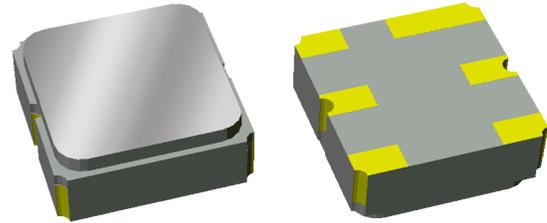


### Applications

- General purpose RF filter
- For Base Station Applications
- Wireless infrastructure
- 4G, Multi-standard
- Band 2 Uplink
- Repeaters

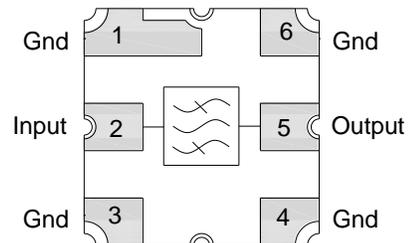


SMP-12, 3.00 x 3.00 x 1.22 mm

### Product Features

- Usable bandwidth 60 MHz
- 35 dB rejection at 1930 MHz
- High attenuation
- Excellent power handling
- Low Loss
- 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



### General Description

885053 is a general purpose Uplink filter for Band 2. This filter was specifically designed in a 3x3mm hermetic package for Base Station and Repeater 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 Uplink RF filtering needs and other general purpose applications.

### Pin Configuration - Single Ended

Pin No.	Label
2	Input
5	Output
1,3,4,6	Ground

### Ordering Information

Part No.	Description
885053	Product description
885053-EVB	Evaluation board description

Standard T/R size = 5000 units/reel

## Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to +125°C
Operating Temperature <sup>(1)</sup>	-40 to +95°C
<b>RF Input Power</b>	
CW, +95°C for 1000 hours	+30 dBm
CW, +95°C for 2 hours	+33 dBm

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

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

Test conditions unless otherwise noted: <sup>(2)</sup> Temp= -40°C to +95°C

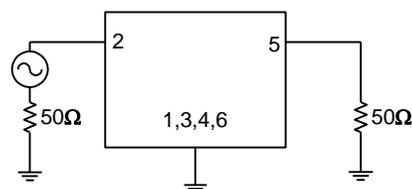
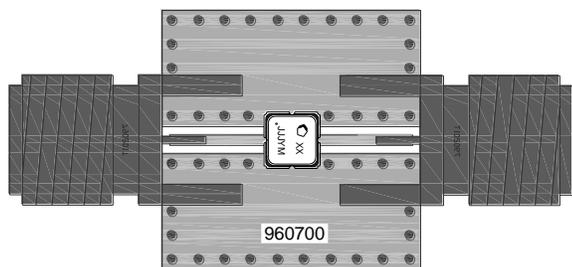
Parameter <sup>(3)</sup>	Conditions	Min	Typ <sup>(4)</sup>	Max	Units
Center Frequency		-	1880.0	-	MHz
Maximum Insertion Loss	1850 –1910 MHz	-	2.0	2.8	dB
Amplitude Variation <sup>(5)</sup>	1850 –1910 MHz	-	1.0	1.8	dB p-p
Group Delay Variation <sup>(5)</sup>	1850 –1910 MHz	-	27	40	ns p-p
	1850 –1910 MHz <small>over any 5 MHz span</small>	-	9	15	ns p-p
	1855 –1905 MHz <small>over any 5 MHz span</small>	-	7	12	ns p-p
Absolute Attenuation <sup>(6)</sup>	9 –1475 MHz	30	41	-	dB
	1475 –1570 MHz	35	47	-	dB
	1570 –1725 MHz	40	44	-	dB
	1725 –1755 MHz	35	40	-	dB
	1755 –1805 MHz	30	35	-	dB
	1805 –1830 MHz	20	34	-	dB
	1930 –1935 MHz	35	45	-	dB
	1935 –1990 MHz	45	50	-	dB
	1990 –2170 MHz	30	50	-	dB
	2170 –2700 MHz	15	35	-	dB
	2700 –3800 MHz	10	25	-	dB
3800 –5000 MHz	5	20	-	dB	
Input VSWR	1850 –1910 MHz	-	1.9	2.5:1	-
Output VSWR	1850 –1910 MHz	-	1.9	2.5:1	-
Source Impedance <sup>(7)</sup>	single-ended	-	50	-	Ω
Load Impedance <sup>(7)</sup>	single-ended	-	50	-	Ω

Notes:

1. All specifications are based on the TriQuint schematic 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. Amplitude Variation is defined as the difference between the lowest loss and the highest loss within defined frequency points
6. Relative to zero dB
7. This is the optimum impedance in order to achieve the performance shown

