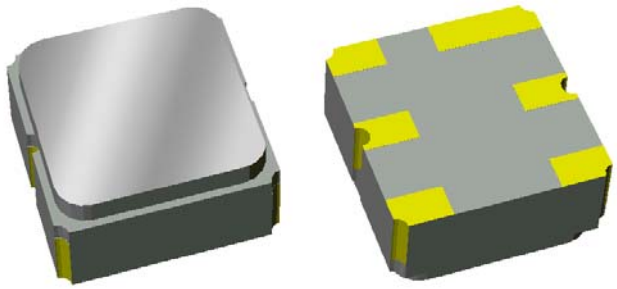
TriQuint SEMICONDUCTOR

Data Sheet

Part Number 856815
1650.75 MHz SAW Filter

Features

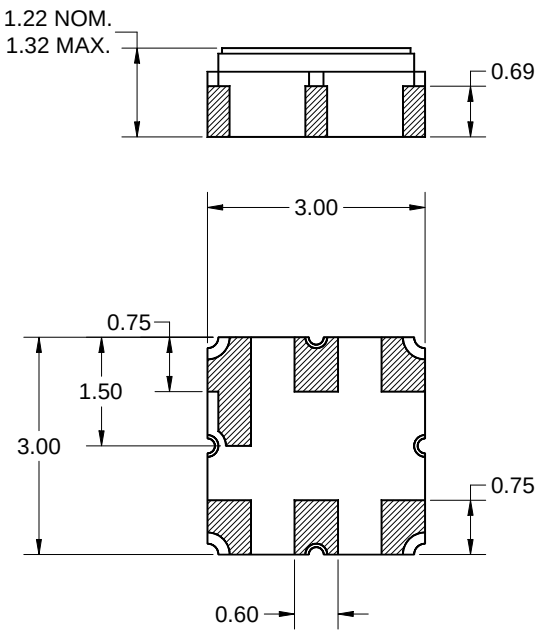
- For SATCOM applications
- Usable bandwidth 48.5 MHz
- Low loss
- High Attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- **RoHS** compliant (2002/95/EC), **Pb**-free



Package

Surface Mount 3.00 x 3.00 x 1.22 mm

SMP-12

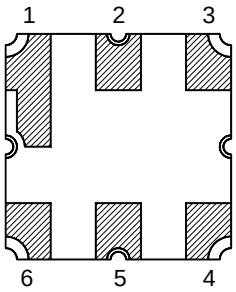


Dimensions shown are nominal in millimeters
All tolerances are ±0.15mm except overall length and width ±0.10mm

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

Pin Configuration

Bottom View



Pin No.	Description
2	Input
5	Output
1,3,4,6	Case Ground

Electrical Specifications (1)

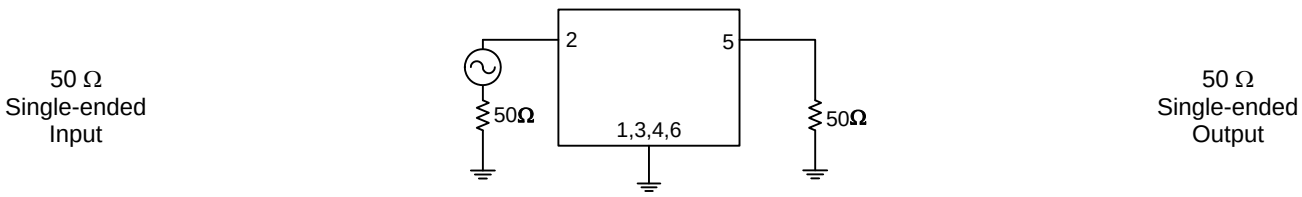
Specified Temperature Range: (2) -20 to +85 °C

Parameter (3)	Minimum	Typical (4)	Maximum	Unit
Center Frequency	-	1650.75	-	MHz
Maximum Insertion Loss				
1626.5 – 1675 MHz	-	2.5	3.0	dB
Absolute Attenuation				
0.1 – 1559.0 MHz	35.0	50	-	dB
1576.5 MHz	30.5	50	-	dB
1751.0 MHz	24.5	48	-	dB
2400 – 2500.0 MHz	45.0	48	-	dB
Passband Ripple (5)				
1626.5 – 1675 MHz	-	0.3	1.0	dB
Input/Output Return Loss				
1626.5 – 1675 MHz	9.0	11	-	dB
Source Impedance (single-ended) (6)	-	50	-	Ω
Load Impedance (single-ended) (6)	-	50	-	Ω

Notes:

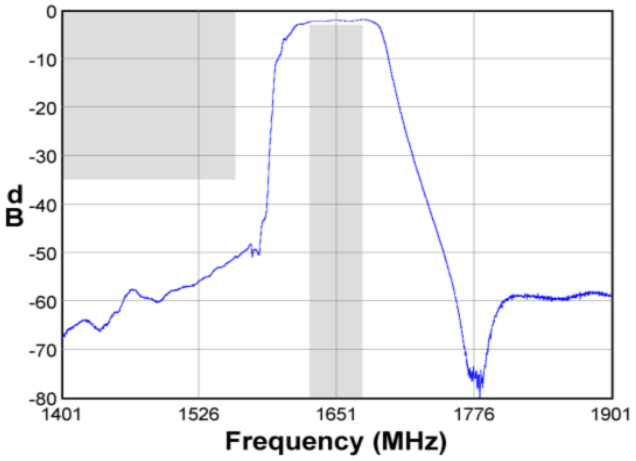
1. All specifications are based on the TriQuint test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. Typical values are based on average measurements at room temperature
5. Evaluated as peak-to-adjacent valley ripple and does not include amplitude variation due to pass-band roll-off at band edges
6. This is the optimum impedance in order to achieve the performance shown

Test Circuit:

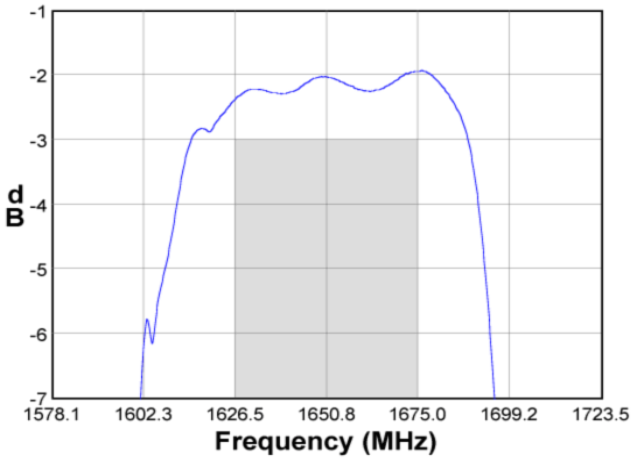


Typical Performance (at room temperature)

