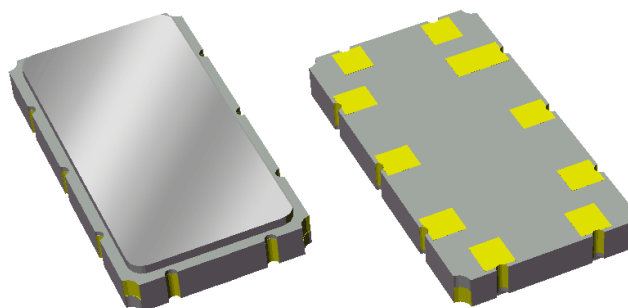


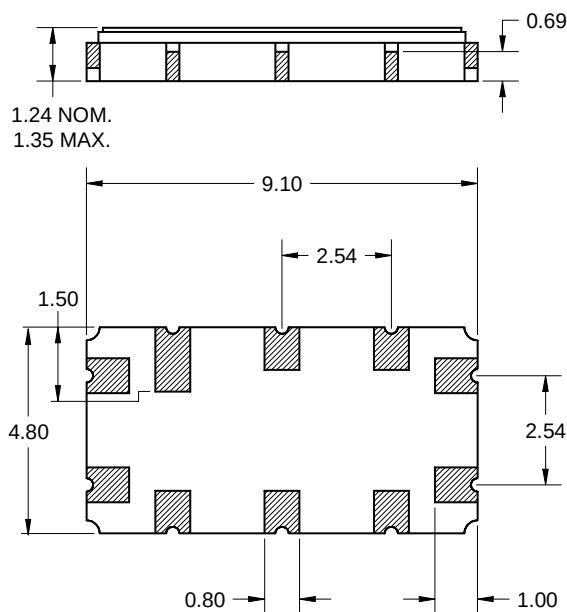
Features

- For multiple applications
- Usable bandwidth 7.0 MHz
- Low loss
- High attenuation
- Balanced or single-ended 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
SMP-35C

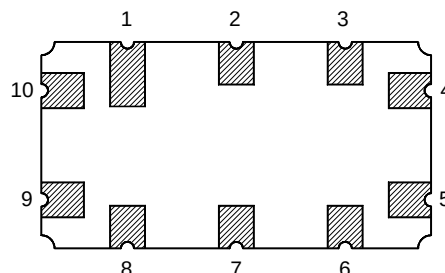


Dimensions shown are nominal in millimeters
All tolerances are ± 0.15 mm except overall
length and width ± 0.10 mm

Body: Al_2O_3 ceramic
Lid: Kovar, Ni plated
Terminations: Au plating 0.5 - 1.0 μ m,
over a 2 - 6 μ m Ni plating

Pin Configuration

Bottom View



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

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

Electrical Specifications ⁽¹⁾

Operating Temperature Range: ⁽²⁾ -40 to +85 °C

Parameter ⁽³⁾	Minimum	Typical ⁽⁵⁾	Maximum	Unit
Center Frequency	-	140	-	MHz
Insertion Loss @ Center Frequency	-	13.6	15.5	dB
Amplitude Variation 137.25 – 142.75 MHz	-	0.4	1.4	dB p-p
136.50 – 143.50 MHz	-	0.5	1.7	dB p-p
Phase Linearity 137.25 – 142.75 MHz	-	1.8	6.0	° p-p
136.50 – 143.50 MHz	-	2.8	7.6	° p-p
Average Group Delay 137.25 – 142.75 MHz	1.02	1.07	1.12	µs
Input/Output Return Loss 136.50 – 143.50 MHz	10	20	-	dB
Relative Attenuation ⁽⁴⁾ 10 – 132MHz	40	45	-	dB
132 – 133 MHz	35	46	-	dB
147 – 150 MHz	35	43	-	dB
150 – 200 MHz	40	45	-	dB
Triple Transit Suppression	40	60	-	dB
Source Impedance (balanced or single-ended) ⁽⁶⁾	-	50	-	Ω
Load Impedance (balanced or single-ended) ⁽⁶⁾	-	50	-	Ω

