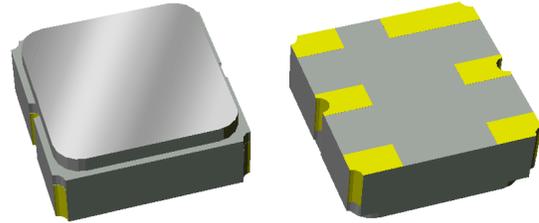


# 856880

## 1880 MHz SAW Filter

### Applications

- General purpose wireless
- Wireless infrastructure
- Base Station applications



### Product Features

- Usable bandwidth 60 MHz
- 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 

### General Description

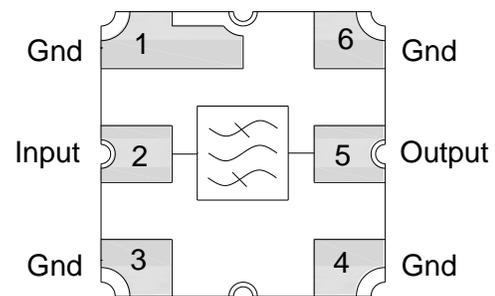
856880 is a general purpose Uplink filter for Band 2. This filter was specifically designed in a 3x3mm hermetic package for base station applications and is part of our wide portfolio of RF filters in the same package.

Low insertion loss, coupled with low amplitude variation and high attenuation makes this filter a natural choice for our customers uplink RF filtering needs.

No matching components are required, making filter implementation easy.

### 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
856880	packaged part
856880-EVB	evaluation board

Standard T/R size = 5000 units/reel.

## Specifications

### Electrical Specifications <sup>(1)</sup>

Specified Temperature Range: <sup>(2)</sup> -30 to +85 °C

Parameter <sup>(3)</sup>	Conditions	Min	Typical <sup>(4)</sup>	Max	Units
Center Frequency		-	1880	-	MHz
Maximum Insertion Loss	1850 – 1910 MHz	-	2.3	3.0	dB
Amplitude Variation	1850 – 1910 MHz	-	0.5	1.0	dB p-p
Amplitude Variation over any 5MHz window	1850 – 1910 MHz	-	0.2	0.8	dB p-p
Phase Ripple	1850 – 1910 MHz	-	12	30	deg p-p
Group Delay Variation	1850 – 1910 MHz	-	7.7	25	ns p-p
Absolute Group Delay	1850 – 1910 MHz	-	10	30	ns
Relative Attenuation <sup>(5)</sup>	50 – 110 MHz	35	55.5	-	dB
	300 – 400 MHz	35	45.0	-	dB
	920 – 965 MHz	35	41.0	-	dB
	965 – 1300 MHz	25	40.5	-	dB
	1300 – 1635 MHz	25	37.0	-	dB
	1635 – 1665 MHz	25	37.7	-	dB
	1665 – 1730 MHz	25	34.7	-	dB
	1730 – 1790 MHz	10	19.7	-	dB
	2030 – 2090 MHz	20	25.2	-	dB
	2573 – 2621 MHz	30	34.2	-	dB
	4074 – 4162 MHz	20	31.0	-	dB
	4791 – 4879 MHz	18	23.0	-	dB
Input/output VSWR	1850 – 1910 MHz	-	1.75	2:1	-
Source Impedance <sup>(6)</sup>	Single-ended	-	50	-	Ω
Load Impedance <sup>(6)</sup>	Single-ended	-	50	-	Ω

#### Notes:

- All specifications are based on the TriQuint schematic 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, unless otherwise noted
- Relative to maximum insertion loss in passband
- This is the optimum impedance in order to achieve the performance shown

### Absolute Maximum Ratings

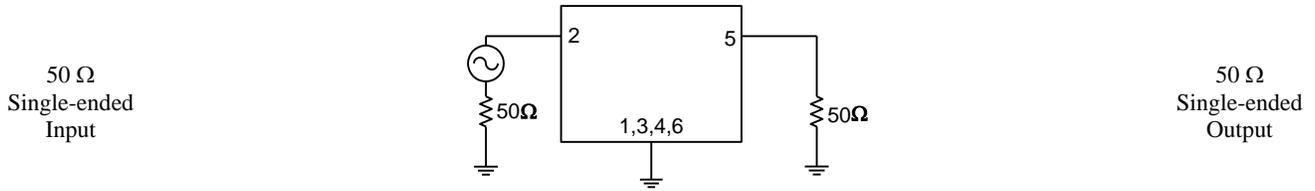
Parameter	Rating
Operable Temperature	-40 to +85 °C
Storage Temperature	-40 to +85 °C
Input Power <sup>(7)</sup>	+22 dBm

- Input Power is targeted for an applied CW modulated RF in the 1850 – 1910 MHz band at 55 °C for a minimum of 125 hrs

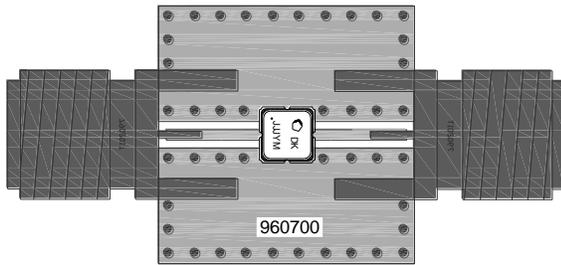
Operation of this device outside the parameter ranges given above may cause permanent damage.

