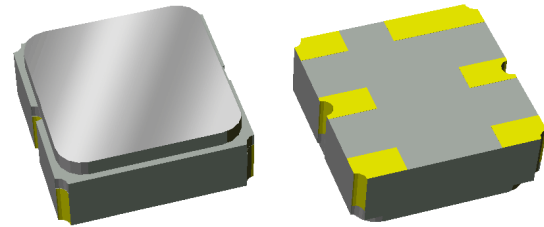


856883

737 MHz SAW Filter

Applications

- General purpose wireless
- Wireless infrastructure
- 3G, 4G, Multi-standard
- Repeaters

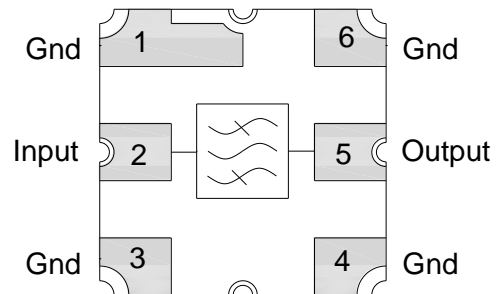


Product Features

- Usable bandwidth 18 MHz
- High attenuation
- Low Loss
- Excellent power handling
- Single-ended operation
- No matching required for operation at 50Ω
- Small Size: 3.00 x 3.00 x 1.22 mm
- Ceramic Surface Mount Package (SMP)
- Hermetically Sealed
- **RoHS** compliant, **Pb**-free

Functional Block Diagram

Top view



General Description

856883 is a general purpose Downlink filter for band 12. This filter was specifically designed in a 3x3mm hermetic package for base station applications and is part of our wide portfolio of RF filters in the same package.

Low insertion loss, coupled with high attenuation and excellent power handling, makes this filter a natural choice for our customers Downlink RF filtering needs.

Pin Configuration

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

Ordering Information

Part No.	Description
856883	packaged part
856883-EVB	evaluation board

Standard T/R size = 5000 units/reel.

Specifications

Electrical Specifications ⁽¹⁾

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

Parameter ⁽³⁾	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency		-	737	-	MHz
Maximum Insertion Loss	728 – 746 MHz	-	1.8	2.25	dB
Lower 3 dB Band Edge ⁽⁵⁾		-	722.3	728	MHz
Upper 3 dB Band Edge ⁽⁵⁾		746	751.8	-	MHz
Absolute Attenuation ⁽⁵⁾	10 – 700 MHz	40	50	-	dB
	700 – 708 MHz	37	46	-	dB
	766 – 1500 MHz	40	43	-	dB
	1500 – 2000 MHz	30	35	-	dB
Input Return Loss	728 – 746 MHz	10	12.5	-	dB
Output Return Loss	728 – 746 MHz	10	12.5	-	dB
Source Impedance ⁽⁶⁾	Single-ended	-	50	-	Ω
Load Impedance ⁽⁶⁾	Single-ended	-	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

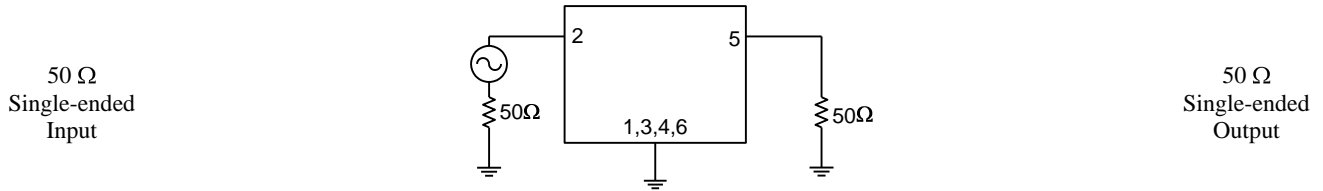
Absolute Maximum Ratings

Parameter	Rating
Operating Temperature	-40 to +85 °C
Storage Temperature	-40 to +85 °C
Input Power ⁽⁷⁾	+20 dBm

7. Input Power is targeted for an applied CW modulated RF in the 728-746 MHz band at 55 °C for a minimum of 10000 hrs
 Operation of this device outside the parameter ranges given above may cause permanent damage.

