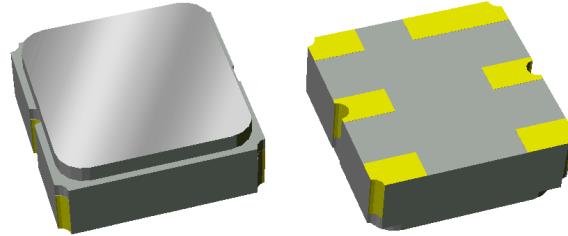


Applications

- For ISM applications
- Bluetooth



Product Features

- Usable bandwidth 83.5 MHz
- High Attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- No Impedance matching required for operation at 50Ω
- Small Size: 3.00 x 3.00 x 1.22 mm
- Hermetically sealed
- RoHS compliant, Pb-free

General Description

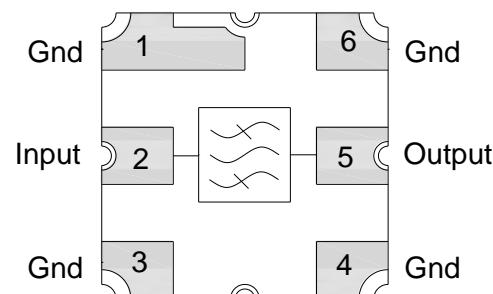
The 855916 is a high-performance RF SAW filter with a center frequency of 2441.8 and a usable bandwidth of 83.5 MHz.

It features low loss with excellent attenuation, is designed to be used with a single ended input and output, and no impedance matching is required for operation at 50Ω .

The device is RoHS compliant and Pb-free.

Functional Block Diagram

Top view



Pin Configuration

Pin # SE	Description
2	Input
5	Output
1,3,4,6	Case Ground

Ordering Information

Part No.	Description
855916	packaged part
855916-EVB	evaluation board

Standard T/R size = 5000 units/reel.

Specifications

Electrical Specifications ⁽¹⁾

Specified Temperature Range: ⁽²⁾ 0 to +60 °C

Parameter ⁽³⁾	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency		-	2441.8	-	MHz
Maximum Insertion Loss	2400 – 2483.5 MHz	-	2.76	5.0	dB
Passband Ripple	2400 – 2483.5 MHz	-	1.2	2.5	dB p-p
Absolute Attenuation ⁽⁵⁾	0.3 – 500 MHz	25	34	-	dB
	500 – 1000 MHz	20	29	-	dB
	1000 – 1700 MHz	20	26.8	-	dB
	1700 – 2200 MHz	20	26.8	-	dB
	2700 – 3100 MHz	20	30.5	-	dB
	3100 – 4000 MHz	20	31.8	-	dB
	4000 – 5000 MHz	10	20	-	dB
Input VSWR	2400 – 2483.5 MHz	-	2.75	4.55:1	Ratio
Input VSWR	2400 – 2483.5 MHz	-	2.68	5.70:1	Ratio

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

Parameter ⁽³⁾	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency		-	2441.8	-	MHz
Maximum Insertion Loss	2400 – 2483.5 MHz	-	2.76	5.0	dB
Passband Ripple	2400 – 2483.5 MHz	-	1.2	3.0	dB p-p
Absolute Attenuation ⁽⁵⁾	0.3 – 500 MHz	25	34	-	dB
	500 – 1000 MHz	20	29	-	dB
	1000 – 1700 MHz	20	26.8	-	dB
	1700 – 2200 MHz	20	26.8	-	dB
	2700 – 3100 MHz	20	30.5	-	dB
	3100 – 4000 MHz	20	31.8	-	dB
	4000 – 5000 MHz	10	20	-	dB
Input VSWR	2400 – 2483.5 MHz	-	2.75	4.55:1	Ratio
Output VSWR	2400 – 2483.5 MHz	-	2.68	5.70:1	Ratio
Load /Source Impedance (single-ended) ⁽⁶⁾		-	50	-	Ω

Notes:

1. All specifications are based on the TriQuint schematic for the main reference 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 zero dB
6. This is the optimum impedance in order to achieve the performance shown

Absolute Maximum Ratings

Parameter	Rating
Operating Temperature ⁽⁷⁾	-40 to +85
Storage Temperature	-40 to +85
Input Power (CW at 2441 MHz for 10K hrs)	+10 dBm

7. Device may operate over this range with degraded Electrical Specifications

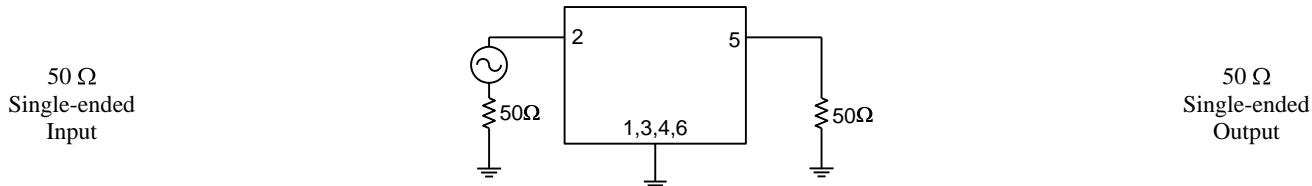
Operation of this device outside the parameter ranges given above may cause permanent damage.

855916**2441.8 MHz SAW Filter**


TriQuint 
SEMICONDUCTOR

Reference Design 1 – 50Ω SE Input, 50Ω SE Output

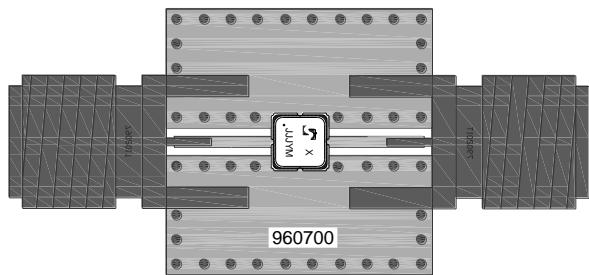
Schematic



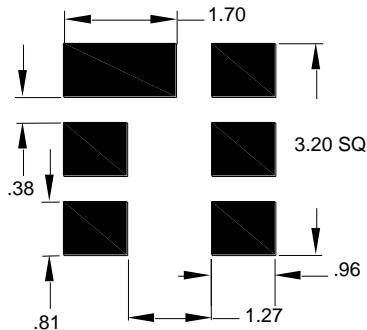
Notes:

1. No impedance matching required
2. Actual matching values may vary due to PCB layout and parasitic

PC Board



Mounting Configuration



Notes:

Top, middle & bottom layers: 1/2 oz copper
 Substrates: FR4 dielectric .063" / Taconic TLY-5A .0075"
 Finish plating: Nickel: 3-8µm thick, Gold: .03-.2µm thick
 Hole plating: Copper min .0008µm

