
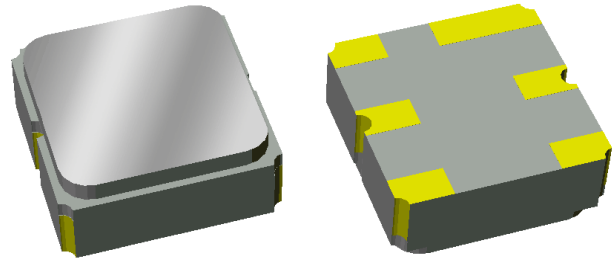


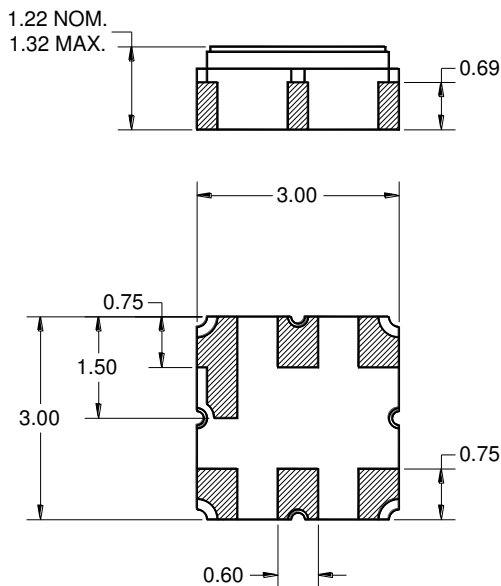
## Features

- For Base Station applications
- Usable bandwidth 18 MHz
- Low loss
- High attenuation
- Single-ended operation
- No impedance matching required for operation at 50  $\Omega$
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



## Package

Surface Mount 3.00 x 3.00 x 1.22 mm  
SMP-12

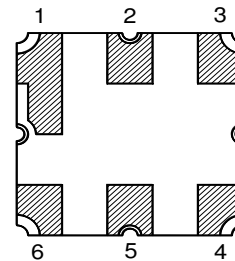


Dimensions shown are nominal in millimeters  
All tolerances are  $\pm 0.15$ mm except overall  
length and width  $\pm 0.10$ mm

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

## Pin Configuration

Bottom View



Pin No.	Description
2	Input
5	Output
1,3,4,6	Case Ground

**Electrical Specifications <sup>(1)</sup>**

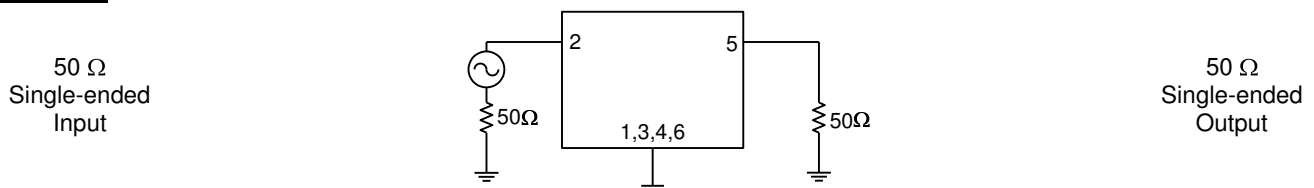
Operating Temperature Range: <sup>(2)</sup> -40 to +85 °C

Parameter <sup>(3)</sup>	Minimum	Typical <sup>(4)</sup>	Maximum	Unit
<b>Center Frequency</b>	-	707	-	MHz
<b>Maximum Insertion Loss</b> 698 – 716 MHz	-	1.5	2.0	dB
<b>Amplitude Variation</b> 698 – 716 MHz	-	0.5	1.0	dB
<b>Amplitude Variation (over any 5MHz band)</b> 698 – 716 MHz	-	0.4	0.8	dB
<b>Relative Attenuation <sup>(5)</sup></b>				
70 – 120 MHz	50	52	-	dB
430 – 470 MHz	41	44	-	dB
728 – 746 MHz	9	21	-	dB
753 – 763 MHz	35	39	-	dB
804 – 815 MHz	39	42	-	dB
930 – 940 MHz	41	45	-	dB
1609 – 1629 MHz	47	53	-	dB
1860 – 1880 MHz	44	53	-	dB
2770 – 3043 MHz	15	19	-	dB
<b>Phase Ripple</b> 698 – 716 MHz	-	6	30	deg
<b>Group Delay Variation</b> 698 – 716 MHz	-	11	21	ns p-p
<b>Absolute Delay</b> 698 – 716 MHz	-	34	40	ns
<b>Input/Output VSWR</b> 698 – 716 MHz	-	1.7:1	2:1	-
<b>Source Impedance: (single-ended) <sup>(6)</sup></b>	-	50	-	Ω
<b>Load Impedance: (single-ended) <sup>(6)</sup></b>	-	50	-	Ω

