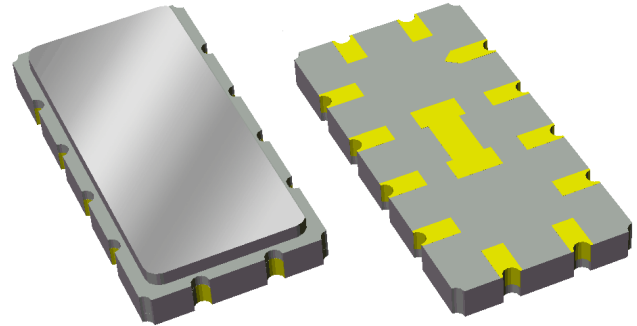


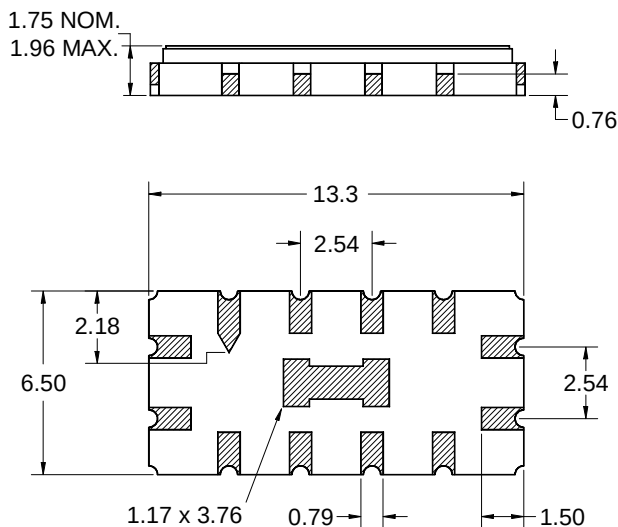
Features

- For Broadband applications
- Usable bandwidth 1.0 MHz
- Low loss
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



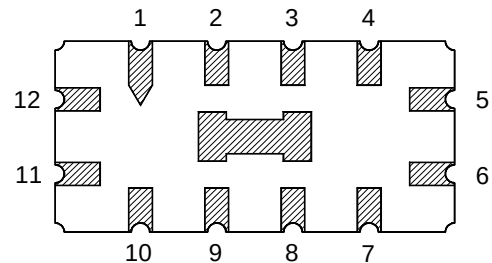
Package

Surface Mount 13.30 x 6.50 x 1.75 mm
SMP-53



Pin Configuration

Bottom View



Single-ended Configuration

Pin No.	Description
11	Input
5	Output
1,4,6,7,10,12	Ground
2,3,8,9	Case Ground

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

Electrical Specifications ⁽¹⁾

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

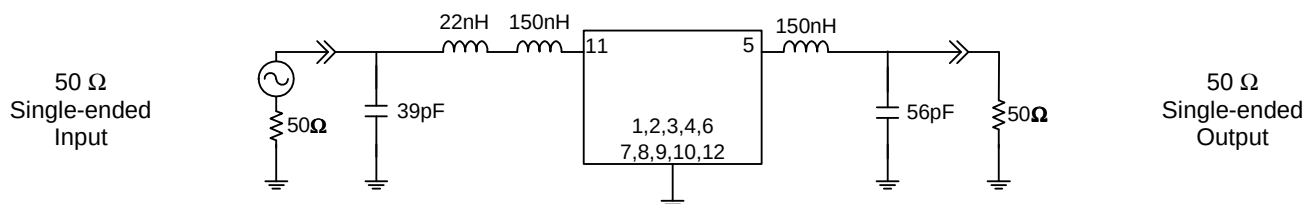
Parameter ⁽³⁾	Minimum	Typical ⁽⁴⁾	Maximum	Unit
Center Frequency	-	110.592	-	MHz
Insertion Loss at 110.592 MHz	4.70	6.52	7.70	dB
3 dB Bandwidth ⁽⁵⁾	-	0.79	1.0	MHz
Lower 30 dB Band Edge ⁽⁵⁾	109.292	-	-	MHz
Upper 30 dB Band Edge ⁽⁵⁾	-	-	111.892	MHz
Lower 40 dB Band Edge ⁽⁵⁾	108.192	-	-	MHz
Upper 40 dB Band Edge ⁽⁵⁾	-	-	112.992	MHz
Passband Ripple 110.442 – 110.742 MHz	-	0.25	0.6	dB p-p
Group Delay Variation 110.392 – 110.792 MHz	-	100	150	ns p-p
Triple Transit Suppression	32	38	-	dB
Source Impedance (single-ended) ⁽⁶⁾	-	50	-	Ω
Load Impedance (single-ended) ⁽⁶⁾	-	50	-	Ω

