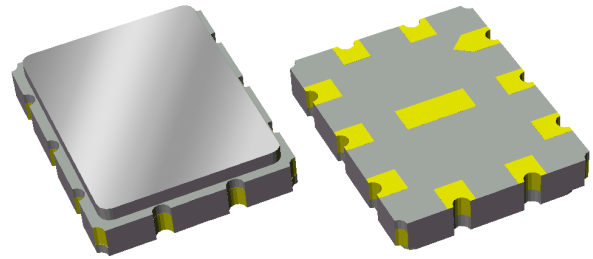


### Applications

- For Broadband applications



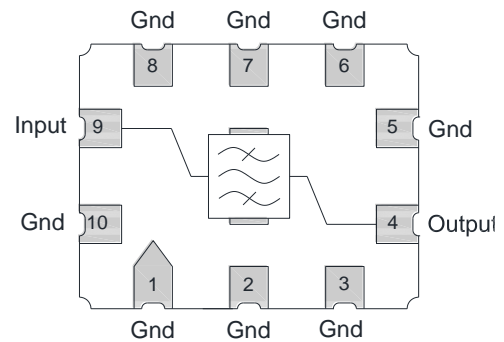
SMP-35B, 9.0 x 7.01 x 1.50 mm

### 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 <sup>(1)</sup>	-40 to +85 °C
Operating Temperatures <sup>(2)</sup>	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 <sup>(1)</sup> <sup>(3)</sup>

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

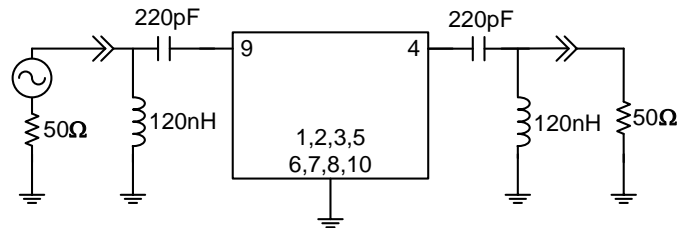
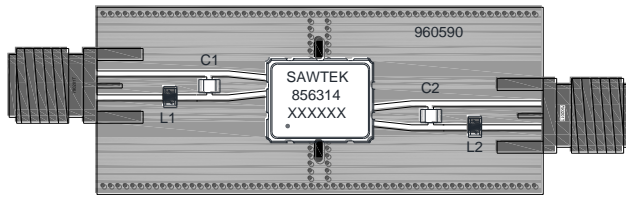
Parameter	Conditions	Min	Typical <sup>(4)</sup>	Max	Units
Center Frequency		-	140	-	MHz
Maximum Insertion Loss	At center frequency	-	21	22.5	dB
Lower 1.5 dB Bandedge <sup>(5)</sup>		-	103	109	MHz
Upper 1.5 dB Bandedge		171	177	-	
Lower 3 dB Bandedge <sup>(5)</sup>		-	102	104	MHz
Upper 3 dB Bandedge		176	178	-	
Lower 40 dB Bandedge <sup>(5)</sup>		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 <sup>(5)</sup>	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 <sup>(6)</sup>	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:**