**Evaluation Board**

**Matching Schematics**



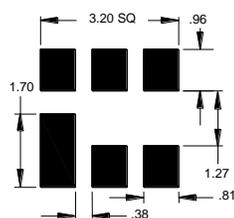
**Notes:**

1. No impedance matching required
2. PCB: . 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

**Bill of Material – 885053-EVB**

Reference Des.	Value	Description	Manuf.	Part Number
U1	N/A	1880 MHz Baw Filter	TriQuint	885053
SMA	N/A	SMA connector	Radiall USA	9602-1111-018
PCB			Multiple	960700

**PCB Mounting Pattern**

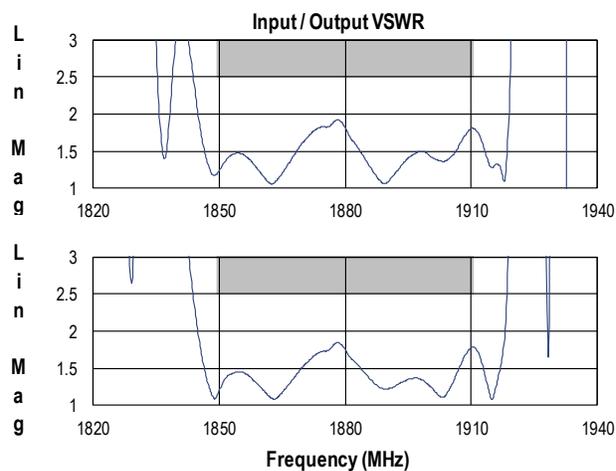
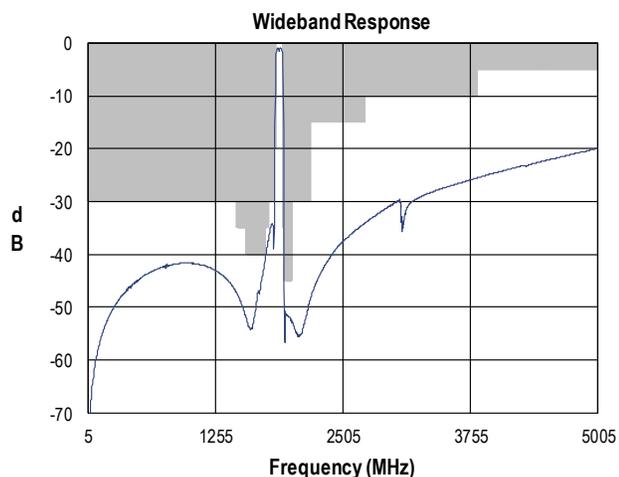
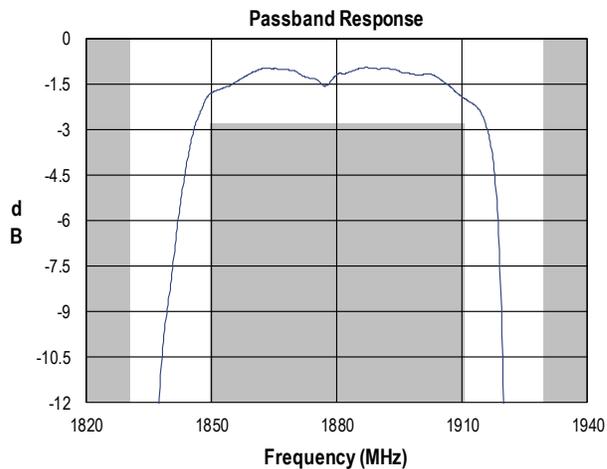
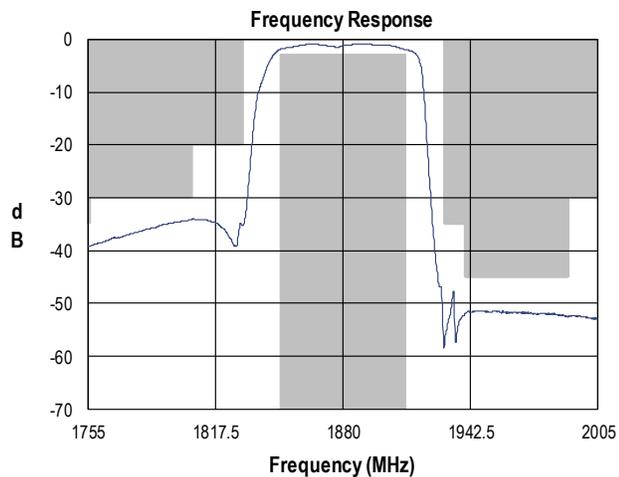


**Notes:**

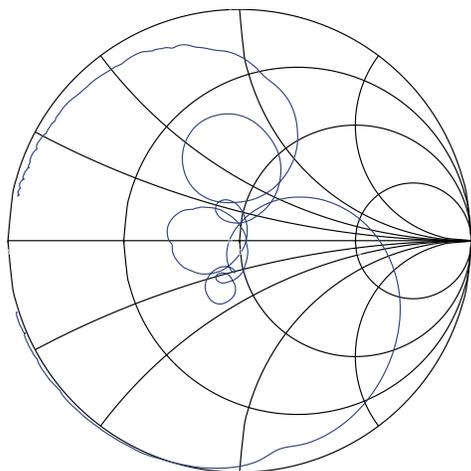
1. All dimensions are in millimeters. Angles are in degrees.
2. This drawing specifies the mounting pattern used on the TriQuint evaluation board for this product. Some modification may be necessary to suit end user assembly materials and processes.

