TriQuint SEMICONDUCTOR

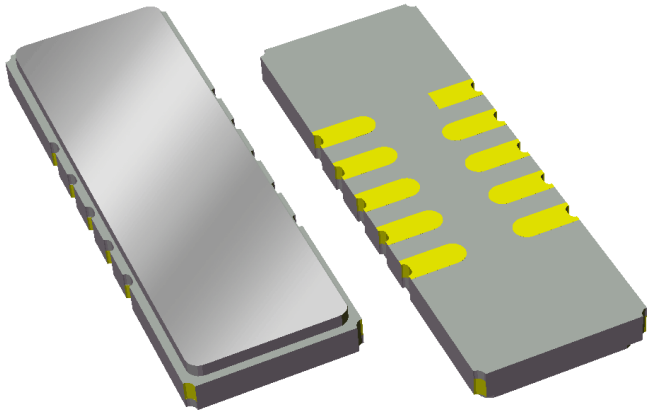
Data Sheet

Part Number 855131

199 MHz SAW Filter

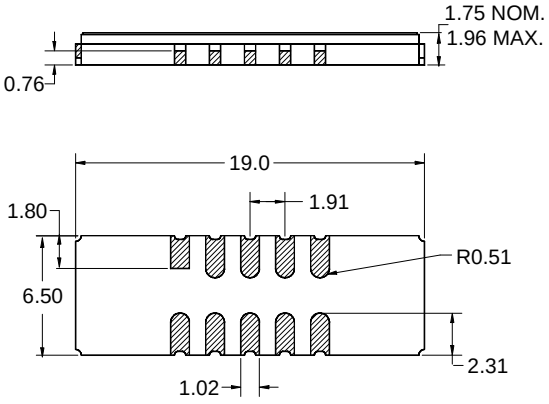
Features

- For GSM/EDGE applications
- Usable bandwidth 200 MHz
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- **RoHS** compliant (2002/95/EC), **Pb**-free



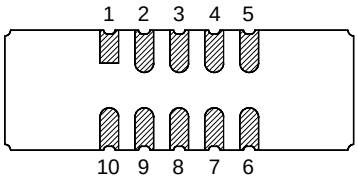
Package

Surface Mount 19.00 x 6.50 x 1.75 mm



Pin Configuration

Bottom View



Single-ended Configuration

Pin No.	Description
10	Input
5	Output
1,6	Ground
2,3,4	Case Ground
7,8,9	Case Ground

Dimensions shown are nominal in millimeters
All tolerances are ±0.15mm except overall length and width +0.15mm/-0.10 mm

Body: Al_2O_3 ceramic
Lid: *Kovar*, *Ni* plated
Terminations: *Au* plating 0.5 - 1.0µm, over a 2 – 6µm *Ni* plating

Electrical Specifications [1]

Operating Temperature Range: [2] -10 to +85 °C

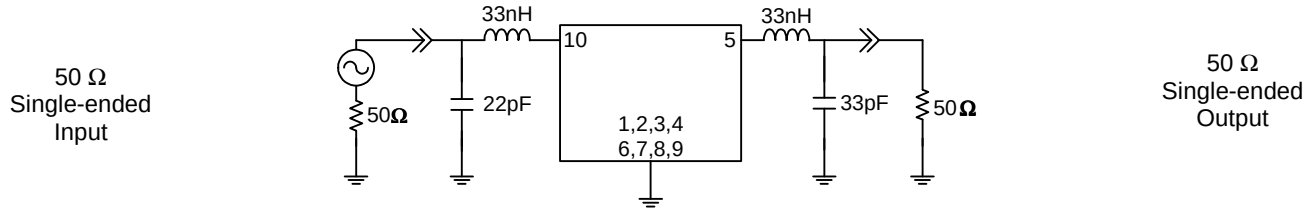
Parameter [3]	Minimum	Typical [4]	Maximum	Unit
Center Frequency	-	199	-	MHz
Minimum Insertion Loss	-	6	7.5	dB
Lower 1 dB Band Edge [5]	-	198.892	-	MHz
Upper 1 dB Band Edge [5]	-	199.152	-	MHz
Lower 35 dB Band Edge [5]	198.4	198.506	-	MHz
Upper 35 dB Band Edge [5]	-	199.534	199.6	MHz
Lower 45 dB Band Edge [5]	198.2	198.292	-	MHz
Upper 45 dB Band Edge [5]	-	199.75	199.8	MHz
Passband Variation [6]	-	0.24	1	dB p-p
Group Delay Variation				
198.9 – 199.1 MHz	-	245	500	ns p-p
Relative Attenuation [5]				
119.0 – 198.2 MHz	45	49	-	dB
199.8 – 279.0 MHz	45	49	-	dB
Source Impedance (single-ended) [7]	-	50	-	Ω
Load Impedance (single-ended) [7]	-	50	-	Ω