### Reference Design

#### Schematic



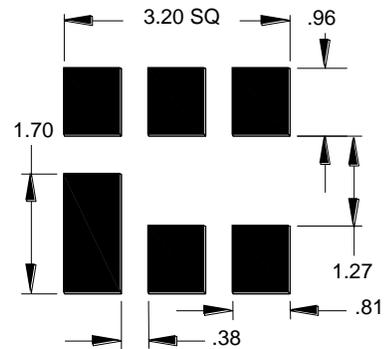
#### PC Board



**Notes:**

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

#### Mounting Configuration



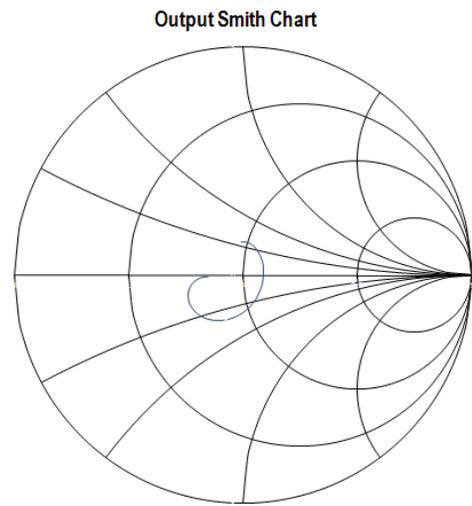
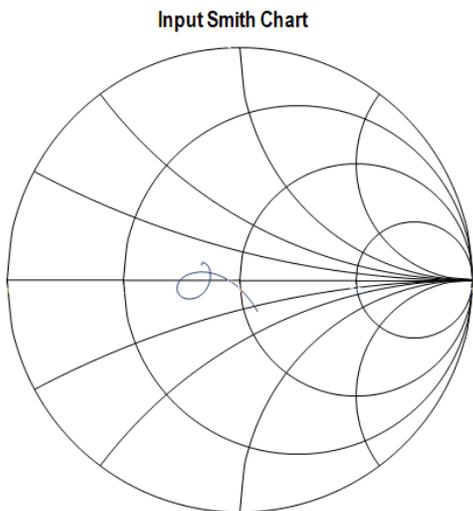
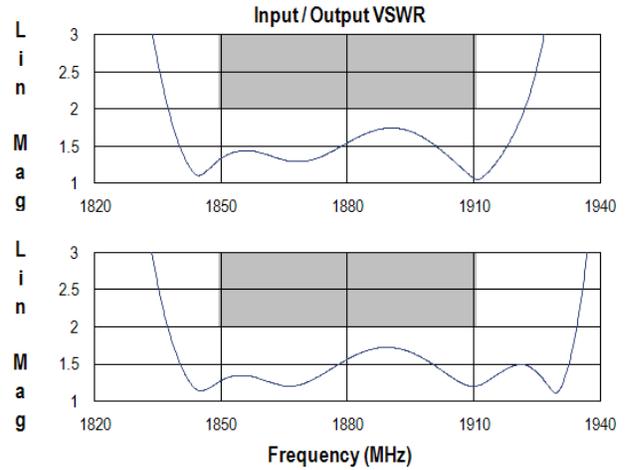
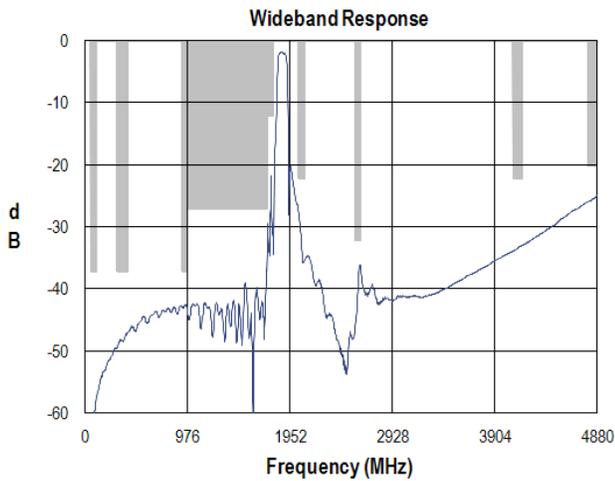
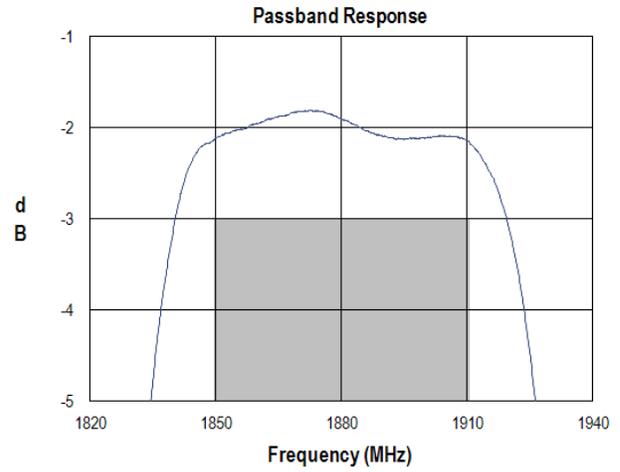
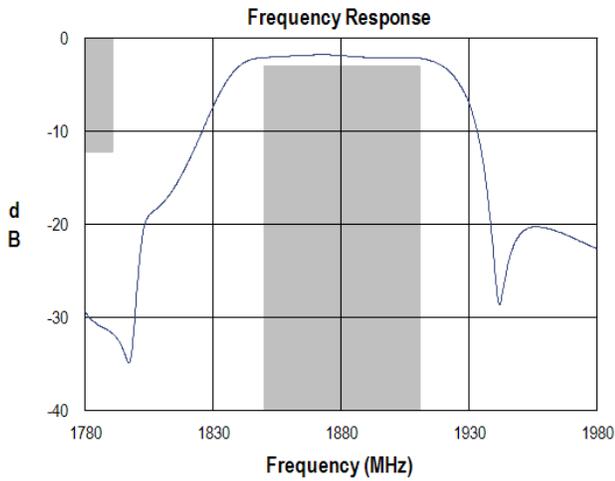
**Notes:**

