
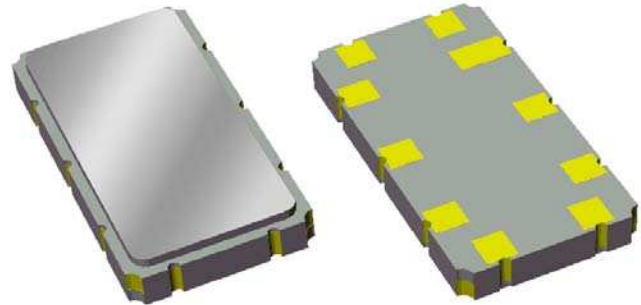


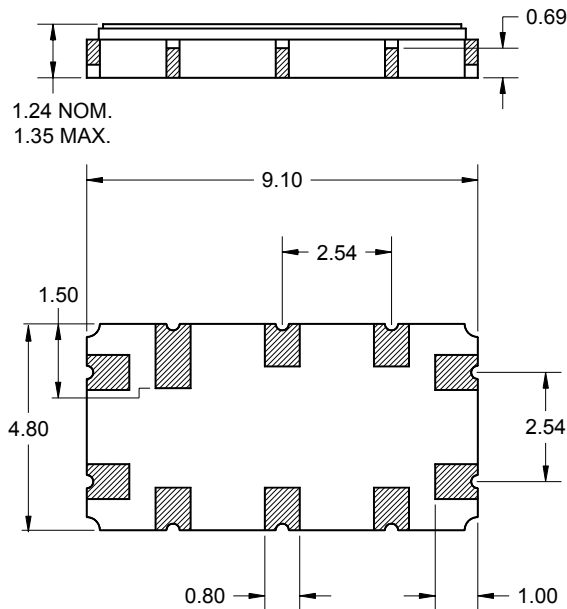
Features

- For UMTS and WCDMA applications
- Usable bandwidth 5 MHz
- Low loss
- High attenuation
- Single-Ended or 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

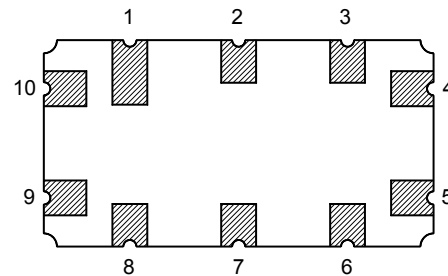


Dimensions shown are nominal in millimeters
 All tolerances are $\pm 0.15\text{mm}$ except overall length and width $+0.10\text{mm}/-0.10\text{mm}$

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

Pin Configuration

Bottom View



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

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

Electrical Specifications ⁽¹⁾

Operating Temperature Range: ⁽²⁾ -35 °C to +85 °C

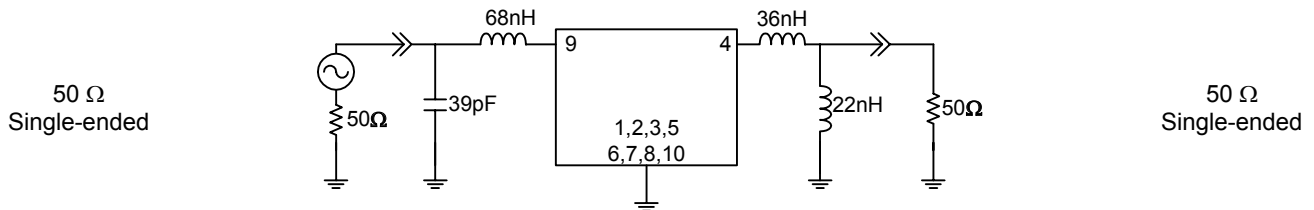
Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Center Frequency	-	167.0	-	MHz
Maximum Insertion Loss 164.5 – 169.5 MHz	-	8.0	10	dB
Amplitude Variation 164.5 – 169.5 MHz	-	0.5	1.0	dB p-p
Input/Output Return Loss 164.5 – 169.5 MHz	8	12	-	dB
Error Vector Magnitude 164.5 – 169.5 MHz	-	2	4.0	%
Input IP3	+40	43	-	dBm
Input power	-	-	+10	dBm
Relative Attenuation ⁽⁴⁾				
110 – 147 MHz	40	45	-	dB
147 – 157 MHz	30	37	-	dB
157 – 161.1 MHz	20	26	-	dB
161.1 – 163.5 MHz	3	5	-	dB
170.5 – 172.9 MHz	3	5	-	dB
172.9 – 177 MHz	20	25	-	dB
177 – 187 MHz	30	33	-	dB
187 – 224 MHz	40	43	-	dB
Source/Load Impedance ⁽⁵⁾ (Single-Ended)	-	50	-	Ω
Source/Load Impedance ⁽⁵⁾ (Balanced)	-	200	-	Ω