Notes:

1. All specifications are based on the TriQuint test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. Typical values are based on average measurements at room temperature
5. Relative to minimum insertion loss
6. Passband variation is defined as the difference between the lowest loss and the highest loss within the passband. The edge of the passband is the point where the amplitude begins a downward trend that does not reverse until the stopband
7. This is the optimum impedance in order to achieve the performance shown

Test Circuit:

Actual matching values may vary due to PCB layout and parasitics



Electrical Specifications [1]

Operating Temperature Range: [2] -40 to +85 °C

Parameter [3]	Minimum	Typical [4]	Maximum	Unit
Center Frequency	-	199	-	MHz
Minimum Insertion Loss	-	6	7.5	dB
Lower 1 dB Band Edge [5]	-	198.892	-	MHz
Upper 1 dB Band Edge [5]	-	199.152	-	MHz
Lower 35 dB Band Edge [5]	198.4	198.506	-	MHz
Upper 35 dB Band Edge [5]	-	199.534	199.6	MHz
Lower 45 dB Band Edge [5]	198.050	198.292	-	MHz
Upper 45 dB Band Edge [5]	-	199.75	199.8	MHz
Passband Variation [6]	-	0.24	1	dB p-p
Group Delay Variation				
198.9 – 199.1 MHz	-	245	500	ns p-p
Relative Attenuation [5]				
119.0 – 198.050 MHz	45	49	-	dB
199.8 – 279.0 MHz	45	49	-	dB
Source Impedance (single-ended) [7]	-	50	-	Ω
Load Impedance (single-ended) [7]	-	50	-	Ω

Notes:

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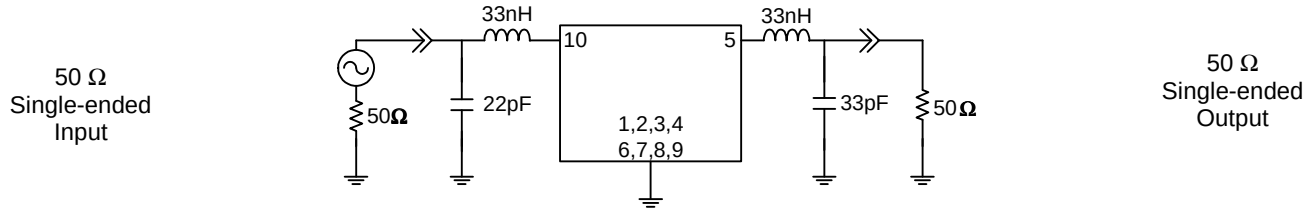
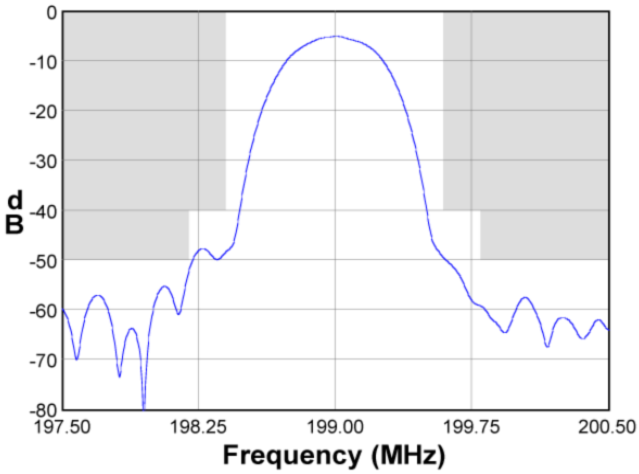
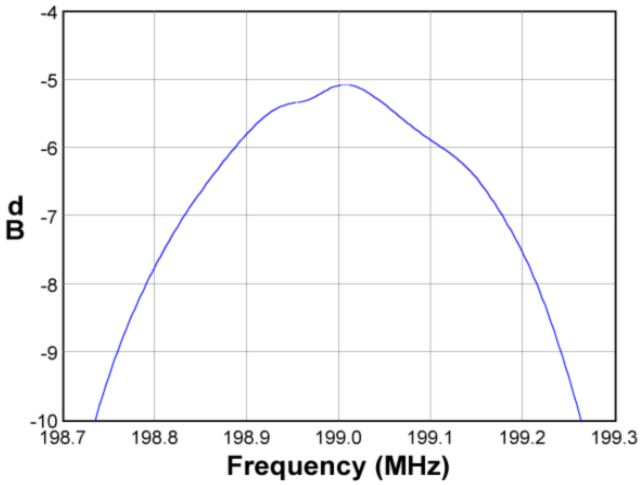


