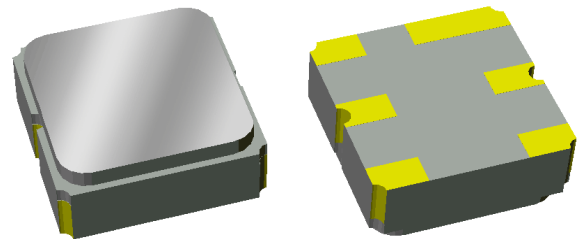


855916

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

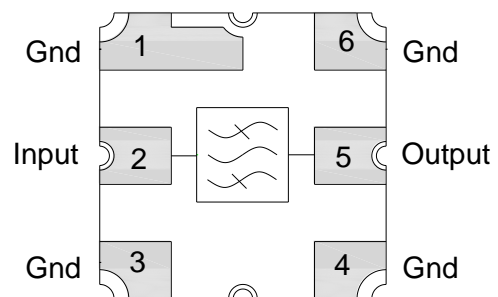
The 855916 is a high-performance RF SAW filter with a center frequency of 2441.8 and a usable bandwidth of 83.5 MHz.

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 ⁽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:

- All specifications are based on the TriQuint schematic for the main reference design shown on page 3
- In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
- Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
- Typical values are based on average measurements at room temperature
- Relative to zero dB
- This is the optimum impedance in order to achieve the performance shown

Absolute Maximum Ratings

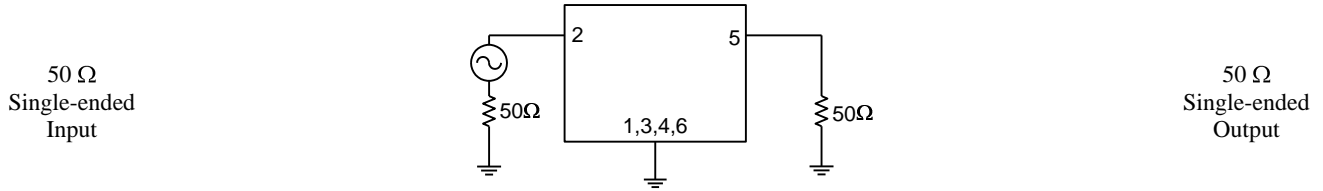
Parameter	Rating
Operating Temperature ⁽⁷⁾	-40 to +85
Storage Temperature	-40 to +85
Input Power (CW at 2441 MHz for 10K hrs)	+10 dBm

- 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

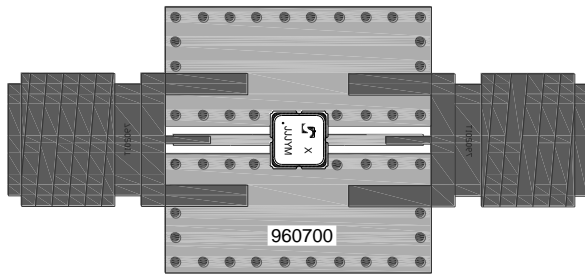
Schematic



Notes:

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

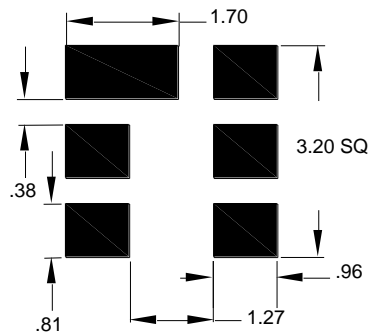
PC Board



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

Mounting Configuration



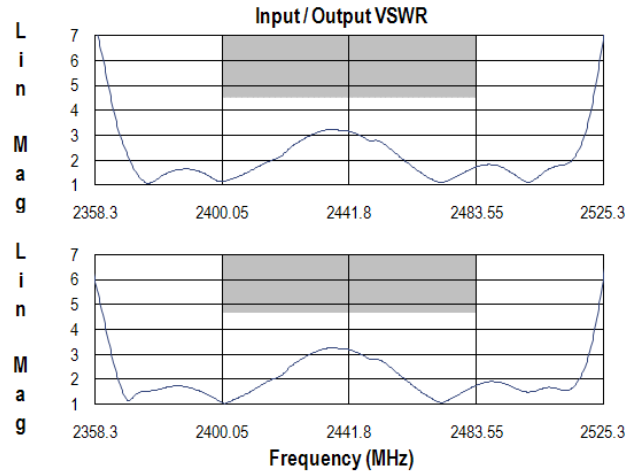
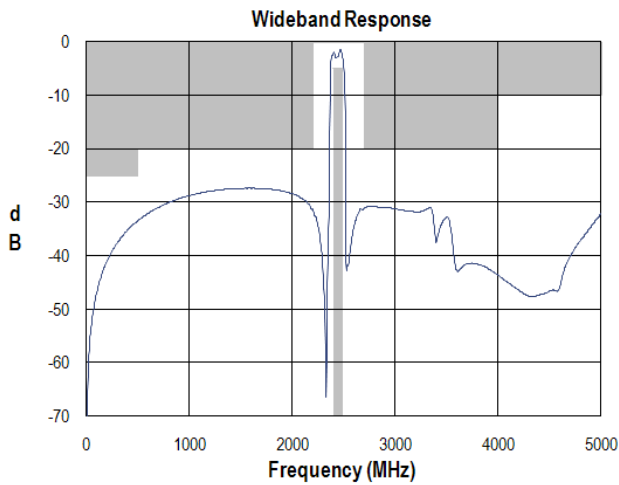
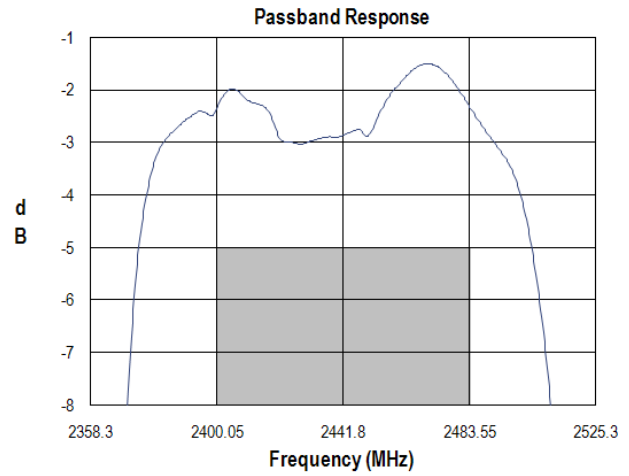
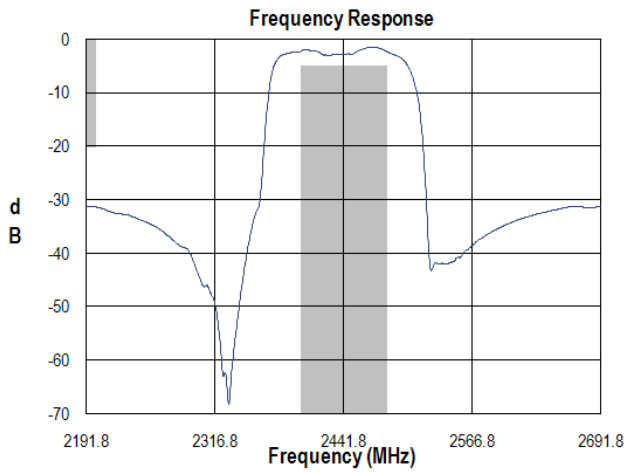
Notes:

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

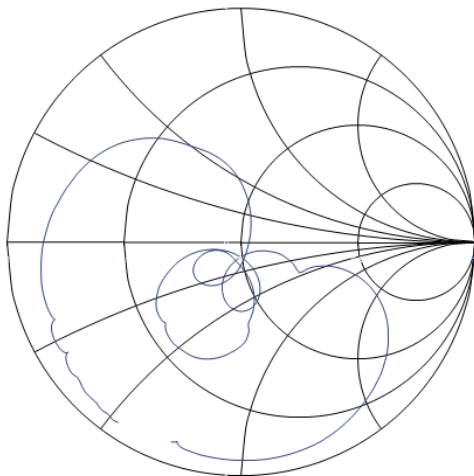
Bill of Material

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

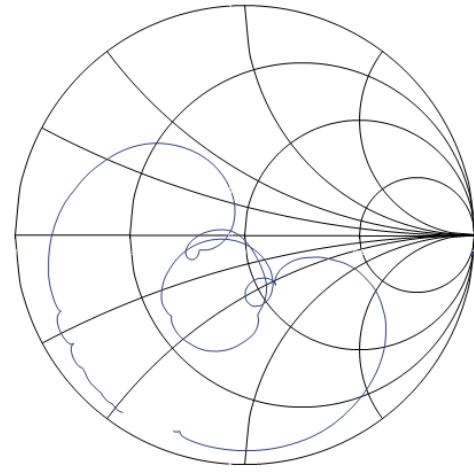
Typical Performance (at room temperature)



Input Smith Chart

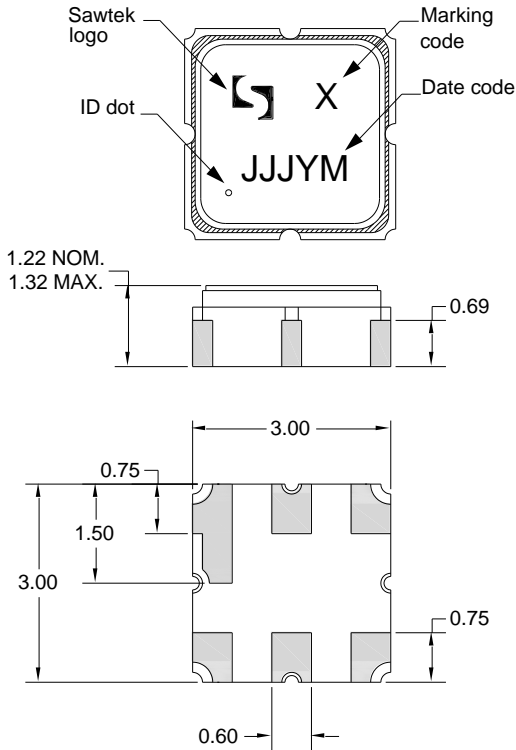


Output Smith Chart



Mechanical Information

Package Information, Dimensions and Marking



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

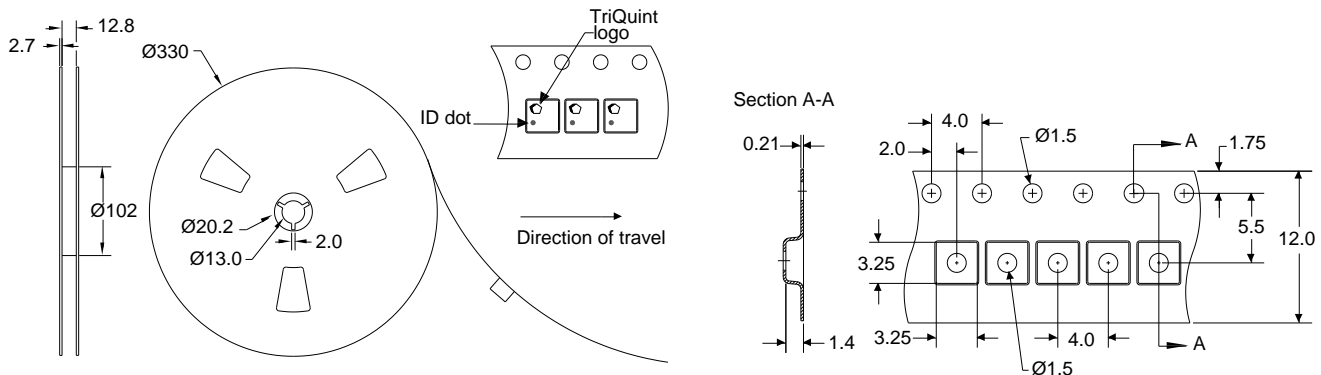
Body: Al_2O_3 ceramic
 Lid: Kovar, Ni plated
 Terminations: Au plating 0.5 - 1.0 μ m, over a 2-6 μ m Ni plating

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



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 (C₁₅H₁₂Br₄O₂) Free
- PFOS Free
- SVHC Free

Contact Information

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