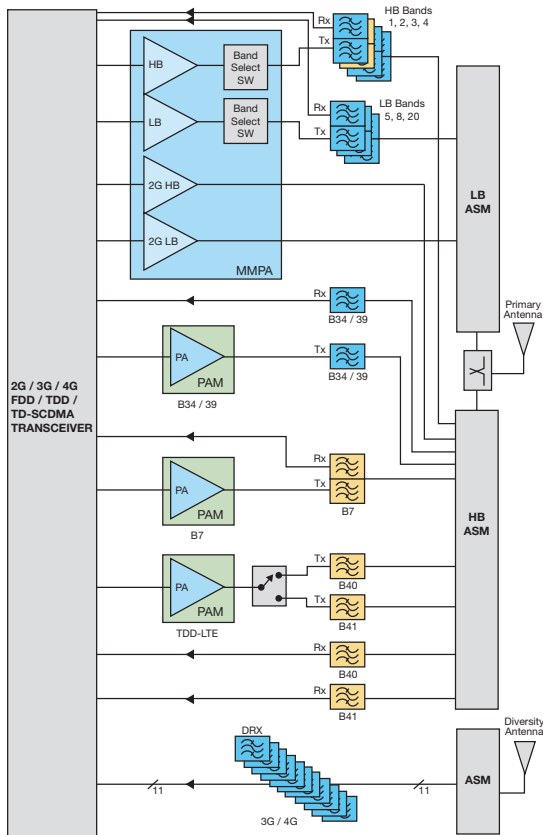
Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2710	10.5 - 12 GHz High Power Amplifier	10.5 to 12	38	19	–	> 40	7 to 9	1,050
TGA2510	2 W Ku-Band Power Amplifier	12.5 to 17	34	26	–	–	7.5	650
TGA2533	Ku-Band Power Amplifier	12.7 to 15.4	35	28	6	–	6	1,300
TGA2505	Ku-Band High Power Amplifier	13 to 17	34	25	–	–	7	640
TGA2514	6.5 W Ku-Band Power Amplifier	13 to 18	38	24	–	–	8	2,600
TGA4530	K-Band High Linearity Power Amplifier	17 to 21	30	20	–	–	5 to 7	825
TGA4531	K-Band High Linearity Power Amplifier	17 to 24	32	23	6	–	7	720
TGA4532	K-Band Power Amplifier	17.5 to 20	32.5	23	6	–	6	900
TGA4022	K-Band High Power Amplifier	18 to 23	32.5	26	–	–	7	840
TGA4509	30 GHz High Power Amplifier	27 to 31	30	22	–	–	6	420
TGA4513	27 - 31 GHz, 2 W Balanced Power Amplifier	27 to 31	33	20	–	–	6	840
TGA4906	4 W Ka-Band High Power Amplifier	28 to 31	36	24	–	–	6	1,600
TGA4916	7 W Ka-Band High Power Amplifier	29 to 31	38.5	21	–	–	6	3,200
TGA4510	29 - 37 GHz Driver Amplifier	29 to 37	16	16	–	–	6	60
TGA4516	2 W Ka-Band Power Amplifier	30 to 40	33	18	–	–	6	1,050
TGA4514	2 W Ka-Band Power Amplifier	31 to 35	33.5	19	–	–	6 to 7	1,150
TGA2575	3 W Ka-Band Power Amplifier	32 to 38	35.5	19	–	22	6	2,100
TGA2575-TS**	Ka-Band 3 W Power Amplifier On Carrier	32 to 38	35.5	19	–	22	6	2,100
TGA1141	Ka-Band High Power Amplifier	33 to 36	31	17	–	–	6 to 7	880
TGA4522	33 - 47 GHz Wideband Driver Amplifier	33 to 47	27	14	–	–	6	400
TGA4043	Q-Band Power Amplifier	40 to 45	29	10	–	–	7	500
TGA4042	Q-Band Driver Amplifier	41 to 45	18	14	–	–	6	168
TGA4046	2 W Q-Band High Power Amplifier	41 to 46	33	16	–	–	6	2,000

NOTES: ** = Preview

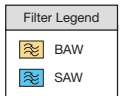
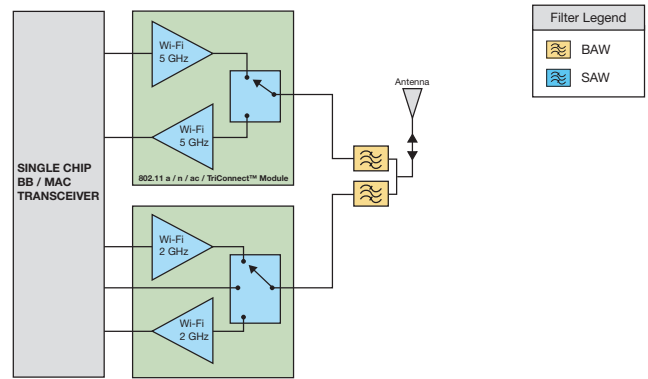
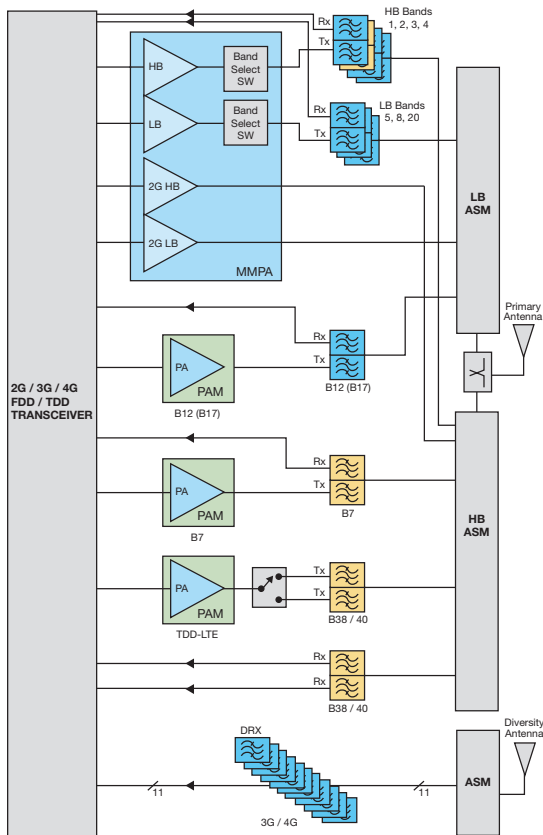
SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856980	70 MHz IF SAW Filter	SAW	70	2.5	9	SE/SE	13.3 x 6.5
857174	70 MHz SAW Filter	SAW	70	4.9	25.5 max	SE/SE	19 x 6.5
857175	70 MHz SAW Filter	SAW	70	5.7	21	SE/SE	19 x 6.5
857176	140 MHz SAW Filter	SAW	140	28.5	19.75	SE/SE	9 x 7.01
857177	140 MHz SAW Filter	SAW	140	1.5	23.5	SE/SE	19 x 6.5
880272*	1227.6 MHz GPS L2 BAW Filter	BAW	1,227.6	30	2.25	SE/SE	3.26 x 1.6
880273	1575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	40	2.35	SE/SE	3.26 x 1.6

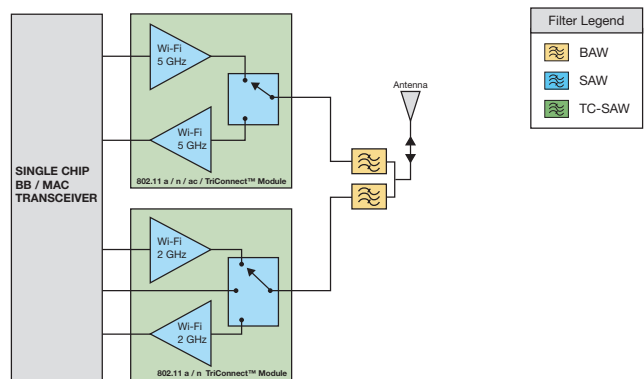
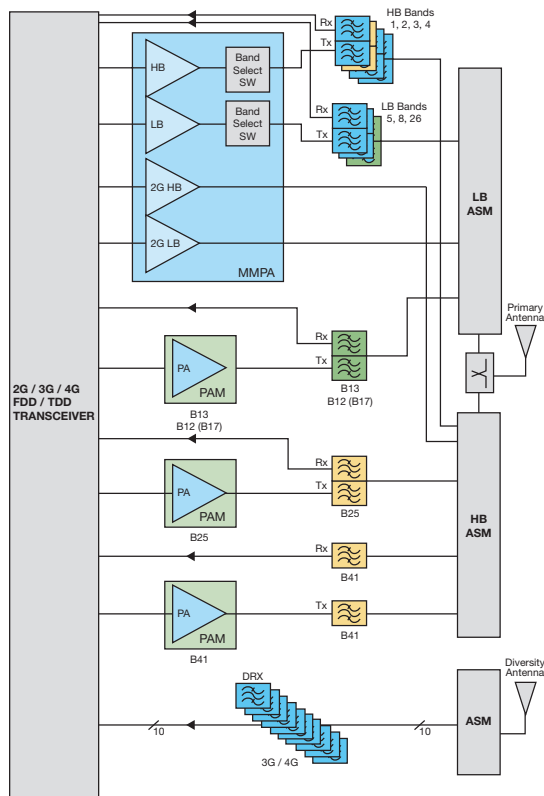
NOTES: * = New



Regional Phone Asia



Regional Phone Europe / EMEA



Regional Phone North America

Power Amplifiers

Part	Description	Standards	Bands	Pout (dBm)	Gain (dB)	PAE (%)	Package (mm)
TQM7M5005H	Quad-Band GSM/GPRS/EDGE-Linear Power Amplifier Module	GSM, GPRS, EDGE	GSM850/900, DCS/PCS	35	32	55	5 x 5
TQM7M5013	Quad-Band GSM/GPRS/EDGE-Linear Power Amplifier Module	GSM, GPRS, EDGE	GSM850/900, DCS/PCS	35	—	55	5 x 5
TQM7M5022	Quad-Band GSM/GPRS/EDGE-Polar Power Amplifier Module	GSM, GPRS, EDGE	GSM850/900, DCS/PCS	35	—	55	5 x 5
TQM7M5050	Quad-Band GSM/GPRS/EDGE-Linear Power Amplifier Module	GSM, GPRS, EDGE	GSM850/900, DCS/PCS	35	28	55	5 x 3.5

Transmit Modules

Part	Description	Bands	Features	Package (mm)
TQF9088	QUANTUM Tx™ Dual-Band WCDMA/LTE/GPRS SP6T Transmit Module	QDE + DB	Integrated QB GSM/GPRS & 2 WCDMA Antenna Switch Ports, Low Rx Insertion Loss	6 x 5 x 1
TQF9089**	QUANTUM Tx™ Quad-Band WCDMA/LTE/GPRS SP8T Transmit Module	QDE + QB	Integrated QB GSM/GPRS & 4 WCDMA Antenna Switch Ports, Low Rx Insertion Loss	6 x 5 x 1

NOTES: ** = Preview

Duplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856999	CDMA BC10 SAW Duplexer	SAW	833, 878	32	2.5, 2.5	SE/BAL	2.5 x 2
TQM966002	PCS BAW Duplexer	BAW	1,880, 1,960	60	1.8, 1.9	SE/SE	2.5 x 2
TQM963014	LTE BC14/Band 25 BAW Duplexer	BAW	1,882.5, 1,962.5	65	1.8, 2.2	SE/SE	2.5 x 2

Filter / Duplexer Modules

Part	Description	Bands	Features	Package (mm)
TQQ2526**	B25 PCS/B26 Cellular Bands Duplexer Bank Module	B25, B26	Duplexer Bank for B25/B26 Applications	2.8 x 4.7 x 1

NOTES: ** = Preview

Power Amplifier Modules

Part	Description	Standards	Bands	Band Classes	Pout (dBm)	Gain (dB)	PAE (%)	Package (mm)
TQM716015	CDMA & WCDMA/HSUPA Power Amplifier Module with Coupler	CDMA, WCDMA, LTE	5	0	28.3	27	40	3 x 3
TQM756014	CDMA & WCDMA/HSUPA Power Amplifier Module with Coupler	CDMA, WCDMA, LTE	4	15	28.3	27	41	3 x 3
TQM766012	CDMA & WCDMA/HSUPA Power Amplifier Module with Coupler	CDMA, WCDMA, LTE	2	1	28.6	27	41	3 x 3
TQM7M6025	Dual-Band WCDMA Power Amplifier Module with Coupler	CDMA, WCDMA	2, 5	0, 1	28.6	27	45	4 x 3
TQM7M6125	Dual-Broadband WCDMA Power Amplifier Module with Coupler	CDMA, WCDMA, LTE	1, 2, 5, 8	0, 1	28.5	27	45	4 x 3

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
TQM966025	1,962.5 MHz RF BAW Filter - Band 25 Diversity Rx	BAW	1,962.5	65	2.6	SE/SE	2.5 x 2

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package (mm)
TQP4M3019	CDMA SP3T Switch	0.824 to 1.990	0.5 to 0.6	22 to 27	38	2.6	0.01	2.5 x 2

Duplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
TQM966002	PCS BAW Duplexer	BAW	1,880, 1,960	60	1.8, 1.9	SE/SE	2.5 x 2

Multi-Mode, Multi-Band Power Amplifier (MMPA) Modules

Part	Description	Bands	Features	Package (mm)
TQM7M9023	TRIUMF™ MMPA Module with Quad-Band GMSK/EDGE and Dual-Band WCDMA	GSM850/900, DCS/PCS, WCDMA B1 & B5/8	2-Bit (Hi/Med/Lo Power Modes)	7.5 x 5 x 1
TQM7M9053	TRIUMF™ MMPA Module with Quad-Band GMSK/EDGE and Dual-Band WCDMA	GSM850/900, DCS/PCS, WCDMA B1 & B5/8	1-Bit (Hi/Med Power Modes)	7.5 x 5 x 1

Power Amplifier Duplexer Modules

Part	Description	Bands	Features	Package (mm)
TQM616025	TRITIUM™ WCDMA/HSUPA PA-Duplexer Module; SE Input with Coupler, Detector	Bands 5 & 6	1-Bit (Hi/Lo Power Modes)	7 x 4 x 1.1
TQM626028L	TRITIUM™ WCDMA/HSUPA PA-Duplexer Module; SE Input with Coupler, Detector	Band 8	1-Bit (Hi/Lo Power Modes)	7 x 4 x 1.1
TQM666022	TRITIUM™ WCDMA/HSUPA PA-Duplexer Module; SE Input with Coupler, Detector	Band 2	1-Bit (Hi/Lo Power Modes)	7 x 4 x 1.1
TQM666052	TRITIUM™ WCDMA/HSUPA PA-Duplexer Module; BAL Input with Coupler	Band 2	1-Bit (Hi/Lo Power Modes)	4.5 x 3.5 x 1
TQM676021	TRITIUM™ WCDMA/HSUPA PA-Duplexer Module; SE Input with Coupler, Detector	Band 1	1-Bit (Hi/Lo Power Modes)	7 x 4 x 1.1

Power Amplifier Modules

Part	Description	Standards	Bands	Band Classes	Pout (dBm)	Gain (dB)	PAE (%)	Package (mm)
TQM716015	CDMA & WCDMA/HSUPA Power Amplifier Module with Coupler	CDMA, WCDMA, LTE	5	0	28.3	27	40	3 x 3
TQM726018	WCDMA/HSUPA Power Amplifier Module with Coupler	CDMA, WCDMA, LTE	8	3	28.5	27	39	3 x 3
TQM756014	CDMA & WCDMA/HSUPA Power Amplifier Module with Coupler	CDMA, WCDMA, LTE	4	15	28.3	27	41	3 x 3
TQM766012	CDMA & WCDMA/HSUPA Power Amplifier Module with Coupler	CDMA, WCDMA, LTE	2	1	28.6	27	41	3 x 3
TQM776011	WCDMA/HSUPA Power Amplifier Module with Coupler	CDMA, WCDMA, LTE	1	6	28.3	27.5	41	3 x 3
TQM7M5013	Quad-Band GSM/GPRS/EDGE-Linear Power Amplifier Module	GSM, GPRS, EDGE	GSM850/900, DCS/PCS	–	35	–	55	5 x 5
TQM7M5022	Quad-Band GSM/GPRS/EDGE-Polar Power Amplifier Module	GSM, GPRS, EDGE	GSM850/900, DCS/PCS	–	35	–	55	5 x 5
TQM7M6018	Dual-Broadband WCDMA Power Amplifier Module with Coupler	CDMA, WCDMA	1, 2, 5, 8	0, 1	28.3	27	45	4 x 3
TQM7M6025	Dual-Band WCDMA Power Amplifier Module with Coupler	CDMA, WCDMA	2, 5	0, 1	28.6	27	45	4 x 3
TQM7M6125	Dual-Broadband WCDMA Power Amplifier Module with Coupler	CDMA, WCDMA, LTE	1, 2, 5, 8	0, 1	28.5	27	45	4 x 3
TQM7M6158	Dual-Band WCDMA Power Amplifier Module with Coupler	WCDMA, LTE	1, 8	–	27.5	27	45	4 x 3

Transmit Modules

Part	Description	Bands	Features	Package (mm)
TQF9088	QUANTUM Tx™ Dual-Band WCDMA/LTE/GPRS SP6T Transmit Module	QDE + DB	Integrated QB GSM/GPRS & 2 WCDMA Antenna Switch Ports, Low Rx Insertion Loss	6 x 5 x 1
TQF9089**	QUANTUM Tx™ Quad-Band WCDMA/LTE/GPRS SP8T Transmit Module	QDE + QB	Integrated QB GSM/GPRS & 4 WCDMA Antenna Switch Ports, Low Rx Insertion Loss	6 x 5 x 1
TQM6M9098	QUANTUM Tx™ GSM/GPRS/EDGE/TD-SCDMA/TDD-LTE Transmit Module; PA/LPF/SP8T Switch with Up to 4 WCDMA Antenna Switch Ports	GSM850, GSM900, DCS, PCS, TD-SCDMA (Bands 34 & 39) + 4 WCDMA/LTE/TD-SCDMA/TDD-LTE Bands	Integrated QB GSM/GPRS/EDGE/TD-SCDMA & 8 Antenna Switch Ports, Low Rx Insertion Loss	6 x 5 x 0.8

NOTES: ** = Preview

Duplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856931	LTE Band 17 SAW Duplexer	SAW	710, 740	12	1.8, 1.9	SE/SE, SE/BAL	2.5 x 2
856879	LTE Band 13 SAW Duplexer	SAW	751, 782	10	1.85, 2.2	SE/SE, SE/BAL	2.5 x 2
856979	LTE Band 20 TC SAW Duplexer	TC SAW	806, 847	30	2.5, 3.0	SE/SE, SE/BAL	2.5 x 2
TQQ2504**	B4, B25 LTE SE/SE Duplexer	SAW/BAW	1,850 to 1,915	65	2	SE/SE	3.6 x 2 x 0.9
TQM963014	LTE BC14/Band 25 BAW Duplexer	BAW	1,882.5, 1,962.5	65	1.8, 2.2	SE/SE	2.5 x 2
TQM976027*	B7 BAW Duplexer	BAW	2,500 to 2,570, 2,620 to 2,690	70	3	SE/SE	2 x 1.6

NOTES: * = New, ** = Preview

Filter/Duplexer Modules

Part	Description	Bands	Features	Package (mm)
TQM9M9030*	Dual-Band Duplexer Bank	Band 1 Duplexer, Band 8 Duplexer, DCS Filter	Low Insertion Loss with Excellent Attenuation	3.6 x 5 x 1
TQQ2526**	B25 PCS/B26 Cellular Bands Duplexer Bank Module	B25, B26	Duplexer Bank for B25/B26 Applications	2.8 x 4.7 x 1

NOTES: * = New, ** = Preview

Multi-Mode, Multi-Band Power Amplifier (MMPA) Modules

Part	Description	Bands	Features	Package (mm)
TQM7M9050	TRIUMF™ MMPA Module with Quad-Band GSM/EDGE and Penta-Band W/CDMA/HSPA+/LTE	GSM850/900, DCS/PCS & WCDMA & LTE B1, B2, B3/4, 5 and 8	High/Low Power Modes	7 x 5 x 1
TQP9051*	TRIUMF™ ET/APT-MIPI MMPA	GSM850/900, DCS/PCS & WCDMA & LTE B1, B2, B3, B4, B5, B8, B26	High/Low Power Modes	5 x 7 x 1
TQP9058H*	TRIUMF™ Quad Band GSM-EDGE and Penta Band W/CDMA/HSPA+/LTE	GSM 850/900, DCS/PCS, & WCDMA & LTE B1, B2, B3/4, B5, B8	High/Low Power Modes	7 x 5 x 1
TQP9059*	TRIUMF™ Advanced ET/APT-MIPI MMPA	GSM850/900, DCS/PCS & WCDMA & LTE B1, B2, B3, B4, B5, B8, B17, B20, B26	High/Low Power Modes	5 x 7 x 1
TQP9059S*	TRIUMF™ Advanced ET/APT-MIPI MMPA	GSM850/900, DCS/PCS & WCDMA & LTE B1, B2, B3, B4, B5, B8, B20, B26	High/Low Power Modes	5 x 7 x 1

NOTES: * = New, ** = Preview

Power Amplifier Modules

Part	Description	Standards	Bands	Pout (dBm)	Gain (dB)	PAE (%)	Package (mm)
TQM700013	LTE Power Amplifier Module with Coupler	LTE	13	27.5	31	40	3 x 3
TQM700017	LTE Power Amplifier Module with Coupler	LTE	17	27.5	31	40	3 x 3

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
857031	SVLTE Notch SAW Filter	TC SAW	751, 782	10	0.65	SE/SE	2.5 x 2
857061	SVLTE Notch SAW Filter	TC SAW	751, 836.5, 881.5	10, 25	1	SE/SE	2.5 x 2
TQM966025	1,962.5 MHz RF BAW Filter - Band 25 Diversity Rx	BAW	1,962.5	65	2.6	SE/SE	2.5 x 2
885049	2,350 MHz RF BAW Filter - Band 40	BAW	2,350	100	1.3	SE/SE	1.4 x 1.2
885032	2.4 GHz RF BAW Filter - WLAN/BT LTE Coexistence	BAW	2,442	79	1.7	SE/SE	1.4 x 1.2
TQQ0041*	B41 Rx BAW Filter	BAW	2,580	196	3.5	SE/SE	2 x 2
885043*	B38/B40 Tx Diplexed BAW Filter	BAW	2,595, 2,350	100	3.5	SE/SE	1.7 x 1.3

NOTES: * = New

Duplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
TQQ1013**	Band 13 LTE SE/SE Duplexer	SAW	777 to 787, 746 to 756	–	2.4	SE/SE	2.5 x 2
856979	LTE Band 13 SAW Duplexer	SAW	751, 782	10	1.85, 2.2	SE/SE, SE/BAL	2.5 x 2
TQQ2504**	B4, B25 LTE SE/SE Duplexer	SAW/BAW	1,850 to 1,915	65	2	SE/SE	3.6 x 2 x 0.9
TQM966002	PCS BAW Duplexer	BAW	1,880, 1,960	60	1.8, 1.9	SE/SE	2.5 x 2.0
TQM963014	LTE BC14/Band 25 BAW Duplexer	BAW	1,882.5, 1,962.5	65	1.8, 2.2	SE/SE	2.5 x 2
TQM976027*	B7 BAW Duplexer	BAW	2,500 to 2,570, 2,620 to 2,690	70	3	SE/SE	2.0 x 1.6

NOTES: * = New, ** = Preview

Filter/Duplexer Modules

Part	Description	Bands	Features	Package (mm)
TQQ2526**	B25 PCS/B26 Cellular Bands Duplexer Bank Module	B25, B26	Duplexer Bank for B25/B26 Applications	2.8 x 4.7 x 1

NOTES: ** = Preview

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
857031	SVLTE Notch SAW Filter	TC SAW	751, 782	10	0.65	SE/SE	2.5 x 2
857061	SVLTE Notch SAW Filter	TC SAW	751, 836.5, 881.5	10, 25	1	SE/SE	2.5 x 2
TQM966025	1,962.5 MHz RF BAW Filter - Band 25 Diversity Rx	BAW	1,962.5	65	2.6	SE/SE	2.5 x 2
885049	2,350 MHz RF BAW Filter - Band 40	BAW	2,350	100	1.3	SE/SE	1.4 x 1.2
885032	2.4 GHz RF BAW Filter - WLAN/ BT LTE Coexistence	BAW	2,442	79	1.7	SE/SE	1.4 x 1.2
885033	2.4 GHz RF BAW Filter - WLAN/ BT LTE Coexistence	BAW	2,442	79	1.7	SE/SE	1.4 x 1.2
TQQ0041*	B41 Rx BAW Filter	BAW	2,580	196	3.5	SE/SE	2 x 2
885043*	B38/B40 Tx Diplexed BAW Filter	BAW	2,595, 2,350	100	3.5	SE/SE	1.7 x 1.3

NOTES: * = New

GPS Front End Modules

Part	Description	NF (dB)	Gain (dB)	Output IP3 (dBm)
TQM640002	GPS Low Noise Amplifier/Filter Module	1.56	16	> 9

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856039	GPS SAW Filter	SAW	1,575.42	2	1.8	SE/SE	3 x 3
856139	GPS SAW Filter	SAW	1,575.42	2.4	1.3	SE/SE	3 x 3
856561	GPS SAW Filter, SE/SE	SAW	1,575.42	2	0.75	SE/SE	1.4 x 1.2 x 0.46
856576	GPS SAW Filter, SE/BAL	SAW	1,575.42	2	1.1	SE/BAL	1.4 x 1.2

Bluetooth Power Amplifiers

Part	Description	Bands	Features	Package (mm)
TQP770001	Bluetooth® EDR v2.0 Class 1 Power Amplifier MMIC	2.4 to 2.5 GHz ISM Band	STSLP-12 Package	2 x 2 x 0.57

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	Voltage (V)	IQ (mA)
TQP787011	5 GHz WLAN Power Amplifier MMIC	5.15 to 5.875	16	32	3.3	125

