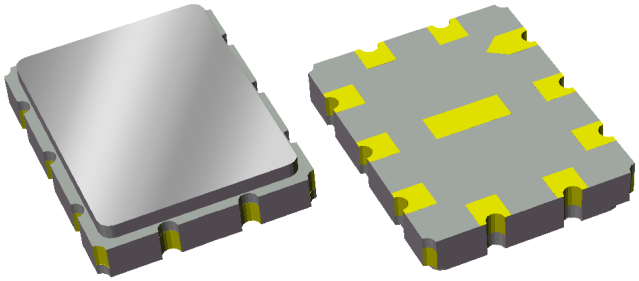
TriQuint SEMICONDUCTOR

Data Sheet

Part Number 856727
144 MHz SAW Filter

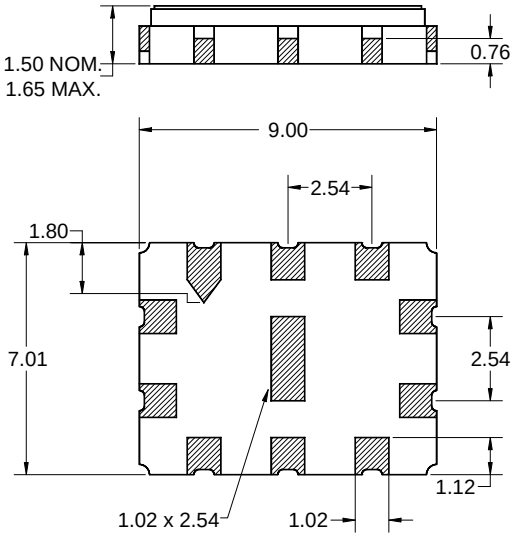
Features

- For broadband applications
- Usable 1.5dB bandwidth of 75 MHz
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small Size
- Hermetic
- **RoHS** compliant (2002/95/EC), **Pb**-free



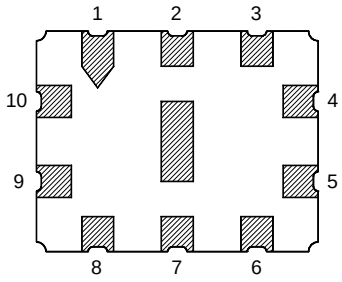
Package

Surface Mount 9.10 x 7.01 x 1.5 mm
SMP-35B



Pin Configuration

Bottom View



Single-ended Configuration

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

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

Electrical Specifications [1]

Operating Temperature Range: [2] -25 to +70 °C

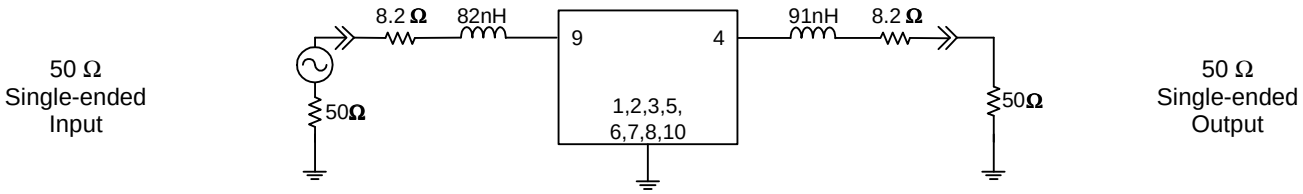
Parameter [3]	Minimum	Typical [4]	Maximum	Unit
Center Frequency	-	144	-	MHz
Insertion Loss at Center Frequency	-	21.20	22.50	dB
Lower 1.5 dB Bandedge [5]	-	101.50	106.50	MHz
Upper 1.5 dB Bandedge [5]	181.50	184.15	-	MHz
Lower 3 dB Bandedge [5]	-	100.42	104	MHz
Upper 3 dB Bandedge [5]	184	185.51	-	MHz
Lower 40 dB Bandedge [5]	85.50	91.81	-	MHz
Upper 40 dB Bandedge [5]	-	199.60	202.50	MHz
Passband Ripple 106.5 – 181.5 MHz	-	0.56	1.5	dB p-p
Phase Linearity 113 – 175 MHz	-	4.55	9	° p-p
Group Delay Variation 113 – 175 MHz	-	46.06	100	ns p-p
Absolute Group Delay	-	0.62	0.97	
Stopband Rejection [5]				
1 – 85.5 MHz	40	43.21	-	dB
202.5 – 260 MHz	38	44.80	-	dB
260 – 1000 MHz	35	40.80	-	
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. Relative to insertion loss at center frequency
6. This is the optimum impedance in order to achieve the performance shown