Notes:

1. All specifications are based on the TriQuint matching schematics shown on page 5
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. Relative to insertion loss at center frequency
5. Typical values are based on average measurements at room temperature
6. This is the optimum impedance in order to achieve the performance shown

Electrical Specifications ⁽¹⁾

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

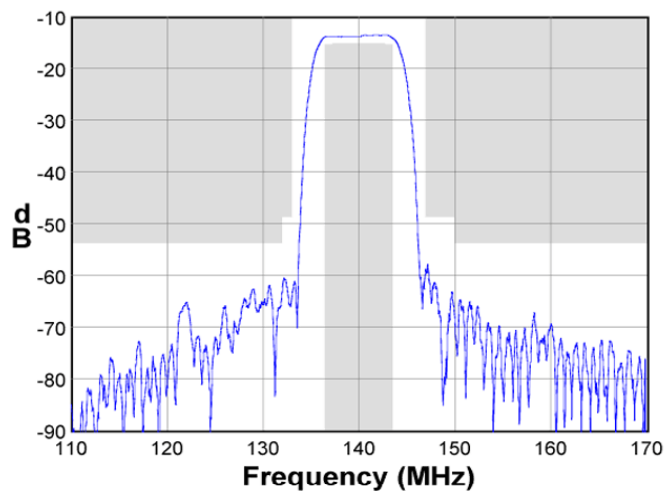
Parameter ⁽³⁾	Minimum	Typical ⁽⁵⁾	Maximum	Unit
Center Frequency	-	140	-	MHz
Insertion Loss @ Center Frequency	-	13.6	15.5	dB
Amplitude Variation				
137.25 – 142.75 MHz	-	0.4	1.4	dB p-p
136.50 – 143.50 MHz	-	0.5	1.7	dB p-p
Phase Linearity				
137.25 – 142.75 MHz	-	1.8	6	° p-p
136.50 – 143.50 MHz	-	2.8	7	° p-p
Average Group Delay				
137.25 – 142.75 MHz	1.02	1.07	1.12	µs
Input/Output Return Loss				
136.50 – 143.50 MHz	10	20	-	dB
Relative Attenuation ⁽⁴⁾				
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150 – 200 MHz	40	45	-	dB
Triple Transit Suppression	40	60	-	dB
Source Impedance (balanced or single-ended) ⁽⁶⁾	-	50	-	Ω
Load Impedance (balanced or single-ended) ⁽⁶⁾	-	50	-	Ω

Notes:

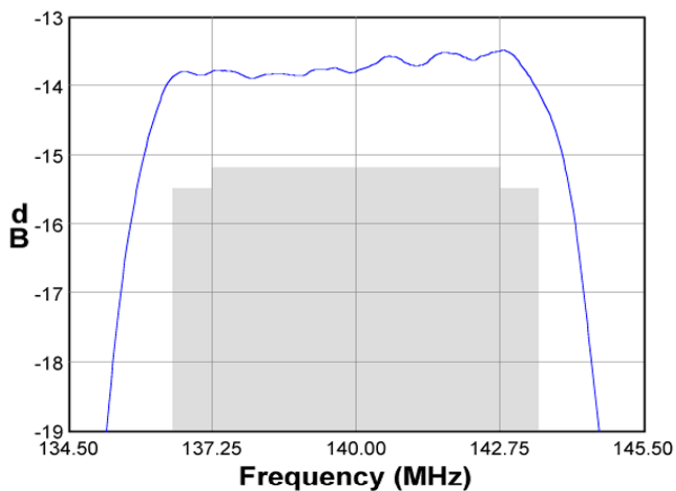
1. All specifications are based on the TriQuint matching schematics shown on page 5
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations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

Typical Performance (at room temperature)