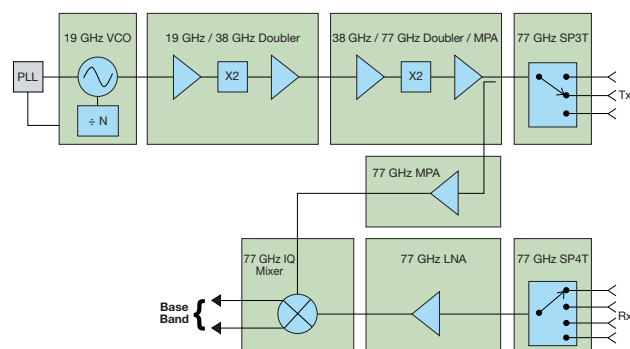
SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
885032	2.4 GHz RF BAW Filter - WLAN/ BT LTE Coexistence	BAW	2,442	79	1.7	SE/SE	1.4 x 1.2
885033	2.4 GHz RF BAW Filter - WLAN/ BT LTE Coexistence	BAW	2,442	79	1.7	SE/SE	1.4 x 1.2

WLAN Front End Modules

Part	Description	Frequency (GHz)	802.11 Standards	Typ Pout 1.78% EVM (dBm)	Typ Pout 3.0% EVM (dBm)	Tx Gain (dB)	Rx Gain (dB)	Rx NF (dB)	Nom Bias Voltage (V)	Current (mA)	Package (mm)
TQP9046	802.11b/g/n Bluetooth® Power Amplifier + Pdet, LNA with Bypass, SP3T Switch	2.4 to 2.5	b/g/n	16	19.3	25	13.5	2.2	3.8	152	2.5 x 2.5 x 0.4
TQM679002A	802.11b/g/n Bluetooth® Power Amplifier + Pdet, SP3T Switch with WLAN Rx Balun	2.4 to 2.5	b/g/n	–	16	33.5	–	–	3.6	114	3 x 3 x 0.45
TQP879001A	WLAN Low Noise Amplifier & SP3T Switch with WLAN TX and Bluetooth® Path	2.4 to 2.5	b/g/n	–	–	–	13.5	1.9	3.3	–	1.5 x 1.5 x 0.55
TQP6M9002	802.11a/b/g/n Bluetooth® Power Amplifier + Pdet, SP3T, SP2T Switch with WLAN RX Balun	2.4 to 2.5, 4.9 to 5.85	a/b/g/n	–	16, 16	34, 32	–	–	3.6	110, 150	4 x 4 x 0.55
TQP6M9017	High Performance 802.11a/b/g/n/ac Bluetooth® Power Amplifier + Pdet, SP3T, SP2T Switch, with LNA + RX Balun	2.4 to 2.5, 4.9 to 5.85	a/b/g/n/ac	17, 16.5	18, 18	36, 37	4, 12	3, 3	3	165, 250	4 x 4 x 0.55
TQP887052	802.11a/n/ac Power Amplifier, SP2T Switch	4.5 to 5.925	a/n/ac	18.5	20.5	37	–	–	3.6	250	2.5 x 2.5 x 0.4
TQF7062**	802.11a/n/ac Power Amplifier, LNA with Bypass, SP2T Switch	4.9 to 5.925	a/n/ac	19	20.5	36	13	2.5	3.6	290	2.5 x 2.5 x 0.4
TQP887051	802.11a/n/ac Power Amplifier + Pdet, LNA with Bypass, SP2T Switch	5.15 to 5.85	a/n/ac	16	19	31	13.5	2.6	3.6	230	2.5 x 2.5 x 0.4
TQL1600*	5 GHz WLAN Switch / LNA Front End Module	5.15 to 5.875	a/n/ac	–	–	–	13	2.5	3.3, 5	8	2.5 x 2.5 x 0.45
TQP8080	5 GHz WLAN 802.11a/n/ac Front End Module with PA + Pdet, SP2T and LNA	5.15 to 5.875	a/n/ac	18	20	29.5	13	2.5	5	240	2.5 x 2.5 x 0.4

NOTES: * = New, ** = Preview



Example of a 77 GHz Radar Front-End

Frequency Converters/Mixers

Part	Description	RF (GHz)	IF (GHz)	LO (GHz)	Gain (dB)	Output P1dB (dBm)	LO Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGC4703-FC	19 - 38 GHz Doubler	38 to 38.5	19 to 19.25	–	8	14	–	3.5	65	Die
TGC4702-FC	77 GHz Downconverting IQ Mixer	75 to 82	DC to 0.1	75 to 82	-12	–	11	1.1	1	Die
TGC4704-FC	38 - 77 GHz Doubler and Medium Power Amplifier	76 to 77	38 to 38.5	–	5	14	–	3.75	180	Die

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Voltage (V)	Current (mA)	Package Style
TGA4705-FC	77 GHz Flip-Chip Low Noise Amplifier	72 to 80	5	23	2	60	Die

Oscillators

Part	Description	Frequency (GHz)	Power (dBm)	Phase Noise (dBc/Hz)	Voltage (V)	Current (mA)	Package Style
TGV2204-FC*	19 GHz VCO with Prescaler	18.5 to 19.5	7	-105 @ 1 MHz	5	158	Die

NOTES: * = New

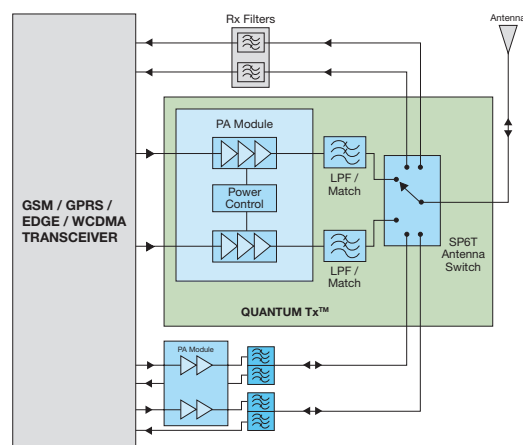
Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	Voltage (V)	IQ (mA)
TGA4706-FC	77 GHz Medium Power Amplifier	76 to 83	14	12	3.5	75

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Voltage (V)	Current (mA)	Package Style
TGS4305-FC	60 - 90 GHz SP3T Switch Flip Chip	60 to 90	2.3	20	1.35, -5	10, 0	Die
TGS4307*	77 GHz Transceiver Switch	70 to 85	2.5	40	1.3	40	Die
TGS4306-FC	70 - 90 GHz SP4T Switch Flip Chip	70 to 90	3	20	1.35, -5	10, 0	Die

NOTES: * = New



Cellular & GPS Transceiver for Auto Telematics

Diplexers

Part	Description	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
TQM2M9016	GPS-SDARS Antenna Diplexer	1,575.42, 2,332.5	3, 25	0.6, 0.8	SE/SE	3 x 3

Duplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856908	Cell Band SAW Duplexer	SAW	836.5, 881.5	25	2, 2.5	SE/SE	3.8 x 3.8
856565	CDMA 2-in-1 Rx Filter	SAW	881.5, 1,960	25, 60	1.6, 2.2	SE/BAL	2 x 1.5

GPS Front End Modules

Part	Description	NF (dB)	Gain (dB)	Output IP3 (dBm)
TQM640002	GPS Low Noise Amplifier/Filter Module	1.56	16	> 9

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
857038	836.5 MHz SAW Filter	SAW	836.5	25	2.3	SE/SE	1.4 x 1.2
856039	GPS SAW Filter	SAW	1,575.42	2	1.8	SE/SE	3 x 3
856139	GPS SAW Filter	SAW	1,575.42	2.4	1.3	SE/SE	3 x 3
856561	GPS SAW Filter, SE/SE	SAW	1,575.42	2	0.75	SE/SE	1.4 x 1.2 x 0.46
856576	GPS SAW Filter, SE/BAL	SAW	1,575.42	2	1.1	SE/BAL	1.4 x 1.2

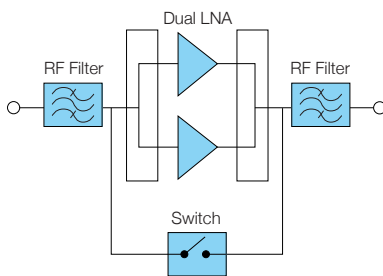
Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TQP4M0009	High Isolation Reflective SPDT Switch	0.1 to 5	0.6	54	33	3.3	0.015	8-pin MSOP
TQP4M0008	Low Loss Reflective SPDT Switch	0.1 to 6	0.4	26	37	3.3	0.015	2 x 2 mm
TQP4M0011	Low Loss Reflective SP3T Switch	0.1 to 6	0.6	34	34	3.3	0.015	12-pin 3 x 3 mm QFN Package

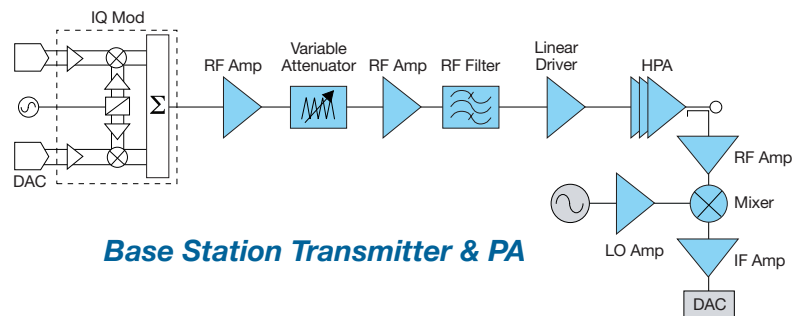
WLAN Front End Modules

Part	Description	Frequency (GHz)	802.11 Standards	Rx Gain (dB)	Rx NF (dB)	Nom Bias Voltage (V)	Current (mA)	Package (mm)
TQL1600*	5 GHz WLAN Switch / LNA Front End Module	5.15 to 5.875	a/n/ac	13	2.5	3.3, 5	8	2.5 x 2.5 x 0.45

NOTES: * = New



Tower Mounted LNA



Base Station Transmitter & PA

Duplexers

Part	Description	Type	Frequency (MHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Package (mm)
856908	Cell Band SAW Duplexer	SAW	836.5, 881.5	25	2, 2.5	SE/SE	3.8 x 3.8
856565	CDMA 2-in-1 Rx Filter	SAW	881.5, 1,960	25, 60	1.6, 2.2	SE/BAL	2 x 1.5

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
855107	IF SAW Filter - CDMA	SAW	70	1.228	19	SE/SE	74.7 x 18.9
856929	IF SAW Filter - Multi-Standard	SAW	140	18.4	9.1	SE/SE	7 x 5.5
855395	IF SAW Filter - CDMA	SAW	141	1.18	11.7	SE/SE	19 x 6.5
854833-1	Filter - CDMA BTS	SAW	150	1.18	19.5	SE/SE	19 x 6.5
856582	Filter - 3G BTS	SAW	172.8	18	8.7	SE/SE	7 x 5.5
856802	IF SAW Filter - Multi-Standard	SAW	172.8	20	8	SE/SE, SE/BAL	5 x 5
856893	IF SAW Filter - Multi-Standard	SAW	172.8	21	8.2	BAL/BAL	7 x 5.5
855992	Filter - CDMA BTS	SAW	240	3.6	14.3	SE/SE	13.3 x 6.5
855914	Filter - 3G BTS	SAW	326.4	17.4	12.61	SE/SE	7.01 x 5.51
856771	IF SAW Filter - Multi-Standard	SAW	358.4	19.2	10.1	BAL/BAL	7 x 5.5
856884	RF SAW Filter - Band 12 Uplink	SAW	707	18	1.5	SE/SE	3 x 3
856883	RF SAW Filter - Band 12 Downlink	SAW	737	18	1.8	SE/SE	3 x 3

SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856844	RF SAW Filter	SAW	782	10	1.52	SE/SE	3 x 3
856932	RF SAW Filter - Band 20 Uplink	SAW	847	30	1.3	SE/SE	3 x 3
855728	Filter - CDMA/Amps (Rx) High Rejection	SAW	881.5	25	2.7	SE/SE	3 x 3
856824	RF SAW Filter	SAW	897.5	35	1.4	SE/SE	3 x 3
856928	RF SAW Filter - Band 11 Uplink	SAW	1,445.40	35	1.25	SE/SE	3 x 3
856654	RF SAW Filter - Band 3 Uplink	SAW	1,747.50	75	2.2	SE/SE	3 x 3
855849	RF SAW Filter - Band 2 Uplink	SAW	1,880	60	2.4	SE/SE	3 x 3
856530	Filter - U.S. PCS (Tx) Full-Band	SAW	1,880	60	2.8	SE/SE	3 x 3
856880	RF SAW Filter - Band 2 Uplink	SAW	1,880	60	2.3	SE/SE	3 x 3
885025	1880 MHz RF BAW Filter - Band 2 Uplink	BAW	1,880	60	3.5	SE/SE	3 x 3
856992	RF SAW Filter - Band 25 Uplink	SAW	1,882.50	65	1.9	SE/SE	3 x 3
855817	RF Filter, PCS	SAW	1,960	60	2.1	SE/SE	3 x 3
856531	RF Filter, PCS	SAW	1,960	60	2.25	SE/SE	3 x 3
856717	Delay Filter 450 ns	SAW	1,960	60	22	SE/SE	9.1 x 4.8
885024	1960 MHz RF BAW Filter - Band 2 Downlink	BAW	1,960	60	3.7	SE/SE	3 x 3
856649	SAW Delay Line	SAW	2,140	100	25	SE/SE, BAL/SE	7 x 5.5

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package (mm)
TQP4M3019	CDMA SP3T Switch	0.824 to 1.99	0.5 to 0.6	22 to 27	38	2.6	0.01	2.5 x 2

Duplexers

Part	Description	Type	Frequency (MHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Package (mm)
856908	Cell Band SAW Duplexer	SAW	836.5, 881.5	25	2.0, 2.5	SE/SE	3.8 x 3.8

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
854651	Filter - Standard Low Loss	SAW	70	0.55	7.6	SE/SE	19 x 6.5
854823	Filter - GSM BTS	SAW	86.6	0.40 min	5.5	SE/SE	19 x 6.5
855884	IF SAW Filter - GSM	SAW	125	0.4	5.7	SE/SE	13.3 x 6.5
856444	IF SAW Filter - GSM	SAW	125	0.4	5.9	SE/SE	9.1 x 4.8
856447	IF SAW Filter - GSM	SAW	170.6	0.18	5.59	SE/SE	13.3 x 6.5
855625	IF SAW Filter - GSM	SAW	190	0.2	4.2	SE/SE	7 x 5.5
856541	IF SAW Filter - GSM	SAW	201	0.22	6.1	BAL/BAL	13.3 x 6.5
855885	IF SAW Filter - GSM	SAW	208	0.4	5	SE/SE	13.3 x 6.5
856445	IF SAW Filter - GSM	SAW	208	0.4	5.88	SE/SE	9.1 x 4.8
856378	IF Filter, GSM	SAW	211	0.2	5.2	SE/SE	13.3 x 6.5
856884	RF SAW Filter - Band 12 Uplink	SAW	707	18	1.5	SE/SE	3 x 3
856883	RF SAW Filter - Band 12 Downlink	SAW	737	18	1.8	SE/SE	3 x 3
855728	Filter - CDMA/Amps (Rx) High Rejection	SAW	881.5	25	2.7	SE/SE	3 x 3
855782	RF Filter, Cell Band	SAW	881.5	25	1.8	SE/SE	3 x 3

SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856671	RF Filter, EGSM	SAW	897.5	35	1.8	SE/SE	3 x 3
855810	RF SAW Filter - Band 8 Downlink	SAW	942.5	35	3.2	SE/SE	3 x 3
855820	RF SAW Filter - Band 8 Downlink	SAW	942.5	35	2	SE/SE	3 x 3
856528	RF Filter, EGSM	SAW	942.5	35	2.5	SE/SE	3 x 3
855860	RF SAW Filter - Band 3 Downlink	SAW	1,842.50	75	1.9	SE/SE	3 x 3
856530	Filter - U.S. PCS (Tx) Full-Band	SAW	1,880	60	2.8	SE/SE	3 x 3
855817	RF Filter, PCS	SAW	1,960	60	2.1	SE/SE	3 x 3
856531	RF Filter, PCS	SAW	1,960	60	2.25	SE/SE	3 x 3
856717	Delay Filter 450 ns	SAW	1,960	60	22	SE/SE	9.1 x 4.8
856649	SAW Delay Line	SAW	2,140	100	25	SE/SE, BAL/SE	7 x 5.5

Attenuators

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Bits	Control Voltage (V)	Package (mm)
TQP4M9071	Parallel Controlled 6 Bit, 31.5 dB Digital Step Attenuator	Digital	0 to 4	1.6	31.5	30	6	5	4 x 4
TQP4M9072	Serial Controlled 6 Bit, 31.5 dB Digital Step Attenuator	Digital	0 to 4	1.6	31.5	30	6	5	4 x 4
TQP4M9083	High Linearity Serial Controlled 7 Bit, 31.75 dB Digital Step Attenuator	Digital	0.4 to 3.5	1.5	31.75	30	7	5	4 x 4

Through Lines

Part	Description	3 dB Frequency Cut-Off (GHz)	Return Loss (dB)	Package (mm)
TQM4M9073	Through Line	> 6	25	3 x 3

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
CLY2	GaAs FET	DC to 3	14.5	23.5	-	0.79	-	3	180	MW6
TGF2021-04-SD	DC - 4 GHz Packaged Power pHEMT	DC to 4	16	26.5	-	0.6	-	5	150	SOT-89
CLY5	GaAs FET	0.4 to 2.5	11	27	-	1.7	-	3	350	MW6
TQP3M6004	700 - 915 MHz High IP3 Dual pHEMT Low Noise Amplifier	0.7 to 0.915	20.5	20.7	-	0.32	-	4	70	4 x 4 mm
TGA2601-SM*	800 - 3000 MHz High IP3 Dual pHEMT	0.8 to 3	19 to 24	23	-	0.7	-	4	100	4 x 4 mm
TGA2602-SM	Dual GaAs pHEMT	0.8 to 3	20.5	20	-	0.55	-	4	100	2 x 2 mm
TQP3M6005	1700 - 2000 MHz High IP3 Dual pHEMT Low Noise Amplifier	1.7 to 2	17.9	21.6	-	0.36	-	4.5	50	4 x 4 mm

NOTES: * = New

Driver Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TQP3301	8 W Linear Amplifier	400 to 2,700	17.4	40	52	4.7	5	500	4 x 5

Driver Amplifiers (Cont.)

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TQP7M9105	1 W 5 V High Linearity Amplifier	50 to 1,500	19.4	30	49	6.3	5	220	SOT-89
TQP7M9106	2 W 5 V High Linearity Amplifier	50 to 1,500	20.8	33	50	4.8	5	455	4 x 4 mm
AH118-89G	0.25 W Linear Amplifier	60 to 3,500	20.5	24	40	4	5	160	SOT-89
AH225-S8G	1 W Linear Amplifier	400 to 2,700	15.2	31	47	6.3	5	300	SOIC-8
AH420-EG	4 W Linear Amplifier	400 to 2,700	16	35.7	50	5.3	5	800	4 x 5 mm
AH128-89G	0.25 W Linear Amplifier	400 to 3,500	16.9	25	40	4.6	5	115	SOT-89
AH125-89G	0.5 W Linear Amplifier	400 to 3,600	16.2	28	45	4.4	5	150	SOT-89
TQP7M9101	0.25 W Linear Amplifier	400 to 4,000	17.5	24.8	40	4	5	88	SOT-89
TQP7M9102	0.5 W Linear Amplifier	400 to 4,000	17.8	27.5	44	3.9	5	137	SOT-89
TQP7M9103	1 W Linear Amplifier	400 to 4,000	16.6	29.1	45	4.4	5	235	SOT-89
AH323-G	2 W 2-Stage Linear Amplifier	700 to 2,700	27	33	50	4.2	5	680	5 x 5 mm
TQP7M9104	2 W Linear Amplifier	700 to 2,700	15.8	32.8	49.5	4.4	5	435	4 x 4 mm
AP561-F	8 W Linear Amplifier	700 to 2,900	15.8	39	50	5.3	12	300	5 x 6 mm
AH212-S8G	1 W 2-Stage Linear Amplifier	1,800 to 2,700	27	30.5	46.5	5.5	5	400	SOIC-8
AH314-G	2 W Linear Amplifier	2,300 to 2,900	23	33	42	6.4	5	600	5 x 5 mm
AP562-F	8 W Linear Amplifier	3,300 to 3,800	11.5	39.4	50	6	12	400	5 x 6 mm

Duplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856908	Cell Band SAW Duplexer	SAW	836.5, 881.5	25	2.0, 2.5	SE/SE	3.8 x 3.8
TQM969001	PCS BAW Duplexer	BAW	1,880, 1,960	60	1.32, 1.52	SE/SE	3.8 x 3.8

Frequency Converters/Mixers

Part	Description	RF (GHz)	IF (GHz)	LO (GHz)	Gain (dB)	Output IP3 (dBm)	NF (dB)	Output P1dB (dBm)	LO Power (dBm)	Voltage (V)	Current (mA)	Package Style
CMY210	Mixer with LO Amplifier	0.5 to 2.5	0.05 to 0.25	0.5 to 2.5	-5.7	18.3	6	8	0	3	6	MW-6
CMY212	Downconverter with LO, IF Amplifiers	0.5 to 2.5	0.05 to 0.25	0.5 to 2.5	10	20	8	8	-4	3	11	SCT598
CMY213	Downconverter with LO, IF Amplifiers	0.5 to 2.5	0.05 to 0.25	0.5 to 2.5	9.5	19.5	8	8	-5	3	8	SCT598
TQP519021	High IP3 Dual Channel Downconverter	0.68 to 0.92	0.07 to 0.28	0.6 to 1.1	9	34.5	10.8	20.8	0	5	295	6 x 6 mm
ML483-G	Mixer with LO Amplifier	0.7 to 1	0.07 to 0.3	0.7 to 1.3	-8.6	27.4	9.1	14.9	0	5	50	MSOP-8
ML485-G	Mixer with LO Amplifier	1.6 to 3.2	0.05 to 0.3	1.4 to 3.5	-8.5	26.3	9.1	11.3	0	5	40	MSOP-8
TQP569022	High IP3 Dual Channel Downconverter	1.7 to 2.2	0.07 to 0.28	1.4 to 2.5	9	34.5	9.7	21	0	5	295	6 x 6 mm

Gain Block Amplifiers

Part	Description	Frequency (GHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
AG603-89G	Cascadable Gain Block	DC to 3,000	18.5	19.5	33	3.8	6	75	SOT-89
AG602-89G	Cascadable Gain Block	DC to 3,500	14	18.5	33	4.4	6	75	SOT-89
ECG008B-G	Cascadable Gain Block	DC to 4,000	15	24	40	4.6	9	120	SOT-89
ECG006C-G	Cascadable Gain Block	DC to 5,500	15	15.5	32	3.7	5	45	SOT-86
AG201-63G	Cascadable Gain Block	DC to 6,000	11	6.5	19.5	4.4	5	20	SOT-363
AG201-86G	Cascadable Gain Block	DC to 6,000	11	6.5	19.5	4.4	5	20	SOT-86
AG203-63G	Cascadable Gain Block	DC to 6,000	20	8	21	3.1	5	20	SOT-363
AG203-86G	Cascadable Gain Block	DC to 6,000	20	8	21	3.1	5	20	SOT-86
AG302-63G	Cascadable Gain Block	DC to 6,000	15.5	13.5	26	3.2	5	35	SOT-363
AG302-86G	Cascadable Gain Block	DC to 6,000	15.5	13.5	26	3.2	5	35	SOT-86

Gain Block Amplifiers (Cont.)