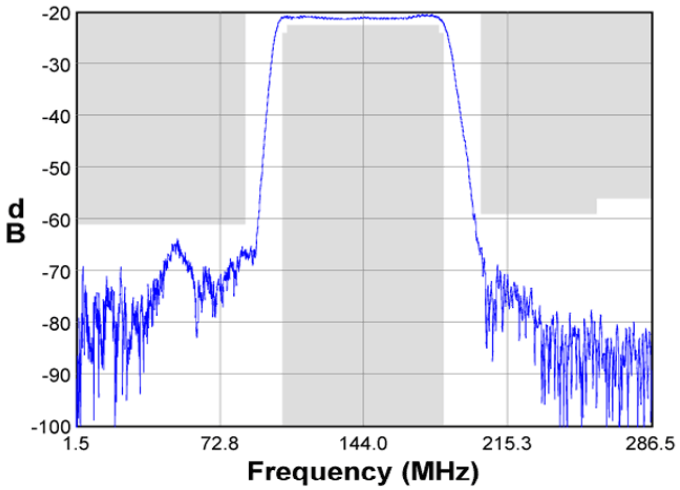
Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

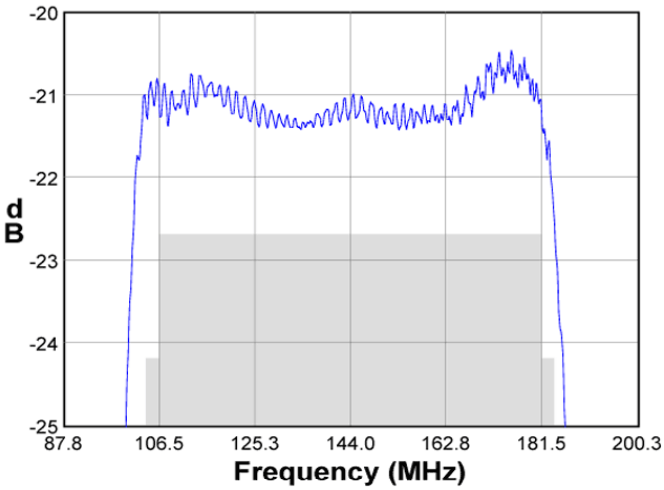


Typical Performance (at room temperature)

