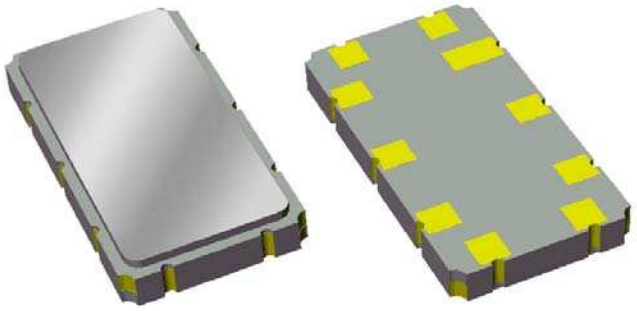
TriQuint SEMICONDUCTOR

Data Sheet

Part Number 856496
208 MHz SAW Filter

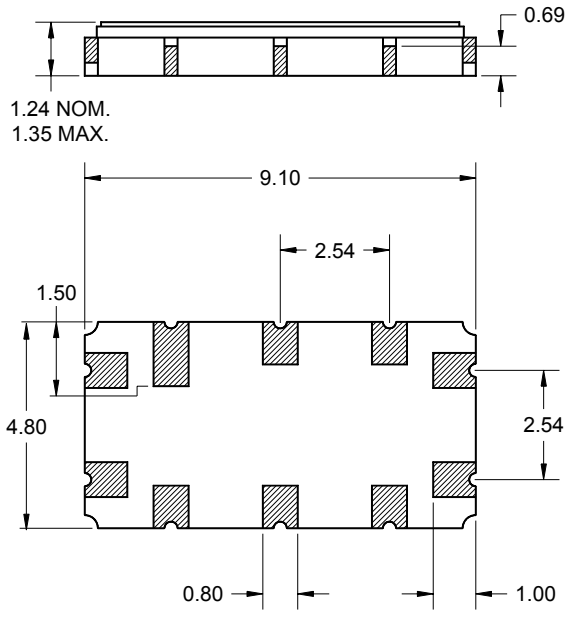
Features

- For WCDMA applications
- Useable bandwidth of 3.84 MHz
- High attenuation
- Balanced operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free



Package

Surface Mount 9.10 x 4.80 x 1.24 mm

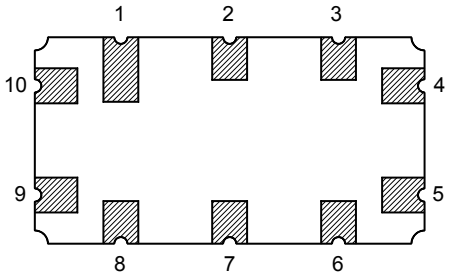


Dimensions shown are nominal in millimeters
All tolerances are ±0.15mm except overall length and width ±0.10mm

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
4	Input
5	Input Return
9	Output
10	Output Return
1,2,3	Case ground
6,7,8	Case ground

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Electrical Specifications [1]