Part	Description	Frequency (GHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
AG303-63G	Cascadable Gain Block	DC to 6,000	20.5	14	26	3	5	35	SOT-363
AG303-86G	Cascadable Gain Block	DC to 6,000	20.5	14	26	3	5	35	SOT-86
AG402-86G	Cascadable Gain Block	DC to 6,000	15	17	32.5	3.7	6	60	SOT-86
AG402-89G	Cascadable Gain Block	DC to 6,000	15	17	32.5	3.7	6	60	SOT-89
AG403-86G	Cascadable Gain Block	DC to 6,000	21	18	31.5	3	6	60	SOT-86
AG403-89G	Cascadable Gain Block	DC to 6,000	21	18	31.5	3	6	60	SOT-89
AG503-86G	Cascadable Gain Block	DC to 6,000	21	16	29	2.9	6	45	SOT-86
AG503-89G	Cascadable Gain Block	DC to 6,000	21	16	29	2.9	6	45	SOT-89
AG604-86G	Cascadable Gain Block	DC to 6,000	21.5	19.5	33.5	3.5	6	75	SOT-86
AG604-89G	Cascadable Gain Block	DC to 6,000	21.5	19.5	33.5	3.5	6	75	SOT-89
ECG003B-G	Cascadable Gain Block	DC to 6,000	20	24	39	3.5	9	110	SOT-89
TQP369180	Cascadable Gain Block	DC to 6,000	15.7	15.2	29.8	3.6	5	45	SOT-89
TQP369181	Cascadable Gain Block	DC to 6,000	15.6	15.2	30	3.6	5	45	SOT-363
TQP369182	Cascadable Gain Block	DC to 6,000	22.3	16.1	29.6	3.8	5	45	SOT-89
TQP369184	Cascadable Gain Block	DC to 6,000	22	16.2	29.8	3.8	5	45	SOT-363
TQP369185	Cascadable Gain Block	DC to 6,000	19	19.6	31.7	4.7	5	75	SOT-89
WJA1500	Cascadable Gain Block	50 to 1,000	19.2	20.5	44	5	5	95	SOT-89
WJA1510	Cascadable Gain Block	50 to 1,000	14.2	20	47	5.4	5	95	SOT-89
TQL9047*	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	21.2	35.5	1.6	5	70	2 x 2 mm
TQL9048*	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	22	40.5	1.7	5	130	2 x 2 mm
TQP3M9028	High Linearity Low Noise Gain Block	50 to 4,000	14.7	20.7	40	2	5	85	SOT-89
TQP3M9038	High Linearity LNA Gain Block	50 to 4,000	14.9	21.6	39.5	2	5	85	3 x 3 mm

NOTES: * = New

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TQP3M9039	High IP3 Dual E-PHEMT Low Noise Amplifier	0.05 to 1.5	0.6	18	38.8	21.5	4.35	57	4 x 4 mm
TQP3M9018	High Linearity Low Noise Gain Block	0.05 to 4	1.3	20.5	36	20	5	85	3 x 3 mm
TQP3M9008	High Linearity Low Noise Gain Block	0.05 to 4	1.3	20.6	35.5	20	5	85	SOT-89
TQP3M9009	High Linearity Low Noise Gain Block	0.05 to 4	1.3	21.8	39.5	22	5	125	SOT-89
TQP3M9019	High Linearity Low Noise Gain Block	0.05 to 4	1.3	22	39.5	22	5	125	3 x 3 mm
TQP3M9035	High Linearity LNA Gain Block	0.05 to 4	0.66	16.5	37	22.5	5	110	2 x 2 mm
TQP3M9005	Low Noise Amplifier Gain Block	0.1 to 4	0.8	15.3	34	22.3	5	50	3 x 3 mm
TQP3M9007	High Linearity Low Noise Gain Block	0.1 to 4	1.3	13	41	23.6	5	125	SOT-89
TQP3M9036	Ultra Low Noise, High Linearity LNA	0.4 to 2	0.45	19	35	20	5	65	2 x 2 mm
TQL9042	Ultra Low Noise, High Linearity LNA with Bypass Function	0.5 to 2	0.42	19	36	23	5	70	3 x 3 mm
TQP3M9006	High Linearity Low Noise Gain Block	0.5 to 4	1	13.5	38.5	22.4	5	90	3 x 3 mm
TQP3M9040	High IP3 Dual E-PHEMT Low Noise Amplifier	1.5 to 2.3	0.67	18	40	21.8	4.35	57	4 x 4 mm
TQL9043	Ultra Low Noise, High Linearity LNA with Bypass Function	1.5 to 4	0.6	17.5	33	19.4	5	80	3 x 3 mm
TQL9044*	Ultra Low Noise, High Linearity LNA with Bypass Function	1.5 to 4	0.6	19.4	34.5	20.4	5	70	3 x 3 mm
TQP3M9037	Ultra Low Noise, High Linearity LNA	1.5 to 4	0.4	20	35	20	5	65	2 x 2 mm
TQP3M9041	High IP3 Dual E-PHEMT Low Noise Amplifier	2.3 to 6	0.8	18	38	22.5	4.35	57	4 x 4 mm
TQP3M9041	High IP3 Dual E-PHEMT Low Noise Amplifier	2.3 to 6	0.80	18	38	22.5	4.35	57	4 x 4 mm

NOTES: * = New

Power Amplifier Modules

Part	Description	Standards	Bands	Pout (dBm)	Gain (dB)	PAE (%)	Package (mm)
TGP2453-SM**	1800 MHz 2.5 W Small Cell PA Module	W-CDMA, LTE	3,9	43.0	34	35	20 x 20
TGP2451-SM**	1900 MHz 2.5 W Small Cell PA Module	W-CDMA, LTE	2, 25, 36	43.0	35	38	20 x 20
TGA2450-SM*	2100 MHz 2.5 W Small Cell PA Module	W-CDMA, LTE	1, 4, 10	42.5	35	35	20 x 20

NOTES: * = New, ** = Preview

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
855035	140 MHz SAW Filter	SAW	140	0.47	18.5	SE/SE	19 x 6.5
856656	Low Loss IF Filter	SAW	140	10	9.2	SE/SE	13.3 x 6.5
856684	Low Loss IF Filter	SAW	140	15	9.1	SE/SE	13.3 x 6.5
856774	Filter - Standard Low Loss	SAW	140	56	22.3	BAL/BAL	9.1 x 4.8
856929	IF SAW Filter - Multi-Standard	SAW	140	18.4	9.1	SE/SE	7 x 5.5
856727	IF Filter	SAW	144	75	21.2	SE/SE	9 x 7.01
856517	IF Filter	SAW	153.6	32	13	SE/SE	13.3 x 6.5
855886	161.5 MHz SAW Filter	SAW	161.5	25	22	SE/SE	9 x 7.01
856683	WCDMA IF Filter	SAW	167	5	8	SE/SE, BAL/BAL	9.1 x 4.8
856802	IF SAW Filter - Multi-Standard	SAW	172.8	20	8	SE/SE, SE/BAL	5 x 5
856893	IF SAW Filter - Multi-Standard	SAW	172.8	21	8.2	BAL/BAL	7 x 5.5
857124	184.32 MHz SAW Filter	SAW	184.32	25	7.8	BAL/BAL	7 x 5.5
857071	192.5 MHz SAW Filter	SAW	192.5	67.5	17	BAL/BAL	7 x 5.5
855816	205 MHz SAW Filter	SAW	205	1.3	22	SE/SE	13.3 x 6.5
857072	242.5 MHz SAW Filter	SAW	242.5	27.6	9	BAL/BAL	7 x 5.5
855549	242.625 MHz SAW Filter	SAW	242.625	1.3	18.7	SE/SE	19 x 6.5
856771	IF SAW Filter - Multi-Standard	SAW	358.4	19.2	10.1	BAL/BAL	7.0 x 5.5
857073	397.5 MHz SAW Filter	SAW	397.5	66.7	16.6	BAL/BAL	7 x 5.5
857074	447.5 MHz SAW Filter	SAW	447.5	28.16	14.1	BAL/BAL	7 x 5.5
855985	549.5 MHz SAW Filter	SAW	549.5	1	11.6	SE/SE	9 x 7.01
856884	RF SAW Filter - Band 12 Uplink	SAW	707	18	1.5	SE/SE	3 x 3
857193*	725.5 MHz SAW Band 28 Uplink Filter	SAW	725.5	45	4	SE/SE	3 x 3
856883	RF SAW Filter - Band 12 Downlink	SAW	737	18	1.8	SE/SE	3 x 3
856764	RF SAW Filter - Band 13 Uplink	SAW	781.5	11	1.46	SE/SE	3 x 3
856844	RF SAW Filter	SAW	782	10	1.52	SE/SE	3 x 3
856932	RF SAW Filter - Band 20 Uplink	SAW	847	30	1.3	SE/SE	3 x 3
856606	860.5 MHz SAW Filter	SAW	860.5	19	1.1	SE/SE	3 x 3
856824	RF SAW Filter	SAW	897.5	35	1.4	SE/SE	3 x 3
856928	RF SAW Filter - Band 11 Uplink	SAW	1,445.4	35	1.25	SE/SE	3 x 3
TQQ7303*	1747.5 MHz BAW Band 3 Uplink Filter	BAW	1,747.5	75	3.5	SE/SE	3 x 3
TQQ0302**	Band 3 Uplink RF Filter	BAW	1,747.5	75	3.5	SE/SE	3 x 3
TQQ0303**	Band 3 Downlink RF Filter	BAW	1,842.5	75	3.5	SE/SE	3 x 3
856705	RF SAW Filter - Band 2 Uplink	SAW	1,880	60	2.2	SE/SE	3 x 3
856880	RF SAW Filter - Band 2 Uplink	SAW	1,880	60	2.3	SE/SE	3 x 3
856678	RF Filter - 1950 MHz Band	SAW	1,950	60	1.8	SE/SE	3 x 3
857145	1960 MHz SAW Filter	SAW	1,960	160	3	SE/SE	3 x 3
856604	2332.5 MHz SAW Filter	SAW	2,332.5	45	1.7	SE/BAL	1.4 x 1.2
885069*	2350 MHz BAW Band 40 Filter	BAW	2,350	100	3	SE/SE	1.4 x 1.2
TQQ7307*	2535 MHz BAW Band 7 Uplink Filter	BAW	2,535	70	3.5	SE/SE	3 x 3
885026**	B38 Tx/Rx Filter	BAW	2,595	50	1.4	SE/SE	1.4 x 1.2

NOTES: * = New, ** = Preview

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TQP4M0013*	High Isolation Absorptive SPST Switch	0.1 to 4	0.55	50	35	3.3	0.08	2 x 2 mm
TQP4M0009	High Isolation Reflective SPDT Switch	0.1 to 5	0.6	54	33	3.3	0.015	8-pin MSOP
TQP4M0008	Low Loss Reflective SPDT Switch	0.1 to 6	0.4	26	37	3.3	0.015	2 x 2 mm
TQP4M0010	High Isolation Absorptive SPDT Switch	0.1 to 6	0.5	55	33	3.3	0.07	4 x 4 mm
TQC0015*	High Isolation Absorptive SPDT Switch	0.1 to 6	0.5	55	33	3.3	0.1	4 x 4 mm
TQP4M0011	Low Loss Reflective SP3T Switch	0.1 to 6	0.6	34	34	3.3	0.015	12-pin 3 x 3 mm QFN Package

NOTES: * = New

Variable Gain Amplifiers

Part	Description	Frequency (MHz)	Attenuation Range (dB)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package (mm)
TQM8M9075	Digital Variable Gain Amplifier	50 to 4,000	31.5	18	20.5	36.5	2.9	5	88	5 x 5
TQM8M9076	Digital Variable Gain Amplifier	50 to 4,000	31.5	19.5	22	38.5	2.9	5	125	5 x 5
TQM8M9077	Digital Variable Gain Amplifier	50 to 4,000	31.5	13	21.5	38.5	3.7	5	88	5 x 5
TQM8M9079	Variable Gain Amplifier	500 to 2,700	30	38	16	29	4	5	95	5 x 5
TQM829007	Digital Variable Gain Amplifier	600 to 1,000	31.5	31.7	24.3	40	2.1	5	174	6 x 6
TQC9305*	Digital Variable Gain Amplifier with Shutdown Mode	700 to 3,600	31.5	13	23	39.7	3.1	5	130	5 x 5
TQM879026	Digital Variable Gain Amplifier	700 to 4,000	31.5	32.5	24	42.5	1.5	5	176	4 x 4
TQM879028	Digital Variable Gain Amplifier	700 to 4,000	31.5	33	27.3	45	1.5	5	230	4 x 4
TQM879006A	Digital Variable Gain Amplifier Module	1,400 to 2,700	31.5	31.7	24.5	43	1.5	5	174	6 x 6
TQM879008	Digital Variable Gain Amplifier	1,500 to 2,700	31.5	41.5	27.3	48.5	3.9	5	285	6 x 6

NOTES: * = New

Duplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856908	Cell Band SAW Duplexer	SAW	836.5, 881.5	25	2.0, 2.5	SE/SE	3.8 x 3.8

Power Amplifier Modules

Part	Description	Standards	Bands	Pout (dBm)	Gain (dB)	PAE (%)	Package (mm)
TGP2453-SM**	1800 MHz 2.5 W Small Cell PA Module	W-CDMA, LTE	3, 9	43	34	35	20 x 20
TGP2451-SM**	1900 MHz 2.5 W Small Cell PA Module	W-CDMA, LTE	2, 25, 36	43	35	38	20 x 20
TGA2450-SM*	2100 MHz 2.5 W Small Cell PA Module	W-CDMA, LTE	1, 4, 10	42.5	35	35	20 x 20

NOTES: * = New, ** = Preview

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856656	Low Loss IF Filter	SAW	140	10	9.2	SE/SE	13.3 x 6.5
856684	Low Loss IF Filter	SAW	140	15	9.1	SE/SE	13.3 x 6.5
856774	Filter - Standard Low Loss	SAW	140	56	22.3	BAL/BAL	9.1 x 4.8
856929	IF SAW Filter - Multi-Standard	SAW	140	18.4	9.1	SE/SE	7 x 5.5

SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856517	IF Filter	SAW	153.6	32	13	SE/SE	13.3 x 6.5
856748	IF SAW Filter - Multi-Standard	SAW	153.6	18.3	10	SE/SE	13.3 x 6.5
856683	WCDMA IF Filter	SAW	167	5	8	SE/SE, BAL/BAL	9.1 x 4.8
856512	IF SAW Filter - Multi-Standard	SAW	168.5	26.4	8	SE/SE, SE/BAL	5 x 5
856582	Filter - 3G BTS	SAW	172.8	18	8.7	SE/SE	7 x 5.5
856620	IF SAW Filter - WCDMA	SAW	172.8	8.84	9	SE/SE, SE/BAL	7 x 5.5
856802	IF SAW Filter - Multi-Standard	SAW	172.8	20	8	SE/SE, SE/BAL	5 x 5
856893	IF SAW Filter - Multi-Standard	SAW	172.8	21	8.2	BAL/BAL	7 x 5.5
856234	Filter - CDMA IF	SAW	183.6	1.26	7.4	SE/BAL, BAL/BAL	7 x 5.5
857124	184.32 MHz SAW Filter	SAW	184.32	25	7.8	BAL/BAL	7 x 5.5
855529	IF SAW Filter - WCDMA	SAW	190	4	9.8	SE/SE	13.3 x 6.5
855770	Filter - 3G BTS	SAW	190	5	8	SE/SE	5 x 5
856731	IF SAW Filter - Multi-Standard	SAW	192	60	13.5	SE/BAL, SE/SE	7 x 5.5
856496	IF SAW Filter - WCDMA	SAW	208	3.84	11.5	BAL/BAL	9.1 x 4.8
855914	Filter - 3G BTS	SAW	326.4	17.4	12.61	SE/SE	7.01 x 5.51
856771	IF SAW Filter - Multi-Standard	SAW	358.4	19.2	10.1	BAL/BAL	7 x 5.5
856882	IF SAW Filter	SAW	358.4	39.6	9.5	BAL/BAL	7 x 5.5
856966	IF SAW Filter - Multi-Standard	SAW	358.4	24.8	9	BAL/BAL	7 x 5.5
855954	Filter - Wireless Data	SAW	380	7.3	9.5	SE/SE	3.8 x 3.8
855559	IF SAW Filter - WCDMA	SAW	398	22	7.5	SE/SE	7 x 5.5
855561	IF SAW Filter - WCDMA	SAW	398	4.3	9.9	SE/SE	7 x 5.5
856687	IF SAW Filter - Multi-Standard	SAW	456	19	10	BAL/BAL	7 x 5.5
856884	RF SAW Filter - Band 12 Uplink	SAW	707	18	1.5	SE/SE	3 x 3
857193*	725.5 MHz SAW Band 28 Uplink Filter	SAW	725.5	45	4	SE/SE	3 x 3
856883	RF SAW Filter - Band 12 Downlink	SAW	737	18	1.8	SE/SE	3 x 3
857217*	742.5 MHz SAW Filter	SAW	742.5	27	2.5	SE/SE	3 x 3
856764	RF SAW Filter - Band 13 Uplink	SAW	781.5	11	1.46	SE/SE	3 x 3
856844	RF SAW Filter	SAW	782	10	1.52	SE/SE	3 x 3
856977	RF SAW Filter - Band 13/14 Uplink	SAW	787.5	21	2.05	SE/SE	3 x 3
857019	Band 5e Uplink RF Filter	SAW	835	30	2.1	SE/SE	3 x 3
856503	RF SAW Filter - Band 5 Uplink	SAW	836.5	25	2.7	SE/SE	3 x 3
856704	RF SAW Filter - Band 5 Uplink	SAW	836.5	25	1.2	SE/SE	3 x 3
856932	RF SAW Filter - Band 20 Uplink	SAW	847	30	1.3	SE/SE	3 x 3
855728	Filter - CDMA/Amps (Rx) High Rejection	SAW	881.5	25	2.7	SE/SE	3 x 3
855782	RF Filter, Cell Band	SAW	881.5	25	1.8	SE/SE	3 x 3
856504	RF SAW Filter - Band 5 Downlink	SAW	881.5	25	2.7	SE/SE	3 x 3
856824	RF SAW Filter	SAW	897.5	35	1.4	SE/SE	3 x 3
856928	RF SAW Filter - Band 11 Uplink	SAW	1,445.4	35	1.25	SE/SE	3 x 3
TQQ7303**	1,747.5 MHz BAW Band 3 Uplink Filter	BAW	1,747.5	75	3.5	SE/SE	3 x 3
TQQ0302**	Band 3 Uplink RF Filter	BAW	1,747.5	75	3.5	SE/SE	3 x 3
856934	Band 3 Downlink RF Filter	SAW	1,842.5	75	2.9	SE/SE	3 x 3
856530	Filter - U.S. PCS (Tx) Full-Band	SAW	1,880	60	2.8	SE/SE	3 x 3
856705	RF SAW Filter - Band 2 Uplink	SAW	1,880	60	2.2	SE/SE	3 x 3
856934	Band 3 Downlink RF Filter	SAW	1,842.5	75	2.9	SE/SE	3 x 3
856880	RF SAW Filter - Band 2 Uplink	SAW	1,880	60	2.3	SE/SE	3 x 3
885025	1,880 MHz RF BAW Filter - Band 2 Uplink	BAW	1,880	60	3.5	SE/SE	3 x 3
856532	RF Filter, UMTS	SAW	1,950	60	2.5	SE/SE	3 x 3
856678	RF Filter - 1950 MHz Band	SAW	1,950	60	1.8	SE/SE	3 x 3
855817	RF Filter, PCS	SAW	1,960	60	2.1	SE/SE	3 x 3
855859	RF SAW Filter - Band 2 Downlink	SAW	1,960	60	2.5	SE/SE	3 x 3
856531	RF Filter, PCS	SAW	1,960	60	2.25	SE/SE	3 x 3
856717	Delay Filter 450 ns	SAW	1,960	60	22	SE/SE	9.1 x 4.8
885024	1,960 MHz RF BAW Filter - Band 2 Downlink	BAW	1,960	60	3.7	SE/SE	3 x 3

SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856649	SAW Delay Line	SAW	2,140	100	25	SE/SE, BAL/SE	7 x 5.5
885069*	2,350 MHz BAW Band 40 Filter	BAW	2,350	100	3	SE/SE	1.4 x 1.2
885009	2,535 MHz RF BAW Filter - Band 7 Uplink	BAW	2,535	70	1.3	SE/SE	3 x 3
TQQ7307*	2,535 MHz BAW Band 7 Uplink Filter	BAW	2,535	70	3.5	SE/SE	3 x 3
885026**	B38 Tx/Rx Filter	BAW	2,595	50	1.4	SE/SE	1.4 x 1.2

NOTES: * = New, ** = Preview

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package (mm)
TQP4M0013*	High Isolation Absorptive SPST Switch	0.1 to 4	0.55	50	35	3.3	0.08	2 x 2
TQP4M0008	Low Loss Reflective SPDT Switch	0.1 to 6	0.4	26	37	3.3	0.015	2 x 2
TQP4M0010	High Isolation Absorptive SPDT Switch	0.1 to 6	0.5	55	33	3.3	0.07	4 x 4
TQC0015*	High Isolation Absorptive SPDT Switch	0.1 to 6	0.5	60	33	3.3	0.1	4 x 4

NOTES: * = New

Attenuators

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Bits	Control Voltage (V)	Package (mm)
TQP4M9071	Parallel Controlled 6 Bit, 31.5 dB Digital Step Attenuator	Digital	0 to 4	1.6	31.5	30	6	5	4 x 4
TQP4M9072	Serial Controlled 6 Bit, 31.5 dB Digital Step Attenuator	Digital	0 to 4	1.6	31.5	30	6	5	4 x 4
TQP4M9083	High Linearity Serial Controlled 7 Bit, 31.75 dB Digital Step Attenuator	Digital	0.4 to 3.5	1.5	31.75	30	7	5	4 x 4

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TGF2021-04-SD	DC - 4 GHz Packaged Power pHEMT	DC to 4	16	26.5	0.6	5	150	SOT-89
TGA2602-SM	Dual GaAs pHEMT	0.8 to 3	20.5	20	0.55	4	100	2 x 2 mm

Driver Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TQP7M9105	1 W 5 V High Linearity Amplifier	50 to 1,500	19.4	30	49	6.3	5	220	SOT-89
TQP7M9106	2 W 5 V High Linearity Amplifier	50 to 1,500	20.8	33	50	4.8	5	455	4 x 4 mm
TQP3301	8 W Linear Amplifier	400 to 2,700	17.4	40	52	4.7	5	500	4 x 5
TQP7M9101	0.25 W Linear Amplifier	400 to 4,000	17.5	24.8	40	4	5	88	SOT-89
TQP7M9102	0.5 W Linear Amplifier	400 to 4,000	17.8	27.5	44	3.9	5	137	SOT-89
TQP7M9103	1 W Linear Amplifier	400 to 4,000	16.6	29.1	45	4.4	5	235	SOT-89
TQP7M9104	2 W Linear Amplifier	700 to 2,700	15.8	32.8	49.5	4.4	5	435	4 x 4 mm
AH323-G	2 W 2-Stage Linear Amplifier	700 to 2,700	27	33	50	4.2	5	680	5 x 5 mm
AP561-F	8 W Linear Amplifier	700 to 2,900	15.8	39	50	5.3	12	300	5 x 6 mm
AP562-F	8 W Linear Amplifier	3,300 to 3,800	11.5	39.4	50	6	12	400	5 x 6 mm

Gain Block Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TQP3M9007	High Linearity Low Noise Gain Block	0.1 to 4	1.3	13	41	23.6	5	125	SOT-89
TQP3M9028	High Linearity Low Noise Gain Block	50 to 4,000	14.7	20.7	40	2	5	85	SOT-89
TQL9047*	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	21.2	35.5	1.6	5	70	2 x 2 mm
TQL9048*	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	22	40.5	1.7	5	130	2 x 2 mm
TQP3M9038	High Linearity LNA Gain Block	50 to 4,000	14.9	21.6	39.5	2	5	85	3 x 3 mm

NOTES: * = New

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TQP3M9008	High Linearity Low Noise Gain Block	0.05 to 4	1.3	20.6	35.5	20	5	85	SOT-89
TQP3M9009	High Linearity Low Noise Gain Block	0.05 to 4	1.3	21.8	39.5	22	5	125	SOT-89
TQP3M9018	High Linearity Low Noise Gain Block	0.05 to 4	1.3	20.5	36	20	5	85	3 x 3 mm
TQP3M9019	High Linearity Low Noise Gain Block	0.05 to 4	1.3	22	39.5	22	5	125	3 x 3 mm
TQP3M9005	Low Noise Amplifier Gain Block	0.1 to 4	0.8	15.3	34	22.3	5	50	3 x 3 mm
TQP3M9006	High Linearity Low Noise Gain Block	0.5 to 4	1	13.5	38.5	22.4	5	90	3 x 3 mm

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
855679	Filter - Broadband Wireless Access	SAW	80	8	11.9	SE/SE	13.3 x 6.5
854920	Filter - Standard Low Loss	SAW	140	18	9.1	SE/SE	13.3 x 6.5
856140	310.7 MHz SAW Filter	SAW	310.7	3	3	SE/SE	5 x 5
855595	320 MHz SAW Filter	SAW	320	22	19.3	SE/SE	9 x 7.01
855596	320 MHz SAW Filter	SAW	320	22	19.4	SE/SE	9 x 7.01
854565	350 MHz SAW Filter	SAW	350	1.2	10.2	SE/SE	13.3 x 6.5
855399	Filter - Broadband Wireless Access	SAW	350	2.62	13.7	SE/SE, BAL/BAL	13.3 x 6.5
856466	IF Filter - WiMAX	SAW	374	18	9	BAL/BAL	3.8 x 3.8
856490	Filter - Standard IF 380 MHz SAW	SAW	380	9.2	10	BAL/BAL	7 x 5.5
856631	Filter - Standard IF 380 MHz SAW	SAW	380	10.5	8.7	BAL/BAL	7 x 5.5
856652	Filter - WiMAX IF SAW	SAW	398	10	8.7	BAL/BAL	5 x 5
856549	Filter - Standard IF 456 MHz SAW	SAW	456	7.8	7.9	BAL/BAL	5 x 5
856638	Filter - Standard IF 456 MHz SAW	SAW	456	10	8.3	BAL/BAL	5 x 5
856672	Filter - Standard IF 456 MHz SAW	SAW	456	10	8.3	BAL/BAL	7 x 5.5
856623	464 MHz SAW Filter	SAW	464	3.5	10.6	BAL/BAL	7 x 5.5
856586	467 MHz SAW Filter	SAW	467	10	3	SE/SE	3.8 x 3.8
855271	Filter - Standard IF 479.75 MHz SAW	SAW	479.75	11.7	19.5	SE/SE	7 x 5.5
855272	Filter - Test Equipment	SAW	479.75	25.5	9.8	SE/SE	7 x 5.5
856625	520 MHz SAW Filter	SAW	520	11	9.5	SE/SE	5 x 5
856680	520 MHz SAW Filter	SAW	520	7.09	10.8	SE/SE	5 x 5
856665	Filter - Standard IF 580 MHz SAW	SAW	580	10.5	10.7	BAL/BAL	7 x 5.5
856690	756 MHz SAW Filter	SAW	756	18.5	1.9	SE/SE	3.8 x 3.8
856866	756 MHz SAW Filter	SAW	756	29.15	0.9	SE/SE	3.8 x 3.8
856526	Filter - Standard IF 810 MHz SAW	SAW	810	10	3.5	SE/SE	3 x 3
856534	Filter - Standard IF 810 MHz SAW	SAW	810	5	4.6	SE/SE	3 x 3
856330	Broadband Access IF SAW Filter	SAW	1,086	10	4	BAL/BAL	3 x 3
856365	Broadband Access IF SAW Filter	SAW	1,216	8	3.75	BAL/BAL	3 x 3
856598	Broadband Access IF SAW Filter	SAW	1,220	50	3.9	BAL/BAL	3.8 x 3.8
885007	2,436 MHz BAW Filter - ISM Passband for Coexistence	BAW	2,436	72	2	SE/SE	1.7 x 1.3
885017	2,436 MHz BAW Filter - ISM Passband for Coexistence	BAW	2,436	72	1.8	SE/SE	1.4 x 1.2

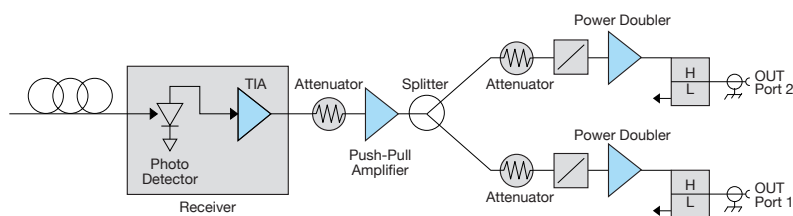
SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
885008	2,440 MHz BAW Filter - ISM Notch for Coexistence	BAW	2,440	71	1.5 (Out of Band IL)	SE/SE	1.7 x 1.3
885010	2,440 MHz BAW Filter - ISM Notch for Coexistence	BAW	2,440	82	2 (Out of Band IL)	SE/SE	1.7 x 1.3

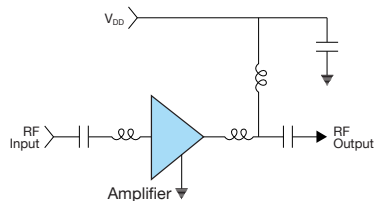
Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package (mm)
TQP4M0010	High Isolation Absorptive SPDT Switch	0.1 to 6	0.5	55	33	3.3	0.07	4 x 4
TQC0015*	High Isolation Absorptive SPDT Switch	0.1 to 6	0.5	60	33	3.3	0.1	4 x 4

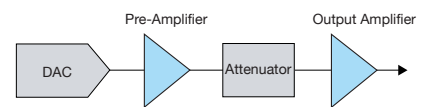
NOTES: * = New



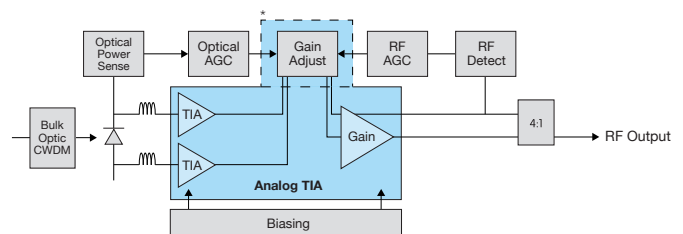
CATV Infrastructure



Subscriber Home Amplifiers



Edge QAM DOCSIS® 3.0



* TAT6281 includes additional gain adjust function.