Typical Performance (at +25°C)

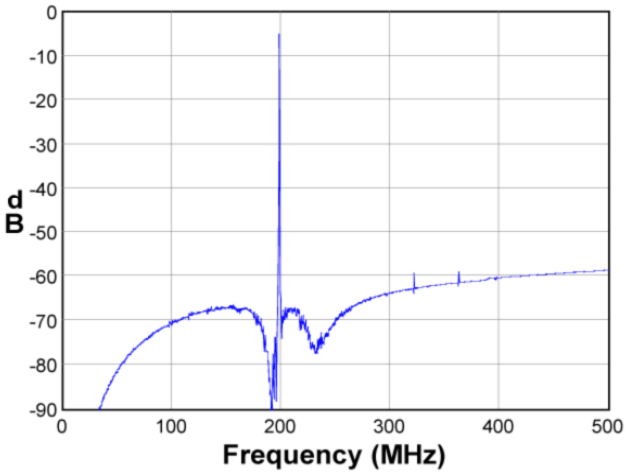
Frequency Response



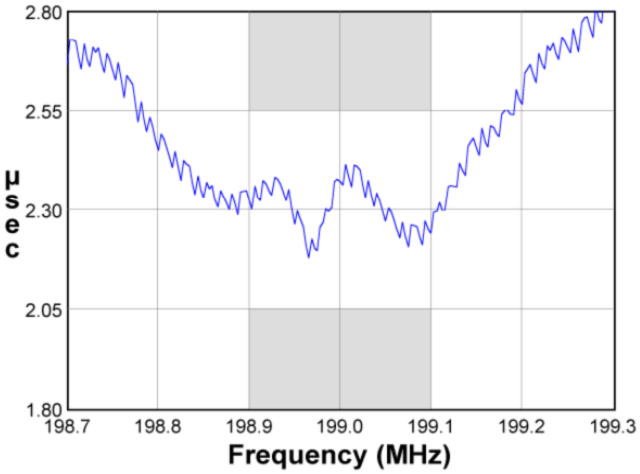
Passband Response



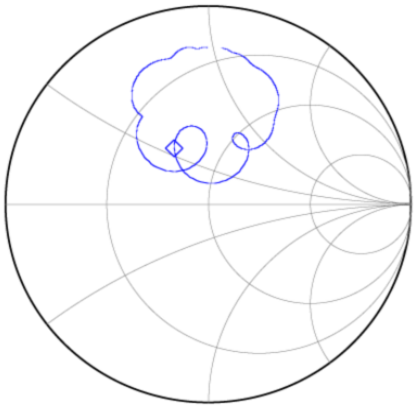
Wideband Response



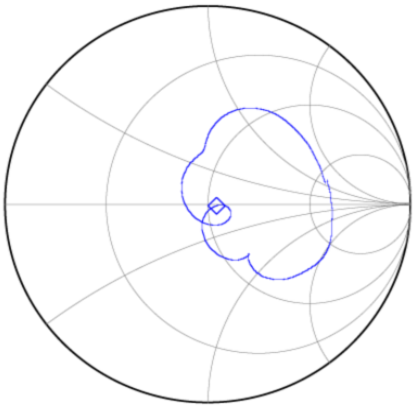
Group Delay Variation



Input Smith Chart



Output Smith Chart



Matching Schematics

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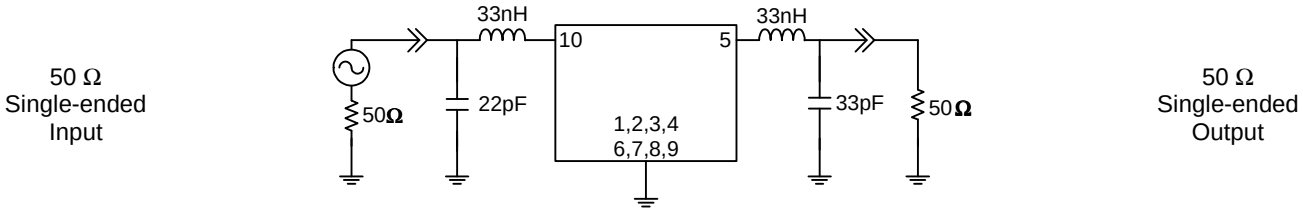
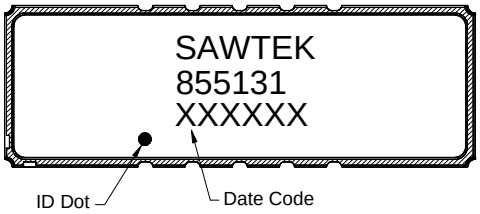
Actual matching values may vary due to PCB layout and parasitics

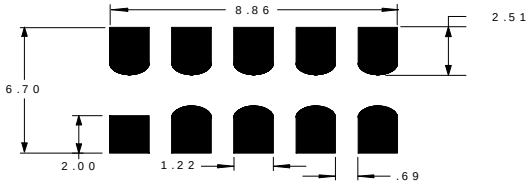


Marking



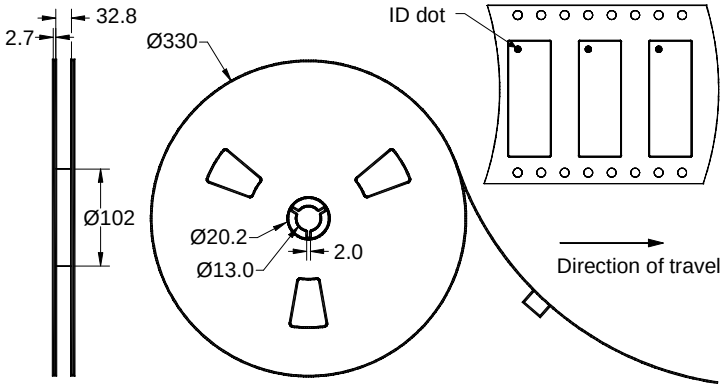
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

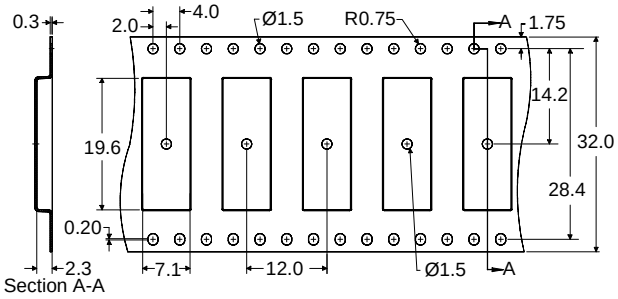
PCB Footprint



This footprint represents a recommendation only
Dimensions shown are nominal in millimeters

Tape and Reel





Dimensions shown are nominal in millimeters
Packaging quantity: 2000 units/reel

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Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-40	+85	^{o}C
Storage Temperature Range	T_{stg}	-40	+85	^{o}C
Input Power	P_{in}	-	+15	dBm
ESD (Human Body Model), JEDEC JESD22-A114	V_{HBM}	-	1500	Volts
ESD (Machine Model), JEDEC JESD22-A115	V_{MM}	-	500	Volts

Important Notes

Warnings

- Electrostatic Sensitive Device (ESD)
- Avoid ultrasonic exposure

RoHS Compliance

- This product complies with EU directive 2002/95/EC (RoHS)

Solderability

- Compatible with JESD22-B102, Pb-free process, 260C peak reflow temperature (see soldering profile)

Links to Additional Technical Information

PCB Layout Tips | Qualification Flowchart | Soldering Profile

S-Parameters | RoHS Information | Other Technical Information

Contact Information

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