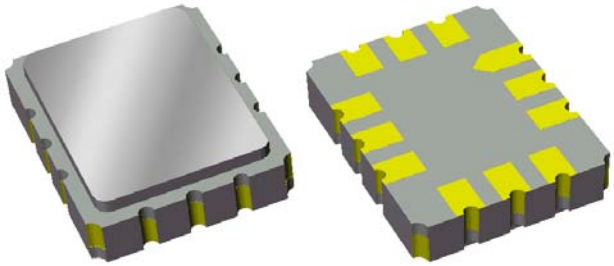
TriQuint SEMICONDUCTOR

Data Sheet

Part Number 856687
456 MHz SAW Filter

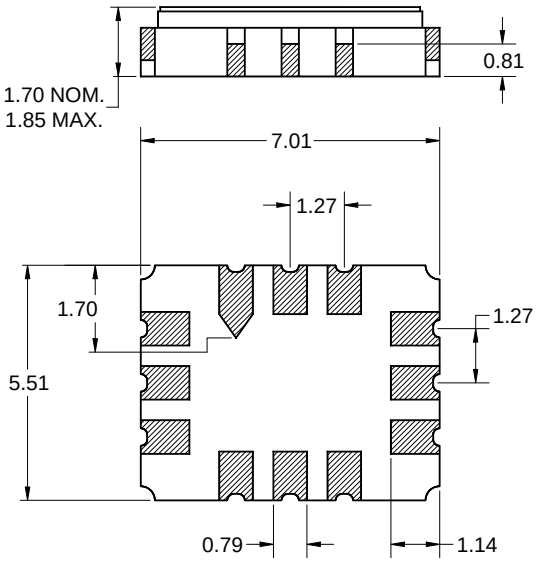
Features

- For broadband applications
- Usable bandwidth of 19 MHz
- Low loss
- High attenuation
- Balanced operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- **RoHS** compliant (2002/95/EC), **Pb**-free



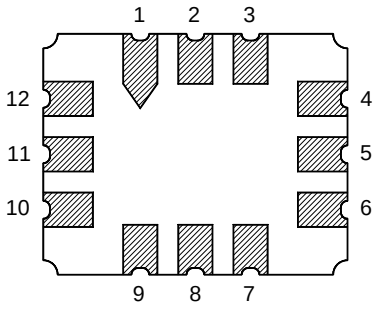
Package

Surface Mount 7.01 x 5.51 x 1.70 mm
SMP-28B



Pin Configuration

Bottom View



Pin No.	Description
10	Input +
12	Input -
4	Output +
6	Output -
1,2,3,5	Case Ground
7,8,9,11	Case 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] -33 to +85 °C

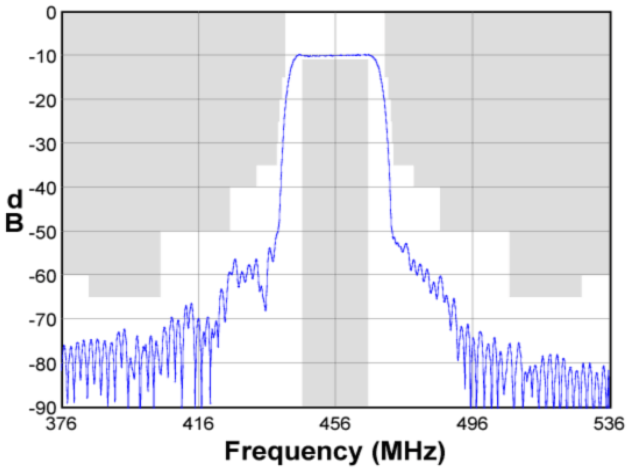
Parameter [3]	Minimum	Typical [4]	Maximum	Unit
Center Frequency, F_0	-	456	-	MHz
Insertion Loss @ F_0	-	10	12.5	dB
Amplitude Variation [5]				
446.5 - 465.5 MHz	-	0.4	1.0	dB p-p
Absolute Attenuation [6]				
10.00 – 384.00 MHz	50	64	-	dB
384.00 – 405.00 MHz	55	62	-	dB
405.00 – 425.30 MHz	40	49	-	dB
425.30 – 433.00 MHz	30	45	-	dB
433.00 – 439.00 MHz	25	42	-	dB
439.00 – 439.25 MHz	20	41	-	dB
439.25 – 439.75 MHz	15	34	-	dB
439.75 – 440.50 MHz	10	22	-	dB
440.50 – 441.50 MHz	5	10	-	dB
470.50 – 471.50 MHz	5	12	-	dB
471.50 – 472.25 MHz	10	22	-	dB
472.25 – 472.75 MHz	15	37	-	dB
472.75 – 473.00 MHz	20	41	-	dB
473.00 – 479.00 MHz	25	42	-	dB
479.00 – 486.70 MHz	30	47	-	dB
486.70 – 507.00 MHz	40	51	-	dB
507.00 – 528.00 MHz	55	65	-	dB
528.00 – 1000 MHz	50	70	-	dB
Absolute Group Delay @ F_0	-	0.37	-	µs
Group Delay Variation [5]				
446.5 - 465.5 MHz	-	28	100	nsec
Time side-lobe response attenuation (1.0 – 500 µs)	40	44	-	dB
Balanced Source Impedance [7]	-	200	-	Ω
Balanced Load Impedance [7]	-	200	-	Ω