FTTH/RFoG

CATV Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style	Applications
AG606-G	CATV Dual HBT Amplifier	DC to 1,000	13.5	20	37	4.5	> 7	165	SOIC-8	General Purpose Dual
TAT7457	CATV 75 Ohm pHEMT Adjustable Gain RF Amplifier	DC to 2,000	19	21	40	2	5 to 8	120	SOT-89	Single Ended Home Amplifier
TAT7467H	75 Ohm, 40 - 1,000 MHz RF Amplifier	40 to 1,000	17	24	43	4.7	5	380	SOIC-8	Headend DOCSIS
TAT8801A1H	75 Ohm, 40 - 1,000 MHz RF Amplifier Power Doubler	40 to 1,000	11	31	50	-	12	585	SOIC-16W	Infrastructure
TAT8857A1H*	CATV Infrastructure Power Doubler	40 to 1,000	21 to 27	31	52	4	24	350	SOIC-16W	Infrastructure
TGA2803-SM	CATV TIA/Gain Block	40 to 1,000	20	28	45	1.5	8	350	4 x 4 mm	Receiver

CATV Amplifiers (Cont.)

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style	Applications
TGA2806-SM	CATV Linear Amplifier	40 to 1,000	20	28	45	1.7	8	380	5 x 5 mm	General Purpose Dual
TGA2807-SM	CATV Linear Amplifier	40 to 1,000	18.5	28	43	2.3	6	318	5 x 5 mm	Headend DOCSIS Receiver
TAT6254B	50 - 1,000 MHz FTTH/RFoG Amplifier	50 to 1,000	38	–	–	–	12 or 5	100 or 220	4 x 4 mm	Receiver
TAT6254C	50 - 1000 MHz FTTH RF Amplifier	50 to 1,000	33	–	–	–	12 or 5	100 or 220	4 x 4 mm	Receiver
TAT6281**	50 - 1000 MHz FTTH Integrated Variable Gain Receiver	50 to 1,000	33	–	–	–	5	300	6 x 6 mm	Receiver
TAT7427B-T1*	75 Ohm, 50 - 1000 MHz Single Ended RF Amplifier	50 to 1,000	18.5	–	39	2.5	8	145	SOT-89	Single Ended Home Amplifier
TAT7430B-T1*	75 Ohm, 50 - 1000 MHz Single Ended RF Amplifier	50 to 1,000	22	22	41	2	5 to 8	190	SOT-89	Single Ended Home Amplifier
TAT7461	75 Ohm, 50 - 1,000 MHz Single Ended RF Amplifier	50 to 1,000	16	22	39	2.5	6	130	SOT-89	Single Ended Home Amplifier
TAT7461-x*	75 Ohm, 50 - 1,000 MHz Single Ended RF Amplifier	50 to 1,000	16	24	39	2.5	5	115	SOT-89	Single Ended Home Amplifier
TAT7466	75 Ohm, 50 - 1,000 MHz RF Amplifier	50 to 1,000	14	–	41	4.5	6	190	SOIC-8	General Purpose Dual
TAT8858A1H*	CATV Infrastructure Push Pull Amplifier	50 to 1,000	27 to 34	28	44	3	24	270	SOIC-16W	Infrastructure
TAT7469	75 Ohm, 50 - 1,200 MHz RF Amplifier	50 to 1,200	17.5	–	38	3.2	5	250	SOIC-8	General Purpose Dual
TAT8804D1H	21 dB CATV 12 V Power Doubler	50 to 1,200	21	35	49	4.5	12	650	5 x 7 mm	Infrastructure
TAT9988*	GaN CATV MMIC Power Doubler	50 to 1,200	24	–	53	3.5	24	445	5 x 7 mm	Infrastructure
TAT7460	75 Ohm, 50 - 2600 MHz Single Ended RF Amplifier	50 to 2,600	16.5	20.5	36	2.5	5	100	SOT-89	Single Ended Home Amplifier
TAT7460B1A	CATV 50 - 2,600 MHz Amplifier	50 to 2,600	17	20	38	3	5	100	SOT-89	CATV + SAT Gain Block

NOTES: * = New

CATV Hybrid Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	RF Output / Tilt (dBmV / dB)	CSO (dBc)	CTB (dBc)	Voltage (V)	Current (mA)	Package Style	Applications
TAT8884HO*	CATV High Output GaAs Power Doubler Hybrid	50 to 1,000	26	55 / 18	-75	-78	24	440	SOT115J	Power Doubler
TAT8888*	CATV High Output GaN Power Doubler Hybrid	50 to 1,000	24	61 / 18	-65	-65	24	440	SOT115J	Power Doubler

NOTES: * = New, ** = Preview

Gain Block Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TQP369180	Cascadable Gain Block	DC to 6,000	15.7	15.2	29.8	3.6	5	45	SOT-89
TQP369181	Cascadable Gain Block	DC to 6,000	15.6	15.2	30	3.6	5	45	SOT-363
TQP369182	Cascadable Gain Block	DC to 6,000	22.3	16.1	29.6	3.8	5	45	SOT-89
TQP369184	Cascadable Gain Block	DC to 6,000	22	16.2	29.8	3.8	5	45	SOT-363
TQP369185	Cascadable Gain Block	DC to 6,000	19	19.6	31.7	4.7	5	75	SOT-89
TQL9047*	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	21.2	35.5	1.6	5	70	2 x 2 mm
TQL9048*	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	22	40.5	1.7	5	130	2 x 2 mm
TQP3M9038	High Linearity LNA Gain Block	50 to 4,000	14.9	21.6	39.5	2	5	85	3 x 3 mm

NOTES: * = New

Protection Circuits

Part	Description	Trigger Voltage 1 (V)	Trigger Voltage 2 (V)	Trigger Voltage 3 (V)	Capacitance (fF)	Package (mm)
TQP200002	ESD Protection Circuit	19	27	46	50 to 65	1.5 x 1.2

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
855748	Filter - Broadband Access	SAW	36.15	8.14	20.59	SE/SE	27.2 x 12.6
855079	Filter - Broadband Access	SAW	44	6	20.3	SE/SE	27.2 x 12.6
856129	Filter - Broadband Access	SAW	44	6	20.8	SE/SE	24.6 x 9
855659	Filter - Broadband Access	SAW	110.59	0.79	6.52	SE/SE	13.3 x 6.5
855068	Filter - Broadband Access	SAW	202.75	1.1	6.6	SE/SE	13.3 x 6.5
855104	Filter - Broadband Access	SAW	499.25	1	7.08	SE/SE	9 x 7.01
855964	Filter - Broadband Access	SAW	1,086	10	4	BAL/BAL	3 x 3
856330	Broadband Access IF SAW Filter	SAW	1,086	10	4	BAL/BAL	3 x 3
856096	Filter - Broadband Access	SAW	1,090	10	5.6	BAL/BAL	3.8 x 3.8
857179	1090 MHz SAW Filter	SAW	1,090	10	5.6	BAL/BAL	3.8 x 3.8
856298	Filter - Broadband Access	SAW	1,220	10	4.5	BAL/BAL	3 x 3
856598	Broadband Access IF SAW Filter	SAW	1,220	50	3.9	BAL/BAL	3.8 x 3.8
856653	Filter - Broadband Access	SAW	1,250	100	6.8	BAL/BAL	3 x 3

Variable Gain Amplifiers

Part	Description	Frequency (MHz)	Attenuation Range (dB)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package (mm)
TAT3814	5 - 300 MHz Variable Gain Return Path Amplifier	5 to 300	20	36	26	40	IRL 15, ORL 20	8	320	6 x 6
TAT2814A	Variable Gain DOCSIS 3.0 Amplifier	45 to 1,003	18	30	28	49	2.7	5, 8	290, 415	7 x 7

GPS Front End Modules

Part	Description	NF (dB)	Gain (dB)	Output IP3 (dBm)
TQM640002	GPS Low Noise Amplifier/Filter Module	1.56	16	> 9

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856288	Filter - GPS IF	SAW	465	6	1.43	SE/SE	3 x 3
856440	Filter - GPS L5 RF	SAW	1,176	35	2.4	SE/SE	2 x 1.5
857143	1,176.45 MHz SAW Filter	SAW	1,176.45	20.46	0.5	SE/SE	1.4 x 1.2
857144	1,176.45 MHz SAW Filter	SAW	1,176.45	20.46	2	SE/SE	1.4 x 1.2
856700	GPS L2 SAW Filter	SAW	1,227.60	31	1.1	SE/SE	2 x 1.5
857141	1,227.6 MHz SAW Filter	SAW	1,227.60	20.46	0.5	SE/SE	1.4 x 1.2
857142	1,227.6 MHz SAW Filter	SAW	1,227.60	20.46	2.1	SE/SE	1.4 x 1.2
880366*	1,227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	12	1.5	SE/SE	3.26 x 1.6
880372	1,227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	15	3	SE/SE	3.71 x 2.57
880365	1,380 MHz GPS L3/L4 BAW Filter	BAW	1,380	38	2.75	SE/SE	3.26 x 1.6

SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856039	GPS SAW Filter	SAW	1,575.42	2	1.8	SE/SE	3 x 3
856139	GPS SAW Filter	SAW	1,575.42	2.4	1.3	SE/SE	3 x 3
856561	GPS SAW Filter, SE/SE	SAW	1,575.42	2	0.75	SE/SE	1.4 x 1.2 x 0.46
856576	GPS SAW Filter, SE/BAL	SAW	1,575.42	2	1.1	SE/BAL	1.4 x 1.2
856793	GPS SAW Filter, SE/SE	SAW	1,575.42	2.4	0.6	SE/SE	1.4 x 1.2
857139	1,575.42 MHz SAW Filter	SAW	1,575.42	20.46	0.6	SE/SE	1.4 x 1.2
857140	1,575.42 MHz SAW Filter	SAW	1,575.42	20.46	2.6	SE/SE	1.4 x 1.2
880085	1,575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	15	1.5	SE/SE	3.26 x 1.6
880098*	1,575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	20	4 Max	SE/SE	3.71 x 2.57
880373	1,575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	23	3	SE/SE	3.71 x 2.57
857207*	1,585.66 MHz SAW Filter	SAW	1,585.66	41	1.45	SE/BAL	1.4 x 1.2
856909	1,601.5 MHz SAW Filter	SAW	1,601.50	17	2.2	SE/SE	3 x 3

NOTES: * = New

Attenuators

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Bits	Control Voltage (V)	Package Style
TGL4203	50 GHz Wideband Analog Attenuator	Analog	DC to 50	2	17	15	N/A	-1 to 0	Die
TGL4203-SM	DC - 30 GHz Wideband Analog Attenuator	Analog	DC to 30	1.5	16	20	N/A	-1 to 0	Die
TQP4M9071	Parallel Controlled 6 Bit, 31.5 dB Digital Step Attenuator	Digital	0 to 4	1.6	31.5	30	6	5	4 x 4 mm
TQP4M9072	Serial Controlled 6 Bit, 31.5 dB Digital Step Attenuator	Digital	0 to 4	1.6	31.5	30	6	5	4 x 4 mm
TQP4M9083	High Linearity Serial Controlled 7 Bit, 31.75 dB Digital Step Attenuator	Digital	0.4 to 3.5	1.5	31.75	30	7	5	4 x 4 mm

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
TGF2021-04-SD	DC - 4 GHz Packaged Power pHEMT	DC to 4	16	26.5	-	0.6	-	5	150	SOT-89
TGF2018	180 um Discrete GaAs pHEMT	DC to 20	14	-	22	1	55	8	29	Die
TGF2025	250 um Discrete GaAs pHEMT	DC to 20	14	-	25	0.9	58	8	41	Die
TGF2040	400 um Discrete GaAs pHEMT	DC to 20	13	-	26	1.1	55	8	65	Die
TGF2060	600 um Discrete GaAs pHEMT	DC to 20	12	-	28	1.4	55	8	97	Die
TGF2080	800 um Discrete GaAs pHEMT	DC to 20	11.5	-	29.5	-	56	8	129	Die
TGF2120	1,200 um Discrete GaAs pHEMT	DC to 20	11	31	-	-	57	8	194	Die
TGF2160	1,600 um Discrete GaAs pHEMT	DC to 20	10.4	32.5	-	-	63	8	258	Die
TGA2602-SM	Dual GaAs pHEMT	0.8 to 3	20.5	20	-	0.55	-	4	100	2 x 2 mm

Driver Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TQP7M9105	1 W 5V High Linearity Amplifier	50 to 1,500	19.4	30	49	6.3	5	220	SOT-89
TQP7M9106	2 W 5V High Linearity Amplifier	50 to 1,500	20.8	33	50	4.8	5	455	4 x 4 mm

Driver Amplifiers (Cont.)

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
AH225-S8G	1 W Linear Amplifier	400 to 2,700	15.2	31	47	6.3	5	300	SOIC-8
AH420-EG	4 W Linear Amplifier	400 to 2,700	16	35.7	50	5.3	5	800	4 x 5 mm
AH128-89G	0.25 W Linear Amplifier	400 to 3,500	16.9	25	40	4.6	5	115	SOT-89
AH125-89G	0.5 W Linear Amplifier	400 to 3,600	16.2	28	45	4.4	5	150	SOT-89
TQP7M9101	0.25 W Linear Amplifier	400 to 4,000	17.5	24.8	40	4	5	88	SOT-89
TQP7M9102	0.5 W Linear Amplifier	400 to 4,000	17.8	27.5	44	3.9	5	137	SOT-89
TQP7M9103	1 W Linear Amplifier	400 to 4,000	16.6	29.1	45	4.4	5	235	SOT-89
AH323-G	2 W 2-Stage Linear Amplifier	700 to 2,700	27	33	50	4.2	5	680	5 x 5 mm
TQP7M9104	2 W Linear Amplifier	700 to 2,700	15.8	32.8	49.5	4.4	5	435	4 x 4 mm

Frequency Converters / Mixers

Part	Description	RF (GHz)	IF (GHz)	LO (GHz)	Gain (dB)	Output IP3 (dBm)	NF (dB)	Output P1dB (dBm)	LO Power (dBm)	Voltage (V)	Current (mA)	Package (mm)
CMY212	Downconverter with LO, IF Amplifiers	0.5 to 2.5	0.05 to 0.25	0.5 to 2.5	10	20	8	8	-4	3	11	SCT598

Gain Block Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
AG603-89G	Cascadable Gain Block	DC to 3,000	18.5	19.5	33	3.8	6	75	SOT-89
AG602-89G	Cascadable Gain Block	DC to 3,500	14	18.5	33	4.4	6	75	SOT-89
ECG008B-G	Cascadable Gain Block	DC to 4,000	15	24	40	4.6	9	120	SOT-89
ECG006C-G	Cascadable Gain Block	DC to 5,500	15	15.5	32	3.7	5	45	SOT-86
AG604-86G	Cascadable Gain Block	DC to 6,000	21.5	19.5	33.5	3.5	6	75	SOT-86
AG604-89G	Cascadable Gain Block	DC to 6,000	21.5	19.5	33.5	3.5	6	75	SOT-89
ECG003B-G	Cascadable Gain Block	DC to 6,000	20	24	39	3.5	9	110	SOT-89
TQP369180	Cascadable Gain Block	DC to 6,000	15.7	15.2	29.8	3.6	5	45	SOT-89
TQP369181	Cascadable Gain Block	DC to 6,000	15.6	15.2	30	3.6	5	45	SOT-363
AG201-63G	Cascadable Gain Block	DC to 6,000	11	6.5	19.5	4.4	5	20	SOT-363
AG201-86G	Cascadable Gain Block	DC to 6,000	11	6.5	19.5	4.4	5	20	SOT-86
AG203-63G	Cascadable Gain Block	DC to 6,000	20	8	21	3.1	5	20	SOT-363
AG203-86G	Cascadable Gain Block	DC to 6,000	20	8	21	3.1	5	20	SOT-86
AG302-63G	Cascadable Gain Block	DC to 6,000	15.5	13.5	26	3.2	5	35	SOT-363
AG302-86G	Cascadable Gain Block	DC to 6,000	15.5	13.5	26	3.2	5	35	SOT-86
AG303-63G	Cascadable Gain Block	DC to 6,000	20.5	14	26	3	5	35	SOT-363
AG303-86G	Cascadable Gain Block	DC to 6,000	20.5	14	26	3	5	35	SOT-86
AG402-86G	Cascadable Gain Block	DC to 6,000	15	17	32.5	3.7	6	60	SOT-86
AG402-89G	Cascadable Gain Block	DC to 6,000	15	17	32.5	3.7	6	60	SOT-89
AG403-86G	Cascadable Gain Block	DC to 6,000	21	18	31.5	3	6	60	SOT-86
AG403-89G	Cascadable Gain Block	DC to 6,000	21	18	31.5	3	6	60	SOT-89
TQP369182	Cascadable Gain Block	DC to 6,000	22.3	16.1	29.6	3.8	5	45	SOT-89
TQP369184	Cascadable Gain Block	DC to 6,000	22	16.2	29.8	3.8	5	45	SOT-363
TQP369185	Cascadable Gain Block	DC to 6,000	19	19.6	31.7	4.7	5	75	SOT-89
WJA1500	Cascadable Gain Block	50 to 1,000	19.2	20.5	44	5	5	95	SOT-89
WJA1510	Cascadable Gain Block	50 to 1,000	14.2	20	47	5.4	5	95	SOT-89
TQP3M9028	High Linearity Low Noise Gain Block	50 to 4,000	14.7	20.7	40	2	5	85	SOT-89
TQL9047*	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	21.2	35.5	1.6	5	70	2 x 2 mm
TQL9048*	High Linearity Gain Block with Shutdown Function	50 to 4,000	14.5	22	40.5	1.7	5	130	2 x 2 mm
TQP3M9038	High Linearity LNA Gain Block	50 to 4,000	14.9	21.6	39.5	2	5	85	3 x 3 mm

NOTES: * = New

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TQP3M9008	High Linearity Low Noise Gain Block	0.05 to 4	1.3	20.6	35.5	20	5	85	SOT-89
TQP3M9009	High Linearity Low Noise Gain Block	0.05 to 4	1.3	21.8	39.5	22	5	125	SOT-89
TQP3M9018	High Linearity Low Noise Gain Block	0.05 to 4	1.3	20.5	36	20	5	85	3 x 3 mm
TQP3M9019	High Linearity Low Noise Gain Block	0.05 to 4	1.3	22	39.5	22	5	125	3 x 3 mm
TQP3M9005	Low Noise Amplifier Gain Block	0.1 to 4	0.8	15.3	34	22.3	5	50	3 x 3 mm
TQP3M9007	High Linearity Low Noise Gain Block	0.1 to 4	1.3	13	41	23.6	5	125	SOT-89
TQL9042	Ultra Low Noise, High Linearity LNA with Bypass Function	0.5 to 2	0.42	19	36	23	5	70	3 x 3 mm
TQP3M9006	High Linearity Low Noise Gain Block	0.5 to 4	1	13.5	38.5	22.4	5	90	3 x 3 mm
TQL9043	Ultra Low Noise, High Linearity LNA with Bypass Function	1.5 to 4	0.6	17.5	33	19.4	5	80	3 x 3 mm
TQL9044*	Ultra Low Noise, High Linearity LNA with Bypass Function	1.5 to 4	0.6	19.4	34.5	20.4	5	70	3 x 3 mm

NOTES: * = New

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA4534-SM	K-Band Power Amplifier	17.7 to 19.7	34	21	9	–	6	1,430
TGA4535-SM	K-Band Power Amplifier	21.2 to 23.6	34	22	8	–	6	1,430
TGA4536-SM*	K-Band Power Amplifier	24.2 to 26.5	34	18	7	20	6	1,430
TGA4542	37 - 40 GHz Power Amplifier	37 to 40	32.4	26	–	18	6	900
TGA4543	40.5 - 43.5 GHz Power Amplifier	40.5 to 43.5	30	23	–	–	6	900

NOTES: * = New

SAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
854652	Filter - Standard Low Loss	SAW	70	1.1	7.3	SE/SE	19 x 6.5
854653	Filter - Standard Low Loss	SAW	70	1.52	7.5	SE/SE	19 x 6.5
854654	Filter - Standard Low Loss	SAW	70	2.1	7.85	SE/SE	19 x 6.5
854655	Filter - Standard Low Loss	SAW	70	2.59	8.75	SE/SE	19 x 6.5
854656	Filter - Standard Low Loss	SAW	70	3.5	6.95	SE/SE	13.3 x 6.5
854657	Filter - Standard Low Loss	SAW	70	3.8	7.25	SE/SE	13.3 x 6.5
854658	Filter - Standard Low Loss	SAW	70	4.45	6.8	SE/SE	13.3 x 6.5
854659	Filter - Standard Low Loss	SAW	70	4.9	6.8	SE/SE	13.3 x 6.5
854660	Filter - Standard Low Loss	SAW	70	5.35	7.25	SE/SE	13.3 x 6.5
854661	Filter - Standard Low Loss	SAW	70	6.35	7.5	SE/SE	13.3 x 6.5
854662	Filter - Standard Low Loss	SAW	70	7.4	8.5	SE/SE	13.3 x 6.5
854663	Filter - Standard Low Loss	SAW	70	8.4	9	SE/SE	13.3 x 6.5
854664	Filter - Standard Low Loss	SAW	70	9.4	9.75	SE/SE	13.3 x 6.5
854665	Filter - Standard Low Loss	SAW	70	10.45	10	SE/SE	13.3 x 6.5
854666	Filter - Standard Low Loss	SAW	70	12.5	11.5	SE/SE	13.3 x 6.5
854667	Filter - Standard Low Loss	SAW	70	14.45	12.5	SE/SE	13.3 x 6.5
854668	Filter - Standard Low Loss	SAW	70	16.5	12.5	SE/SE	13.3 x 6.5
854669	Filter - Standard Low Loss	SAW	70	18.5	13.5	SE/SE	13.3 x 6.5
854670	Filter - Standard Low Loss	SAW	70	20	14.5	SE/SE	13.3 x 6.5
854671	Filter - Standard Low Loss	SAW	70	22.3	15	SE/SE	13.3 x 6.5
854672	Filter - Standard Low Loss	SAW	70	24.45	16.25	SE/SE	13.3 x 6.5
854673	Filter - Standard Low Loss	SAW	70	26.4	17	SE/SE	13.3 x 6.5
854674	Filter - Standard Low Loss	SAW	70	28.5	17.6	SE/SE	13.3 x 6.5
854675	Filter - Standard Low Loss	SAW	70	30.3	17.5	SE/SE	13.3 x 6.5
854678	Filter - Standard Low Loss	SAW	70	36.2	20.2	SE/SE	13.3 x 6.5
854680	Filter - Standard Low Loss	SAW	70	40.35	21.5	SE/SE	13.3 x 6.5
855735	Filter - Standard 70 High Selectivity	SAW	70	0.31	16.36	SE/SE	24.6 x 9

SAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
855736	Filter - Standard 70 High Selectivity	SAW	70	0.7	21.3	SE/SE	24.6 x 9
855737	Filter - Standard 70 High Selectivity	SAW	70	1	22.2	SE/SE	24.6 x 9
855738	Filter - Standard 70 High Selectivity	SAW	70	1	21.6	SE/SE	24.6 x 9
855739	Filter - Standard 70 High Selectivity	SAW	70	2.2	23	SE/SE	19 x 6.5
855740	Filter - Standard 70 High Selectivity	SAW	70	2.7	20.25	SE/SE	19 x 6.5
855741	Filter - Standard 70 High Selectivity	SAW	70	3.1	23	SE/SE	19 x 6.5
855743	Filter - Standard 70 High Selectivity	SAW	70	4.4	23	SE/SE	19 x 6.5
855744	Filter - Standard 70 High Selectivity	SAW	70	4.9	23.7	SE/SE	19 x 6.5
855745	Filter - Standard 70 High Selectivity	SAW	70	5.7	22.2	SE/SE	19 x 6.5
856152	73 MHz SAW Filter	SAW	73	0.3	6	SE/SE	24.6 x 9
854909	Filter - Standard Low Loss	SAW	140	4.6	10.85	SE/SE	13.3 x 6.5
854913	Filter - Standard Low Loss	SAW	140	7.148	5.5	SE/SE	13.3 x 6.5
854916	Filter - Standard Low Loss	SAW	140	10.59	8.3	SE/SE	13.3 x 6.5
854917	Filter - Standard Low Loss	SAW	140	12.4	8.87	SE/SE	13.3 x 6.5
854919	Filter - Standard Low Loss	SAW	140	16.9	8.4	SE/SE	13.3 x 6.5
854923	Filter - Standard Low Loss	SAW	140	24.26	11.33	SE/SE	13.3 x 6.5
854927	Filter - Standard Low Loss	SAW	140	33.4	11.5	SE/SE	13.3 x 6.5
855035	140 MHz SAW Filter	SAW	140	0.47	18.5	SE/SE	19 x 6.5
855579	140 MHz SAW Filter	SAW	140	1.7	11	SE/SE	19 x 6.5
856062	Filter - Standard 140 High Selectivity	SAW	140	0.75	20.8	SE/SE	19 x 6.5
856063	Filter - Standard 140 High Selectivity	SAW	140	1.5	21.9	SE/SE	19 x 6.5
856064	Filter - Standard 140 High Selectivity	SAW	140	2	21.5	SE/SE	19 x 6.5
856065	Filter - Standard 140 High Selectivity	SAW	140	3	22.4	SE/SE	19 x 6.5
856066	Filter - Standard 140 High Selectivity	SAW	140	6.2	23	SE/SE	13.3 x 6.5
856067	Filter - Standard 140 High Selectivity	SAW	140	7.1	24.5	SE/SE	13.3 x 6.5
856068	Filter - Standard 140 High Selectivity	SAW	140	8.2	23.4	SE/SE	13.3 x 6.5
856069	Filter - Standard 140 High Selectivity	SAW	140	10	20.87	SE/SE	13.3 x 6.5
856070	Filter - Standard 140 High Selectivity	SAW	140	14.1	23.3	SE/SE	13.3 x 6.5
856071	Filter - Standard 140 High Selectivity	SAW	140	16.2	21.7	SE/SE	13.3 x 6.5
856072	Filter - Standard 140 High Selectivity	SAW	140	33.2	21.7	SE/SE	9.0 x 7.01
856074	Filter - Standard 140 High Selectivity	SAW	140	57	18.65	SE/SE	9.0 x 7.01
856314	Filter - Standard 140 High Selectivity	SAW	140	72	21	SE/SE	9 x 7.01
856592	Low Loss IF Filter	SAW	140	21.6	9.3	SE/SE	13.3 x 6.5
856774	Filter - Standard Low Loss	SAW	140	56	22.3	BAL/BAL	9.1 x 4.8
855678	Filter - Other BTS	SAW	150	8	12.1	SE/SE	13.3 x 6.5
856990	Filter - MICS Band SAW	SAW	403.5	3	2.1	BAL/SE	3 x 3
856930	Filter - ISM Band SAW	SAW	457.5	15	2.2	SE/SE	3.8 x 3.8
856963	Filter - ISM Band SAW	SAW	875	10	1.8	SE/SE	2 x 1.5
856327	Filter - ISM Band SAW	SAW	915	26	2.3	SE/SE	2 x 1.5
856905	Filter - ISM Band SAW	SAW	921.5	13	1.9	SE/SE	2 x 1.5
857216*	1030 MHz SAW Filter	SAW	1,030	10	2.3	SE/SE	3 x 3
857215*	1090 MHz SAW Filter	SAW	1,090	10	2.6	SE/SE	3 x 3