Notes:

1. All specifications are based on 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. 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



Electrical Specifications ⁽¹⁾

Operating Temperature Range: ⁽²⁾ -10 °C to +85 °C

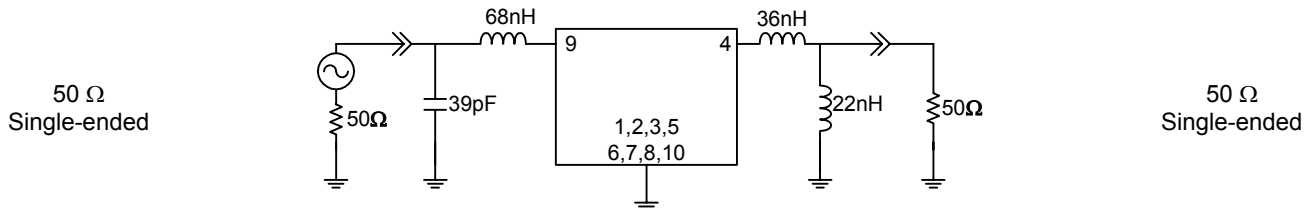
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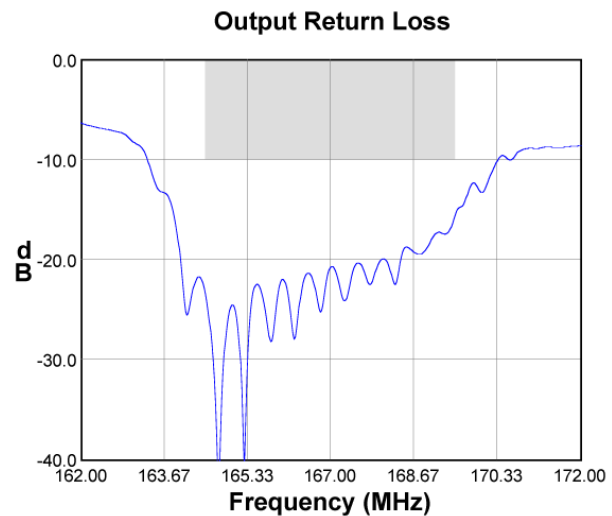
