

Product Features

- GaN on SiC Broadband High Power Amplifier
- 2000 ~ 3000MHz Operation Bandwidth
- Small Signal Gain 22dB min.
- 20W Minimum, P3dB

Applications

- General Purpose
- Telecommunication



Package Type : DP-75

Description

The power amplifier module is designed for General Purpose.

Operating frequency range is from 2000 ~ 3000MHz

Gallium Nitride on SiC technology is used and attached on an aluminum sub carrier. Full in/out matching for broadband performance is already applied. Improved thermal handling by patented technology.

Electrical Specifications @ $V_{CC} = 28V$; $T = 25^{\circ}C$; $Z_S = Z_L = 50\Omega$

PARAMETER	UNIT	MIN	TYP	MAX	CONDITION
Bandwidth	MHz	2000	-	3000	-
Power Gain	dB	21	22	-	@Pin 21dBm
Gain Flatness	dBp-p	-	± 1	± 2	@Pin 21dBm
Gain Variation vs Temperature	dB	-2.0	-	+2.0	-20 ~ 60°C
Output power	dBm	42	43	-	@Pin 21dBm
Input VSWR	dB	-	-6	-	-
Output VSWR	dB	-	-6	-	-
Supply Voltage	V	27.5	28	28.5	Vcc(=Vds)
Quiescent Current Consumption	A	-	2.5	-	-
Supply Current (IDD)	A	-	2.8	3.5	@Pin 21dBm
On/Off Switch Time	uS	-	2	5.0	On: TTL "Low" Off: TTL "High"(0.2A@Disable)
Shut Down, Switch On/Off	V	0 2.5	-	0.5 5.5	On: TTL "Low" Off: TTL "High"

Absolute Maximum Ratings

PARAMETER	UNIT	RATING	SYMBOL
Drain Voltage	V	30	VDS
Operating Flange Temperature	°C	-20 ~ 85	Tc
Storage Temperature	°C	-30 ~ 90	Tstg

Typical Performance

S/N : RWPM309090001

	Temp : 25 °C				Temp : 25 °C		Temp : 65 °C		Temp : -20 °C	
Freq	I/L	O/L	Pin	Gp	Pout	Ids	Pout	Ids	Pout	Id
(GHz)	(dB)	(dB)	(dBm)	(dB)	(dBm)	(A)	(dBm)	(A)	(dBm)	s(A)
2.0	-6.5	-12	21	22.3	43.3	3.04	42.8	2.87	44.1	3.16
2.1	-6.4	-13	21	23.4	43.4	2.89	42.8	2.86	44.2	3.09
2.2	-6.5	-15.5	21	23.9	43.9	2.89	43.5	2.96	44.7	3.26
2.3	-6.8	-19.2	21	24.5	44.5	2.87	43.7	2.97	45.2	3.31
2.4	-7.4	-23	21	24.6	44.6	2.67	43.8	2.67	45	2.96
2.5	-8.5	-23	21	24.9	44.9	2.56	44.3	2.52	45.3	2.74
2.6	-10.9	-18	21	24.3	45.3	2.74	44.4	2.59	45.5	2.82
2.7	-13	-13	21	23.9	44.9	2.65	44.2	2.47	45.4	2.77
2.8	-14.2	-10.6	21	23.4	44.4	2.48	43.8	2.46	45.2	2.8
2.9	-17.2	-9.9	21	23.1	44.1	2.48	43.4	2.4	44.7	2.8
3.0	-13	-8.8	21	22.9	43.9	2.54	43.2	2.43	44.4	2.64

S/N : RWPM309090002

	Temp : 25 °C				Temp : 25 °C		Temp : 65 °C		Temp : -20 °C	
Freq	I/L	O/L	Pin	Gp	Pout	Ids	Pout	Ids	Pout	Id
(GHz)	(dB)	(dB)	(dBm)	(dB)	(dBm)	(A)	(dBm)	(A)	(dBm)	s(A)
2.0	-7.6	-9.9	21	22.2	43.2	3.1	42.6	2.95	44	3.2
2.1	-7.7	-11.7	21	22.3	43.3	2.99	42.7	2.92	44.2	3.15
2.2	-7.8	-13.6	21	22.5	43.5	2.96	43	2.88	44.4	3.18
2.3	-7.8	-15.4	21	23	44	2.95	43.5	2.9	44.7	3.22
2.4	-8.1	-17.6	21	23.4	44.4	2.92	44	2.85	45.1	3.15
2.5	-8	-22.1	21	23.8	44.8	2.86	44.3	2.85	45.4	3.05
2.6	-9	-26.7	21	24.6	45.6	3.0	45.1	2.92	46	2.99
2.7	-11	-21.9	21	24.3	45.3	2.97	44.9	2.94	45.7	2.93
2.8	-12.4	-16.7	21	23.6	44.6	2.78	44.1	2.7	45	2.89
2.9	-13.9	-13.8	21	23.1	44.1	2.66	43.5	2.62	44.6	2.88
3.0	-14	-11.2	21	22.5	43.5	2.63	43.1	2.58	44	2.72