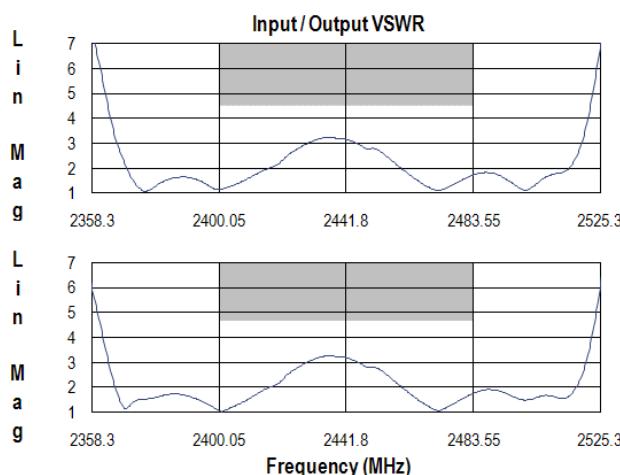
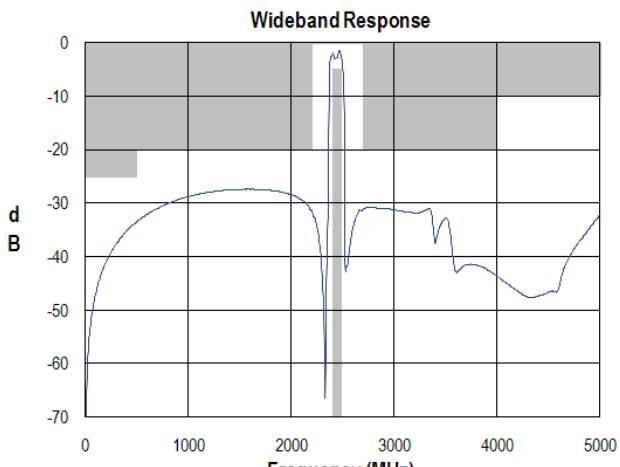
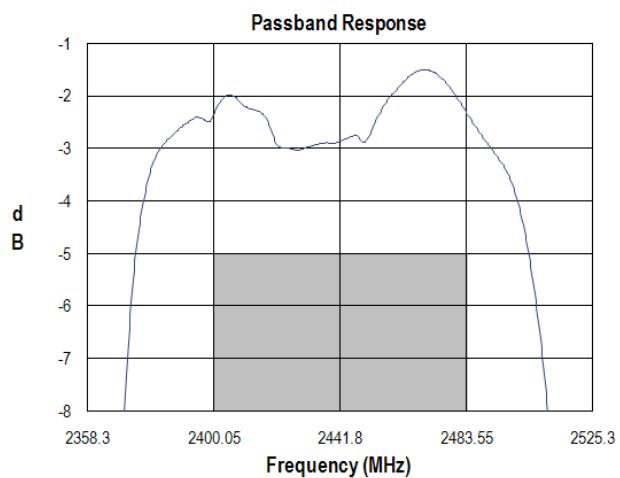
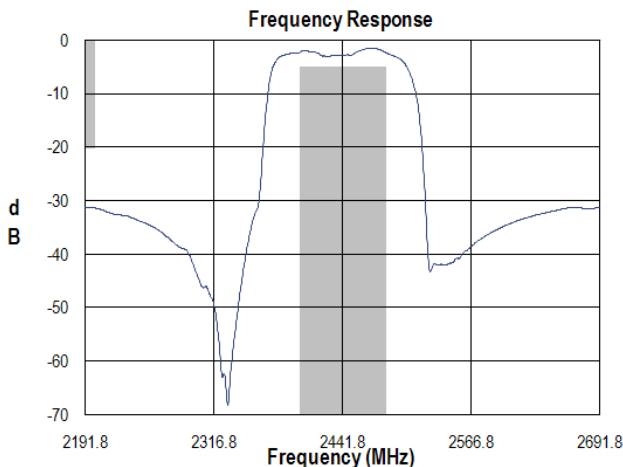
Notes:

1. All dimensions are in millimeters.
2. This footprint represents a recommendation only.

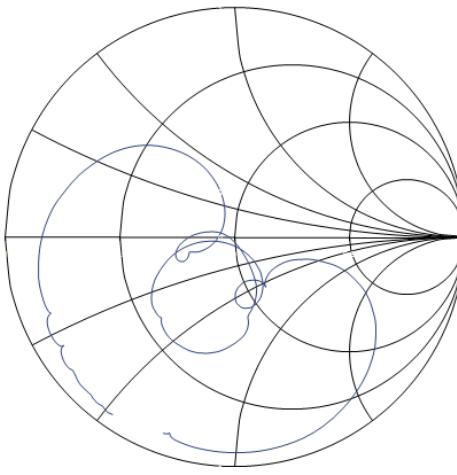
Bill of Material

Reference Desg.	Value	Description	Manufacturer	Part Number
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	multiple	960700