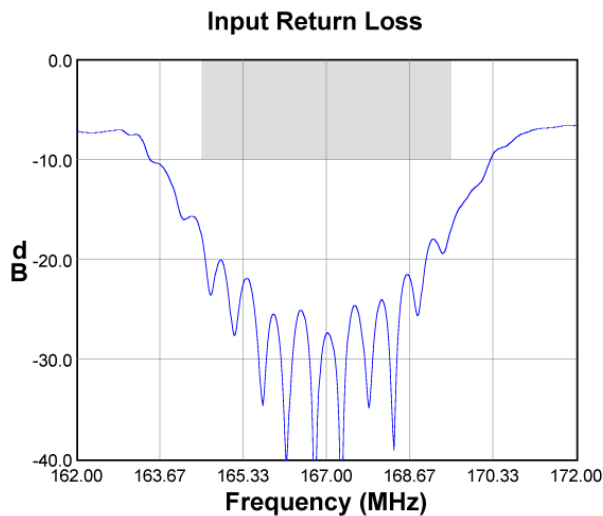
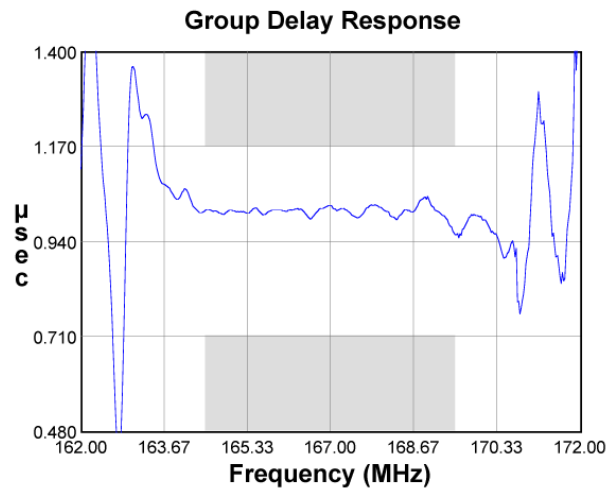
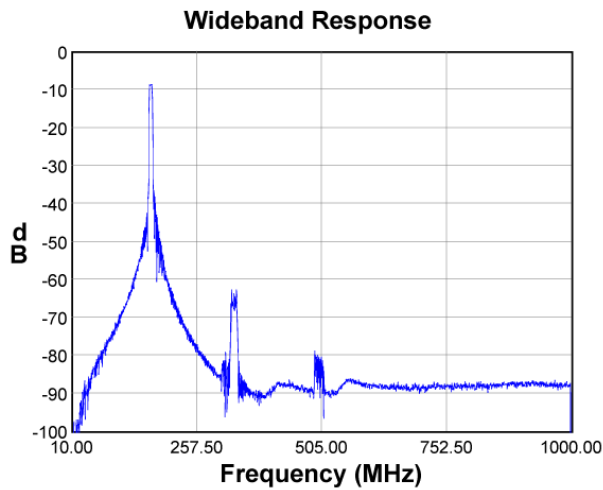
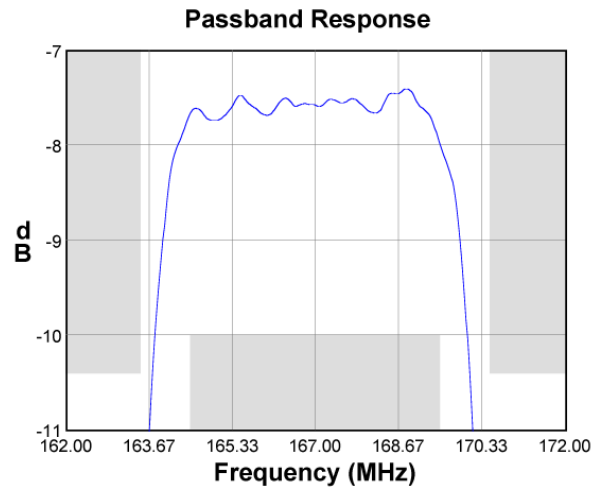
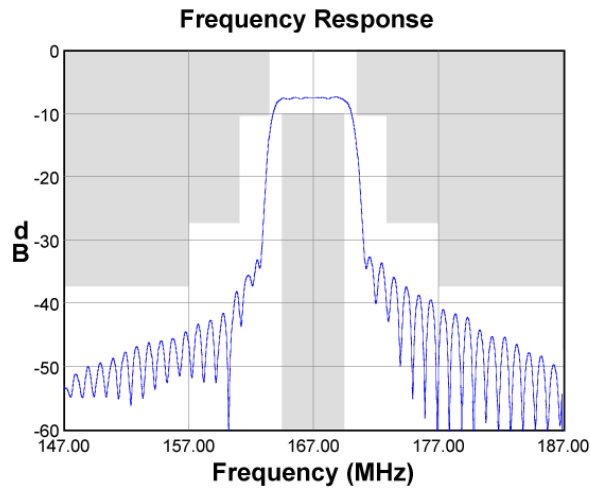
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Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