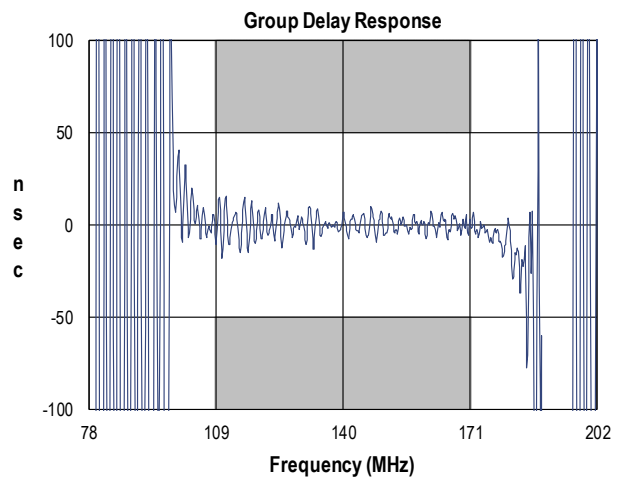
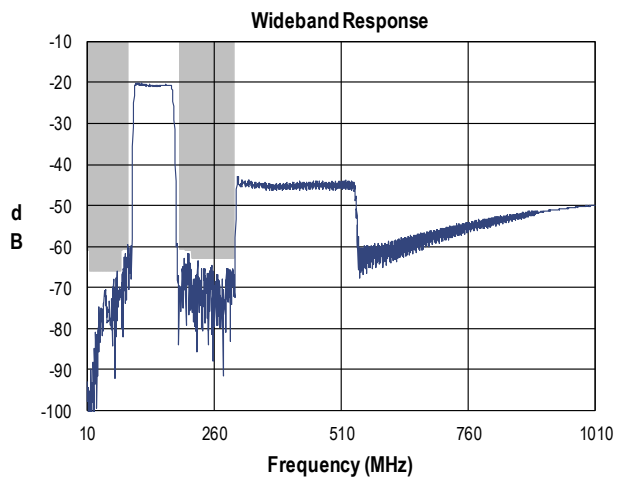
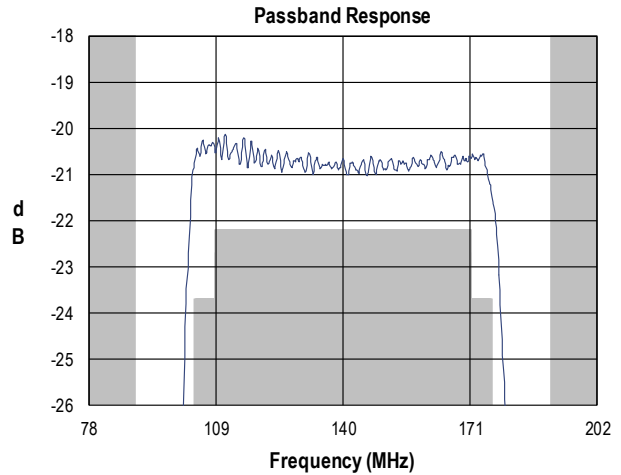
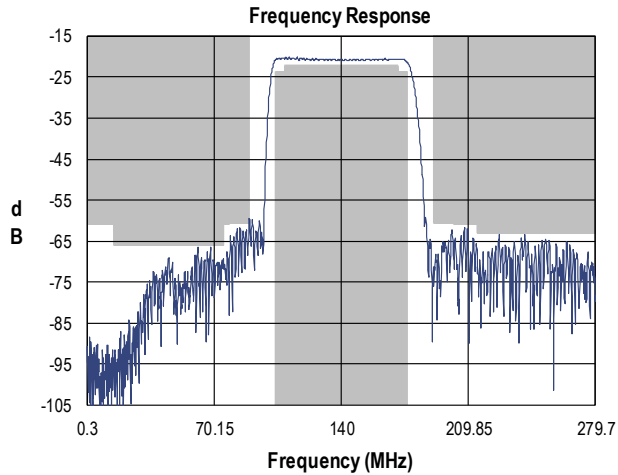
3-layers board - top, middle & bottom layer: 1 oz copper  
 Substrates: .031" thick FR4 dielectric.  
 Finish plating: Nickel: 3-8 μm thick, Gold: .03-.2 μm thick  
 Hole plating: Copper min .0008 μm thick

### Bill of Material

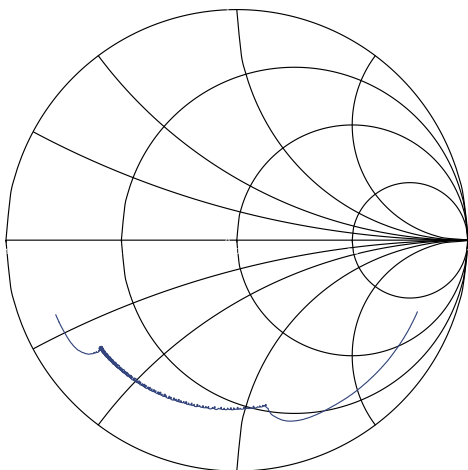
Reference Des.	Value	Description	Manuf.	Part Number
L1	120 nH	0603 wire wound	Coilcraft	0603CS-121XJBC
L2	120 nH	0603 wire wound	Coilcraft	0603CS-121XJBC
C1	220 pF	0603 ceramic cap	Murata	GRM40COG221C050BL
C2	220 pF	0603 ceramic cap	Murata	GRM40COG221C050BL
SMA	N/A	SMA connector	Johnson Components	142-0701-801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