Typical Performance (at room temperature)

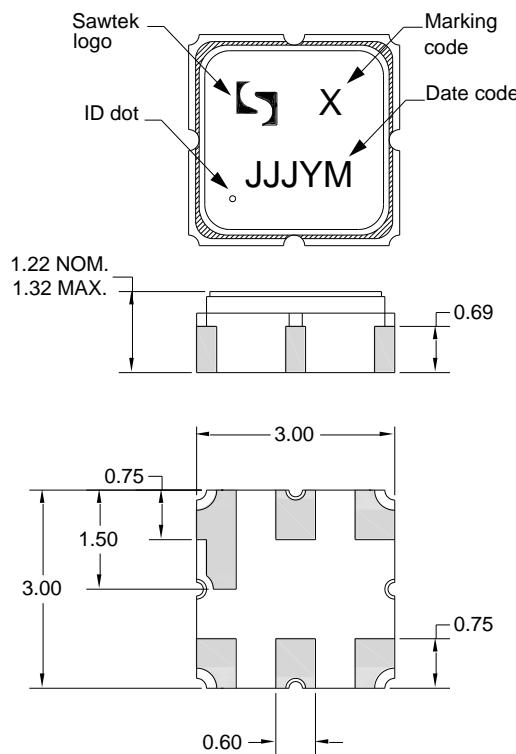


Output Smith Chart



Mechanical Information

Package Information, Dimensions and Marking



Package Style: SMP-12A

Dimensions: 3.00 x 3.00 x 1.22 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

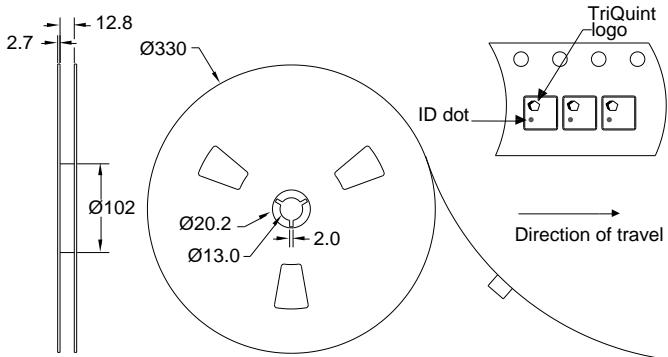
All dimensions shown are nominal in millimeters

All tolerances are ± 0.15 mm except overall length and width ± 0.10 mm

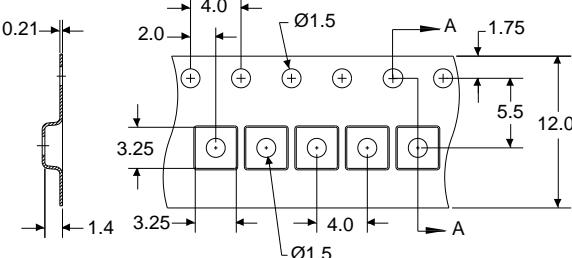
The date code consists of day of the current year (Julian, 3 digits), Y = last digit of the year, and M = manufacturing site code

Tape and Reel Information

Standard T/R size = 5000 units/reel. All dimensions are in millimeters



Section A-A



Product Compliance Information

ESD Information



Caution! ESD-Sensitive Device

ESD Rating: 1B

Value: Passes ≥ 500 V min.

Test: Human Body Model (HBM)

Standard: JEDEC Standard JESD22-A114

ESD Rating: B

Value: Passes ≥ 200 V min.

Test: Machine Model (MM)

Standard: JEDEC Standard JESD22-A115

MSL Rating

Devices are Hermetic, therefore MSL is not applicable

Solderability

Compatible with the latest version of J-STD-020, lead free solder, 260°C

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

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:

- Halogen Free (Chlorine, Bromine)
- Antimony Free
- TBBP-A ($C_{15}H_{12}Br_4O_2$) Free
- PFOS Free
- SVHC Free

Contact Information

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