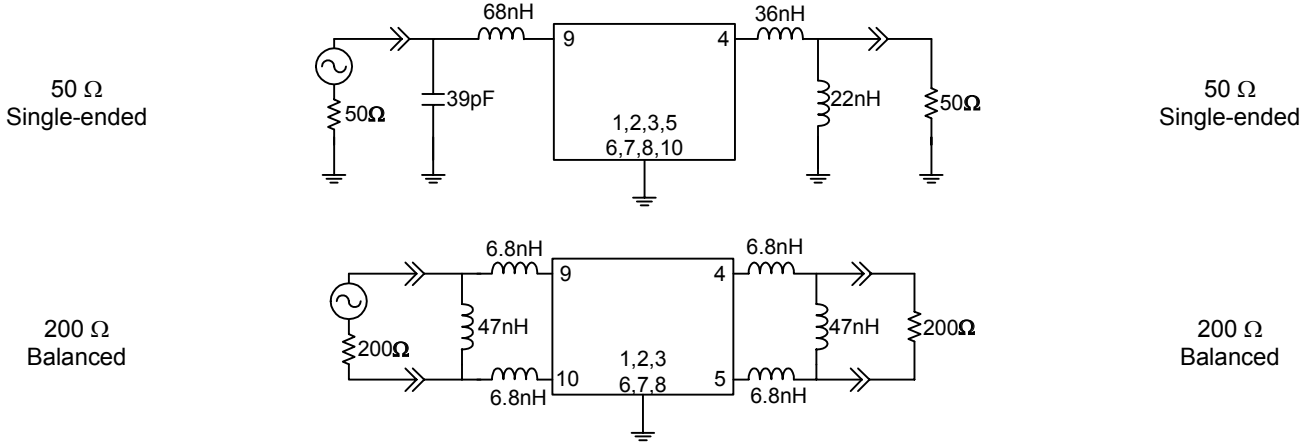


Typical Performance (at +25°C)

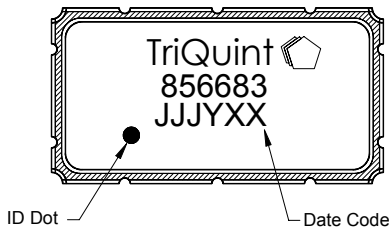


Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

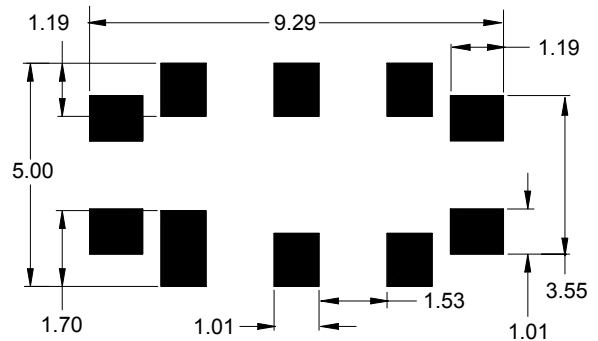


Marking



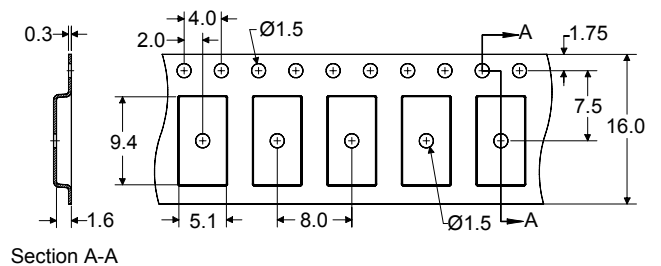
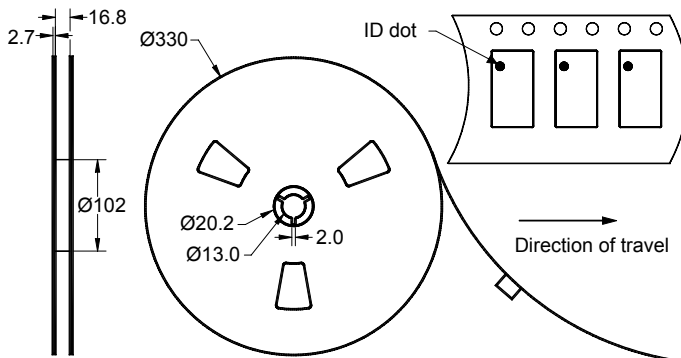
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

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	-35	+85	°C
Operating Temperature Range	T	-10	+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](#)

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[Representatives or distributors](#)