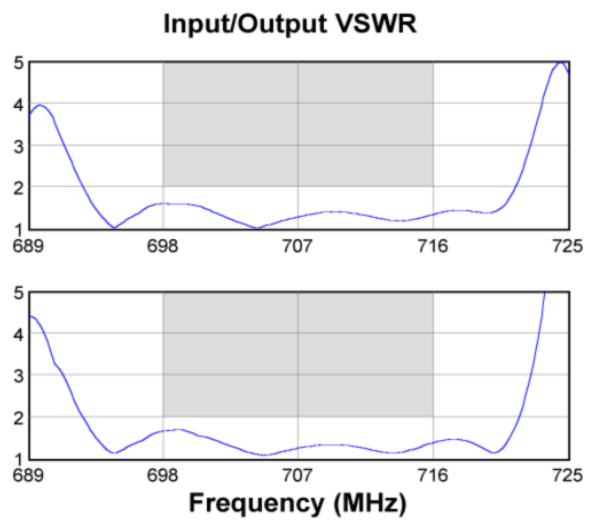
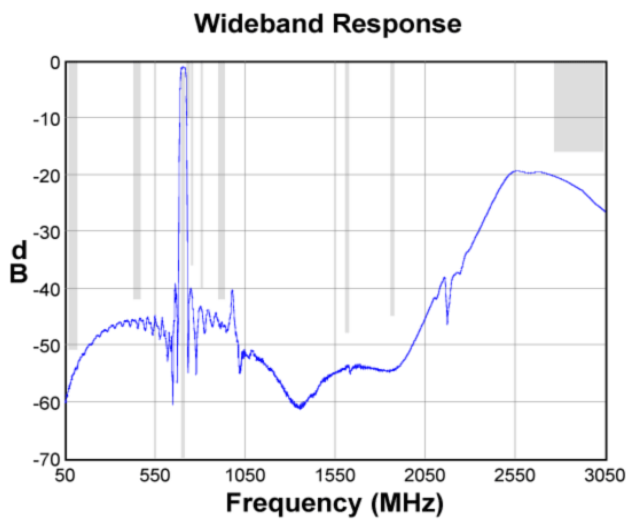
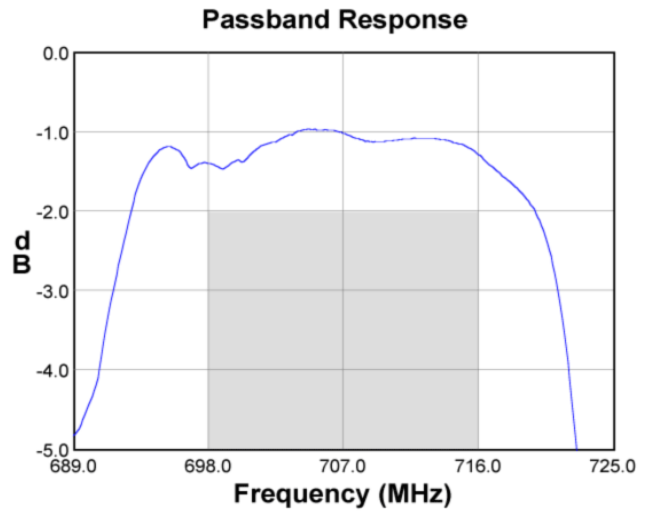
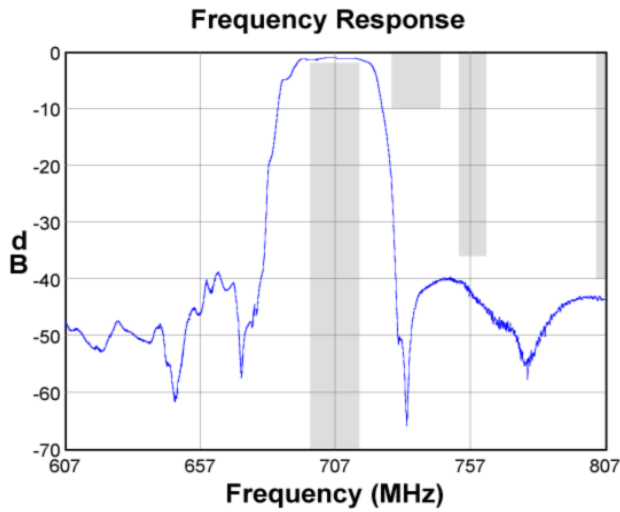
**Notes:**

1. All target 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. Typical values are based on average measurements at room temperature
5. Attenuation is relative to loss at center frequency
6. This is the optimum impedance In order to achieve the performance shown