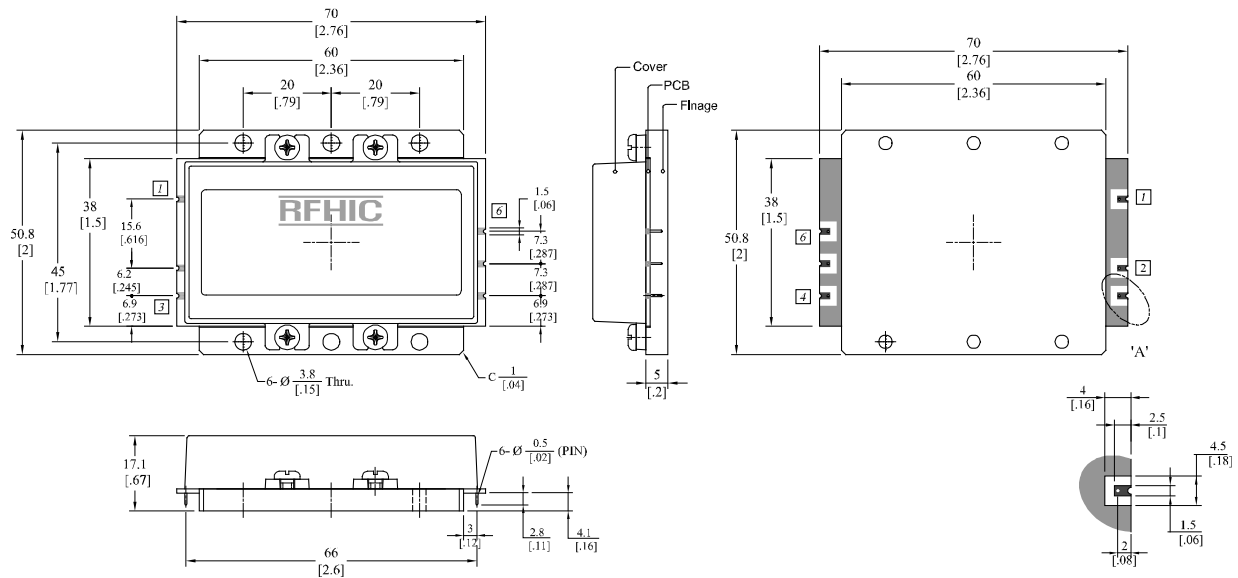
S/N : RWPM309090003

	Temp : 25 °C				Temp : 25 °C		Temp : 65 °C		Temp : -20 °C	
Freq	I/L	O/L	Pin	Gp	Pout	Ids	Pout	Ids	Pout	Id
(GHz)	(dB)	(dB)	(dBm)	(dB)	(dBm)	(A)	(dBm)	(A)	(dBm)	s(A)
2.0	-7	-10.2	21	22.1	43.1	3.1	42.4	2.87	43.5	3.3
2.1	-6.8	-12	21	22.2	43.2	2.98	42.5	2.85	44	3.2
2.2	-6.8	-14	21	22.4	43.4	2.97	42.8	2.93	44.2	3.27
2.3	-7	-16.3	21	22.8	43.8	2.96	43	3.0	44.3	3.31
2.4	-7.4	-19	21	23	44	2.86	43	2.88	44.4	3.19
2.5	-8.1	-22.1	21	23.1	44.1	2.75	43.2	2.67	44.8	3.02
2.6	-9.7	-23.2	21	23.8	44.8	2.86	43.5	2.66	45.4	3.01
2.7	-11.2	-18.3	21	23.5	44.5	2.79	43.5	2.6	45	2.89
2.8	-11.7	-13.8	21	23	44	2.6	43.3	2.55	44.8	2.83
2.9	-15.3	-12.2	21	22.5	43.5	2.54	42.9	2.54	44.4	2.84
3.0	-16.4	-10.1	21	22.2	43.2	2.56	42.7	2.49	43.7	2.74