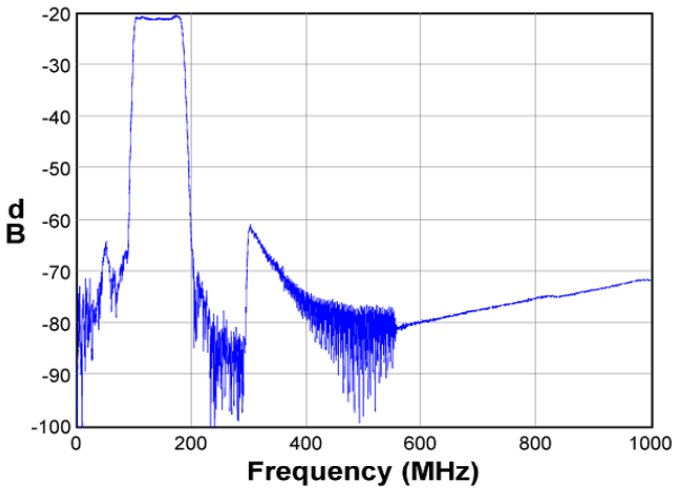
Frequency Response



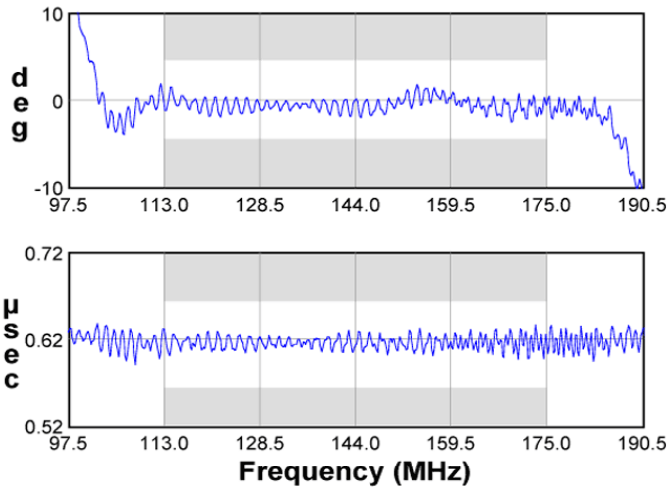
Passband Response



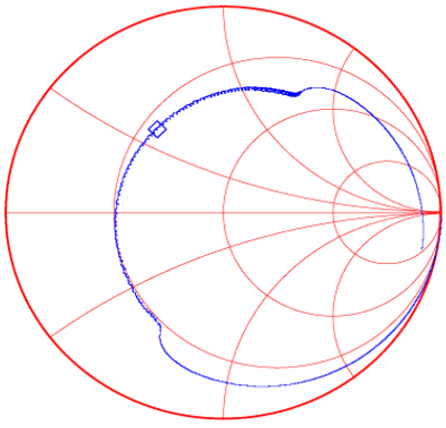
Wideband Response



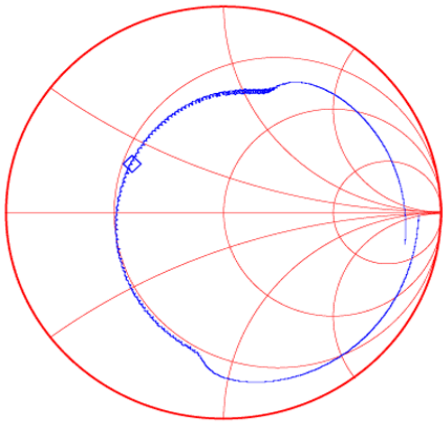
Phase / Group Delay



Input Smith Chart



Output Smith Chart



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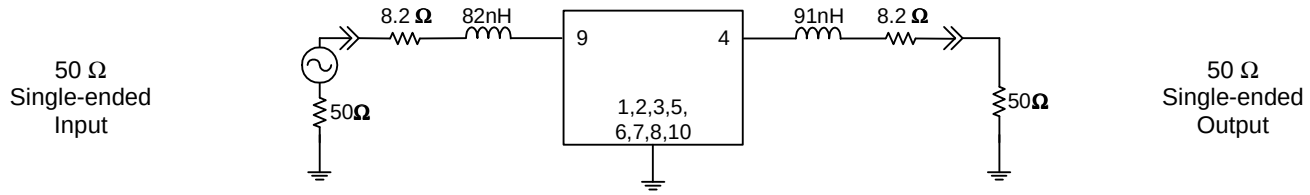
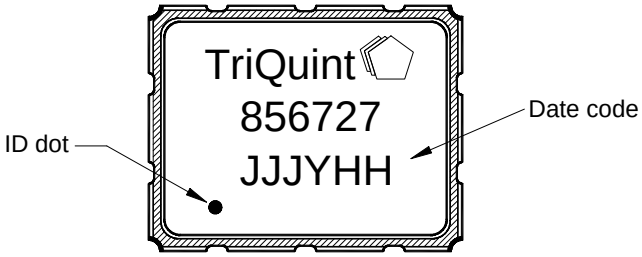
Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

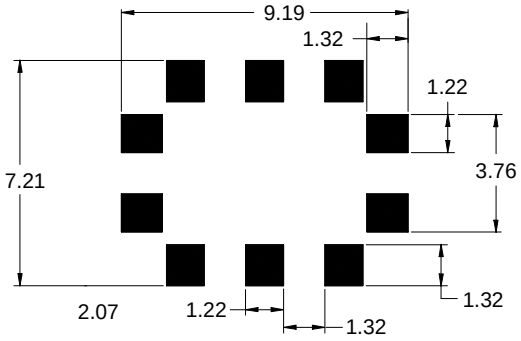


Marking



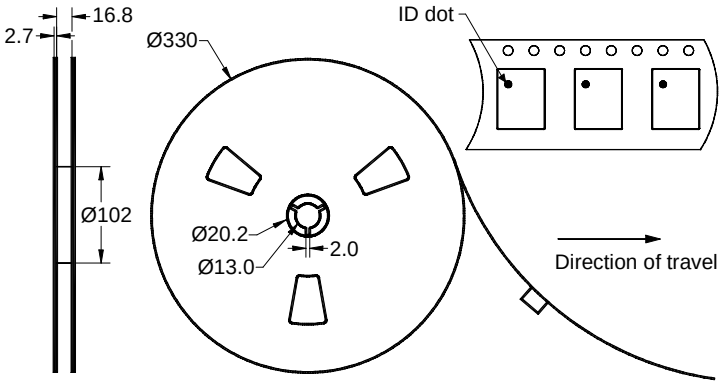
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

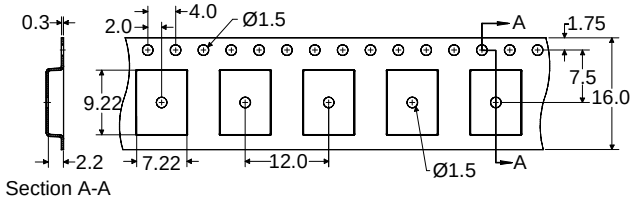
PCB Footprint



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
Temperature Coefficient of Frequency	-	-	-74	ppm/°C

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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