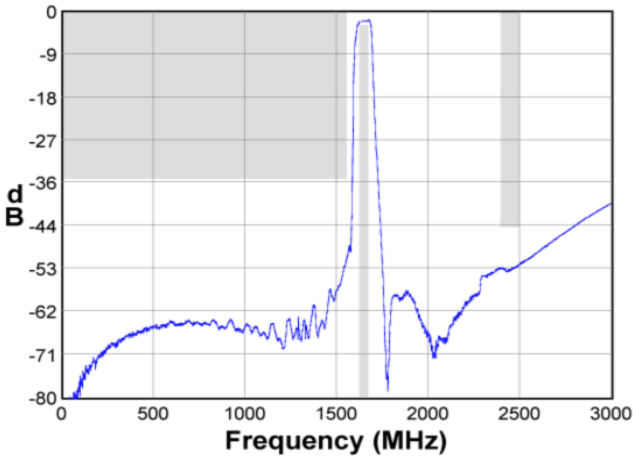
Frequency Response



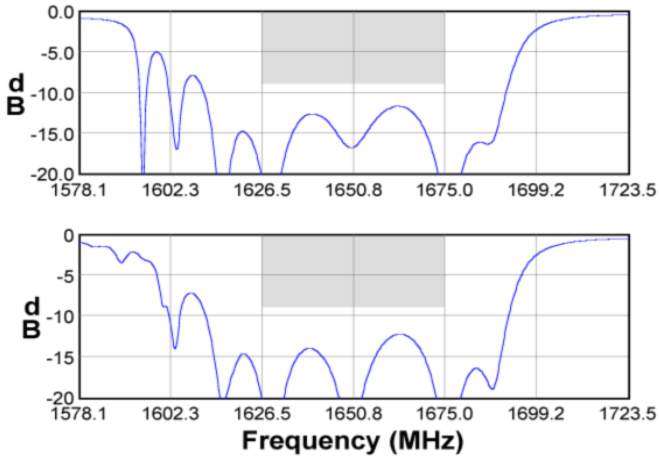
Passband Response



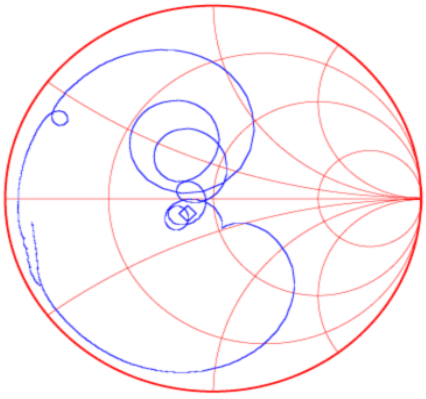
Wideband Response



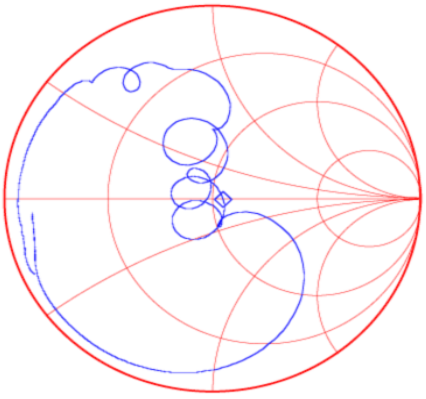
Input/Output Return Loss



Input Smith Chart



Output Smith Chart



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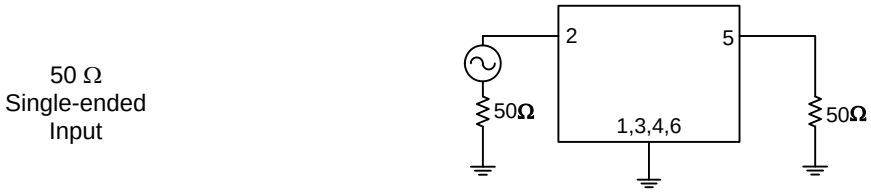
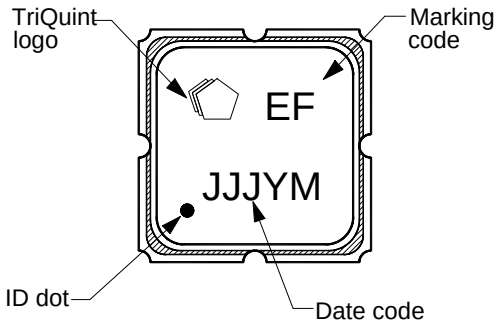
Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

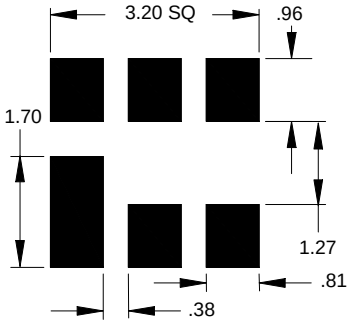


Marking



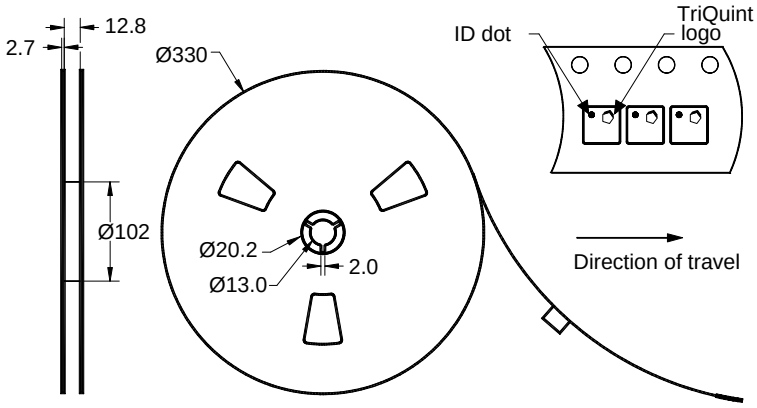
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) M = manufacturing site code

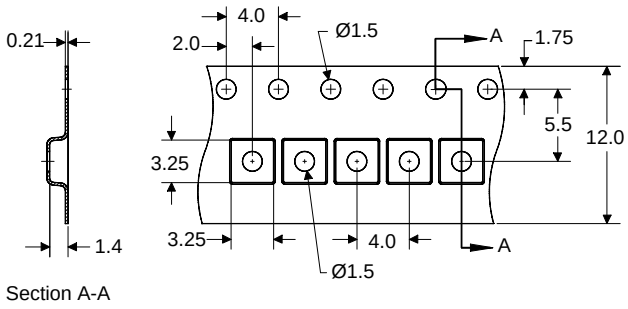
PCB Footprint



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

Tape and Reel





Dimensions shown are nominal in millimeters
Packaging quantity: 5000 units/reel

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Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-20	+85	^{o}C
Storage Temperature Range	T_{stg}	-40	+85	^{o}C
Input Power	P_{in}	-	+10	dBm

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

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