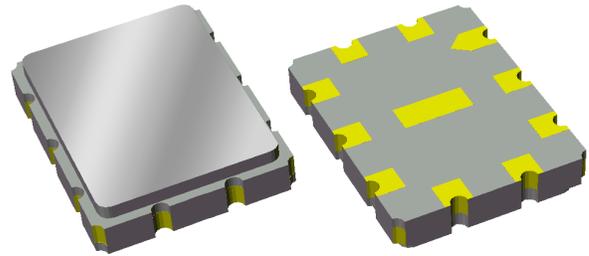


Applications

- For Broadband applications



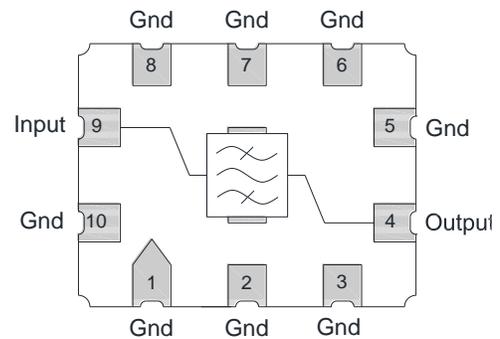
SMP-35B, 9.0 x 7.01 x 1.50 mm

Product Features

- Usable 3 dB bandwidth 72 MHz
- High-attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Hermetically Sealed
- RoHS compliant, Pb-free



Functional Block Diagram



Top View

General Description

856314 is RoHS compliant and Pb-free.

Pin Configuration

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

Ordering Information

Part No.	Description
856314	Packaged Part
856314-EVB	Evaluation board

Standard T/R size = 2000 units/reel

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature ⁽¹⁾	-40 to +85 °C
Operating Temperatures ⁽²⁾	0 to +70 °C

Notes:

1. Operation of this device outside the parameter ranges given may cause permanent damage.
2. Specifications are not guaranteed over all operable conditions.

Electrical Specifications ^{(1) (3)}

Test conditions unless otherwise noted: ⁽²⁾ Temperature Range 0 to +70 °C

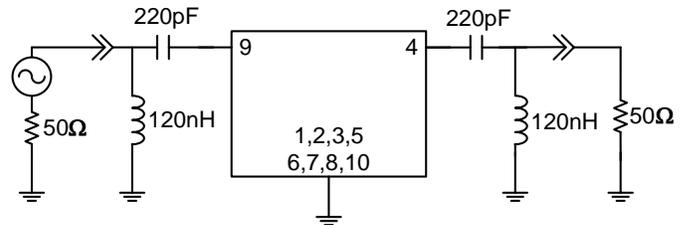
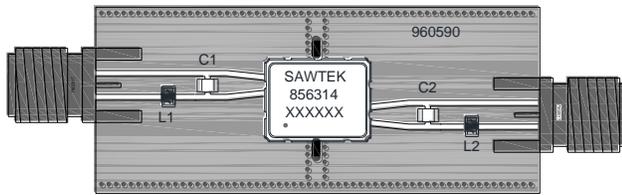
Parameter	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency		-	140	-	MHz
Maximum Insertion Loss	At center frequency	-	21	22.5	dB
Lower 1.5 dB Bandedge ⁽⁵⁾		-	103	109	MHz
Upper 1.5 dB Bandedge		171	177	-	
Lower 3 dB Bandedge ⁽⁵⁾		-	102	104	MHz
Upper 3 dB Bandedge		176	178	-	
Lower 40 dB Bandedge ⁽⁵⁾		89	97	-	MHz
Upper 40 dB Bandedge		-	186	191	
Amplitude Variation	109 – 171 MHz	-	0.7	1.5	dB p-p
Phase Linearity	109 – 171 MHz	-	4.0	10	deg p-p
Group Delay Variation	109 – 171 MHz	-	30	100	ns p-p
Relative Attenuation ⁽⁵⁾	15 – 75 MHz	45	50	-	dB
	75 – 89 MHz	40	43	-	
	191 – 215 MHz	40	44	-	
	215 – 298 MHz	42	46	-	
Temperature Coefficient		-	-74	-	ppm/°C
Source/Load Impedance ⁽⁶⁾	Single ended	-	50	-	Ω

Notes:

1. All specifications are based on the TriQuint schematic design shown on page 3.
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.