NOTES: * = New

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TQP4M0013*	High Isolation Absorptive SPST Switch	0.1 to 4	0.55	50	35	3.3	0.08	2 x 2 mm
TQP4M0009	High Isolation Reflective SPDT Switch	0.1 to 5	0.6	54	33	3.3	0.015	8-pin MSOP
TQP4M0008	Low Loss Reflective SPDT Switch	0.1 to 6	0.4	26	37	3.3	0.015	2 x 2 mm
TQP4M0010	High Isolation Absorptive SPDT Switch	0.1 to 6	0.5	55	33	3.3	0.07	4 x 4 mm
TQC0015*	High Isolation Absorptive SPDT Switch	0.1 to 6	0.5	60	33	3.3	0.1	4 x 4 mm
TQP4M0011	Low Loss Reflective SP3T Switch	0.1 to 6	0.6	34	34	3.3	0.015	12-pin 3 x 3 mm QFN Package

NOTES: * = New

Variable Gain Amplifiers

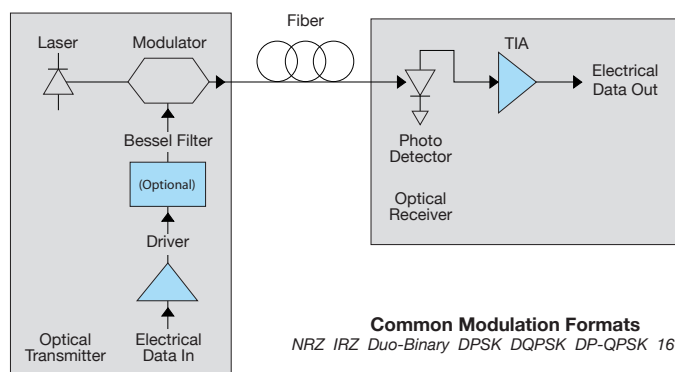
Part	Description	Frequency (MHz)	Attenuation Range (dB)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package (mm)
TQM8M9075	Digital Variable Gain Amplifier	50 to 4,000	31.5	18	20.5	36.5	2.9	5	88	5 x 5
TQM8M9076	Digital Variable Gain Amplifier	50 to 4,000	31.5	19.5	22	38.5	2.9	5	125	5 x 5
TQM8M9077	Digital Variable Gain Amplifier	50 to 4,000	31.5	13	21.5	38.5	3.7	5	88	5 x 5
TQM8M9079	Variable Gain Amplifier	500 to 2,700	30	38	16	29	4	5	95	5 x 5
TQC9305*	Digital Variable Gain Amplifier with Shutdown Mode	700 to 3,600	31.5	13	23	39.7	3.1	5	130	5 x 5

NOTES: * = New

WLAN Front End Modules

Part	Description	Frequency (GHz)	802.11 Standards	Typ Pout 1.78% EVM (dBm)	Typ Pout 3.0% EVM (dBm)	Tx Gain (dB)	Rx Gain (dB)	Rx NF (dB)	Nom Bias Voltage (V)	Current (mA)	Package (mm)
TQL1600*	5 GHz WLAN Switch/LNA Front End Module	5.15 to 5.875	a/n/ac	–	–	–	13	2.5	3.3, 5	8	2.5 x 2.5 x 0.45
TQP8080	5 GHz WLAN 802.11a/n/ac Front End Module with PA + Pdet, SP2T and LNA	5.15 to 5.875	a/n/ac	18	20	29.5	13	2.5	5	240	2.5 x 2.5 x 0.4

NOTES: * = New



Optical Systems (10, 40 & 100 Gb/s)

Attenuators

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Control Voltage (V)	Package Style
TGL4203-SM	DC - 30 GHz Wideband Analog Attenuator	Analog	DC to 30	1.5	16	20	-1 to 0	Die
TGL4203	50 GHz Wideband Analog Attenuator	Analog	DC to 50	2	17	15	-1 to 0	Die

Bessel Filters & Through Lines

Part	Description	3 dB Frequency Cut-Off (GHz)	Group Delay (psec)	Return Loss (dB)	Package Style
TGB2010-00	Bessel Filter (Thru)	Thru	< ±1.25	> 15	Die
TGB2010-06	6 GHz Bessel Filter	6	< ±1.25	> 15	Die
TGB2010-07	7 GHz Bessel Filter	7	< ±1.25	> 15	Die
TGB2010-08	8 GHz Bessel Filter	8	< ±1.25	> 15	Die
TGB2010-09	9 GHz Bessel Filter	9	< ±1.25	> 15	Die
TGB2010-10	10 GHz Bessel Filter	10	< ±1.25	> 15	Die
TGB2010-11	11 GHz Bessel Filter	11	< ±1.25	> 15	Die

CATV Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package (mm)	Applications
TGA2803-SM	CATV TIA/Gain Block	40 to 1,000	20	28	45	1.5	8	350	4 x 4	Receiver

Modulator Drivers

Part	Description	Frequency (GHz)	Vpp (V)	Gain (dB)	3 dB Bandwidth (GHz)	Voltage (V)	Current (mA)	Package Style
TGA4195-SM*	11.3 Gb/s EML Driver, Diff In/Diff Out	DC to 10	6	26	8	3.3	0.65	4 x 4 mm
TGA4953-SL	9.9 - 12.5 Gb/s Optical Modulator Driver	DC to 12	10	35	10	5	210	11.4 x 8.9 mm
TGA4954-SL	9.9 - 12.5 Gb/s Optical Modulator Driver	DC to 12	9	35	10	5	180	11.4 x 8.9 mm
TGA4826-SM	9 - 18 Gb/s, 3 - 10 Vpp Linear Modulator Driver	DC to 18	3 to 10	24	15	7	280	6 x 6 mm
TGA4892-SL*	200Gb/s 16 QAM Linear Dual Driver, SE In/SE Out	DC to 27	3 to 5	24	25	5 - 7	500	13 x 10.6 mm
TGA4957-SM	28 Gb/s Differential Modulator Driver Amplifier	DC to 28	4 to 8	20	22	5	470	6 x 6 mm
TGA4943-SL	40 & 100 Gb/s, 8 Vpp Optical Modulator Driver	DC to 30	4 to 9	32	30	6	280	14.4 x 7 mm
TGA4893-SL**	200Gb/s 16 QAM Linear Dual Driver, Diff In/SE Out	DC to 30	4 to 5	24	25	5	500	16.1 x 10.6 mm
TGA4959-SL	32 Gb/s Differential SMT Modulator Driver	DC to 30	6 to 9	24	27	5	428	10 x 7 mm
TGA4894-SL*	100Gb/s Linear Dual Driver, SE In/SE Out	DC to 30	5 to 8	33	25	5 - 7	650	16.1 x 10.6 mm
TGA4840-SM*	28Gb/s CFP2/CFP4 Modulator Driver	DC to 32	1 to 3	10	25	3.3	50	4 x 3 mm
TGA4832	DC - 35 GHz Wideband Amplifier	DC to 35	4	12	35	5	135	Die
TGA4947-MOD*	Quad Channel 100Gb/s Modulator Driver	DC to 35	3 to 9	27	32	5 to 6	1,100	45 x 33.4 mm
TGA4947-SL	100 Gb/s, 8 Vpp Dual Channel SMT Driver with 2 Internal Bias-T's	DC to 35	3 to 9	32	32	5 to 6	468	16 x 10.5 mm
TGA4830	CFP Low Power Driver	DC to 40	2.5	13	40	5	50	Die
TGA4942-SL	22 - 43 Gb/s, 8 Vpp DPSK SMT Driver, Internal Bias-T	DC to 40	5 to 9	30	35	5 to 7	250	16 x 8 mm
TGA4803	DC to >50 GHz Medium Power Amplifier with AGC	DC to 50+	3.5	8	> 50	6.5	100	Die

NOTES: * = New, ** = Preview

Power Amplifiers

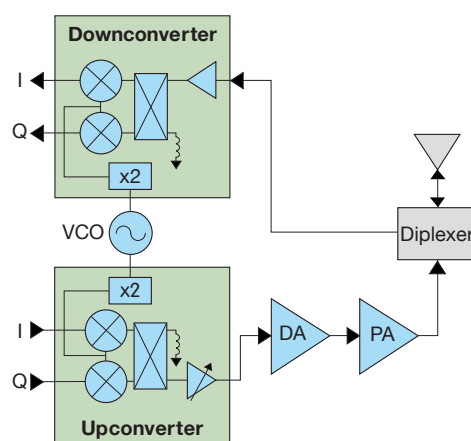
Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	Voltage (V)	IQ (mA)
TGA2565-SM*	11-17 GHz Medium Power Amplifier	11 to 17	27	27	6	210

NOTES: * = New

Transimpedance Amplifiers

Part	Description	Bandwidth (GHz)	Differential Transimpedance Gain (ohm)	Differential Output Vpp (mV)	Equivalent Input Noise (pA/rtHz)	Voltage (V)	Current (mA)
TGA4861	Dual 13 Gb/s Linear Transimpedance Amplifier with AGC	11	250 to 4,800	200 to 900	24	3.3	175
TIA56A	43 Gb/s Limiting Transimpedance Amplifier with PLD	27	3,200	600	30	-5.2	85
TGA4864	Dual 32 Gb/s Linear Transimpedance Amplifier with AGC	28	250 to 4,800	200 to 900	24	3.3	175
TIA56	43 Gb/s Limiting Transimpedance Amplifier	30	4,500	600	30	-5.2	85
TGA4872**	Dual 32 Gb/s Linear Transimpedance Amplifier with AGC	30	7000	200 to 900	20	3.3	175
TGA4874**	Quad 32 Gb/s Linear Transimpedance Amplifier with AGC + Optional SPI Control	30	7000	200 to 900	20	3.3	350
TGA4871**	4-Channel 28 Gb/s Limiting TIA	30	6000	600	15	3.3	300
TGA4866**	44.6 Gb/s Limiting Transimpedance Amplifier	40	2,800	600	15	3.3	75

NOTES: ** = Preview



Attenuators

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Control Voltage (V)	Package Style
TGL4203-SM	DC - 30 GHz Wideband Analog Attenuator	Analog	DC to 30	1.5	16	20	-1 to 0	Die
TGL4203	50 GHz Wideband Analog Attenuator	Analog	DC to 50	2	17	15	-1 to 0	Die

Through Lines

Part	Description	3 dB Frequency Cut-Off (GHz)	Return Loss (dB)	Package (mm)
TQM4M9073	Through Line	> 6	25	3 x 3

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
TGF2021-04-SD	DC - 4 GHz Packaged Power pHEMT	DC to 4	16	26.5	-	0.6	-	5	150	SOT-89
TGF2021-01	X-Band Discrete Power pHEMT	DC to 12	11	-	> 30	-	59	8 to 12	75 to 125	Die
TGF2021-02	X-Band Discrete Power pHEMT	DC to 12	11	-	> 33	-	59	8 to 12	150 to 250	Die
TGF2021-04	X-Band Discrete Power pHEMT	DC to 12	11	-	> 36	-	59	8 to 12	300 to 500	Die
TGF2021-08	X-Band Discrete Power pHEMT	DC to 12	11	-	> 39	-	59	8 to 12	600 to 1,000	Die
TGF2021-12	X-Band Discrete Power pHEMT	DC to 12	11	-	> 42	-	58	8 to 12	900 to 1,500	Die
TGF2023-2-01	6 W Discrete Power GaN on SiC HEMT	DC to 18	18	-	38	-	71.6	12 to 32	25 to 125	Die
TGF2023-2-10	50 W Discrete Power GaN on SiC HEMT	DC to 18	19.8	-	47.3	-	69.5	12 to 32	200 to 1,000	Die
TGF2023-2-20	90 W Discrete Power GaN on SiC HEMT	DC to 18	19.2	-	50.5	-	70.5	12 to 32	400 to 2,000	Die
TGF2018	180 um Discrete GaAs pHEMT	DC to 20	14	-	22	1	55	8	29	Die
TGF2022-06	Ku-Band Discrete Power pHEMT	DC to 20	13	-	> 28	-	58	8 to 12	45 to 75	Die
TGF2022-12	Ku-Band Discrete Power pHEMT	DC to 20	13	-	> 31	-	58	8 to 12	90 to 150	Die
TGF2022-24	Ku-Band Discrete Power pHEMT	DC to 20	13	-	> 34	-	58	8 to 12	180 to 300	Die
TGF2022-48	Ku-Band Discrete Power pHEMT	DC to 20	13	-	> 37	-	58	8 to 12	360 to 600	Die
TGF2022-60	Ku-Band Discrete Power pHEMT	DC to 20	12	-	> 38	-	57	8 to 12	448 to 752	Die
TGF2025	250 um Discrete GaAs pHEMT	DC to 20	14	-	25	0.9	58	8	41	Die
TGF2040	400 um Discrete GaAs pHEMT	DC to 20	13	-	26	1.1	55	8	65	Die
TGF2060	600 um Discrete GaAs pHEMT	DC to 20	12	-	28	1.4	55	8	97	Die
TGF2080	800 um Discrete GaAs pHEMT	DC to 20	11.5	-	29.5	-	56	8	129	Die
TGF2120	1200 um Discrete GaAs pHEMT	DC to 20	11	31	-	-	57	8	194	Die
TGF2160	1600 um Discrete GaAs pHEMT	DC to 20	10.4	32.5	-	-	63	8	258	Die
TGF4350	0.3 mm, 0.25-μm mmW pHEMT 2MI	DC to 22	13 @ 10 GHz	-	16	0.8 @ 10 GHz	-	3	15	Die

Frequency Converters/Mixers

Part	Description	RF (GHz)	IF (GHz)	LO (GHz)	Gain (dB)	Output IP3 (dBm)	NF (dB)	Output P1dB (dBm)	LO Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGC2610-SM*	Ku-Band Downconverter	10 to 15.4	DC to 4	6 to 19	14	16	1.5	7	0 to 8	4	160	5 x 5 mm
TGC2510-SM	Ku-Band Upconverter	10 to 16	DC to 3.5	6.5 to 19	17	33		10	0 to 6	5	300	5 x 5 mm
TGC4403	8 - 15 GHz Doubler with Amplifier	16 to 30	8 to 15	–	20	–	–	20	–	5	150	Die
TGC4403-SM	8 - 15 GHz Packaged Doubler with Amplifier	16 to 30	8 to 15	–	18	–	–	20	–	5	150	4 x 4 mm
TGC4402	17 - 27 GHz Upconverting Mixer	17 to 27	0.5 to 3	14 to 28	-9	10	9	–	17	-0.9	–	Die
TGC4405*	17 - 27 GHz Upconverter	17 to 27	0.5 to 3	8 to 13	13	–	–	–	2 to 5	5	425	Die
TGC4405-SM*	17 - 27 GHz Packaged Upconverter	17 to 27	0.5 to 3	8 to 13	13	28	–	–	2	5	425	4 x 4 mm
TGC4610-SM	K-Band Downconverter	17 to 27	DC to 4	6.5 to 15.5	15	18	2.5		5.5	3	228	5 x 5 mm
TGC4510-SM	K-Band Upconverter	17.7 to 26.5	DC to 4	6.85 to 15.25	13	32	15	23	6	5, 3.3	360, 170	5 x 5 mm
TGC4402-SM	18 - 26 GHz Packaged Upconverting Mixer	18 to 26	0.5 to 3	16 to 26	-9	10	9	–	19	-0.9	–	4 x 4 mm
TGC1430F	Doubler	20 to 40	–	–	-12	–	–	–	–	–	–	Die
TGC4407-SM	Ka-Band Upconverter	21.5 to 32.5	DC to 7	11 to 16	-9	4	9	-5	0 to 7.5	5	65	3 x 3 mm
TGC4406-SM	28 - 34 GHz Packaged Doubler with Amplifier	28 to 34	14 to 17	–	15	–	–	20	–	5	150	4 x 4 mm
TGC4546-SM*	37-46 GHz Upconverter	37 to 46	DC to 3.5	8.35 to 11.5	12	26	18.5	21	2 to 8	5	430	5 x 5 mm
TGC4671**	71 - 86 GHz Sub-Harmonic Image Reject Mixer	71 to 86	DC to 7	31 to 42	-12	–	–	–	15	–	–	Die

NOTES: * = New, ** = Preview

Gain Block Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TQP369180	Cascadable Gain Block	DC to 6,000	15.7	15.2	29.8	3.6	5	45	SOT-89
TQP369181	Cascadable Gain Block	DC to 6,000	15.6	15.2	30	3.6	5	45	SOT-363
TQP369182	Cascadable Gain Block	DC to 6,000	22.3	16.1	29.6	3.8	5	45	SOT-89
TQP369184	Cascadable Gain Block	DC to 6,000	22	16.2	29.8	3.8	5	45	SOT-363
TQP369185	Cascadable Gain Block	DC to 6,000	19	19.6	31.7	4.7	5	75	SOT-89

Lange Couplers

Part	Description	Frequency (GHz)	Insertion Loss (dB)	Package Style
TGB2001	Lange Coupler	12 to 21	< 0.25	Die
TGB4001	Lange Coupler	18 to 32	< 0.25	Die
TGB4002	Lange Coupler	27 to 45	< 0.25	Die

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TGA2611**	2 - 6 GHz GaN LNA	2 to 6	1.5	25	32	22	10	110	Die
TGA2611-SM**	2 - 6 GHz GaN LNA	2 to 6	1.2	25	32	22	10	100	4 x 4 mm Overmold QFN
TGA2525	2 - 18 GHz Low Noise Amplifier with AGC	2 to 18	2	17	29	22	5	75	Die
TGA2513-SM	Wideband Low Noise Amplifier	2 to 20	2.5	17	–	16	5	75	4 x 4 mm
TGA2526	2 - 20 GHz Low Noise Amplifier with AGC	2 to 20	2.5	17.5	29	22	5	100	Die

Low Noise Amplifiers (Cont.)

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TGA2567-SM*	2-20 GHz LNA Amplifier	2 to 20	2	17	29	19	5	100	QFN 4 x 4 mm 24L
TGA2513	Wideband Low Noise Amplifier	2 to 23	2	17	–	16	5	75	Die
TGA2613**	S-Band High-Linearity LNA	2.5 to 4	2.5	12.5	29	29	6	320	Die
TGA2614**	S-Band High Gain LNA	2.7 to 3.8	0.9	18	33	20	6	110	Die
TGA2614-SM**	S-Band High Gain LNA	2.7 to 3.8	1.2	17	33	19	6	120	QFN 5 x 5 mm 32L
TGA2512-1-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	16	12	5	160	4 x 4 mm
TGA2512-2-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	24	12	5	160	4 x 4 mm
TGM2543-SM**	4 - 20 GHz Limiter/Low Noise Amplifier	4 to 20	2	17	28	21	5	100	7 x 7 mm
TGA2512	X-Band Low Noise Amplifier	5 to 15	1.4	27	24	13	5	160	Die
TGA2612**	6 - 12 GHz GaN LNA	6 to 12	1.8	22	29	20	10	100	Die
TGA2511	X-Band Low Noise Amplifier	6 to 14	1.3	20	24	12	5	160	Die
TGA4506	K-Band Low Noise Amplifier	20 to 27	2.2	21	–	12	3.5	60	Die
TGA4507	Ka-Band Low Noise Amplifier	28 to 36	2.3	22	–	12	3	60	Die
TGA4508	Ka-Band Low Noise Amplifier	30 to 42	2.8	21	–	14	3	40	Die

NOTES: * = New, ** = Preview

Modulator Drivers

Part	Description	Frequency (GHz)	Vpp (V)	Gain (dB)	3 dB Bandwidth (GHz)	Voltage (V)	Current (mA)	Package Style
TGA4832	DC - 35 GHz Wideband Amplifier	DC to 35	4	12	35	5	135	Die
TGA4830	CFP Low Power Driver	DC to 40	2.5	13	40	5	50	Die
TGA4803	DC to >50 GHz Medium Power Amplifier with AGC	DC to 50+	3.5	8	> 50	6.5	100	Die

Oscillators

Part	Description	Frequency (GHz)	Power (dBm)	Phase Noise (dBc/Hz)	Voltage (V)	Current (mA)	Package (mm)
TGV2561-SM	8.9 - 9.8 GHz VCO with Divide by 2	8.9 to 9.8	16	-114 @ 100 kHz	5	195	5 x 5
TGV2562-SM	9.5 - 10.3 GHz VCO with Divide by 2	9.5 to 10.3	15	-113 @ 100 kHz	5	195	5 x 5
TGV2563-SM	9.7 - 10.8 GHz VCO with Divide by 2	9.7 to 10.8	11	-111 @ 100 kHz	5	175	5 x 5
TGV2564-SM	10.3 - 11.1 GHz VCO with Divide by 2	10.3 to 11.1	10	-111 @ 100 kHz	5	175	5 x 5
TGV2539-SM	10.7 - 11.5 GHz VCO with Divide by 2	10.7 to 11.5	10	-111 @ 100 kHz	5	185	5 x 5
TGV2565-SM	11.3 - 12.3 GHz VCO with Divide by 2	11.3 to 12.3	11	-111 @ 100 kHz	5	180	5 x 5
TGV2529-SM	12.5 - 13.5 GHz VCO with Divide by 2	12.5 to 13.5	7	-110 @ 100 kHz	5	165	5 x 5
TGV2584-SM	12.6 - 13.8 GHz VCO with Divide by 2	12.6 to 13.8	10	-110 @ 100 kHz	5	180	5 x 5
TGV2566-SM	13.4 - 14.4 GHz VCO with Divide by 2	13.4 to 14.4	9	-110 @ 100 kHz	5	175	5 x 5

Phase Shifters

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	RMS Amplitude Error (dB)	RMS Phase Error (Degrees)	Bits	Control Voltage (V)	Package Style
TGP2100	30 GHz 5 Bit Phase Shifter	Digital	28 to 32	6	0.5	5	5	0, 5	Die

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2509-FL	Wideband Packaged High Power Amplifier with AGC	2 to 20	29	15	–	–	12	1,100
TGA2509	Wideband 1 W High Power Amplifier with AGC	2 to 22	30	17	–	–	12	1,100
TGA2706-SM	2 W C-Band Packaged Power Amplifier	5.5 to 8.5	34	31	7	–	6	1,260
TGA2701-SM	3 W C-Band Packaged Power Amplifier	5.9 to 8.5	35	18	–	37	6	1,000
TGA2501	High Power Amplifier	6 to 18	34.5	24	–	20	8	1,200
TGA9092-SCC	Power Amplifier (per channel)	6 to 18	34.5	24	–	20	8	1,200
TGA9083-SCC	Power Amplifier - pHEMT	6.5 to 11.5	37, 39	19	–	40, 35	7 to 9	1,200
TGA2701	7 - 8.5 GHz High Power Amplifier	7 to 8.5	37	21	–	> 40	5 to 7	1,050
TGA2700	X-Band Driver Amplifier	8 to 13	30	25	–	–	9	300
TGA2704	9 - 10.5 GHz High Power Amplifier	9 to 10.5	38	20	–	> 40	7 to 9	1,050
TGA2704-SM**	8 W, 9 - 11 GHz Power Amplifier	9 to 11	39	21	–	–	9	1,050
TGA2710-SM**	8 W, 9.5 - 11.5 GHz Power Amplifier	9.5 to 11.5	39	22	–	–	9	1,050
TGA2535-SM	X-Band Power Amplifier	10 to 12	34.5	25	–	30	6	1,300
TGA2710	10.5 - 12 GHz High Power Amplifier	10.5 to 12	38	19	–	> 40	7 to 9	1,050
TGA2565-SM*	11 - 17 GHz Medium Power Amplifier	11 to 17	27	27	–	–	6	210
TGA2524-SM	Ku-Band Power Amplifier	12 to 16	26.5	23	7	–	5	320
TGA2527-SM	Ku-Band Power Amplifier	12.5 to 15.5	31.5	25	7.5	–	6	650
TGA2533-SM	Ku-Band Power Amplifier	12.5 to 15.5	34.5	27	–	–	6	1,300
TGA2510	2 W Ku-Band Power Amplifier	12.5 to 17	34	26	–	–	7.5	650
TGA2510-TS	2 W Ku-Band Power Amplifier	12.5 to 17	34	26	–	–	7.5	650
TGA2533	Ku-Band Power Amplifier	12.7 to 15.4	35	28	6	–	6	1,300
TGA2514-FL	6.5 W Ku-Band Power Amplifier	13 to 16	38	24	–	–	8	2,600
TGA2505	Ku-Band High Power Amplifier	13 to 17	34	25	–	–	7	640
TGA2902-1-SCC-SG	2 W Packaged Amplifier	13 to 17	34	26	–	–	7.5	650
TGA2514	6.5 W Ku-Band Power Amplifier	13 to 18	38	24	–	–	8	2,600
TGA4530	K-Band High Linearity Power Amplifier	17 to 21	30	20	–	–	5 to 7	825
TGA9088A-SCC	20 GHz Medium Power Amplifier	17 to 21	22	18.5	–	–	7	66
TGA2521-SM	17 - 24 GHz Linear Driver Amplifier	17 to 24	25	20	5	–	5	320
TGA2522-SM	17 - 24 GHz Power Amplifier	17 to 24	28	17	–	–	5	712
TGA4531	K-Band High Linearity Power Amplifier	17 to 24	32	23	6	–	7	720
TGA4502-SCC	Ka-Band High Power Amplifier	17 to 27	29	22	–	–	7	760
TGA4030-SM	17 - 37 GHz Medium Power Amplifier/Multiplier	17 to 37	19	20	–	–	5	140
TGA4031-SM	17 - 40 GHz Medium Power Amplifier/Multiplier	17 to 40	19	22	–	–	5	140
TGA4040	17 - 43 GHz Medium Power Amplifier/Multiplier	17 to 43	22	25	–	–	5	140
TGA4532	K-Band Power Amplifier	17.5 to 20	32.5	23	6	–	6	900
TGA4532-SM	K-Band Power Amplifier	17.7 to 19.7	32.5	23	7	–	6	900
TGA4534-SM	K-Band Power Amplifier	17.7 to 19.7	34	21	9	–	6	1,430
TGA4022	K-Band High Power Amplifier	18 to 23	32.5	26	–	–	7	840
TGA1135B-SCC	K-Band High Power Amplifier	18 to 27	30	14	–	–	5 to 7	540
TGA1073G-SCC	K-Band Medium Power Amplifier	19 to 27	25	22	–	–	5 to 7	220
TGA4036	19 - 38 GHz Medium Power Amplifier	19 to 38	22	20	–	–	5	160
TGA4533-SM	K-Band Power Amplifier	21.2 to 23.6	32	22	6	–	6	880
TGA4535-SM	K-Band Power Amplifier	21.2 to 23.6	34	22	8	–	6	1,430
TGA4536-SM*	K-Band Power Amplifier	24.2 to 26.5	34	18	7	20	6	1,430
TGA4902-SM	Ka-Band Packaged Medium Power Amplifier	25 to 35	25	18	–	–	6	220
TGA4544-SM	K-Band Power Amplifier	26 to 31	31.5	23	5	–	6	1100
TGA1073A-SCC	Ka-Band Medium Power Amplifier	26 to 35	25	19	–	–	5 to 7	220
TGA4509	30 GHz High Power Amplifier	27 to 31	30	22	–	–	6	420
TGA4513	27 - 31 GHz, 2 W Balanced Power Amplifier	27 to 31	33	20	–	–	6	840
TGA1073B-SCC	Ka-Band High Power Amplifier	27 to 32	28.5	25	–	–	6 to 8	420
TGA4903-SM	Ka-Band Medium Power Amplifier	27 to 32	24	15	–	–	5	170
TGA4539-SM	1 W Ka-Band Power Amplifier	28 to 30	30.5	20	–	–	6	420
TGA4509-SM	1 W Ka-Band Packaged Power Amplifier	28 to 31	30	22	–	–	6	420
TGA4906	4 W Ka-Band High Power Amplifier	28 to 31	36	24	–	–	6	1,600
TGA4906-SM	4 W Ka-Band Packaged High Power Amplifier	28 to 31	36	23	–	–	6	1,600
TGA4512-SM	Ka-Band Driver Amplifier	28 to 32	17	14.5	7.5	–	6	80

Power Amplifiers (Cont.)