Notes:

1. All specifications are based on the 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. Relative to insertion loss at center frequency
6. This is the optimum impedance in order to achieve the performance shown

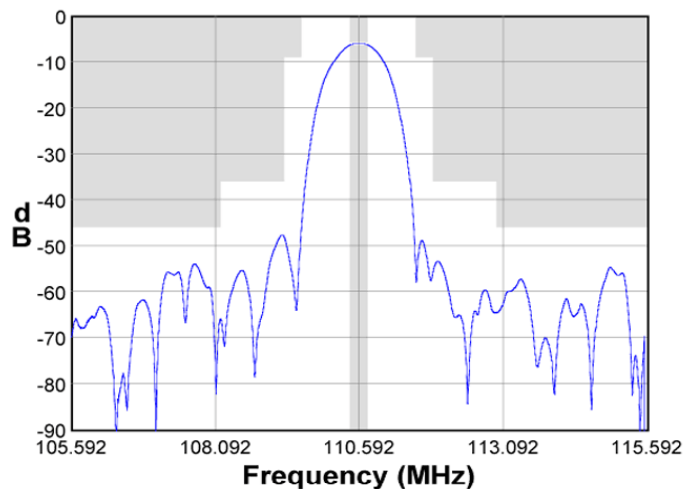
Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

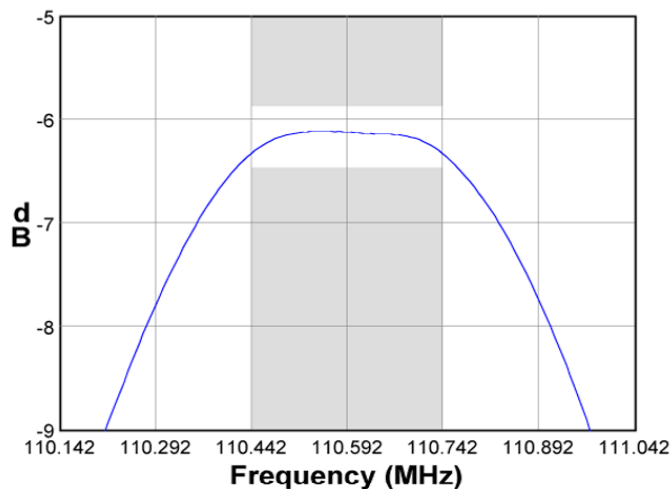


Typical Performance (at room temperature)