**Performance Plots**

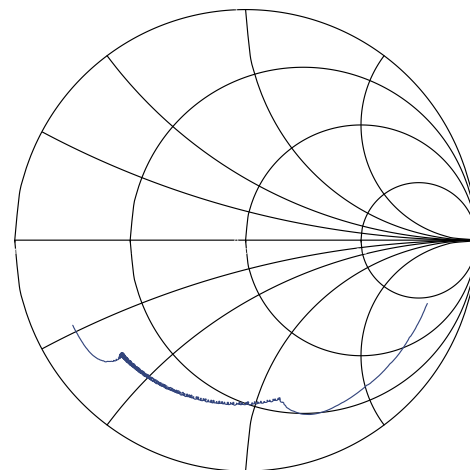
Test conditions unless otherwise noted: Temp.= +25 °C



Input Smith Chart



Output Smith Chart



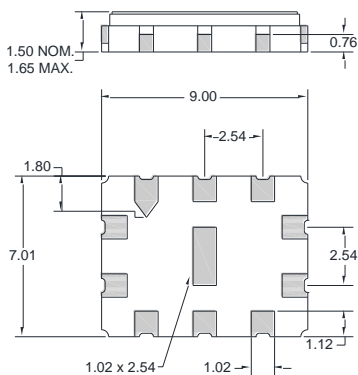
### Package Information, Marking and Dimensions



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

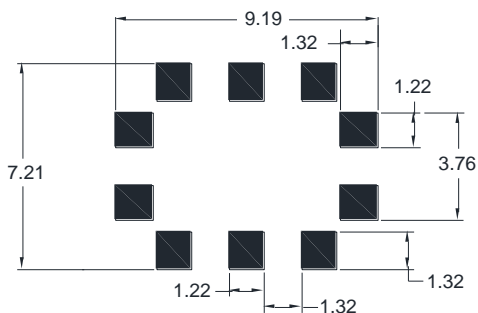
Body:  $Al_2O_3$  ceramic  
 Lid: Kovar, Ni plated.  
 Terminations: Au plating 0.5 - 1.0 $\mu$ m, over a 2-6 $\mu$ m Ni plating

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

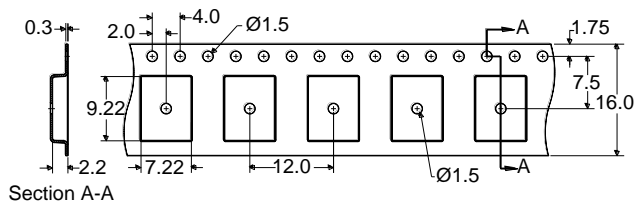
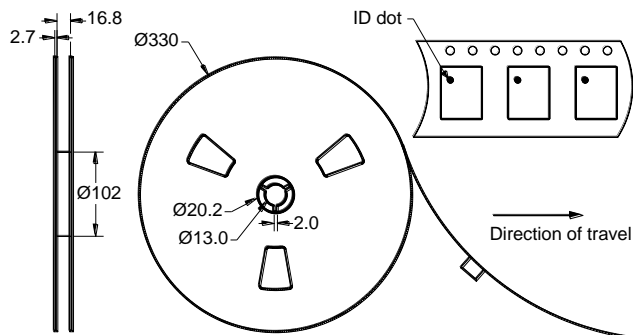
### PCB Mounting Pattern



- 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 (C<sub>15</sub>H<sub>12</sub>Br<sub>4</sub>O<sub>2</sub>) Free
- PFOS Free
- SVHC Free

## Contact Information

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

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**Fax:** +1.407.886.7061

For technical questions and application information:

**Email:** [fapplication.engineering@tqs.com](mailto:fapplication.engineering@tqs.com)

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