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA4916	7 W Ka-Band High Power Amplifier	29 to 31	38.5	21	–	–	6	3,200
TGA4537-SM**	K-Band Power Amplifier	29 to 35	32	18	6	15	6	1,100
TGA4510	29 - 37 GHz Driver Amplifier	29 to 37	16	16	–	–	6	60
TGA4516	2 W Ka-Band Power Amplifier	30 to 40	33	18	–	–	6	1,050
TGA4516-TS	2 W Ka-Band Power Amplifier	30 to 40	33	18	–	–	6	1,050
TGA4514	2 W Ka-Band Power Amplifier	31 to 35	33.5	19	–	–	6 to 7	1,150
TGA4517	Ka-Band Power Amplifier	31 to 37	35	15	–	–	6	2,000
TGA4521	32 - 45 GHz Wideband Driver Amplifier	32 to 45	24	15	–	–	6	200
TGA1141	Ka-Band High Power Amplifier	33 to 36	31	17	–	–	6 to 7	880
TGA4522	33 - 47 GHz Wideband Driver Amplifier	33 to 47	27	14	–	–	6	400
TGA1073C-SCC	Ka-Band High Power Amplifier	36 to 40	26	15	–	–	5 to 7	240
TGA1171-SCC	Ka-Band High Power Amplifier	36 to 40	30	14	–	–	6 to 7	500
TGA4538	37 - 40 GHz Power Amplifier	37 to 40	29.5	24	–	–	5	600
TGA4542	37 - 40 GHz Power Amplifier	37 to 40	32.4	26	–	18	6	900
TGA4043	Q-Band Power Amplifier	40 to 45	29	10	–	–	7	500
TGA4543	40.5 - 43.5 GHz Power Amplifier	40.5 to 43.5	30	23	–	–	6	900
TGA4042	Q-Band Driver Amplifier	41 to 45	18	14	–	–	6	168
TGA4046	2 W Q-Band High Power Amplifier	41 to 46	33	16	–	–	6	2,000

NOTES: * = New, ** = Preview

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856019	Filter - Standard 140 High Selectivity	SAW	140	28.5	20	SE/SE	9 x 7.01
856020	Filter - Standard 140 High Selectivity	SAW	140	65	17.8	SE/SE	9 x 7.01
856073	Filter - Standard 140 High Selectivity	SAW	140	44	21.75	SE/SE	9 x 7.01
856656	Low Loss IF Filter	SAW	140	10	9.2	SE/SE	13.3 x 6.5
856684	Low Loss IF Filter	SAW	140	15	9.1	SE/SE	13.3 x 6.5
856691	Filter - Standard Low Loss	SAW	140	1.5	12.1	SE/SE, BAL/SE	9.1 x 4.8
856692	Filter - Standard Low Loss	SAW	140	3	13.6	SE/SE, BAL/BAL	9.1 x 4.8
856693	Filter - Standard Low Loss	SAW	140	6	11	BAL/BAL	9.1 x 4.8
856694	Filter - Standard Low Loss	SAW	140	7	13.6	SE/SE, BAL/BAL	9.1 x 4.8
856695	Filter - Standard Low Loss	SAW	140	10	10	BAL/BAL	9.1 x 4.8
856696	Filter - Standard Low Loss	SAW	140	14	8.5	SE/SE, BAL/BAL	9.1 x 4.8
856697	Filter - Standard Low Loss	SAW	140	20	9.8	BAL/BAL	9.1 x 4.8
856698	Filter - Standard Low Loss	SAW	140	28	18	SE/SE, BAL/BAL	9.1 x 4.8
856774	Filter - Standard Low Loss	SAW	140	56	22.3	BAL/BAL	9.1 x 4.8
856817	IF Filter	SAW	140	28.56	30	SE/SE	13.3 x 6.5
856517	IF Filter	SAW	153.6	32	13	SE/SE	13.3 x 6.5
856466	IF Filter - WiMAX	SAW	374	18	9	BAL/BAL	3.8 x 3.8
856490	Filter - Standard IF 380 MHz SAW	SAW	380	9.2	10	BAL/BAL	7 x 5.5
856631	Filter - Standard IF 380 MHz SAW	SAW	380	10.5	8.7	BAL/BAL	7 x 5.5
856652	Filter - WiMAX IF SAW	SAW	398	10	8.7	BAL/BAL	5 x 5
855731	Filter - Broadband Access	SAW	426	5.16	18.02	SE/SE	13.3 x 6.5
856549	Filter - Standard IF 456 MHz SAW	SAW	456	7.8	7.9	BAL/BAL	5 x 5
856638	Filter - Standard IF 456 MHz SAW	SAW	456	10	8.3	BAL/BAL	5 x 5
856672	Filter - Standard IF 456 MHz SAW	SAW	456	10	8.3	BAL/BAL	7 x 5.5
856288	Filter - GPS IF	SAW	465	6	1.43	SE/SE	3 x 3
855271	Filter - Standard IF 479.75 MHz SAW	SAW	479.75	11.7	19.5	SE/SE	7 x 5.5
855272	Filter - Test Equipment	SAW	479.75	25.5	9.8	SE/SE	7 x 5.5
856665	Filter - Standard IF 580 MHz SAW	SAW	580	10.5	10.7	BAL/BAL	7 x 5.5
856526	Filter - Standard IF 810 MHz SAW	SAW	810	10	3.5	SE/SE	3 x 3
856534	Filter - Standard IF 810 MHz SAW	SAW	810	5	4.6	SE/SE	3 x 3
857191	810 MHz SAW Filter	SAW	810	5	4.6	SE/SE	3 x 3

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGS2303	SP3T VPIN	0.2 to 20	0.5	35	–	–	10	Die
TGS2304-SCC	SP4T VPIN	0.2 to 20	0.6	38	23	–	10	Die
<i>TGS2352-2-SM**</i>	0.5 - 12 GHz High Power SPDT Reflective Switch	0.5 to 12	< 1	-35	20	0 to -40	–	QFN
<i>TGS2353-2-SM**</i>	0.5 - 18 GHz High Power SPDT Reflective Switch	0.5 to 18	< 1.5	-30	10	0 to -40	–	QFN
TGS2313	4 - 18 GHz VPIN SP3T Switch	4 to 18	1.0	35	20	2.7, -2.7	20	Die
TGS2302	4 - 20 GHz VPIN SPDT Switch	4 to 20	0.9	35	20	2.7, -2.7	20	Die
TGS4302	High Power Ka-Band SPDT Switch	27 to 46	0.9	27	> 33	5, -5	20	Die
TGS4304	High Power Ka-Band Absorptive SPDT Switch	32 to 40	0.9	35	> 33	5, -5	30	Die

Part	Description	Frequency (MHz)	Attenuation Range (dB)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	Voltage (V)	Current (mA)	Package (mm)
TGA4541-SM*	Ka-Band Variable Gain Driver Amplifier	28,000 to 31,000	30	32	23	31	5	330	6 x 6

The diagram illustrates a PLL-based transmitter and receiver system. The transmitter path (top) starts with an RF signal passing through an RF Filter, then a Driver Amp, and a PA (Power Amplifier) to the Antenna. The receiver path (bottom) starts with the Antenna connected to a Diplexer. The Diplexer splits the signal into two paths: one to the RF Filter and another to the PLL (Phase-Locked Loop). The PLL is connected to a VCO (Voltage-Controlled Oscillator) and a Frequency Response block. The VCO output is multiplied by the RF signal in a Multiplier (labeled xN). The output of the Multiplier is then amplified by a Gain Block and fed into a Mixer. The Mixer also receives an IF (Intermediate Frequency) signal from a Gain Block. The output of the Mixer is then filtered by an RF Filter and amplified by a Gain Block to produce the final IF signal.

The diagram illustrates a software-defined radio receiver architecture. It starts with an **Antenna** connected to a **Diplexer**. The **Diplexer** splits the signal into two paths: one to the **Power Amplifier** and another to the **Downconverter**. The **Power Amplifier** contains a **Ka Band Amp**. The **Variable Gain Amplifier** consists of two **Ka Band Amp** blocks and a **Variable Attenuator** in the middle. The **Upconverter** block contains a **Ka Band Amp** and a multiplier ($\times$) that also receives an **IF In** signal. A **LO** (Local Oscillator) signal is provided to the multiplier in the **Upconverter** and the multiplier in the **Downconverter**. The **Downconverter** also receives an **RF In** signal and produces an **IF Out** signal. A **VCO** (Voltage-Controlled Oscillator) block is connected to the **LO** signal and has a $\div 4$ output. The **VTune** input is connected to the **VCO**.

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	Range (dB)	P1dB (dBm)	Control Voltage (V)	Package Style
TGL4203-SM	DC - 30 GHz Wideband Analog Attenuator	Analog	DC to 30	1.5	16	20	-1 to 0	Die
TGL4203	50 GHz Wideband Analog Attenuator	Analog	DC to 50	2	17	15	-1 to 0	Die

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
TGF2021-04-SD	DC - 4 GHz Packaged Power pHEMT	DC to 4	16	26.5	–	0.6	–	5	15	Die
TGF2021-01	X-Band Discrete Power pHEMT	DC to 12	11	–	> 30	–	59	8 to 12	29	Die
TGF2021-02	X-Band Discrete Power pHEMT	DC to 12	11	–	> 33	–	59	8 to 12	75 to 125	Die
TGF2021-04	X-Band Discrete Power pHEMT	DC to 12	11	–	> 36	–	59	8 to 12	150 to 250	Die
TGF2021-08	X-Band Discrete Power pHEMT	DC to 12	11	–	> 39	–	59	8 to 12	300 to 500	Die
TGF2021-12	X-Band Discrete Power pHEMT	DC to 12	11	–	> 42	–	58	8 to 12	150	SOT-89
TGF2018	180 um Discrete GaAs pHEMT	DC to 20	14	–	22	1	55	8	600 to 1,000	Die
TGF2022-06	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 28	–	58	8 to 12	900 to 1,500	Die
TGF2022-12	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 31	–	58	8 to 12	45 to 75	Die
TGF2022-24	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 34	–	58	8 to 12	90 to 150	Die
TGF2022-48	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 37	–	58	8 to 12	180 to 300	Die
TGF2022-60	Ku-Band Discrete Power pHEMT	DC to 20	12	–	> 38	–	57	8 to 12	360 to 600	Die
TGF2025	250 um Discrete GaAs pHEMT	DC to 20	14	–	25	0.9	58	8	448 to 752	Die
TGF2040	400 um Discrete GaAs pHEMT	DC to 20	13	–	26	1.1	55	8	41	Die
TGF2060	600 um Discrete GaAs pHEMT	DC to 20	12	–	28	1.4	55	8	65	Die
TGF2080	800 um Discrete GaAs pHEMT	DC to 20	11.5	–	29.5	–	56	8	97	Die
TGF2120	1200 um Discrete GaAs pHEMT	DC to 20	11	31	–	–	57	8	129	Die
TGF2160	1600 um Discrete GaAs pHEMT	DC to 20	10.4	32.5	–	–	63	8	194	Die
TGF2120	1200 um Discrete GaAs pHEMT	DC to 20	11	31	–	–	57	8	258	Die
TGF2160	1600 um Discrete GaAs pHEMT	DC to 20	10.4	32.5	–	–	63	8	15	Die
TGF4350	0.3 mm, 0.25-μm mmW pHEMT 2MI	DC to 22	13 @ 10 GHz	–	16	0.8 @ 10 GHz	–	3	194	Die

Frequency Converters/Mixers

Part	Description	RF (GHz)	IF (GHz)	LO (GHz)	Gain (dB)	Output IP3 (dBm)	NF (dB)	Output P1dB (dBm)	LO Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGC2510-SM	Ku-Band Upconverter	10 to 16	DC to 3.5	6.5 to 19	17	33	–	10	0 to 6	5	300	5 x 5 mm
TGC2610-SM*	Ku-Band Downconverter	10 to 15.4	DC to 4	6 to 19	14	16	1.5	7	0 to 8	4	160	5 x 5 mm
TGC4403	8 - 15 GHz Doubler with Amplifier	16 to 30	8 to 15	–	20	–	–	20	–	5	150	Die
TGC4403-SM	8 - 15 GHz Packaged Doubler with Amplifier	16 to 30	8 to 15	–	18	–	–	20	–	5	150	4 x 4 mm
TGC4402	17 - 27 GHz Upconverting Mixer	17 to 27	0.5 to 3	14 to 28	-9	10	9	–	17	-0.9	–	Die
TGC4405*	17 - 27 GHz Upconverter	17 to 27	0.5 to 3	8 to 13	13	–	–	–	2 to 5	5	425	Die
TGC4405-SM*	17 - 27 GHz Packaged Upconverter	17 to 27	0.5 to 3	8 to 13	13	28	–	–	2	5	425	4 x 4
TGC4610-SM	K-Band Downconverter	17 to 27	DC to 4	6.5 to 15.5	15	18	2.5	–	5.5	3	228	5 x 5
TGC4510-SM	K-Band Upconverter	17.7 to 26.5	DC to 4	6.85 to 15.25	13	32	15	23	6	5, 3.3	360, 170	5 x 5
TGC4402-SM	18 - 26 GHz Packaged Upconverting Mixer	18 to 26	0.5 to 3	16 to 26	-9	10	9	–	19	-0.9	–	4 x 4 mm
TGC4408-SM	18 - 20 GHz Block Downconverter with Integrated VCO	18.3 to 20.2	0.95 to 1.95	–	8.5	1.5	6.5	-5.5	–	5	305	6 x 5
TGC1430F	Doubler	20 to 40	–	–	-12	–	–	–	–	–	–	Die
TGC4407-SM	Ka-Band Upconverter	21.5 to 32.5	DC to 7	11 to 16	-9	4	9	-5	0 to 7.5	5	65	3 x 3
TGC4406-SM	28 - 34 GHz Packaged Doubler with Amplifier	28 to 34	14 to 17	–	15	–	–	20	–	5	150	4 x 4

NOTES: * = New

Lange Couplers

Part	Description	Frequency (GHz)	Insertion Loss (dB)	Package Style
TGB2001	Lange Coupler	12 to 21	< 0.25	Die
TGB4001	Lange Coupler	18 to 32	< 0.25	Die
TGB4002	Lange Coupler	27 to 45	< 0.25	Die

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Output IP3 (dBm)	P1dB (dBm)	Voltage (V)	Current (mA)	Package Style
TGA2525	2 - 18 GHz Low Noise Amplifier with AGC	2 to 18	2	17	29	22	5	75	Die
TGA2513-SM	Wideband Low Noise Amplifier	2 to 20	2.5	17	–	16	5	75	Die
TGA2526	2 - 20 GHz Low Noise Amplifier with AGC	2 to 20	2.5	17.5	29	22	5	100	4 x 4 mm
TGA2513	Wideband Low Noise Amplifier	2 to 23	2	17	–	16	5	75	4 x 4 mm
TGA2512-1-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	16	12	5	160	Die
TGA2512-2-SM	4 - 14 GHz Balanced Low Noise Amplifier	4 to 14	2.3	25	24	12	5	160	Die
TGA2512	X-Band Low Noise Amplifier	5 to 15	1.4	27	24	13	5	160	Die
TGA2511	X-Band Low Noise Amplifier	6 to 14	1.3	20	24	12	5	160	Die
TGA4506	K-Band Low Noise Amplifier	20 to 27	2.2	21	–	12	3.5	60	Die
TGA4507	Ka-Band Low Noise Amplifier	28 to 36	2.3	22	–	12	3	60	4 x 4 mm
TGA4508	Ka-Band Low Noise Amplifier	30 to 42	2.8	21	–	14	3	40	Die
TGA4600	60 GHz Low Noise Amplifier	57 to 65	4	13	–	–	3	41	Die

Oscillators

Part	Description	Frequency (GHz)	Power (dBm)	Phase Noise (dBc/Hz)	Voltage (V)	Current (mA)	Package (mm)
TGV2561-SM	8.9 - 9.8 GHz VCO with Divide by 2	8.9 to 9.8	16	-114 @ 100 kHz	5	195	5 x 5
TGV2562-SM	9.5 - 10.3 GHz VCO with Divide by 2	9.5 to 10.3	15	-113 @ 100 kHz	5	195	5 x 5
TGV2563-SM	9.7 - 10.8 GHz VCO with Divide by 2	9.7 to 10.8	11	-111 @ 100 kHz	5	175	5 x 5
TGV2564-SM	10.3 - 11.1 GHz VCO with Divide by 2	10.3 to 11.1	10	-111 @ 100 kHz	5	175	5 x 5
TGV2539-SM	10.7 - 11.5 GHz VCO with Divide by 2	10.7 to 11.5	10	-111 @ 100 kHz	5	185	5 x 5
TGV2565-SM	11.3 - 12.3 GHz VCO with Divide by 2	11.3 to 12.3	11	-111 @ 100 kHz	5	180	5 x 5
TGV2529-SM	12.5 - 13.5 GHz VCO with Divide by 2	12.5 to 13.5	7	-110 @ 100 kHz	5	165	5 x 5
TGV2584-SM	12.6 - 13.8 GHz VCO with Divide by 2	12.6 to 13.8	10	-110 @ 100 kHz	5	180	5 x 5
TGV2566-SM	13.4 - 14.4 GHz VCO with Divide by 2	13.4 to 14.4	9	-110 @ 100 kHz	5	175	5 x 5

Phase Shifters

Part	Description	Type	Frequency (GHz)	Insertion Loss (dB)	RMS Amplitude Error (dB)	RMS Phase Error (degrees)	Bits	Control Voltage (V)	Package Style
TGP2100	30 GHz 5 Bit Phase Shifter	Digital	28 to 32	6	0.5	5	5	0, 5	Die
TGP2102	35 GHz 5 Bit Phase Shifter	Digital	32 to 37	7	0.4	3.5	5	-5, 0	Die

Power Amplifiers

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2509-FL	Wideband Packaged High Power Amplifier with AGC	2 to 20	29	15	–	–	12	–
TGA2509	Wideband 1 W High Power Amplifier with AGC	2 to 22	30	17	–	–	12	–
TGA2701-SM	3 W C-Band Packaged Power Amplifier	5.9 to 8.5	35	18	–	37	6	–
TGA2501	High Power Amplifier	6 to 18	34.5	24	–	20	8	–
TGA9092-SCC	Power Amplifier (per channel)	6 to 18	34.5	24	–	20	8	–
TGA9083-SCC	Power Amplifier - pHEMT	6.5 to 11.5	37, 39	19	–	40, 35	7 to 9	–
TGA2565-SM*	11 - 17 GHz Medium Power Amplifier	11 to 17	27	27	–	–	6	–
TGA2524-SM	Ku-Band Power Amplifier	12 to 16	26.5	23	7	–	5	–

Power Amplifiers (Cont.)

Part	Description	Frequency (GHz)	Power (dBm)	Gain (dB)	NF (dB)	PAE (%)	Voltage (V)	IQ (mA)
TGA2527-SM	Ku-Band Power Amplifier	12.5 to 15.5	31.5	25	7.5	—	6	650
TGA2533-SM	Ku-Band Power Amplifier	12.5 to 15.5	34.5	27	—	—	6	1,300
TGA2510	2 W Ku-Band Power Amplifier	12.5 to 17	34	26	—	—	7.5	650
TGA2510-TS	2 W Ku-Band Power Amplifier	12.5 to 17	34	26	—	—	7.5	650
TGA2533	Ku-Band Power Amplifier	12.7 to 15.4	35	28	6	—	6	1,300
TGA2514-FL	6.5 W Ku-Band Power Amplifier	13 to 16	38	24	—	—	8	2,600
TGA2505	Ku-Band High Power Amplifier	13 to 17	34	25	—	—	7	640
TGA2902-1-SCC-SG	2 W Packaged Amplifier	13 to 17	34	26	—	—	7.5	650
TGA2514	6.5 W Ku-Band Power Amplifier	13 to 18	38	24	—	—	8	2,600
TGA4530	K-Band High Linearity Power Amplifier	17 to 21	30	20	—	—	5 to 7	825
TGA9088A-SCC	20 GHz Medium Power Amplifier	17 to 21	22	18.5	—	—	7	66
TGA2521-SM	17 - 24 GHz Linear Driver Amplifier	17 to 24	25	20	5	—	5	320
TGA2522-SM	17 - 24 GHz Power Amplifier	17 to 24	28	17	—	—	5	712
TGA4502-SCC	Ka-Band High Power Amplifier	17 to 27	29	22	—	—	7	760
TGA4030-SM	17 - 37 GHz Medium Power Amplifier/Multiplier	17 to 37	19	20	—	—	5	825
TGA4031-SM	17 - 40 GHz Medium Power Amplifier/Multiplier	17 to 40	19	22	—	—	5	140
TGA4040	17 - 43 GHz Medium Power Amplifier/Multiplier	17 to 43	22	25	—	—	5	140
TGA4532	K-Band Power Amplifier	17.5 to 20	32.5	23	6	—	6	900
TGA4532-SM	K-Band Power Amplifier	17.7 to 19.7	32.5	23	7	—	6	900
TGA4022	K-Band High Power Amplifier	18 to 23	32.5	26	—	—	7	840
TGA1135B-SCC	K-Band High Power Amplifier	18 to 27	30	14	—	—	5 to 7	540
TGA1073G-SCC	K-Band Medium Power Amplifier	19 to 27	25	22	—	—	5 to 7	220
TGA4036	19 - 38 GHz Medium Power Amplifier	19 to 38	22	20	—	—	5	160
TGA4536-SM*	K-Band Power Amplifier	24.2 to 26.5	34	18	7	20	6	1,430
TGA4902-SM	Ka-Band Packaged Medium Power Amplifier	25 to 35	25	18	—	—	6	220
TGA1073A-SCC	Ka-Band Medium Power Amplifier	26 to 35	25	19	—	—	5 to 7	220
TGA2594**	27 - 31 GHz 5 W GaN Power Amplifier	27 to 31	37	23	—	28	20	140
TGA4509	30 GHz High Power Amplifier	27 to 31	30	22	—	—	6	420
TGA4513	27 - 31 GHz, 2 W Balanced Power Amplifier	27 to 31	33	20	—	—	6	840
TGA1073B-SCC	Ka-Band High Power Amplifier	27 to 32	28.5	25	—	—	6 to 8	420
TGA4903-SM	Ka-Band Medium Power Amplifier	27 to 32	24	15	—	—	5	170
TGA2595**	27.5 - 31 GHz 9 W Power Amplifier	27.5 to 31	39.5	23	—	24	20	280
TGA4539-SM	1 W Ka-Band Power Amplifier	28 to 30	30.5	20	—	—	6	420
TGA4509-SM	1 W Ka-Band Packaged Power Amplifier	28 to 31	30	22	—	—	6	420
TGA4906	4 W Ka-Band High Power Amplifier	28 to 31	36	24	—	—	6	1,600
TGA4906-SM	4 W Ka-Band Packaged High Power Amplifier	28 to 31	36	23	—	—	6	1,600
TGA4512-SM	Ka-Band Driver Amplifier	28 to 32	17	14.5	7.5	—	6	80
TGA4916	7 W Ka-Band High Power Amplifier	29 to 31	38.5	21	—	—	6	3,200
TGA4537-SM**	K-Band Power Amplifier	29 to 35	32	18	6	15	6	1,100
TGA4510	29 - 37 GHz Driver Amplifier	29 to 37	16	16	—	—	6	60
TGA4516	2 W Ka-Band Power Amplifier	30 to 40	33	18	—	—	6	1,050
TGA4516-TS	2 W Ka-Band Power Amplifier	30 to 40	33	18	—	—	6	1,050
TGA4514	2 W Ka-Band Power Amplifier	31 to 35	33.5	19	—	—	6 to 7	1,150
TGA4517	Ka-Band Power Amplifier	31 to 37	35	15	—	—	6	2,000
TGA4521	32 - 45 GHz Wideband Driver Amplifier	32 to 45	24	15	—	—	6	200
TGA1141	Ka-Band High Power Amplifier	33 to 36	31	17	—	—	6 to 7	880
TGA4522	33 - 47 GHz Wideband Driver Amplifier	33 to 47	27	14	—	—	6	400
TGA1073C-SCC	Ka-Band High Power Amplifier	36 to 40	26	15	—	—	5 to 7	240
TGA1171-SCC	Ka-Band High Power Amplifier	36 to 40	30	14	—	—	6 to 7	500
TGA4538	37 - 40 GHz Power Amplifier	37 to 40	29.5	24	—	—	5	600
TGA4043	Q-Band Power Amplifier	40 to 45	29	10	—	—	7	500
TGA4042	Q-Band Driver Amplifier	41 to 45	18	14	—	—	6	168
TGA4046	2 W Q-Band High Power Amplifier	41 to 46	33	16	—	—	6	2,000