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

#### Bill of Material

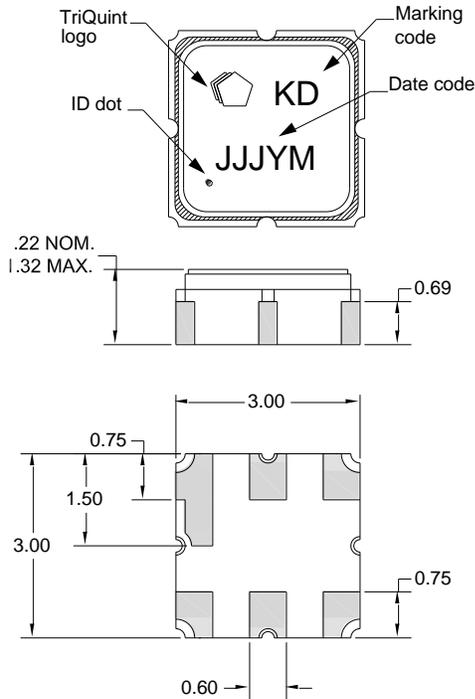
Reference Desg.	Value	Description	Manufacturer	Part Number
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	multiple	960700

**Typical Performance (at room temperature)**



### Mechanical Information

#### Package Information, Dimensions and Marking



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

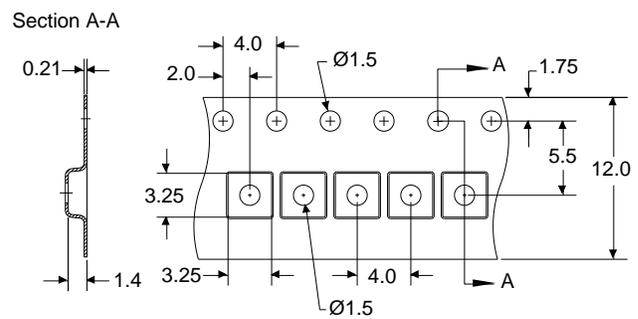
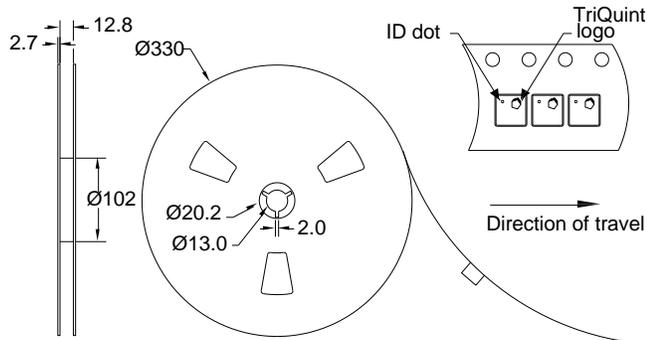
Body:  $Al_2O_3$  ceramic  
 Lid: Kovar, Ni plated  
 Terminations: Au plating 0.5 - 1.0 $\mu$ m, over a 2-6 $\mu$ m Ni plating

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: 0

Value: Passes  $\geq 50V$  min.  
Test: Human Body Model (HBM)  
Standard: JEDEC Standard JESD22-A114

ESD Rating: A

Value: Passes  $\geq 50V$  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<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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Email: [info-sales@tqs.com](mailto:info-sales@tqs.com)      Fax: +1.407.886.7061

For technical questions and application information:

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

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