Evaluation Board

Schematics



Notes:

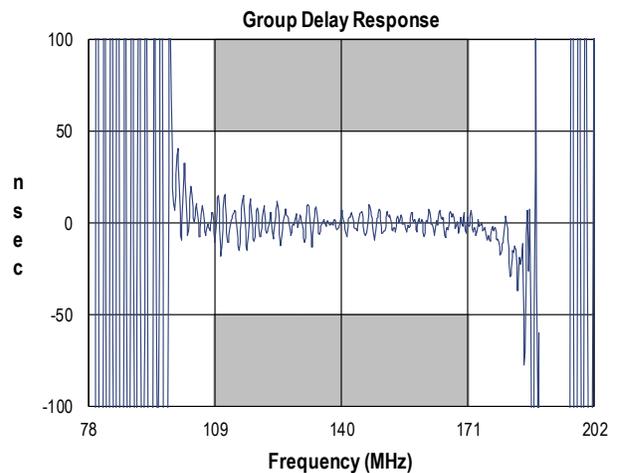
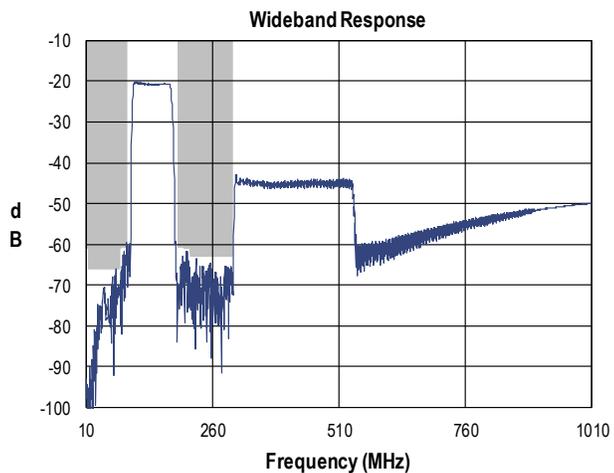
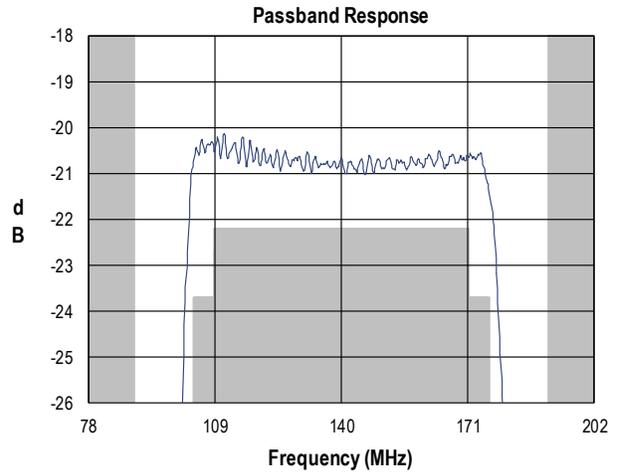
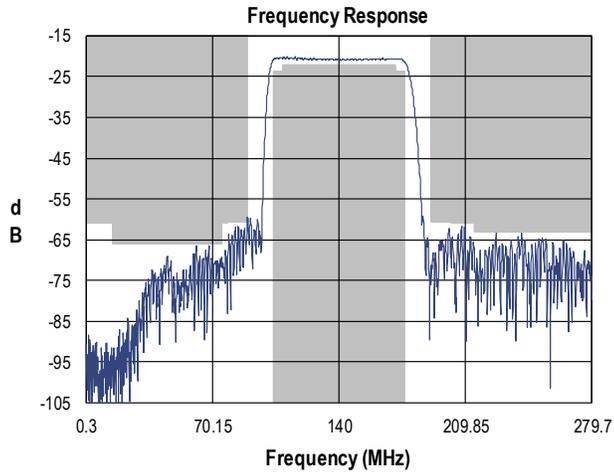
3-layers board - top, middle & bottom layer: 1 oz copper
 Substrates: .031" thick FR4 dielectric.
 Finish plating: Nickel: 3-8 μm thick, Gold: .03-.2 μm thick
 Hole plating: Copper min .0008 μm thick

Bill of Material

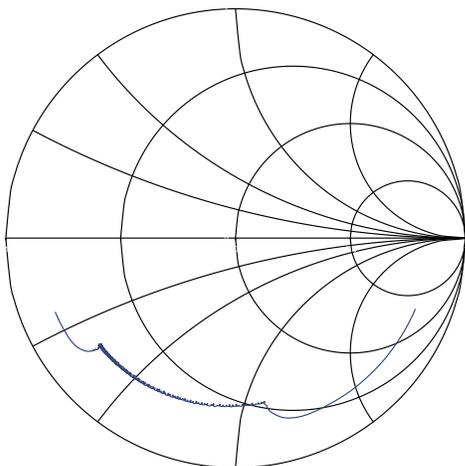
Reference Des.	Value	Description	Manuf.	Part Number
L1	120 nH	0603 wire wound	Coilcraft	0603CS-121XJBC
L2	120 nH	0603 wire wound	Coilcraft	0603CS-121XJBC
C1	220 pF	0603 ceramic cap	Murata	GRM40COG221C050BL
C2	220 pF	0603 ceramic cap	Murata	GRM40COG221C050BL
SMA	N/A	SMA connector	Johnson Components	142-0701-801
PCB	N/A	3-layer	Multiple	960590