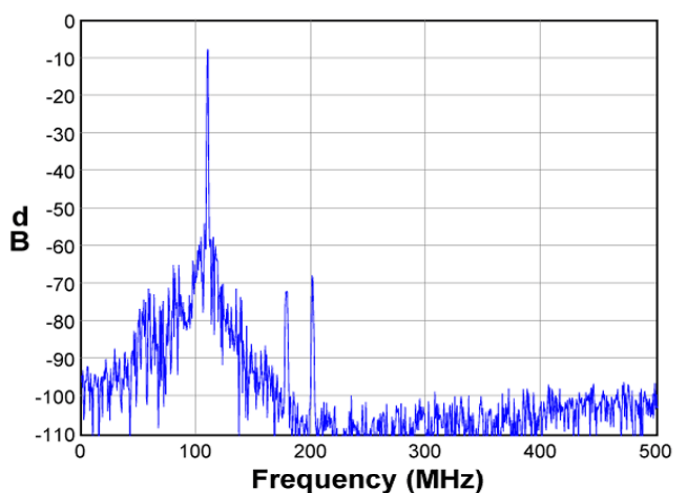
Frequency Response



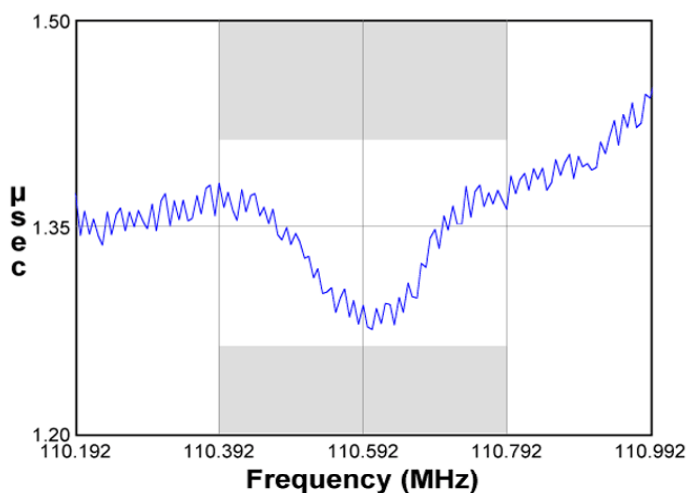
Passband Response



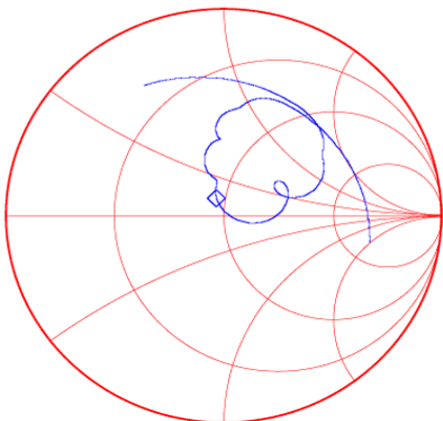
Wideband Response



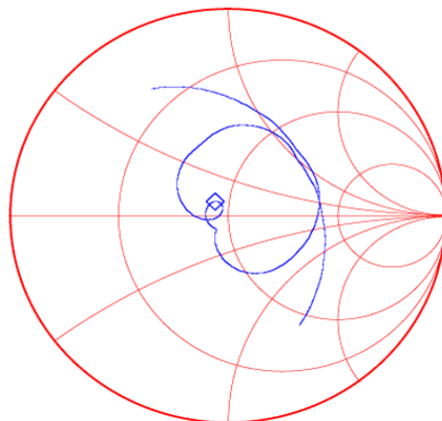
Group Delay Variation



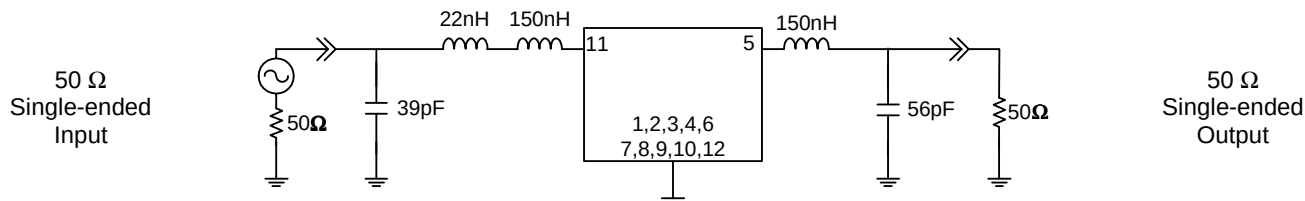
Input Smith Chart



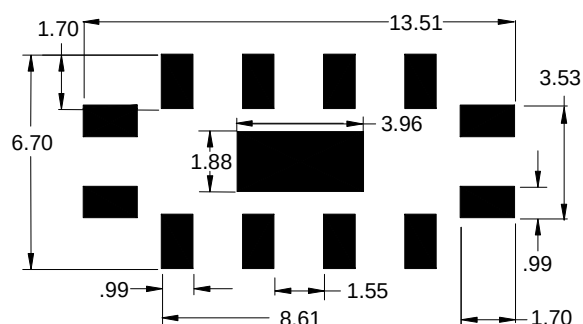
Output Smith Chart



Actual matching values may vary due to PCB layout and parasitics

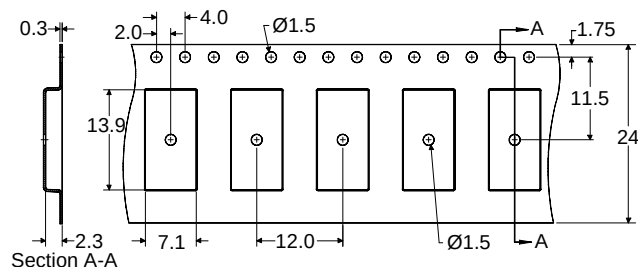


PCB Footprint



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

Technical drawing of a circular component. The main view shows a circle with a central hole of diameter $\varnothing 20.2$ and three radial slots, each with a width of 2.0. The overall width of the component is 24.8. A detail view shows a row of holes with an "ID dot" label. The "Direction of travel" is indicated by an arrow pointing right.



Dimensions shown are nominal in millimeters
Packaging quantity: 2000 units/reel

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 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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