Notes:

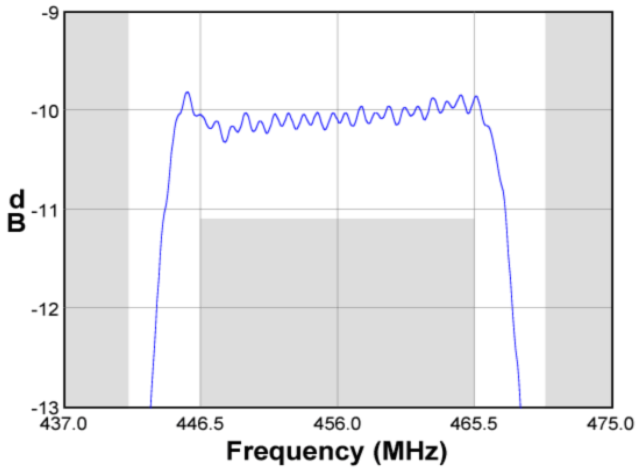
1. All specifications are based on the TriQuint test circuit shown on page 4
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. Typical values are based on average measurements at room temperature
5. Variation is defined as the total peak to peak variation over the defined frequency range
6. Relative to insertion loss at Center Frequency
7. This is the optimum impedance in order to achieve the performance shown

Typical Performance (at room temperature)