Performance Plots

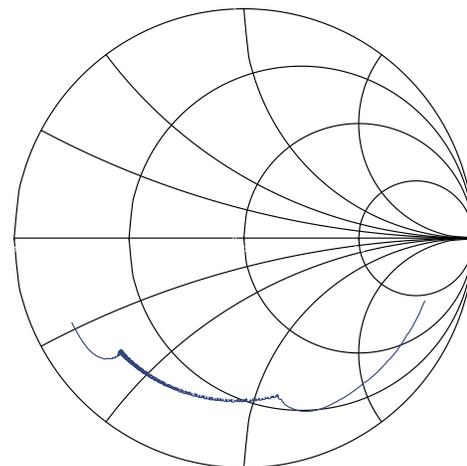
Test conditions unless otherwise noted: Temp.= +25 °C



Input Smith Chart



Output Smith Chart



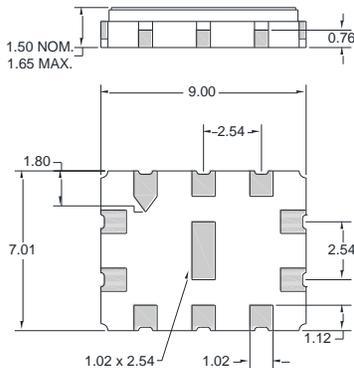
Package Information, Marking and Dimensions



Package Style: SMP-35B
 Dimensions: 9.00 x 7.01 x 1.50 mm

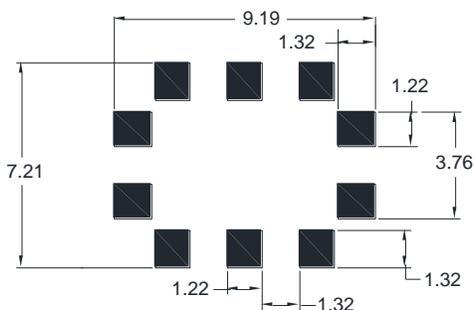
Body: Al_2O_3 ceramic
 Lid: Kovar, Ni plated.
 Terminations: Au plating 0.5 - 1.0 μ m, over a 2-6 μ m Ni plating

The date code consists of:
 The day of the year – Julian (3 digits), Y= last digit of the year - (1 digit),
 HH = the hour of the day – Military (2 digits)



- Notes:
1. All dimensions shown are typical in millimeters
 2. An asterisk (*) in front of the marking code indicates prototype

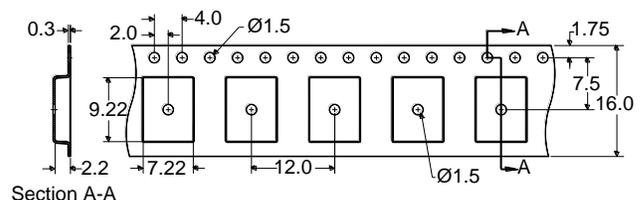
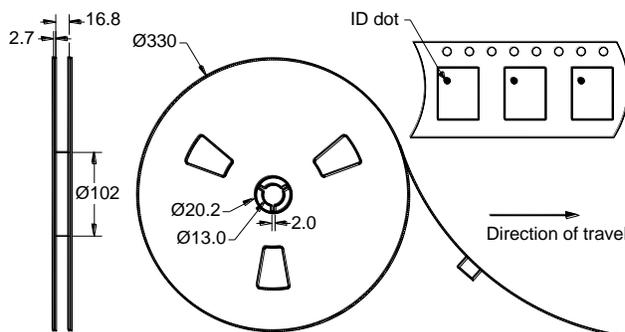
PCB Mounting Pattern



- Notes:
1. All dimensions are in millimeters. Angles are in degrees.
 2. This drawing specifies the mounting pattern used on the TriQuint evaluation board for this product. Some modification may be necessary to suit end user assembly materials and processes.

Tape and Reel information

Standard T/R size = 2000 units / reel. All dimensions are in millimeters



Product Compliance Information

ESD Sensitivity Ratings



Caution! ESD-Sensitive Device

MSL Rating

Not applicable. Hermetic package.

Solderability

Compatible with both lead-free (260 °C maximum reflow temperature) and tin/lead (245 °C maximum reflow temperature) soldering processes.

Refer to [Soldering Profile](#) for recommended guidelines.

RoHS Compliance

This part is compliant with EU 2002/95/EC RoHS directive (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment).

This product also has the following attributes:

- Lead Free
- Halogen Free (Chlorine, Bromine)
- Antimony Free
- TBBP-A (C₁₅H₁₂Br₄O₂) Free
- PFOS Free
- SVHC Free

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations, and information about TriQuint:

Web: www.triquint.com
Email: info-sales@tqs.com

Tel: +1.407.886.8860
Fax: +1.407.886.7061

For technical questions and application information:

Email: fapplication.engineering@tqs.com

Important Notice

The information contained herein is believed to be reliable. TriQuint makes no warranties regarding the information contained herein. TriQuint assumes no responsibility or liability whatsoever for any of the information contained herein. TriQuint assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for TriQuint products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.

TriQuint products are not warranted or authorized for use as critical components in medical, life-saving, or life-sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.