

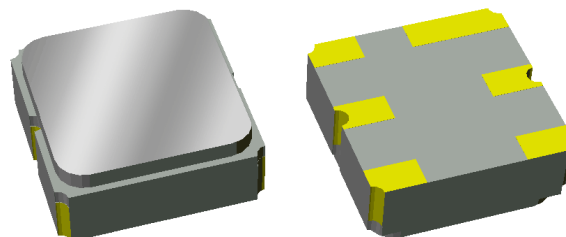
# 855916

## 2441.8 MHz SAW Filter



### 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

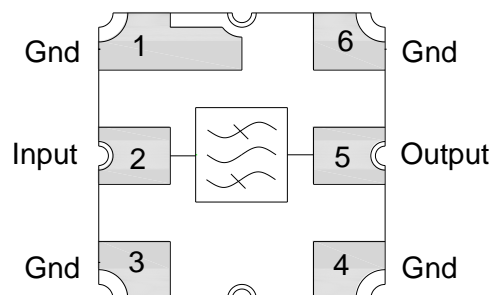
The 855916 is a high-performance RF SAW filter with a center frequency of 2441.8 and a usable bandwidth of 83.5 MHz.

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 <sup>(1)</sup>

Specified Temperature Range: <sup>(2)</sup> 0 to +60 °C

Parameter <sup>(3)</sup>	Conditions	Min	Typical <sup>(4)</sup>	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 <sup>(5)</sup>	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: <sup>(2)</sup> -40 to +85 °C

Parameter <sup>(3)</sup>	Conditions	Min	Typical <sup>(4)</sup>	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 <sup>(5)</sup>	0.3 – 500 MHz	25	34	-	dB
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	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) <sup>(6)</sup>		-	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

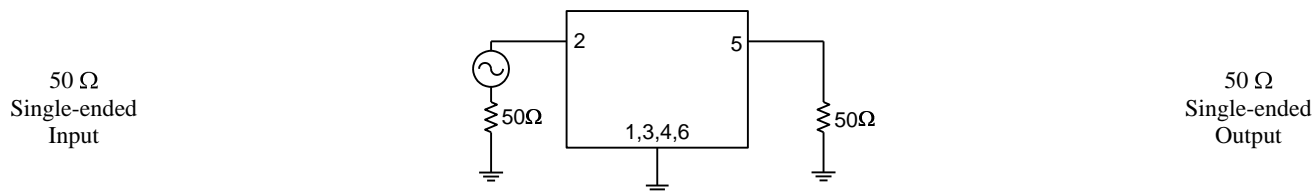
Parameter	Rating
Operating Temperature <sup>(7)</sup>	-40 to +85
Storage Temperature	-40 to +85
Input Power (CW at 2441 MHz for 10K hrs)	+10 dBm

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.

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

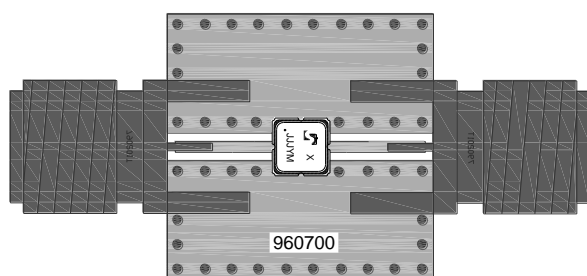
#### Schematic



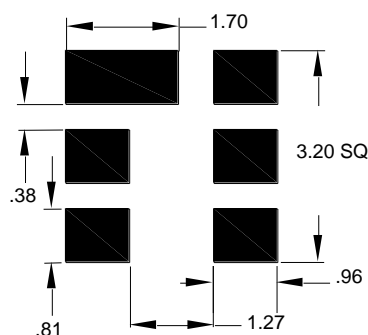
#### Notes:

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

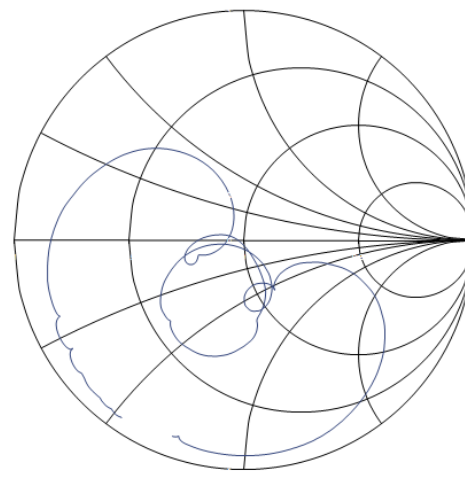
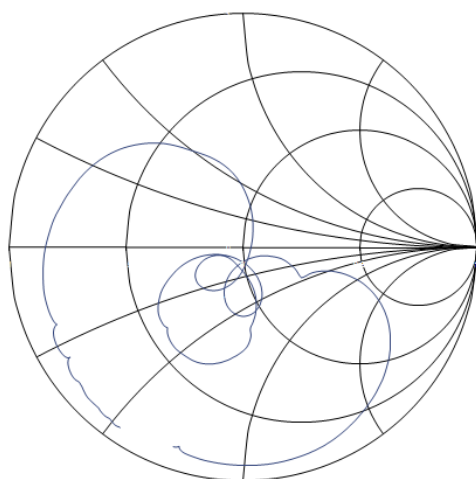
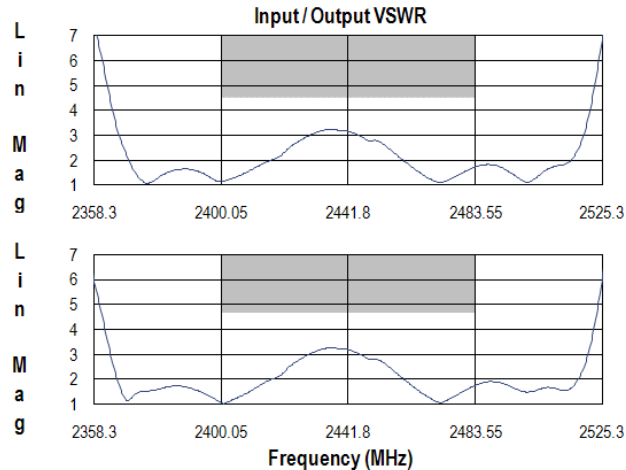
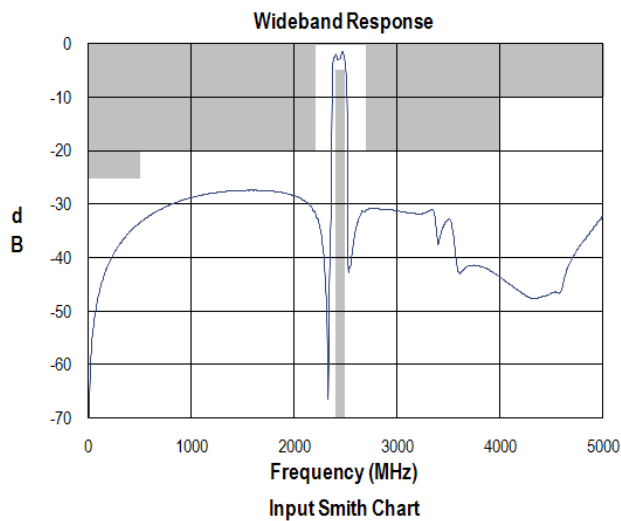
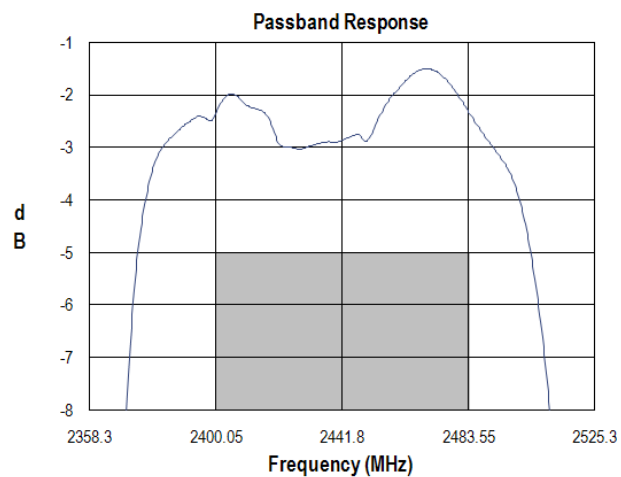
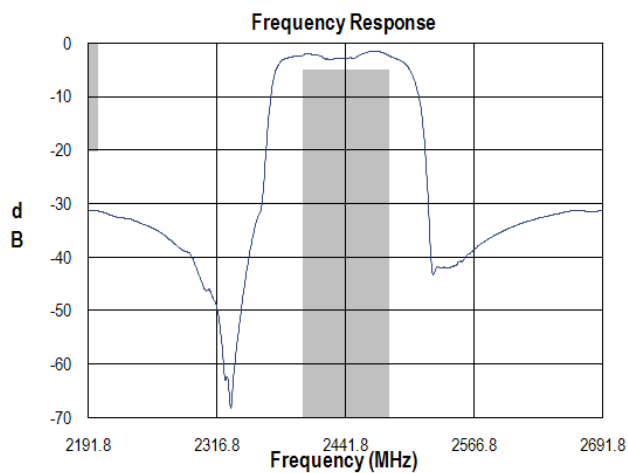
#### Notes:

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

#### Bill of Material

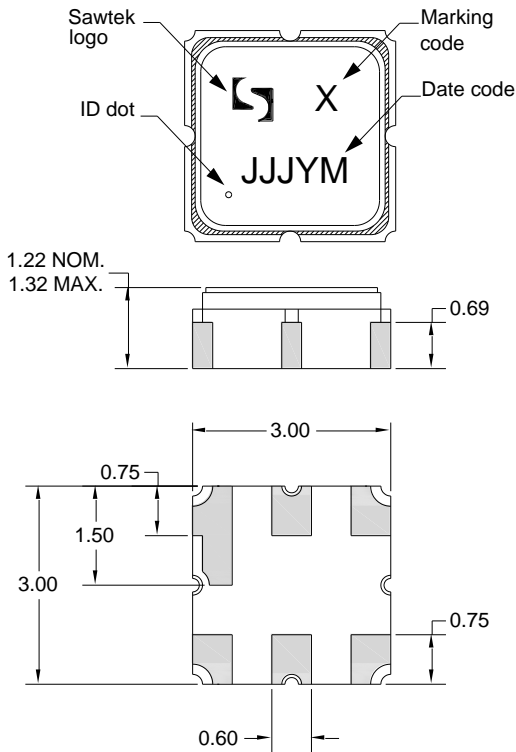
Reference Desg.	Value	Description	Manufacturer	Part Number
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	multiple	960700

### Typical Performance (at room temperature)



## Mechanical Information

### Package Information, Dimensions and Marking



Package Style: SMP-12A  
 Dimensions: 3.00 x 3.00 x 1.22 mm

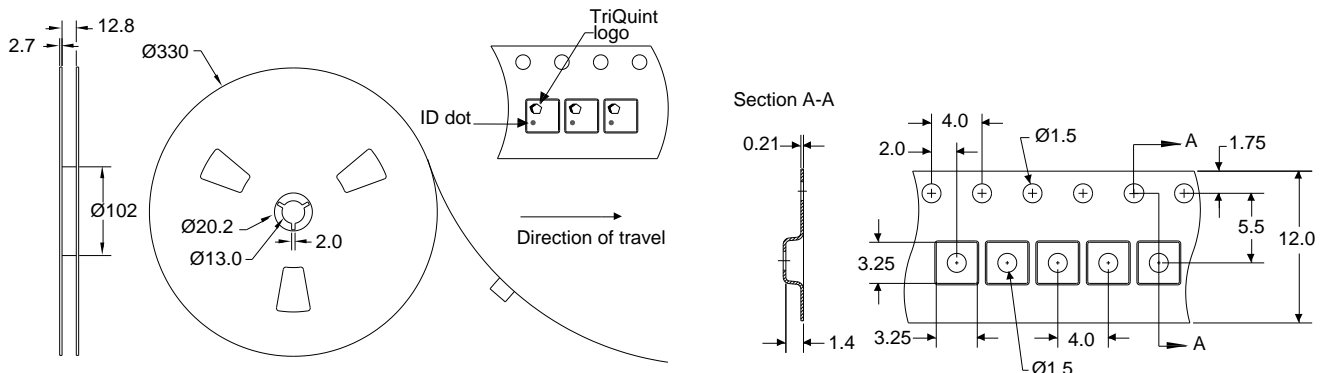
Body:  $Al_2O_3$  ceramic  
 Lid: Kovar, Ni plated  
 Terminations: Au plating 0.5 - 1.0 $\mu$ m, over a 2-6 $\mu$ m Ni plating

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



## Product Compliance Information

### ESD Information



#### Caution! ESD-Sensitive Device

ESD Rating: 1B

Value: Passes  $\geq 500$  V min.  
Test: Human Body Model (HBM)  
Standard: JEDEC Standard JESD22-A114

ESD Rating: B

Value: Passes  $\geq 200$  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

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

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