Reference Design

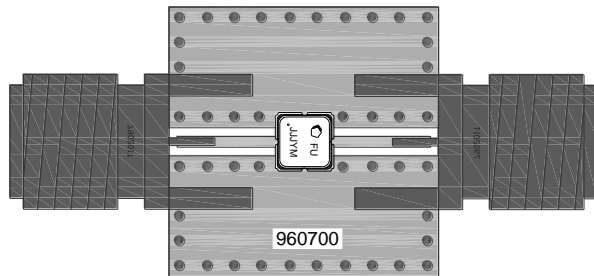
Schematic



Notes:

1. Actual matching values may vary due to PCB layout and parasitic

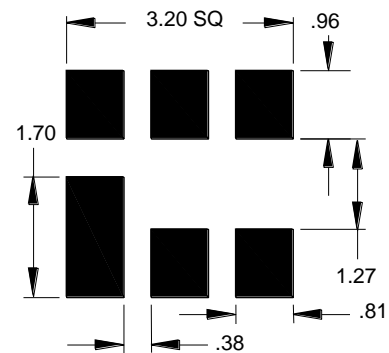
PC Board



Notes:

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

Mounting Configuration



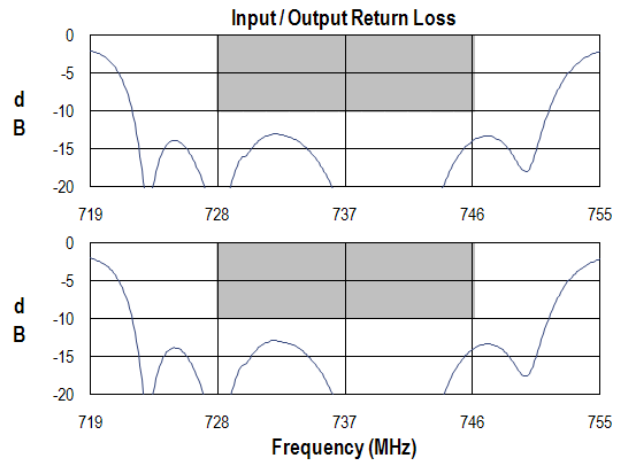
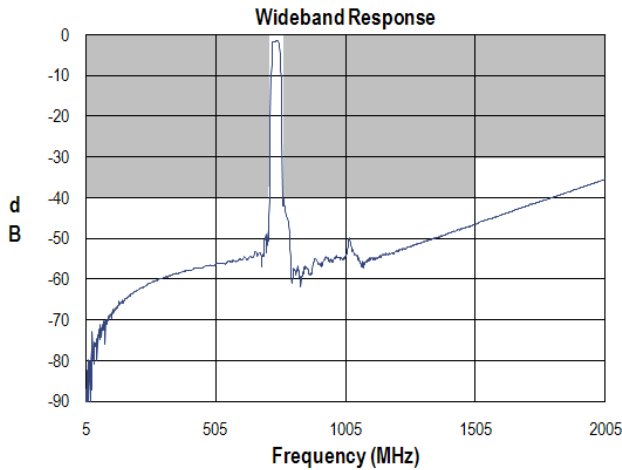
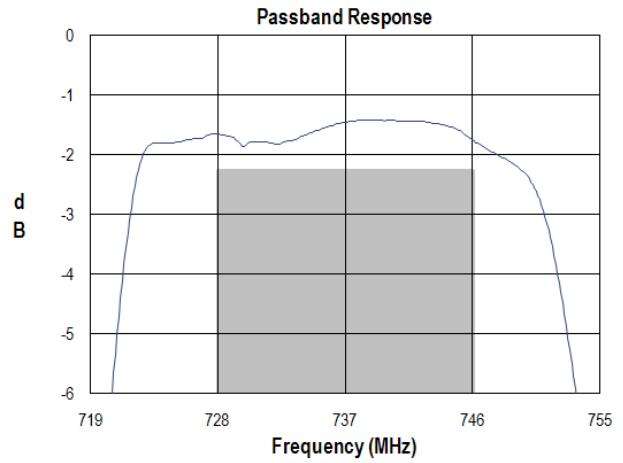
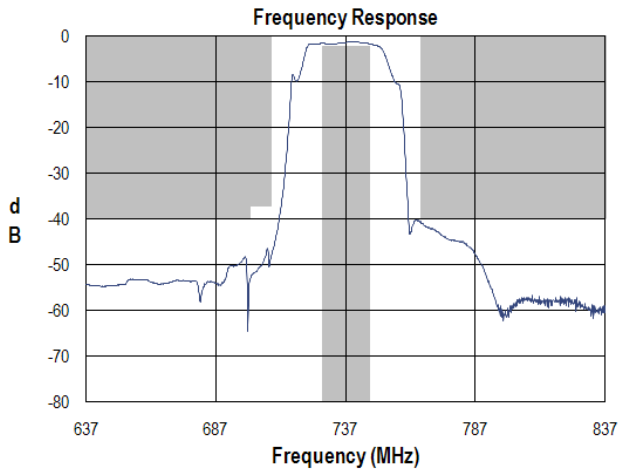
Notes:

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

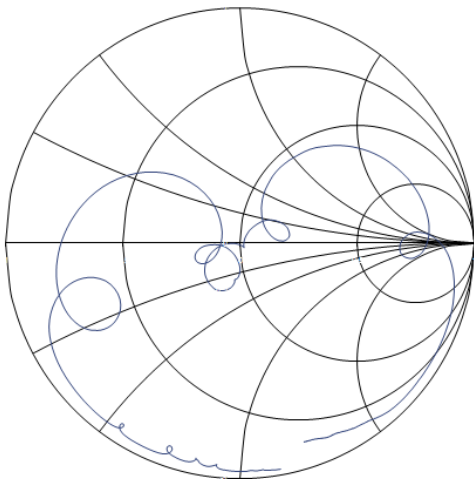
Bill of Material

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

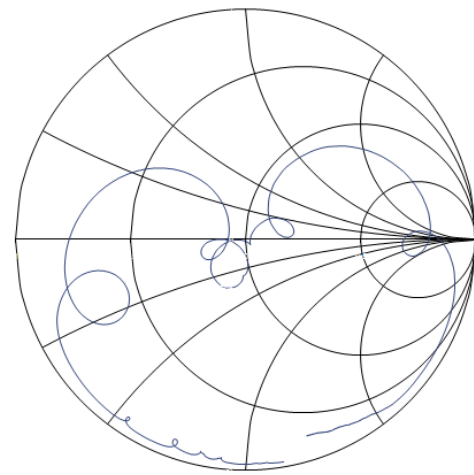
Typical Performance (at room temperature)



Input Smith Chart

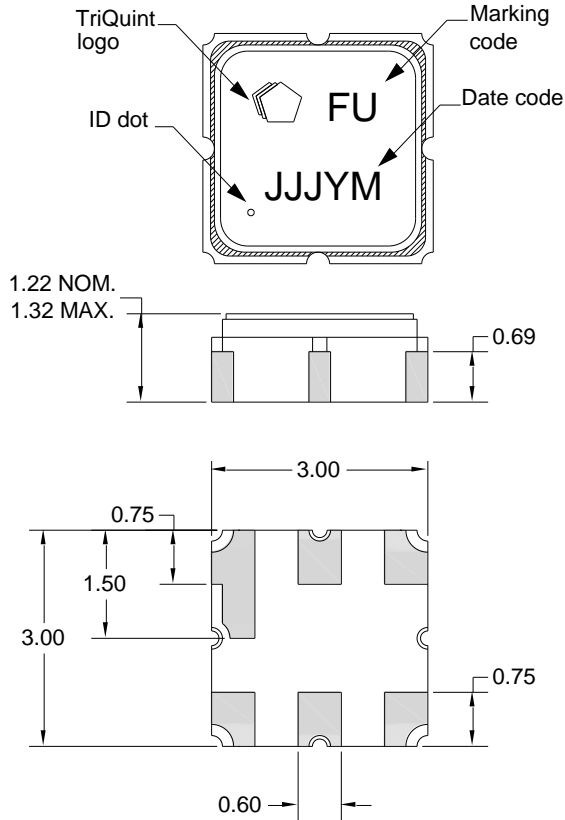


Output Smith Chart



Mechanical Information

Package Information, Dimensions and Marking



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

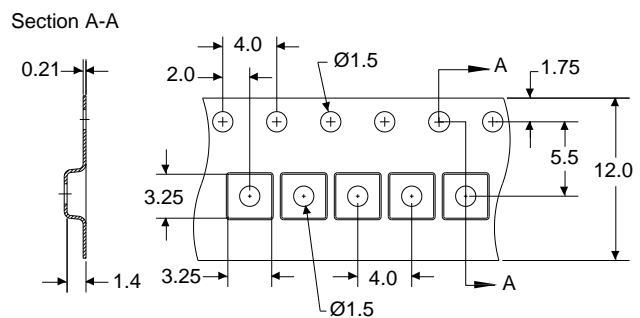
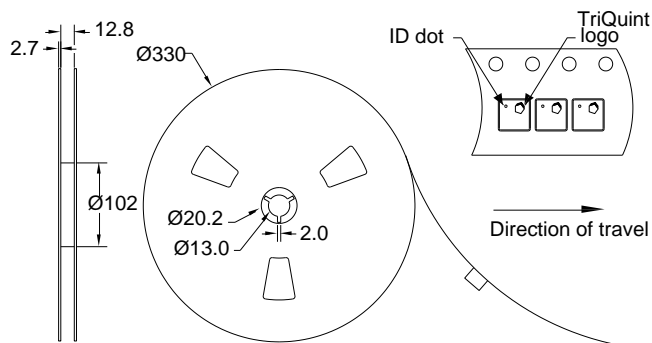
Body: Al_2O_3 ceramic
 Lid: Kovar, Ni plated
 Terminations: Au plating 0.5 - 1.0 μ m, over a 2-6 μ m Ni plating

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: 0

Value: Passes ≥ 200 V min.
Test: Human Body Model (HBM)
Standard: JEDEC Standard JESD22-A114

ESD Rating: A

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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Email: info-sales@tqs.com Fax: **+1.407.886.7061**

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