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

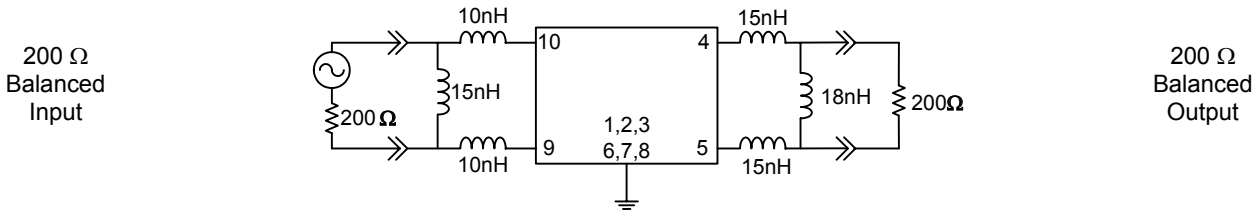
Parameter [3]	Minimum	Typical	Maximum	Unit
Center Frequency, F_0	-	208	-	MHz
Insertion Loss over F_0 ± 1.92 MHz	-	11.5	13	dB
1.0 dB Bandwidth [4]	3.84	4.23	-	MHz
Amplitude Variation over F_0 ± 1.92 MHz	-	0.8	1.0	dB
Mean Group Delay over F_0 ± 1.92 MHz	1.029	1.035	1.039	
Phase Ripple over F_0 ± 1.92 MHz	-	5	-	deg
Phase Ripple RMS over F_0 ± 1.92 MHz	-	1.2	2.0	deg RMS
EVM over F_0 ± 1.92 MHz	-	3	6	%
Stop band Attenuation [4]				
148 - 180 MHz (F_0 – 60 to F_0 – 28 MHz)	55	70	-	dB
180 - 190 MHz (F_0 – 28 to F_0 – 18 MHz)	45	63	-	dB
190 - 203 MHz (F_0 – 18 to F_0 – 5 MHz)	40	45	-	dB
203 - 204.7 MHz (F_0 – 5 to F_0 – 3.3 MHz)	36	39	-	dB
204.7 - 205.2 MHz (F_0 – 3.3 to F_0 – 2.8 MHz)	28	31	-	dB
205.2 - 205.4 MHz (F_0 – 2.8 to F_0 – 2.6 MHz)	25	30	-	dB
205.4 - 205.485 MHz (F_0 – 2. 6 to F_0 – 2.515 MHz)	17	26	-	dB
210.515 - 210.6 MHz (F_0 + 2.515 to F_0 + 2.6 MHz)	17	26	-	dB
210.6 - 210.8 MHz (F_0 + 2.6 to F_0 + 2.8 MHz)	23	26	-	dB
210.8 - 211.3 MHz (F_0 + 2.8 to F_0 + 3.3 MHz)	28	30	-	dB
211.3 - 213 MHz (F_0 + 3.3 to F_0 + 5 MHz)	33	35	-	dB
213 - 226 MHz (F_0 + 5 to F_0 + 18 MHz)	40	42	-	dB
226 - 236 MHz (F_0 + 18 to F_0 + 28 MHz)	45	56	-	dB
236 - 268 MHz (F_0 + 28 to F_0 + 60 MHz)	55	58	-	dB
Source Impedance [5] (Balanced)	-	200	-	Ω
Load Impedance [5] (Balanced)	-	200	-	Ω

Notes:

1. All specifications are based on the 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 and manufacturing tolerances
4. All attenuation measurements are measured relative to minimum insertion loss.
5. This is the optimum impedance in order to achieve the performance shown

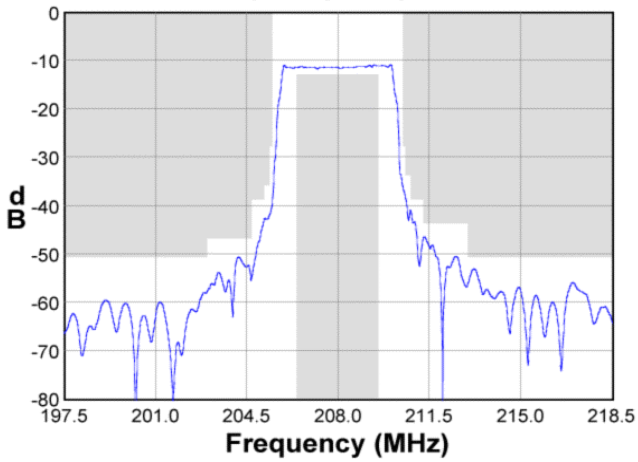
Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