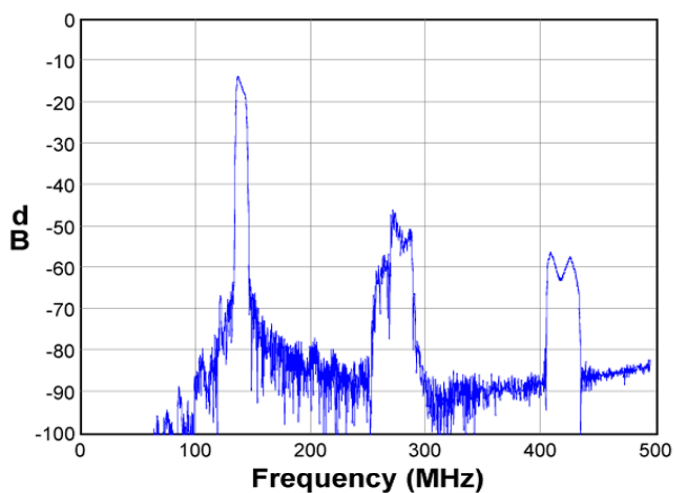
Frequency Response



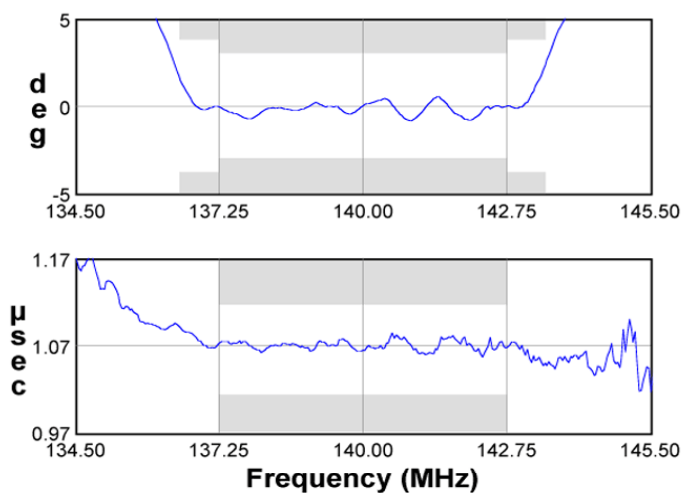
Passband Response



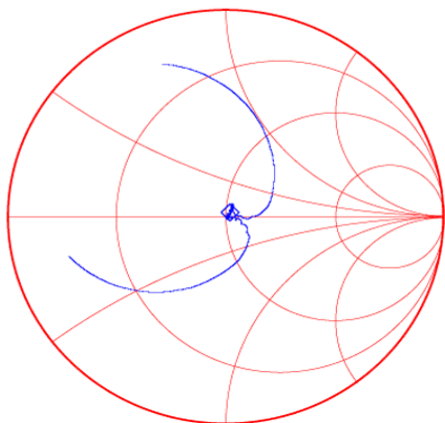
Wideband Response



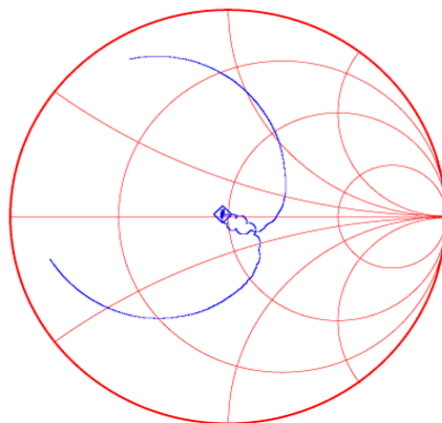
Phase / Group Delay



Input Smith Chart

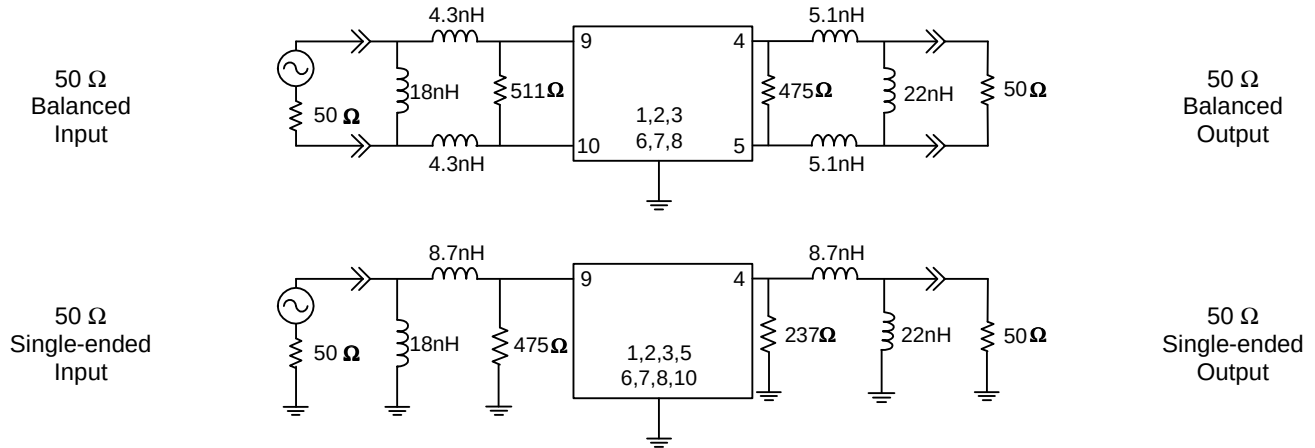


Output Smith Chart

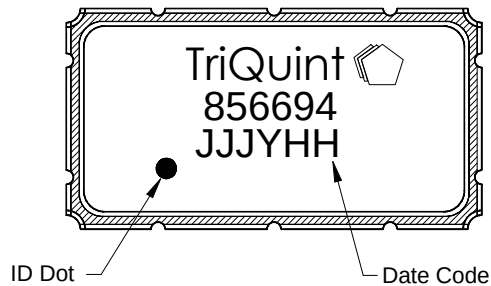


Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

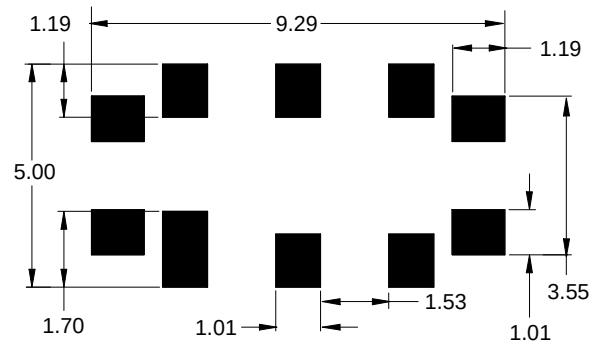


Marking