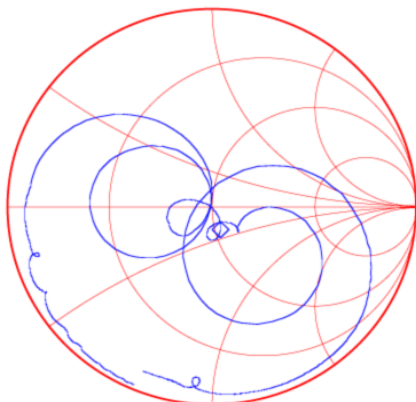
**Test Circuit:**



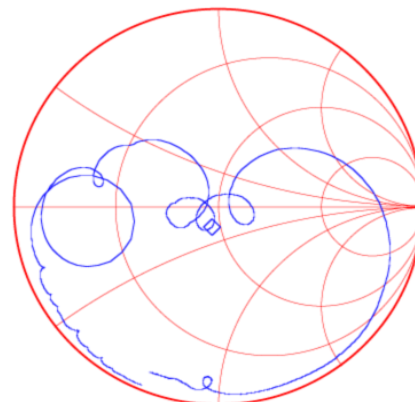
**Typical Performance (at room temperature)**



**Input Smith Chart**



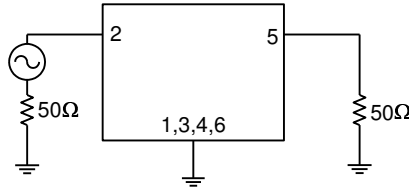
**Output Smith Chart**



**Matching Schematics**

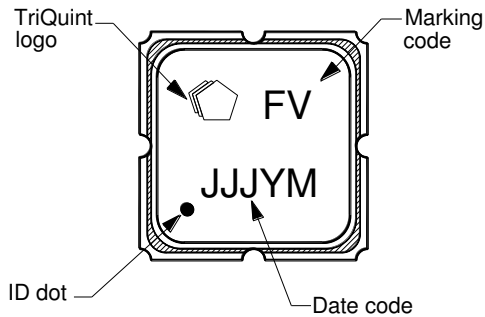
Actual matching values may vary due to PCB layout and parasitics

50  $\Omega$   
Single-ended  
Input

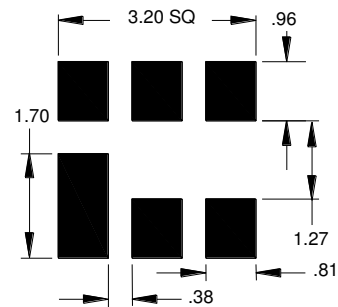


50  $\Omega$   
Single-ended  
Output

**Marking**



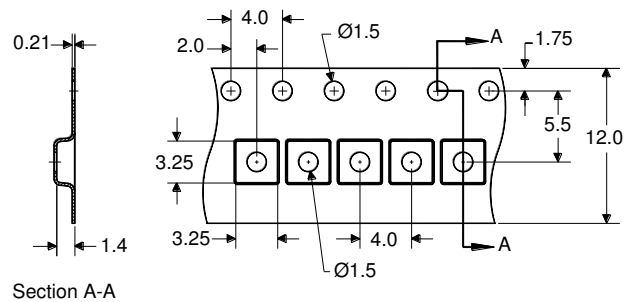
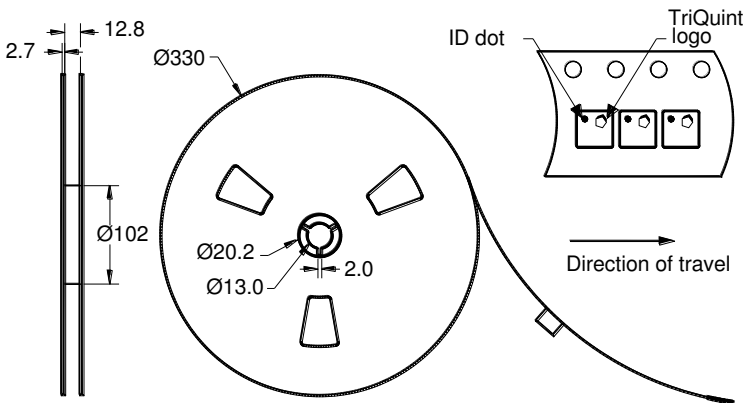
**PCB Footprint**



The date code consists of: day of the current year (Julian, 3 digits), Y = last digit of the year and M = manufacturing site code

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

**Tape and Reel**




Dimensions shown are nominal in millimeters  
Packaging quantity: 5000 units/reel

### Maximum Ratings


Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-40	+85	°C
Storage Temperature Range	T <sub>stg</sub>	-40	+85	°C
DC Voltage on any port (instantaneous only)	V <sub>DC</sub>	-	+5	V

### 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](#)

TriQuint's liability is limited only to the Surface Acoustic Wave (SAW) component(s) described in this data sheet. TriQuint does not accept any liability for applications, processes, circuits or assemblies, which are implemented using any TriQuint component described in this data sheet.

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