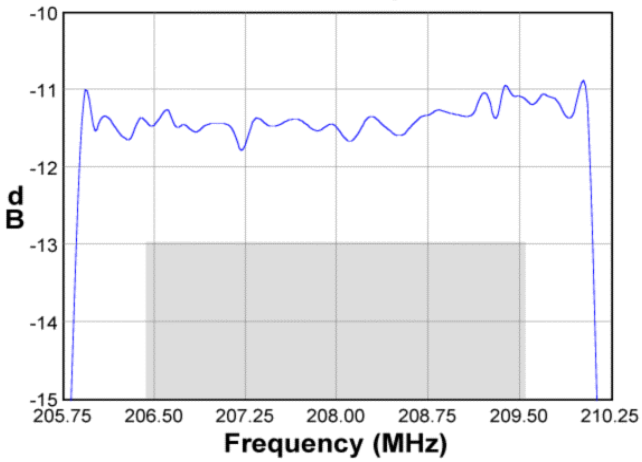


Typical Performance (at +25°C)

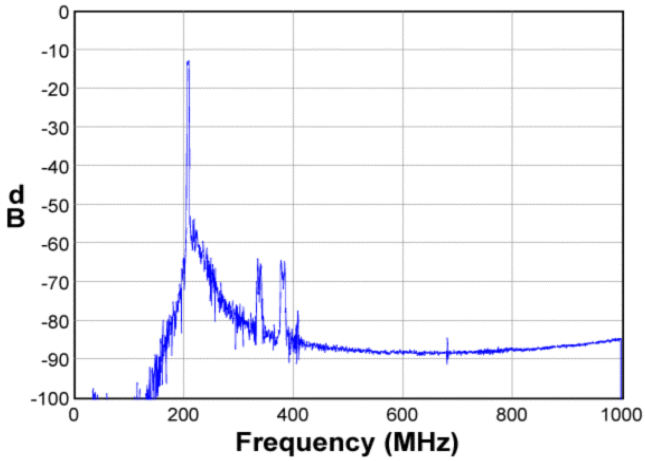
Frequency Response



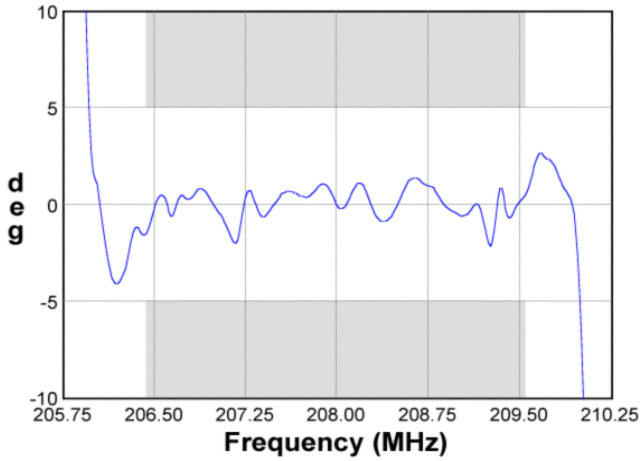
Passband Response



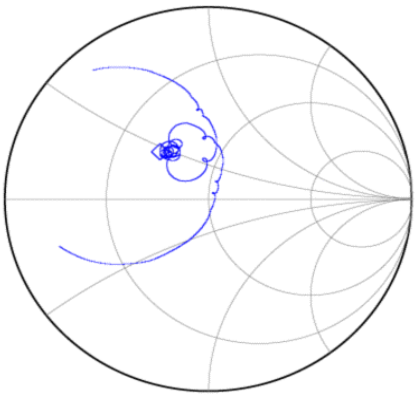
Wideband Response



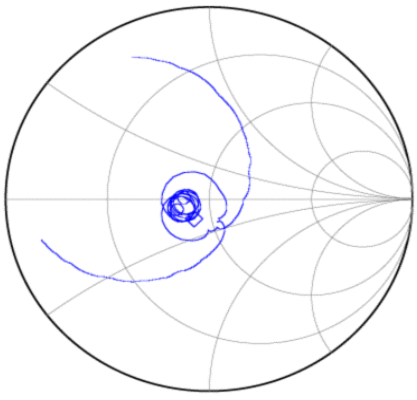
Phase Ripple



Input Smith Chart



Output Smith Chart



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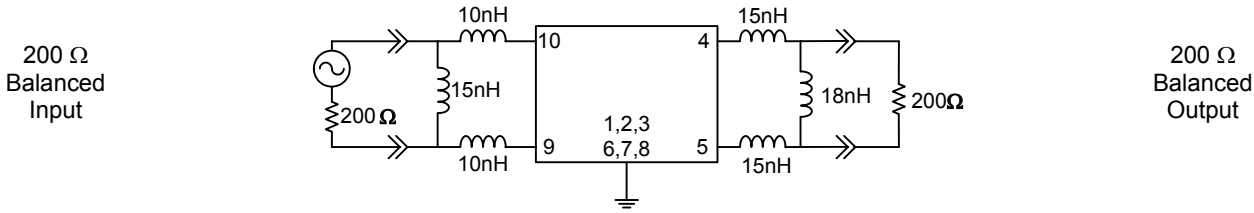
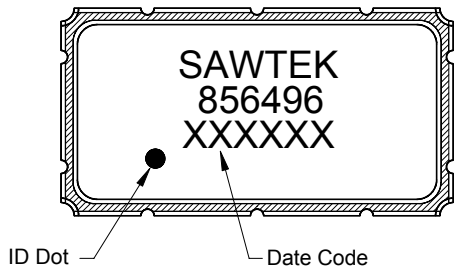
Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

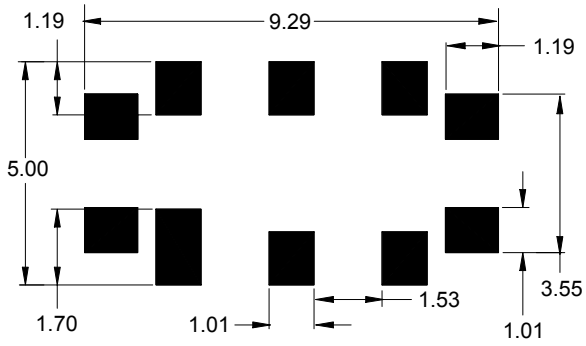


Marking



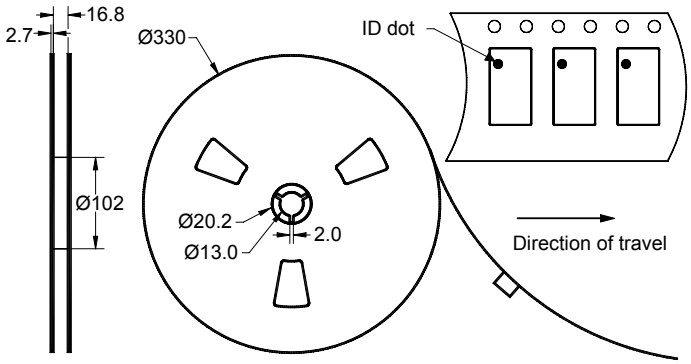
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

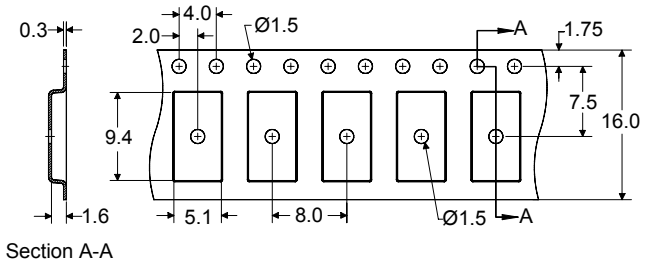
PCB Footprint



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

Tape and Reel





Dimensions shown are nominal in millimeters
Packaging quantity: 4000 units/reel

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Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-40	+85	°C
Storage Temperature Range	T_{stg}	-40	+85	°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 JEDEC J-STD-020C **Pb**-free process, **260°C** 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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