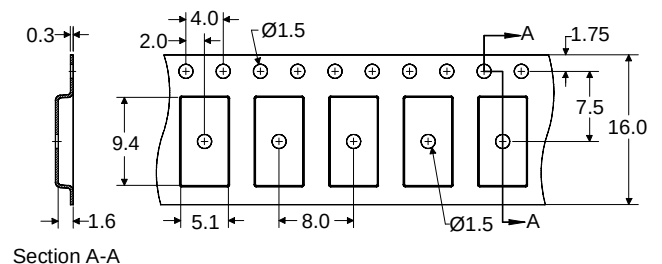
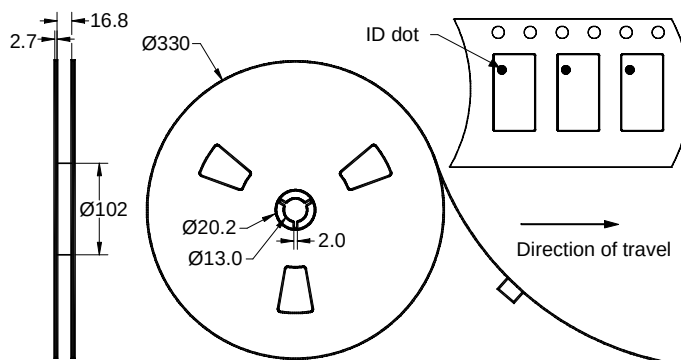
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

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

Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-40	+85	°C
Storage Temperature Range	T _{stg}	-55	+125	°C
Pyroelectric Voltage	V _{pyro}	-	50	mV p-p
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 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](#)

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