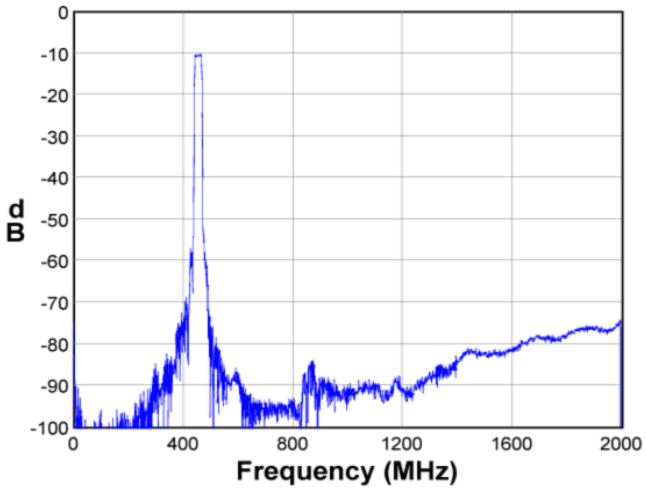
Frequency Response



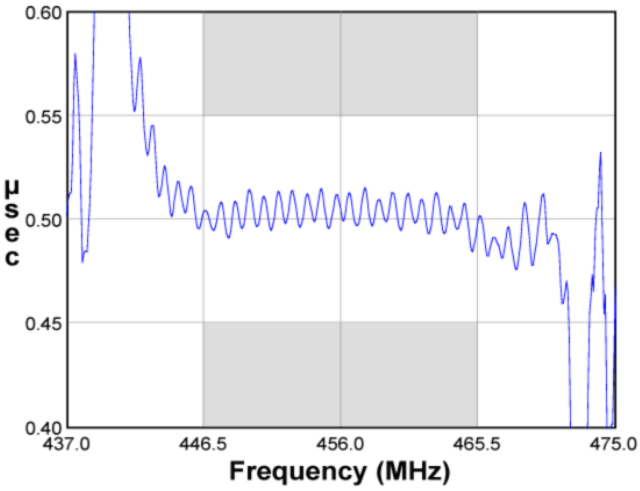
Passband Response



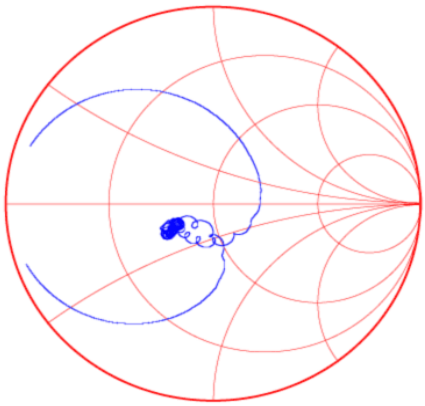
Wideband Response



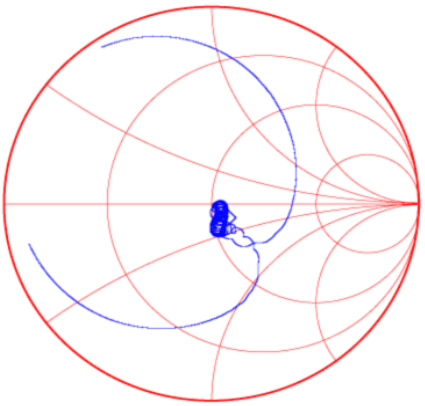
Group Delay Response



Input Smith Chart



Output Smith Chart



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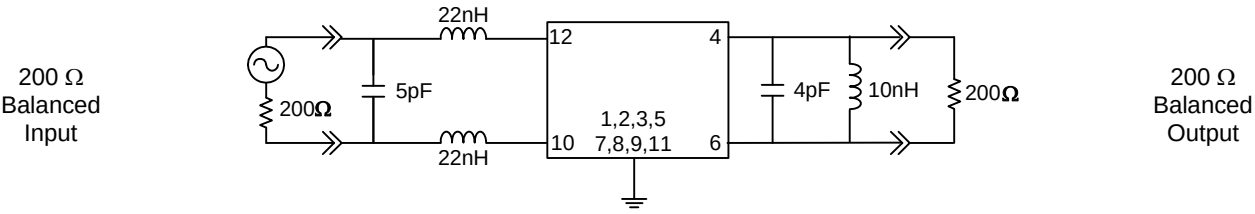
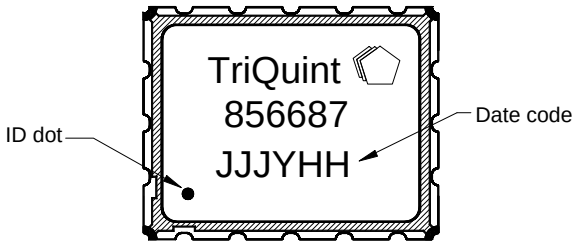
Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

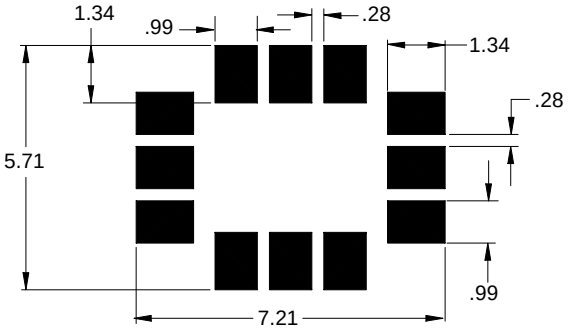


Marking



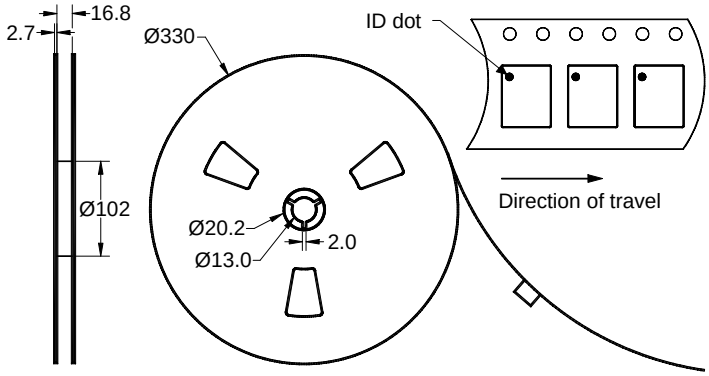
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

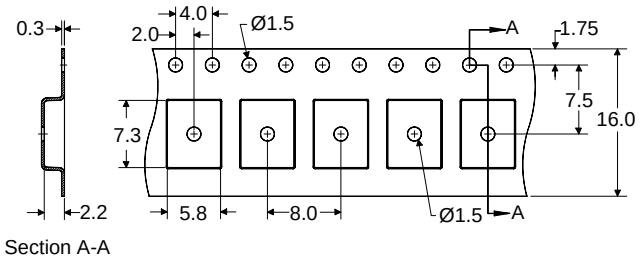
PCB Footprint



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

Tape and Reel





Section A-A

Dimensions shown are nominal in millimeters
Packaging quantity: 3000 units/reel

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Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-33	+85	^{o}C
Storage Temperature Range	T_{stg}	-40	+85	^{o}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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