**Performance Plots**

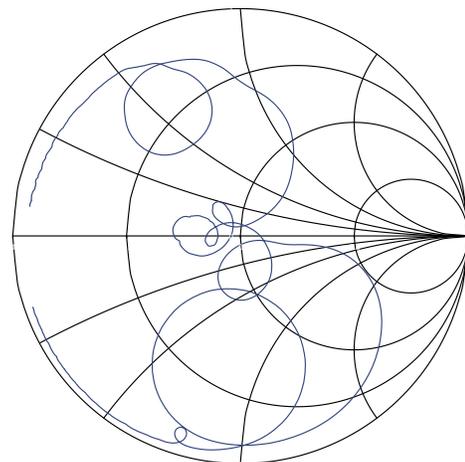
Test conditions unless otherwise noted: Temp= +25°C



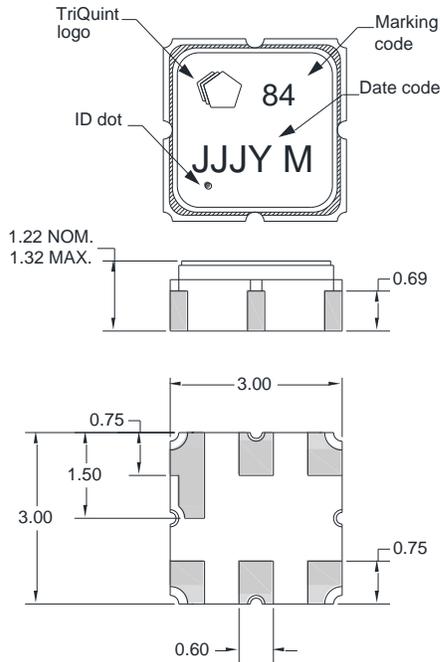
**Input Smith Chart**



**Output Smith Chart**



**Package Information, Marking and Dimensions**



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

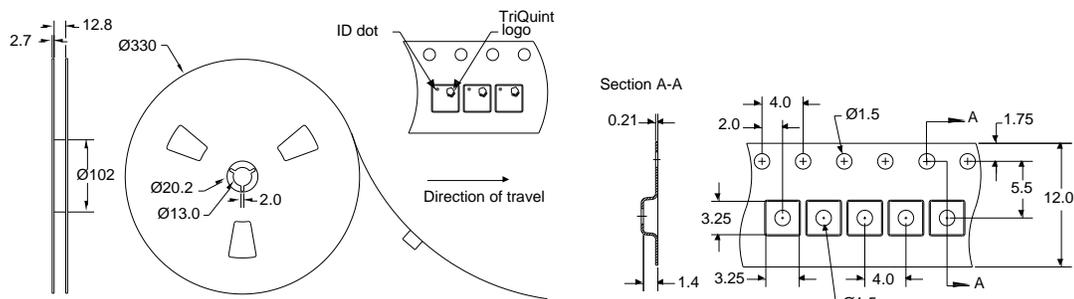
The date code consists of day of the current year (Julian, 3 digits), Y = last digit of the year, and M = manufacturing site code

**Notes:**

1. All dimensions shown are typical in millimeters
2. An asterisk (\*) in front of the marking code indicates prototype.

**Tape and Reel information**

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



## Product Compliance Information

### ESD Sensitivity Ratings



Caution! ESD-Sensitive Device

ESD Rating: Class 3B  
Value: Passes  $\geq 8000$  V  
Test: Electrostatic Discharge Sensitivity Testing,  
Human Body Model (HBM) - component level  
Standard: ESDA/JEDEC JS-001-2012

ESD Rating: Class C  
Value: Passes  $\geq 800$  V  
Test: Machine Model (MM)  
Standard: JEDEC Standard JESD22-A115

### MSL Rating

Not applicable. Hermetic package.

### Solderability

Compatible with both lead-free (260°C maximum reflow temperature) and tin/lead (245°C maximum reflow temperature) soldering processes.

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

### RoHs Compliance

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:

- Lead Free
- 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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**Tel:** +1.407.886.8860  
**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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