NOTES: * = New, ** = Preview

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
880126	2106 MHz RF BAW Filter	BAW	2,106	35	4 max	SE/SE	3.26 x 1.6

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TGS2303	SP3T VPIN	0.2 to 20	0.5	35	–	–	10	Die
TGS2304-SCC	SP4T VPIN	0.2 to 20	0.6	38	23	–	10	Die
TGS2313	4 - 18 GHz VPIN SP3T Switch	4 to 18	1.0	35	20	2.7, -2.7	20	Die
TGS2302	4 - 20 GHz VPIN SPDT Switch	4 to 20	0.9	35	20	2.7, -2.7	20	Die
TGS4302	High Power Ka-Band SPDT Switch	27 to 46	0.9	27	> 33	5, -5	20	Die
TGS4304	High Power Ka-Band Absorptive SPDT Switch	32 to 40	0.9	35	> 33	5, -5	30	Die

Variable Gain Amplifiers

Part	Description	Frequency (MHz)	Attenuation Range (dB)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	Voltage (V)	Current (mA)	Package (mm)
TGA4541-SM*	Ka-Band Variable Gain Driver Amplifier	28,000 to 31,000	30	32	23	31	5	330	6 x 6

NOTES: * = New

Bluetooth Power Amplifiers

Part	Description	Bands	Features	Package (mm)
TQP770001	Bluetooth® EDR v2.0 Class 1 Power Amplifier MMIC	2.4 to 2.5 GHz ISM Band	STSLP-12 Package	2 x 2 x 0.57

Discrete Transistors

Part	Description	Frequency (GHz)	Linear Gain (dB)	P1dB (dBm)	Psat (dBm)	NF (dB)	PAE (%)	Voltage (V)	Current (mA)	Package Style
CLY2	GaAs FET	DC to 3	14.5	23.5	–	0.79	–	3	180	MW6
TGF2021-01	X-Band Discrete Power pHEMT	DC to 12	11	–	> 30	–	59	8 to 12	75 to 125	Die
TGF2021-02	X-Band Discrete Power pHEMT	DC to 12	11	–	> 33	–	59	8 to 12	150 to 250	Die
TGF2021-04	X-Band Discrete Power pHEMT	DC to 12	11	–	> 36	–	59	8 to 12	300 to 500	Die
TGF2021-08	X-Band Discrete Power pHEMT	DC to 12	11	–	> 39	–	59	8 to 12	600 to 1,000	Die
TGF2021-12	X-Band Discrete Power pHEMT	DC to 12	11	–	> 42	–	58	8 to 12	900 to 1,500	Die
TGF2022-06	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 28	–	58	8 to 12	45 to 75	Die
TGF2022-12	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 31	–	58	8 to 12	90 to 150	Die
TGF2022-24	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 34	–	58	8 to 12	180 to 300	Die
TGF2022-48	Ku-Band Discrete Power pHEMT	DC to 20	13	–	> 37	–	58	8 to 12	360 to 600	Die
TGF2022-60	Ku-Band Discrete Power pHEMT	DC to 20	12	–	> 38	–	57	8 to 12	448 to 752	Die
TGF4350	0.3 mm, 0.25- μ m mmW pHEMT 2MI	DC to 22	13 @ 10 GHz	–	16	0.8 @ 10 GHz	–	3	15	Die
CLY5	GaAs FET	0.4 to 2.5	11	27	–	1.7	–	3	350	MW6
TGA2602-SM	Dual GaAs pHEMT	0.8 to 3	20.5	20	–	0.55	–	4	100	2 x 2 mm

Frequency Converters/Mixers

Part	Description	RF (GHz)	IF (GHz)	LO (GHz)	Gain (dB)	Output IP3 (dBm)	NF (dB)	Output P1dB (dBm)	LO Power (dBm)	Voltage (V)	Current (mA)	Package (mm)
CMY210	Mixer with LO Amplifier	0.5 to 2.5	0.05 to 0.25	0.5 to 2.5	-5.7	18.3	6	8	0	3	6	MW-6
CMY212	Downconverter with LO, IF Amplifiers	0.5 to 2.5	0.05 to 0.25	0.5 to 2.5	10	20	8	8	-4	3	11	SCT598
CMY213	Downconverter with LO, IF Amplifiers	0.5 to 2.5	0.05 to 0.25	0.5 to 2.5	9.5	19.5	8	8	-5	3	8	SCT598

Gain Block Amplifiers

Part	Description	Frequency (MHz)	Gain (dB)	P1dB (dBm)	Output IP3 (dBm)	NF (dB)	Voltage (V)	Current (mA)	Package Style
TQP369180	Cascadable Gain Block	DC to 6,000	15.7	15.2	29.8	3.6	5	45	SOT-89
TQP369181	Cascadable Gain Block	DC to 6,000	15.6	15.2	30	3.6	5	45	SOT-363
TQP369182	Cascadable Gain Block	DC to 6,000	22.3	16.1	29.6	3.8	5	45	SOT-89
TQP369184	Cascadable Gain Block	DC to 6,000	22	16.2	29.8	3.8	5	45	SOT-363
TQP369185	Cascadable Gain Block	DC to 6,000	19	19.6	31.7	4.7	5	75	SOT-89

Low Noise Amplifiers

Part	Description	Frequency (GHz)	NF (dB)	Gain (dB)	Voltage (V)	Current (mA)	Package Style
TGA4600	60 GHz Low Noise Amplifier	57 to 65	4	13	3	41	Die

Modulator Drivers

Part	Description	Frequency (GHz)	Vpp (V)	Gain (dB)	3 dB Bandwidth (GHz)	Voltage (V)	Current (mA)	Package Style
TGA4832	DC - 35 GHz Wideband Amplifier	DC to 35	4	12	35	5	135	Die
TGA4830	CFP Low Power Driver	DC to 40	2.5	13	40	5	50	Die

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
855377	Filter - Wireless Data	SAW	350	2.4	8.2	SE/SE	7 x 5.5
855653	Filter - Wireless Data	SAW	374	17	8.5	SE/SE, BAL/BAL	7 x 5.5
855898	Filter - Wireless Data	SAW	374	17	8.5	SE/SE, BAL/BAL	5 x 5
855954	Filter - Wireless Data	SAW	380	7.3	9.5	SE/SE	3.8 x 3.8
855959	549.5 MHz SAW Filter	SAW	549.5	10	11.8	SE/SE	7.01 x 5.51
855942-1	Filter - Wireless Data	SAW	770	17	4.74	BAL/BAL	5 x 5
857191	810 MHz SAW Filter	SAW	810	5	4.6	SE/SE	3 x 3
880371	915 MHz ISM BAW Filter	BAW	915	13	3	SE/SE	6.39 x 4.61
856338	970 MHz SAW Filter	SAW	970	9	24	SE/SE	9.1 x 4.8
856339	970 MHz SAW Filter	SAW	970	18	24.7	SE/SE	7 x 5.5
856256	Filter - Wireless Data	SAW	1,150	16	4.4	BAL/BAL	3 x 3
880404*	1575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	35	1.5	SE/SE	3.71 x 2.57
885070*	2436 MHz BAW Filter - ISM Passband for WiFi Bandedge and LTE Coexistence	BAW	2,436	72	0.7	SE/SE	1.7x1.3
885017	2436 MHz BAW Filter - ISM Passband for Coexistence	BAW	2,436	72	1.8	SE/SE	1.4 x 1.2
857005	2437 MHz SAW Filter	SAW	2,437	66	2.1	SE/SE	1.4 x 1.2
885062*	2440 MHz BAW Filter - ISM Passband for WLAN/LTE Coexistence	BAW	2,440	82	1.6	SE/SE	1.4 x 1.2
885071*	2440 MHz BAW Filter - ISM Passband for WLAN/LTE Coexistence	BAW	2,440	82	1.6	SE/SE	1.4 x 1.2

SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
885008	2440 MHz BAW Filter - ISM Notch for Coexistence	BAW	2,440	71	1.5 (Out of Band IL)	SE/SE	1.7 x 1.3
885010	2440 MHz BAW Filter - ISM Notch for Coexistence	BAW	2,440	82	2 (Out of Band IL)	SE/SE	1.7 x 1.3
856539	Bluetooth SAW Filter	SAW	2,441	83.5	2	SE/SE	1.4 x 1.2
855916	Filter - ISM Band RF Bluetooth/WLAN	SAW	2,441.80	83.5	2.76	SE/SE	3 x 3
885009	2535 MHz RF BAW Filter - Band 7 Uplink	BAW	2,535	70	1.3	SE/SE	3 x 3
880369	5775 MHz WLAN 802.11a BAW Filter	BAW	5,775	100	3	SE/SE	3.26 x 1.6

NOTES: * = New

Switches

Part	Description	Frequency (GHz)	Insertion Loss (dB)	ISO (dB)	Input Power (dBm)	Voltage (V)	Current (mA)	Package Style
TQP4M0008	Low Loss Reflective SPDT Switch	0.1 to 6	0.4	26	37	3.3	0.015	2 x 2 mm
TQP4M0009	High Isolation Reflective SPDT Switch	0.1 to 5	0.6	54	33	3.3	0.015	8-pin MSOP
TQP4M0011	Low Loss Reflective SP3T Switch	0.1 to 6	0.6	34	34	3.3	0.015	12-pin 3 x 3 mm QFN Package
TQS5200	SPDT 802.11a/b/g	1 to 6	0.6	28	31.5	3, 0	< 0.05	2 x 1.3 mm
TQS5202	Diversity Switch 802.11a/b/g	1 to 6	0.8	33	33	3, 0	< 0.05	3 x 3 mm

WLAN Front End Modules

Part	Description	Frequency (GHz)	802.11 Standards	Typ Pout 1.78% EVM (dBm)	Typ Pout 3.0% EVM (dBm)	Tx Gain (dB)	Rx Gain (dB)	Rx NF (dB)	Nom Bias Voltage (V)	Current (mA)	Package (mm)
TQP5523*	5 GHz WLAN 802.11a/n/ac Power Amplifier (+22dBm)	4.9 to 5.925	a/n/ac	22	24	32	—	—	3.3, 5	315	4 x 4 x 0.85
TQP5525*	5 GHz WLAN 802.11a/n/ac Power Amplifier (+24dBm)	4.9 to 5.925	a/n/ac	24	26	32	—	—	3.3, 5	550	4 x 4 x 0.85
TQL1600*	5 GHz WLAN Switch / LNA Front End Module	5.15 to 5.875	a/n/ac	—	—	—	13	2.5	3.3, 5	8	2.5 x 2.5 x 0.45
TQP8080	5 GHz WLAN 802.11a/n/ac Front End Module with PA + Pdet, SP2T and LNA	5.15 to 5.875	a/n/ac	18	20	29.5	13	2.5	5	240	2.5 x 2.5 x 0.4

NOTES: * = New

Duplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856931	LTE Band 17 SAW Duplexer	SAW	710, 740	12	1.8, 1.9	SE/SE, SE/BAL	2.5 x 2
856879	LTE Band 13 SAW Duplexer	SAW	751, 782	10	1.85, 2.2	SE/SE, SE/BAL	2.5 x 2
TQQ1013**	Band 13 LTE SE/SE Duplexer	SAW	777 to 787, 746 to 756	10	2.4	SE/SE	2.5 x 2.5
856979	LTE Band 20 TC SAW Duplexer	TC SAW	806, 847	30	2.5, 3	SE/SE, SE/BAL	2.5 x 2
856999	CDMA BC10 SAW Duplexer	SAW	833, 878	32	2.5, 2.5	SE/BAL	2.5 x 2
856908	Cell Band SAW Duplexer	SAW	836.5, 881.5	25	2, 2.5	SE/SE	3.8 x 3.8
856565*	CDMA 2-in-1 Rx Filter	SAW	881.5, 1,960	25, 60	1.6, 2.2	SE/BAL	2 x 1.5
TQM2M9016	GPS-SDARS Antenna Diplexer	–	1,575.42, 2,332.5	3, 25	0.6, 0.8	SE/SE	3 x 3
TQQ2504**	B4, B25 LTE SE/SE Duplexer	SAW / BAW	1,850 to 1,915	65	2	SE/SE	3.6 x 2 x 0.9
TQM966002	PCS BAW Duplexer	BAW	1,880, 1,960	60	1.8, 1.9	SE/SE	2.5 x 2
TQM969001	PCS BAW Duplexer	BAW	1,880, 1,960	60	1.32, 1.52	SE/SE	3.8 x 3.8
TQM963014	LTE BC14/Band 25 BAW Duplexer	BAW	1,882.5, 1,962.5	65	1.8, 2.2	SE/SE	2.5 x 2
TQM976027*	B7 BAW Duplexer	BAW	2,500 to 2,570, 2,620 to 2,690	60	1.32, 1.52	SE/SE	3.8 x 3.8

NOTES: * = New, ** = Preview

Filter/Duplexer Modules

Part	Description	Bands	Features	Package (mm)
TQM9M9030*	Dual-Band Duplexer Bank	Band 1 Duplexer, Band 8 Duplexer, DCS Filter	Low Insertion Loss with Excellent Attenuation	3.6 x 5 x 1
TQQ2526**	B25 PCS/B26 Cellular Bands Duplexer Bank Module	B25, B26	Duplexer Bank for B25/B26 Applications	2.8 x 4.7 x 1

NOTES: * = New, ** = Preview

Diplexers

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
890086**	1176.45/1575.42 MHz High Attenuation SAW Diplexer	SAW	1,176.45, 1,575.42	20.46	3.5	SE/SE	5 x 5
890087**	1176.45/1575.42 MHz Low Loss SAW Diplexer	SAW	1,176.45, 1,575.42	20.46	0.9	SE/SE	5 x 5
890084**	1227.6/1575.42 MHz High Attenuation SAW Diplexer	SAW	1,227.6, 1,575.42	20.46	3.5	SE/SE	5 x 5
890085**	1227.6/ 575.42 MHz Low Loss SAW Diplexer	SAW	1,227.6, 1,575.42	20.46	0.9	SE/SE	5 x 5
TQM2M9016	GPS-SDARS Antenna Diplexer	–	1,575.42, 2,332.5	3, 25	0.6, 0.8	SE/SE	3 x 3

NOTES: ** = Preview

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
855748	Filter - Broadband Access	SAW	36.15	8.14	20.59	SE/SE	27.2 x 12.6
855079	Filter - Broadband Access	SAW	44	6	20.3	SE/SE	27.2 x 12.6
856129	Filter - Broadband Access	SAW	44	6	20.8	SE/SE	24.6 x 9
854651	Filter - Standard Low Loss	SAW	70	0.55	7.6	SE/SE	19 x 6.5
854652	Filter - Standard Low Loss	SAW	70	1.1	7.3	SE/SE	19 x 6.5
854653	Filter - Standard Low Loss	SAW	70	1.52	7.5	SE/SE	19 x 6.5
854654	Filter - Standard Low Loss	SAW	70	2.1	7.85	SE/SE	19 x 6.5
854655	Filter - Standard Low Loss	SAW	70	2.59	8.75	SE/SE	19 x 6.5
854656	Filter - Standard Low Loss	SAW	70	3.5	6.95	SE/SE	13.3 x 6.5
854657	Filter - Standard Low Loss	SAW	70	3.8	7.25	SE/SE	13.3 x 6.5
854658	Filter - Standard Low Loss	SAW	70	4.45	6.8	SE/SE	13.3 x 6.5
854659	Filter - Standard Low Loss	SAW	70	4.9	6.8	SE/SE	13.3 x 6.5
854660	Filter - Standard Low Loss	SAW	70	5.35	7.25	SE/SE	13.3 x 6.5
854661	Filter - Standard Low Loss	SAW	70	6.35	7.5	SE/SE	13.3 x 6.5
854662	Filter - Standard Low Loss	SAW	70	7.4	8.5	SE/SE	13.3 x 6.5
854663	Filter - Standard Low Loss	SAW	70	8.4	9	SE/SE	13.3 x 6.5
854664	Filter - Standard Low Loss	SAW	70	9.4	9.75	SE/SE	13.3 x 6.5
854665	Filter - Standard Low Loss	SAW	70	10.45	10	SE/SE	13.3 x 6.5
854666	Filter - Standard Low Loss	SAW	70	12.5	11.5	SE/SE	13.3 x 6.5
854667	Filter - Standard Low Loss	SAW	70	14.45	12.5	SE/SE	13.3 x 6.5
854668	Filter - Standard Low Loss	SAW	70	16.5	12.5	SE/SE	13.3 x 6.5
854669	Filter - Standard Low Loss	SAW	70	18.5	13.5	SE/SE	13.3 x 6.5
854670	Filter - Standard Low Loss	SAW	70	20	14.5	SE/SE	13.3 x 6.5
854671	Filter - Standard Low Loss	SAW	70	22.3	15	SE/SE	13.3 x 6.5
854672	Filter - Standard Low Loss	SAW	70	24.45	16.25	SE/SE	13.3 x 6.5
854673	Filter - Standard Low Loss	SAW	70	26.4	17	SE/SE	13.3 x 6.5
854674	Filter - Standard Low Loss	SAW	70	28.5	17.6	SE/SE	13.3 x 6.5
854675	Filter - Standard Low Loss	SAW	70	30.3	17.5	SE/SE	13.3 x 6.5
854678	Filter - Standard Low Loss	SAW	70	36.2	20.2	SE/SE	13.3 x 6.5
854680	Filter - Standard Low Loss	SAW	70	40.35	21.5	SE/SE	13.3 x 6.5
855107	IF SAW Filter - CDMA	SAW	70	1.228	19	SE/SE	74.7 x 18.9
855735	Filter - Standard 70 High Selectivity	SAW	70	0.31	16.36	SE/SE	24.6 x 9
855736	Filter - Standard 70 High Selectivity	SAW	70	0.7	21.3	SE/SE	24.6 x 9
855737	Filter - Standard 70 High Selectivity	SAW	70	1	22.2	SE/SE	24.6 x 9
855738	Filter - Standard 70 High Selectivity	SAW	70	1	21.6	SE/SE	24.6 x 9
855739	Filter - Standard 70 High Selectivity	SAW	70	2.2	23	SE/SE	19 x 6.5
855740	Filter - Standard 70 High Selectivity	SAW	70	2.7	20.25	SE/SE	19 x 6.5
855741	Filter - Standard 70 High Selectivity	SAW	70	3.1	23	SE/SE	19 x 6.5
855743	Filter - Standard 70 High Selectivity	SAW	70	4.4	23	SE/SE	19 x 6.5
855744	Filter - Standard 70 High Selectivity	SAW	70	4.9	23.7	SE/SE	19 x 6.5
855745	Filter - Standard 70 High Selectivity	SAW	70	5.7	22.2	SE/SE	19 x 6.5
856980	70 MHz IF SAW Filter	SAW	70	2.5	9	SE/SE	13.3 x 6.5
857174	70 MHz SAW Filter	SAW	70	4.9	25.5 max	SE/SE	19 x 6.5
857175	70 MHz SAW Filter	SAW	70	5.7	21	SE/SE	19 x 6.5
856152	73 MHz SAW Filter	SAW	73	0.3	6	SE/SE	24.6 x 9
855679	Filter - Broadband Wireless Access	SAW	80	8	11.9	SE/SE	13.3 x 6.5

SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
854823	Filter - GSM BTS	SAW	86.6	0.40 min	5.5	SE/SE	19 x 6.5
855659	Filter - Broadband Access	SAW	110.59	0.79	6.52	SE/SE	13.3 x 6.5
855884	IF SAW Filter - GSM	SAW	125	0.4	5.7	SE/SE	13.3 x 6.5
856444	IF SAW Filter - GSM	SAW	125	0.4	5.9	SE/SE	9.1 x 4.8
854909	Filter - Standard Low Loss	SAW	140	4.6	10.85	SE/SE	13.3 x 6.5
854913	Filter - Standard Low Loss	SAW	140	7.148	5.5	SE/SE	13.3 x 6.5
854916	Filter - Standard Low Loss	SAW	140	10.59	8.3	SE/SE	13.3 x 6.5
854917	Filter - Standard Low Loss	SAW	140	12.4	8.87	SE/SE	13.3 x 6.5
854919	Filter - Standard Low Loss	SAW	140	16.9	8.4	SE/SE	13.3 x 6.5
854920	Filter - Standard Low Loss	SAW	140	18	9.1	SE/SE	13.3 x 6.5
854923	Filter - Standard Low Loss	SAW	140	24.26	11.33	SE/SE	13.3 x 6.5
854927	Filter - Standard Low Loss	SAW	140	33.4	11.5	SE/SE	13.3 x 6.5
855579	140 MHz SAW Filter	SAW	140	1.7	11	SE/SE	19 x 6.5
856019	Filter - Standard 140 High Selectivity	SAW	140	28.5	20	SE/SE	9 x 7.01
856020	Filter - Standard 140 High Selectivity	SAW	140	65	17.8	SE/SE	9 x 7.01
856062	Filter - Standard 140 High Selectivity	SAW	140	0.75	20.8	SE/SE	19 x 6.5
856063	Filter - Standard 140 High Selectivity	SAW	140	1.5	21.9	SE/SE	19 x 6.5
856064	Filter - Standard 140 High Selectivity	SAW	140	2	21.5	SE/SE	19 x 6.5
856065	Filter - Standard 140 High Selectivity	SAW	140	3	22.4	SE/SE	19 x 6.5
856066	Filter - Standard 140 High Selectivity	SAW	140	6.2	23	SE/SE	13.3 x 6.5
856067	Filter - Standard 140 High Selectivity	SAW	140	7.1	24.5	SE/SE	13.3 x 6.5
856068	Filter - Standard 140 High Selectivity	SAW	140	8.2	23.4	SE/SE	13.3 x 6.5
856069	Filter - Standard 140 High Selectivity	SAW	140	10	20.87	SE/SE	13.3 x 6.5
856070	Filter - Standard 140 High Selectivity	SAW	140	14.1	23.3	SE/SE	13.3 x 6.5
856071	Filter - Standard 140 High Selectivity	SAW	140	16.2	21.7	SE/SE	13.3 x 6.5
856072	Filter - Standard 140 High Selectivity	SAW	140	33.2	21.7	SE/SE	9 x 7.01
856073	Filter - Standard 140 High Selectivity	SAW	140	44	21.75	SE/SE	9 x 7.01
856074	Filter - Standard 140 High Selectivity	SAW	140	57	18.65	SE/SE	9 x 7.01
856314	Filter - Standard 140 High Selectivity	SAW	140	72	21	SE/SE	9 x 7.01
856592	Low Loss IF Filter	SAW	140	21.6	9.3	SE/SE	13.3 x 6.5
856656	Low Loss IF Filter	SAW	140	10	9.2	SE/SE	13.3 x 6.5
856684	Low Loss IF Filter	SAW	140	15	9.1	SE/SE	13.3 x 6.5
856691	Filter - Standard Low Loss	SAW	140	1.5	12.1	SE/SE, BAL/SE	9.1 x 4.8
856692	Filter - Standard Low Loss	SAW	140	3	13.6	SE/SE, BAL/BAL	9.1 x 4.8
856693	Filter - Standard Low Loss	SAW	140	6	11	BAL/BAL	9.1 x 4.8
856694	Filter - Standard Low Loss	SAW	140	7	13.6	SE/SE, BAL/BAL	9.1 x 4.8
856695	Filter - Standard Low Loss	SAW	140	10	10	BAL/BAL	9.1 x 4.8
856696	Filter - Standard Low Loss	SAW	140	14	8.5	SE/SE, BAL/BAL	9.1 x 4.8
856697	Filter - Standard Low Loss	SAW	140	20	9.8	BAL/BAL	9.1 x 4.8
856698	Filter - Standard Low Loss	SAW	140	28	18	SE/SE, BAL/BAL	9.1 x 4.8
856774	Filter - Standard Low Loss	SAW	140	56	22.3	BAL/BAL	9.1 x 4.8
856817	IF Filter	SAW	140	28.56	30	SE/SE	13.3 x 6.5
856929	IF SAW Filter - Multi-Standard	SAW	140	18.4	9.1	SE/SE	7 x 5.5

SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
857176	140 MHz SAW Filter	SAW	140	28.5	19.75	SE/SE	9 x 7.01
857177	140 MHz SAW Filter	SAW	140	1.5	23.5	SE/SE	19 x 6.5
855395	IF SAW Filter - CDMA	SAW	141	1.18	11.7	SE/SE	19 x 6.5
856727	IF Filter	SAW	144	75	21.2	SE/SE	9 x 7.01
854833-1	Filter - CDMA BTS	SAW	150	1.18	19.5	SE/SE	19 x 6.5
855678	Filter - Other BTS	SAW	150	8	12.1	SE/SE	13.3 x 6.5
856517	IF Filter	SAW	153.6	32	13	SE/SE	13.3 x 6.5
856748	IF SAW Filter - Multi-Standard	SAW	153.6	18.3	10	SE/SE	13.3 x 6.5
855886	161.5 MHz SAW Filter	SAW	161.5	25	22	SE/SE	9 x 7.01
856683	WCDMA IF Filter	SAW	167	5	8	SE/SE, BAL/BAL	9.1 x 4.8
856512	IF SAW Filter - Multi-Standard	SAW	168.5	26.4	8	SE/SE, SE/BAL	5 x 5
856447	IF SAW Filter - GSM	SAW	170.6	0.18	5.59	SE/SE	13.3 x 6.5
856582	Filter - 3G BTS	SAW	172.8	18	8.7	SE/SE	7 x 5.5
856620	IF SAW Filter - WCDMA	SAW	172.8	8.84	9	SE/SE, SE/BAL	7 x 5.5
856802	IF SAW Filter - Multi-Standard	SAW	172.8	20	8	SE/SE, SE/BAL	5 x 5
856893	IF SAW Filter - Multi-Standard	SAW	172.8	21	8.2	BAL/BAL	7 x 5.5
856234	Filter - CDMA IF	SAW	183.6	1.26	7.4	SE/BAL, BAL/BAL	7 x 5.5
857124	184.32 MHz SAW Filter	SAW	184.32	25	7.8	BAL/BAL	7 x 5.5
855529	IF SAW Filter - WCDMA	SAW	190	4	9.8	SE/SE	13.3 x 6.5
855625	IF SAW Filter - GSM	SAW	190	0.2	4.2	SE/SE	7 x 5.5
855770	Filter - 3G BTS	SAW	190	5	8	SE/SE	5 x 5
856731	IF SAW Filter - Multi-Standard	SAW	192	60	13.5	SE/BAL, SE/SE	7 x 5.5
857071	192.5 MHz SAW Filter	SAW	192.5	67.5	17	BAL/BAL	7 x 5.5
856541	IF SAW Filter - GSM	SAW	201	0.22	6.1	BAL/BAL	13.3 x 6.5
855068	Filter - Broadband Access	SAW	202.75	1.1	6.6	SE/SE	13.3 x 6.5
855816	205 MHz SAW Filter	SAW	205	1.3	22	SE/SE	13.3 x 6.5
855885	IF SAW Filter - GSM	SAW	208	0.4	5	SE/SE	13.3 x 6.5
856445	IF SAW Filter - GSM	SAW	208	0.4	5.88	SE/SE	9.1 x 4.8
856496	IF SAW Filter - WCDMA	SAW	208	3.84	11.5	BAL/BAL	9.1 x 4.8
856378	IF Filter, GSM	SAW	211	0.2	5.2	SE/SE	13.3 x 6.5
855992	Filter - CDMA BTS	SAW	240	3.6	14.3	SE/SE	13.3 x 6.5
857072	242.5 MHz SAW Filter	SAW	242.5	27.6	9	BAL/BAL	7 x 5.5
855549	242.625 MHz SAW Filter	SAW	242.625	1.3	18.7	SE/SE	19 x 6.5
856140	310.7 MHz SAW Filter	SAW	310.7	3	3	SE/SE	5 x 5
855595	320 MHz SAW Filter	SAW	320	22	19.3	SE/SE	9 x 7.01
855596	320 MHz SAW Filter	SAW	320	22	19.4	SE/SE	9 x 7.01
855914	Filter - 3G BTS	SAW	326.4	17.4	12.61	SE/SE	7.01 x 5.51
854565	350 MHz SAW Filter	SAW	350	1.2	10.2	SE/SE	13.3 x 6.5
855377	Filter - Wireless Data	SAW	350	2.4	8.2	SE/SE	7 x 5.5
855399	Filter - Broadband Wireless Access	SAW	350	2.62	13.7	SE/SE, BAL/BAL	13.3 x 6.5
856771	IF SAW Filter - Multi-Standard	SAW	358.4	19.2	10.1	BAL/BAL	7 x 5.5
856882	IF SAW Filter	SAW	358.4	39.6	9.5	BAL/BAL	7 x 5.5
856966	IF SAW Filter - Multi-Standard	SAW	358.4	24.8	9	BAL/BAL	7 x 5.5
855653	Filter - Wireless Data	SAW	374	17	8.5	SE/SE, BAL/BAL	7 x 5.5
855898	Filter - Wireless Data	SAW	374	17	8.5	SE/SE, BAL/BAL	5 x 5
856466	IF Filter - WiMAX	SAW	374	18	9	BAL/BAL	3.8 x 3.8
855954	Filter - Wireless Data	SAW	380	7.3	9.5	SE/SE	3.8 x 3.8
856490	Filter - Standard IF 380 MHz SAW	SAW	380	9.2	10	BAL/BAL	7 x 5.5
856631	Filter - Standard IF 380 MHz SAW	SAW	380	10.5	8.7	BAL/BAL	7 x 5.5

SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
857073	397.5 MHz SAW Filter	SAW	397.5	66.7	16.6	BAL/BAL	7 x 5.5
855559	IF SAW Filter - WCDMA	SAW	398	22	7.5	SE/SE	7 x 5.5
855561	IF SAW Filter - WCDMA	SAW	398	4.3	9.9	SE/SE	7 x 5.5
856652	Filter - WiMAX IF SAW	SAW	398	10	8.7	BAL/BAL	5 x 5
855731	Filter - Broadband Access	SAW	426	5.16	18.02	SE/SE	13.3 x 6.5
857074	447.5 MHz SAW Filter	SAW	447.5	28.16	14.1	BAL/BAL	7 x 5.5
856549	Filter - Standard IF 456 MHz SAW	SAW	456	7.8	7.9	BAL/BAL	5 x 5
856638	Filter - Standard IF 456 MHz SAW	SAW	456	10	8.3	BAL/BAL	5 x 5
856672	Filter - Standard IF 456 MHz SAW	SAW	456	10	8.3	BAL/BAL	7 x 5.5
856687	IF SAW Filter - Multi-Standard	SAW	456	19	10	BAL/BAL	7 x 5.5
856623	464 MHz SAW Filter	SAW	464	3.5	10.6	BAL/BAL	7 x 5.5
856288	Filter - GPS IF	SAW	465	6	1.43	SE/SE	3 x 3
856586	467 MHz SAW Filter	SAW	467	10	3	SE/SE	3.8 x 3.8
855271	Filter - Standard IF 479.75 MHz SAW	SAW	479.75	11.7	19.5	SE/SE	7 x 5.5
855272	Filter - Test Equipment	SAW	479.75	25.5	9.8	SE/SE	7 x 5.5
855104	Filter - Broadband Access	SAW	499.25	1	7.08	SE/SE	9 x 7.01
856625	520 MHz SAW Filter	SAW	520	11	9.5	SE/SE	5 x 5
856680	520 MHz SAW Filter	SAW	520	7.09	10.8	SE/SE	5 x 5
855959	549.5 MHz SAW Filter	SAW	549.5	10	11.8	SE/SE	7.01 x 5.51
855985	549.5 MHz SAW Filter	SAW	549.5	1	11.6	SE/SE	9 x 7.01
856665	Filter - Standard IF 580 MHz SAW	SAW	580	10.5	10.7	BAL/BAL	7 x 5.5
857031	SVLTE Notch SAW Filter	TC SAW	751, 782	10	0.65	SE/SE	2.5 x 2
857061	SVLTE Notch SAW Filter	TC SAW	751, 836.5, 881.5	10, 25	1	SE/SE	2.5 x 2
856690	756 MHz SAW Filter	SAW	756	18.5	1.9	SE/SE	3.8 x 3.8
856866	756 MHz SAW Filter	SAW	756	29.15	0.9	SE/SE	3.8 x 3.8
855942-1	Filter - Wireless Data	SAW	770	17	4.74	BAL/BAL	5 x 5
856526	Filter - Standard IF 810 MHz SAW	SAW	810	10	3.5	SE/SE	3 x 3
856534	Filter - Standard IF 810 MHz SAW	SAW	810	5	4.6	SE/SE	3 x 3
856338	970 MHz SAW Filter	SAW	970	9	24	SE/SE	9.1 x 4.8
856339	970 MHz SAW Filter	SAW	970	18	24.7	SE/SE	7 x 5.5
857162	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	700	30	SE/SE	25.4 x 12.7
857163	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	430	23.3	SE/SE	25.4 x 12.7
857164	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	353.5	21.25	SE/SE	25.4 x 12.7
857165	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	703	31	SE/SE	25.4 x 12.7
857166	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	700	31.75	SE/SE	25.4 x 12.7
857167	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	705	33.7	SE/SE	25.4 x 12.7
857168	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	707	34.6	SE/SE	25.4 x 12.7
857169	1000 MHz Non Dispersive SAW Delay Line	SAW	1,000	705	35.3	SE/SE	25.4 x 12.7
855964	Filter - Broadband Access	SAW	1,086	10	4	BAL/BAL	3 x 3
856330	Broadband Access IF SAW Filter	SAW	1,086	10	4	BAL/BAL	3 x 3
856096	Filter - Broadband Access	SAW	1,090	10	5.6	BAL/BAL	3.8 x 3.8
856256	Filter - Wireless Data	SAW	1,150	16	4.4	BAL/BAL	3 x 3

SAW/BAW Filters

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856365	Broadband Access IF SAW Filter	SAW	1,216	8	3.75	BAL/BAL	3 x 3
856298	Filter - Broadband Access	SAW	1,220	10	4.5	BAL/BAL	3 x 3
856598	Broadband Access IF SAW Filter	SAW	1,220	50	3.9	BAL/BAL	3.8 x 3.8
856793	GPS SAW Filter, SE/SE	SAW	1,575.42	2.4	0.6	SE/SE	1.4 x 1.2
856531	RF Filter, PCS	SAW	1,960	60	2.25	SE/SE	3 x 3
856717	Delay Filter 450 ns	SAW	1,960	60	22	SE/SE	9.1 x 4.8
TQM966025	1962.5 MHz RF BAW Filter - Band 25 Diversity Rx	BAW	1,962.50	65	2.6	SE/SE	2.5 x 2
856649	SAW Delay Line	SAW	2,140	100	25	SE/SE, BAL/SE	7 x 5.5
856990	Filter - MICS Band SAW	SAW	403.5	3	2.1	BAL/SE	3 x 3
856930	Filter - ISM Band SAW	SAW	457.5	15	2.2	SE/SE	3.8 x 3.8
856884	RF SAW Filter - Band 12 Uplink	SAW	707	18	1.5	SE/SE	3 x 3
857193	725.5 MHz SAW Band 28 Uplink Filter	SAW	725.5	45	4	SE/SE	3 x 3
856883	RF SAW Filter - Band 12 Downlink	SAW	737	18	1.8	SE/SE	3 x 3
857217	742.5 MHz SAW Filter	SAW	742.5	27	2.5	SE/SE	3 x 3
857031	SVLTE Notch SAW Filter	TC SAW	751, 782	10	0.65	SE/SE	2.5 x 2
857061	SVLTE Notch SAW Filter	TC SAW	751, 836.5, 881.5	10, 25	1	SE/SE	2.5 x 2
856764	RF SAW Filter - Band 13 Uplink	SAW	781.5	11	1.46	SE/SE	3 x 3
856844	RF SAW Filter	SAW	782	10	1.52	SE/SE	3 x 3
856977	RF SAW Filter - Band 13 / 14 Uplink	SAW	787.5	21	2.05	SE/SE	3 x 3
857191	810 MHz SAW Filter	SAW	810	5	4.6	SE/SE	3 x 3
857019	Band 5e Uplink RF Filter	SAW	835	30	2.1	SE/SE	3 x 3
856503	RF SAW Filter - Band 5 Uplink	SAW	836.5	25	2.7	SE/SE	3 x 3
856704	RF SAW Filter - Band 5 Uplink	SAW	836.5	25	1.2	SE/SE	3 x 3
857038	836.5 MHz SAW Filter	SAW	836.5	25	2.3	SE/SE	1.4 x 1.2
856932	RF SAW Filter - Band 20 Uplink	SAW	847	30	1.3	SE/SE	3 x 3
856606	860.5 MHz SAW Filter	SAW	860.5	19	1.1	SE/SE	3 x 3
856963	Filter - ISM Band SAW	SAW	875	10	1.8	SE/SE	2 x 1.5
855728	Filter - CDMA/Amps (Rx) High Rejection	SAW	881.5	25	2.7	SE/SE	3 x 3
855782	RF Filter, Cell Band	SAW	881.5	25	1.8	SE/SE	3 x 3
856504	RF SAW Filter - Band 5 Downlink	SAW	881.5	25	2.7	SE/SE	3 x 3
856671	RF Filter, EGSM	SAW	897.5	35	1.8	SE/SE	3 x 3
856824	RF SAW Filter	SAW	897.5	35	1.4	SE/SE	3 x 3
856327	Filter - ISM Band SAW	SAW	915	26	2.3	SE/SE	2 x 1.5
880371	915 MHz ISM BAW Filter	BAW	915	13	3	SE/SE	6.39 x 4.61
856905	Filter - ISM Band SAW	SAW	921.5	13	1.9	SE/SE	2 x 1.5
855810	RF SAW Filter - Band 8 Downlink	SAW	942.5	35	3.2	SE/SE	3 x 3
855820	RF SAW Filter - Band 8 Downlink	SAW	942.5	35	2	SE/SE	3 x 3
856528	RF Filter, EGSM	SAW	942.5	35	2.5	SE/SE	3 x 3
857216	1030 MHz SAW Filter	SAW	1,030	10	2.3	SE/SE	3 x 3
880367	1030 MHz SSR/IFF BAW Filter	BAW	1,030	14	3	SE/SE	3.71 x 2.57

SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
857179	1090 MHz SAW Filter	SAW	1,090	10	5.6	BAL/BAL	3.8 x 3.8
857215	1090 MHz SAW Filter	SAW	1,090	10	2.6	SE/SE	3 x 3
880374	1090 MHz SSR/IFF BAW Filter	BAW	1,090	16	3	SE/SE	3.71 x 2.57
856440	Filter - GPS L5 RF	SAW	1,176	35	2.4	SE/SE	2 x 1.5
880364	1176 MHz GPS L5 BAW Filter	BAW	1,176	30	2.5	SE/SE	3.26 x 1.6
857143	1176.45 MHz SAW Filter	SAW	1,176.45	20.46	0.5	SE/SE	1.4 x 1.2
857144	1176.45 MHz SAW Filter	SAW	1,176.45	20.46	2	SE/SE	1.4 x 1.2
856700	GPS L2 SAW Filter	SAW	1,227.60	31	1.1	SE/SE	2 x 1.5
857141	1227.6 MHz SAW Filter	SAW	1,227.60	20.46	0.5	SE/SE	1.4 x 1.2
880060	1227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	25	1.8	SE/SE	3.26 x 1.6
880272	1227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	30	2.25	SE/SE	3.26 x 1.6
880366	1227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	12	1.5	SE/SE	3.26 x 1.6
880372	1227.6 MHz GPS L2 BAW Filter	BAW	1,227.60	15	3	SE/SE	3.71 x 2.57
856653	Filter - Broadband Access	SAW	1,250	100	6.8	BAL/BAL	3 x 3
880368	1280 MHz L-Band BAW Filter	BAW	1,280	19	4	SE/SE	3.71 x 2.57
880365	1380 MHz GPS L3/L4 BAW Filter	BAW	1,380	38	2.75	SE/SE	3.26 x 1.6
856928	RF SAW Filter - Band 11 Uplink	SAW	1,445.40	35	1.25	SE/SE	3 x 3
856039	GPS SAW Filter	SAW	1,575.42	2	1.8	SE/SE	3 x 3
856139	GPS SAW Filter	SAW	1,575.42	2.4	1.3	SE/SE	3 x 3
856561	GPS SAW Filter, SE/SE	SAW	1,575.42	2	0.75	SE/SE	1.4 x 1.2 x 0.46
856576	GPS SAW Filter, SE/BAL	SAW	1,575.42	2	1.1	SE/BAL	1.4 x 1.2
857139	1575.42 MHz SAW Filter	SAW	1,575.42	20.46	0.6	SE/SE	1.4 x 1.2
857140	1575.42 MHz SAW Filter	SAW	1,575.42	20.46	2.6	SE/SE	1.4 x 1.2
880085	1575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	15	1.5	SE/SE	3.26 x 1.6
880094	1575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	30	1.8	SE/SE	3.26 x 1.6
880098	1575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	20	4 max	SE/SE	3.71 x 2.57
880273	1575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	40	2.35	SE/SE	3.26 x 1.6
880373	1575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	23	3	SE/SE	3.71 x 2.57
880404	1575.42 MHz GPS L1 BAW Filter	BAW	1,575.42	35	1.5	SE/SE	3.71 x 2.57
857207	1585.66 MHz SAW Filter	SAW	1,585.66	41	1.45	SE/BAL	1.4 x 1.2
856909	1601.5 MHz SAW Filter	SAW	1,601.50	17	2.2	SE/SE	3 x 3
TQQ0302	Band 3 Uplink RF Filter	BAW	1,747.5	75	3.5	SE/SE	3 x 3
TQQ0303	Band 3 Downlink RF Filter	BAW	1,842.5	75	5	SE/SE	3 x 3
856654	RF SAW Filter - Band 3 Uplink	SAW	1,747.50	75	2.2	SE/SE	3 x 3
TQQ7303	1747.5 MHz BAW Band 3 Uplink Filter	BAW	1,747.50	75	3.5	SE / SE	3 x 3
855860	RF SAW Filter - Band 3 Downlink	SAW	1,842.50	75	1.9	SE/SE	3 x 3
856934	Band 3 Downlink RF Filter	SAW	1,842.50	75	2.9	SE/SE	3 x 3
855849	RF SAW Filter - Band 2 Uplink	SAW	1,880	60	2.4	SE/SE	3 x 3
856530	Filter - U.S. PCS (Tx) Full-Band	SAW	1,880	60	2.8	SE/SE	3 x 3

SAW/BAW Filters (Cont.)

Part	Description	Technology	Frequency (MHz)	Bandwidth (MHz)	Insertion Loss (dB)	I/O Configuration	Package (mm)
856705	RF SAW Filter - Band 2 Uplink	SAW	1,880	60	2.2	SE/SE	3 x 3
856880	RF SAW Filter - Band 2 Uplink	SAW	1,880	60	2.3	SE/SE	3 x 3
885025	1880 MHz RF BAW Filter - Band 2 Uplink	BAW	1,880	60	3.5	SE/SE	3 x 3
856992	RF SAW Filter - Band 25 Uplink	SAW	1,882.50	65	1.9	SE/SE	3 x 3
856532	RF Filter, UMTS	SAW	1,950	60	2.5	SE/SE	3 x 3
856678	RF Filter - 1950 MHz Band	SAW	1,950	60	1.8	SE/SE	3 x 3
855859	RF SAW Filter - Band 2 Downlink	SAW	1,960	60	2.5	SE/SE	3 x 3
855817	RF Filter, PCS	SAW	1,960	60	2.1	SE/SE	3 x 3
857145	1960 MHz SAW Filter	SAW	1,960	160	3	SE/SE	3 x 3
885024	1960 MHz RF BAW Filter - Band 2 Downlink	BAW	1,960	60	3.7	SE/SE	3 x 3
TQM966025	1962.5 MHz RF BAW Filter - Band 25 Diversity Rx	BAW	1,962.50	65	2.6	SE/SE	2.5 x 2
880126	2106 MHz RF BAW Filter	BAW	2,106	35	4 max	SE/SE	3.26 x 1.6
880148	2324 MHz RF BAW Filter	BAW	2,324	38	3	SE/SE	3.71 x 2.57
856604	2332.5 MHz SAW Filter	SAW	2,332.50	45	1.7	SE/BAL	1.4 x 1.2
885049	2350 MHz RF BAW Filter - Band 40	BAW	2,350	100	1.3	SE/SE	1.4 x 1.2
885069	2350 MHz BAW Band 40 Filter	BAW	2,350	100	3	SE/SE	1.4 x 1.2
885007	2436 MHz BAW Filter - ISM Passband for Coexistence	BAW	2,436	72	2	SE/SE	1.7 x 1.3
885017	2436 MHz BAW Filter - ISM Passband for Coexistence	BAW	2,436	72	1.8	SE/SE	1.4 x 1.2
857005	2437 MHz SAW Filter	SAW	2,437	66	2.1	SE/SE	1.4 x 1.2
885008	2440 MHz BAW Filter - ISM Notch for Coexistence	BAW	2,440	71	1.5 (Out of Band IL)	SE/SE	1.7 x 1.3
885010	2440 MHz BAW Filter - ISM Notch for Coexistence	BAW	2,440	82	2 (Out of Band IL)	SE/SE	1.7 x 1.3
856539	Bluetooth SAW Filter	SAW	2,441	83.5	2	SE/SE	1.4 x 1.2
855916	Filter - ISM Band RF Bluetooth/WLAN	SAW	2,441.80	83.5	2.76	SE/SE	3 x 3
885032	2.4 GHz RF BAW Filter - WLAN/BT LTE Coexistence	BAW	2,442	79	1.7	SE/SE	1.4 x 1.2
885033	2.4 GHz RF BAW Filter - WLAN/BT LTE Coexistence	BAW	2,442	79	1.7	SE/SE	1.4 x 1.2
885009	2535 MHz RF BAW Filter - Band 7 Uplink	BAW	2,535	70	1.3	SE/SE	3 x 3
885009	2535 MHz RF BAW Filter - Band 7 Uplink	BAW	2,535	70	1.3	SE/SE	3 x 3
TQQ7307	2535 MHz BAW Band 7 Uplink Filter	BAW	2,535	70	3.5	SE / SE	3 x 3
880157	2560 MHz S-Band BAW Filter	BAW	2,560	30	3.8	SE/SE	3.71 x 2.57
TQQ0041	B41 Rx BAW Filter	BAW	2,580	196	3.5	SE/SE	2 x 2
885026	B38 Tx/Rx Filter	BAW	2,595	50	1.4	SE/SE	1.4 x 1.2
885043	B38/B40 Tx Duplexed BAW Filter	BAW	2,595, 2,350	100	3.5	SE/SE	1.7 x 1.3
880369	5775 MHz WLAN 802.11a BAW Filter	BAW	5,775	100	3	SE/SE	3.26 x 1.6

Ordering

TriQuint products can be purchased through:

- **TriQuint Online Store:**
Select TriQuint products are now available for purchase online at <http://store.triquint.com>.
- **TriQuint Field Sales Offices:**
We have regional sales offices across the globe to work closely with you on your next TriQuint product purchase. To identify the closest regional sales office, please go to our website at www.triquint.com/sales.
- **Local Sales Representatives:**
Local sales representatives are skilled at examining application needs from a variety of angles to aid the design process. Their insight and specialized experience, paired with your goals, can find the combination of products that best meet overall objectives. Since these representatives work with a variety of customers in many different design environments, their experience can be valuable in determining the right 'fit' for your particular application. To locate a sales representative, please visit our website at www.triquint.com/sales.
- **Distributors - Buy / Resale Reps:**
TriQuint products can be purchased from any one of the distributors or buy / resale reps listed on our website at www.triquint.com/sales.

Terms & Conditions

For a complete listing of TriQuint terms and conditions of sale, please visit our website at www.triquint.com/sales.

Export Compliance

Almost all products TriQuint offers for sale as detailed in this Product Selection Guide are available for export subject to US government regulations. Please contact your TriQuint salesperson for details.

Product Support

- **Product Data Sheets:**
Detailed information on our products including datasheets can be found on the TriQuint website at www.triquint.com.
- **Applications Support:**
Detailed product support information can be found on the TriQuint website at www.triquint.com/sales.

Reliability Programs

Our programs are in line with JEDEC and other industry standards.

Environmental, Health & Safety Policy

TriQuint is committed to driving continuous improvement; providing employees with a safe and healthy working environment; and being a role model for sound environmental stewardship and pollution prevention, while meeting or exceeding all applicable federal, state and local requirements.

Environmental Systems

- ISO-14001:2004 (Select Sites)

Quality Policy

Each of us at TriQuint is committed to zero defects, continuous improvement, quality and reliability to meet or exceed customer requirements.

Quality Systems

- ISO-9001:2008 Certified (Select Sites)
- ISO / TS 16949:2009 Certified (Select Sites)
- ISO / AS9100B Certified (Select Sites)

Quality Tools Utilized

- Design Failure Mode & Effects Analysis (DFMEA)
- Process Failure Mode & Effects Analysis (PFMEA)
- Process Control Plan (PCP)
- Production Part Approval Process (PPAP)
- Eight Discipline Problem Solving (8-D)
- Real Time Statistical Process Control (SPC)
- Measurement System Analysis (MSA)
- Advanced Product Quality Planning (APQP)

For further details on TriQuint quality and reliability information, please visit our website at www.triquint.com/about-us/quality.

Product Compliance Policies

TriQuint is committed to meeting all global product environmental regulations that affect its products. These regulations include:

- Directive 2002 / 95 / EC (RoHS Directive) and its recast Directive 2011 / 65 / EU
- Management Methods for Control of Pollution Caused by Electronic Information Products (China RoHS)
- Directive 94 / 62 / EC (Packaging Directive)
- Directive 2006 / 122 / EC (PFOS Directive)
- Regulation (EC) No 1907 / 2006 (REACH Regulation)
- Commission Decision 2009 / 251 / EC (Dimethylfumarate Ban)

All active TriQuint commercial standard products are compliant with these directives. Contact TriQuint for the RoHS compliance status of custom products, military products and products manufactured prior to June 2006. All new product designs are halogen-free since late 2008. TriQuint does not use any REACH Substances of Very High Concern (SVHCs) in its products or packaging materials above a concentration of 0.1% (at the product level). Also, TriQuint is committed to complying with Section 1502 (Conflict Minerals) of the Dodd-Frank Wall Street Regulation and Consumer Protection Act. We are actively surveying our supply chain to determine the source of the conflict mineral derivatives in our products. At this time, we have determined that gold, tin, and tantalum are being sourced from the Conflict Region, but all smelters identified as sourcing from this are are certified as Conflict-Free Smelter Program Compliant. At this time, we do not have enough information about the sourcing of the tungsten smelters in our supply chain to be able to determine if they are sourcing from the Conflict Region. Please contact TriQuint at rohs_info@triquint.com for more information on the use of conflict mineral derivatives in TriQuint products.

In addition to being compliant with the above product compliance laws and regulations, TriQuint participates in the following customer programs:

- Sony Green Partner
- Samsung Eco-Partner

Please contact TriQuint at rohs_info@triquint.com for any product compliance information requests. For further details on TriQuint environmental, health & safety information, please visit our website at www.triquint.com/about-us.

Notice

The data provided in this selection guide is subject to change without notice. TriQuint reserves the right to make changes to specifications and other information at any time.

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