Mechanical Specifications

PARAMETER		UNIT	TYP
Dimension	Package	mm	70 x 50.8 x 17.1
	Housing		90 x 75 x 25
Weight	Package	g	75
	Housing		270
Housing RF IN/OUT Connector		-	SMA Female
Cooling		-	External Heat-sink

Package Dimensions (Type: DP-75)

* Unit: mm[inch] | Tolerance: ± 0.2 [.008]

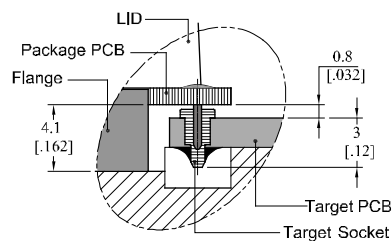
Pin Description			
Pin No	Function	Pin No	Function
1	RF IN	4	Switch ON/OFF
2	Vcc(+28V)	5	GND
3	Shut Down(+5V)	6	RF OUT

* Terminal Pin Information : ASK206091,AA (Acethink, Pin) , ASK20556,AA-1(Acethink, Pin Socket)

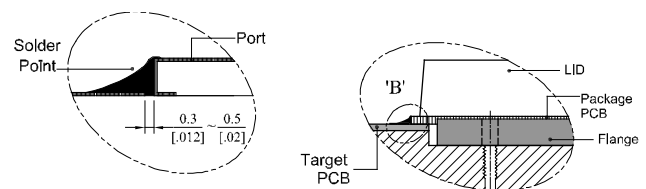
* Recommended Screw Torque : 8.0kgf.cm $\pm$ 1 using SEMS M3 10mm Bolt

How to connected the package to a target PCB

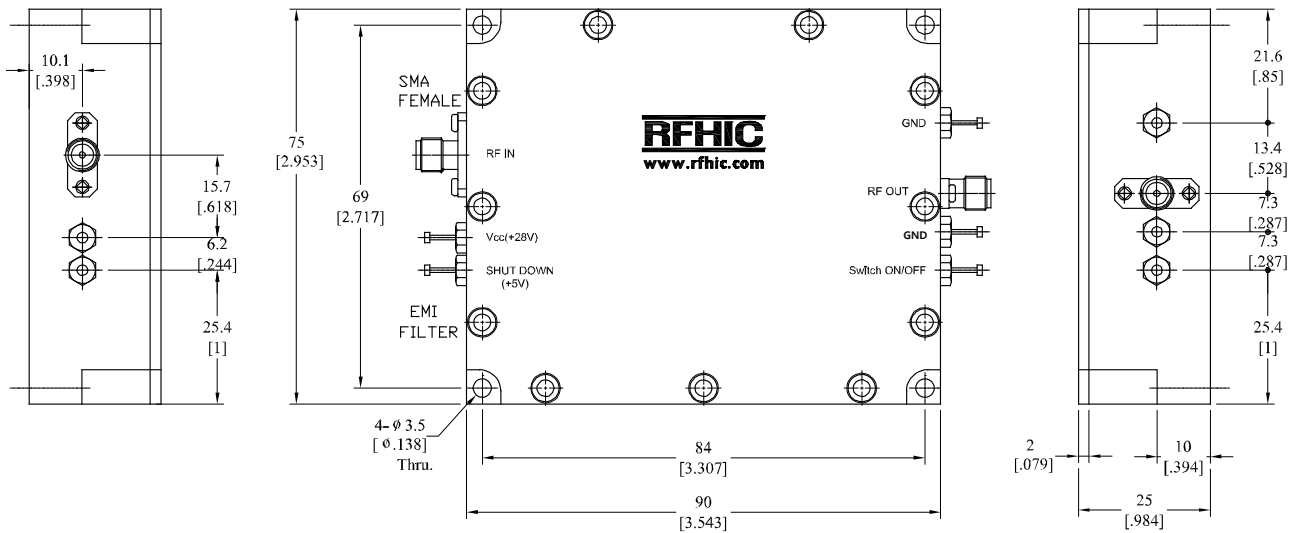
With Pin



Without Pin



SMA Connectorized Housing Dimensions



Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RWP25020-50	2014.4.2	1.3	Mechanical Specifications	-
RWP25020-50	2013.9.26	1.2	SMA Connectorized Housing Dimensions	-
RWP25020-50	2012.9.5	1.1	-	-

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