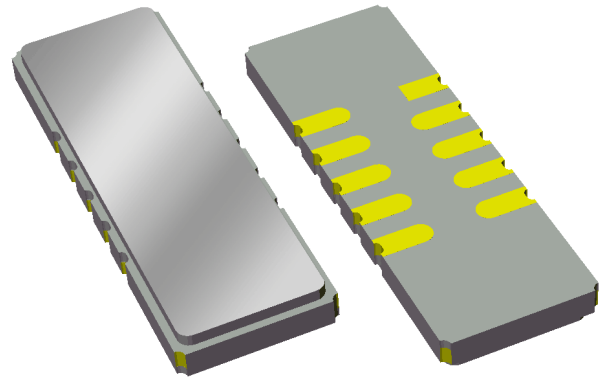


# 855579

## 140 MHz SAW Filter

### Applications

- General Purpose
- For IF applications



### Product Features

- Typical 3 dB bandwidth of 1.7 MHz
- Low loss
- High Attenuation
- Dimensions: 19.00 x 6.50 x 1.75mm
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Hermetic **RoHS** compliant, **Pb-free**

### General Description

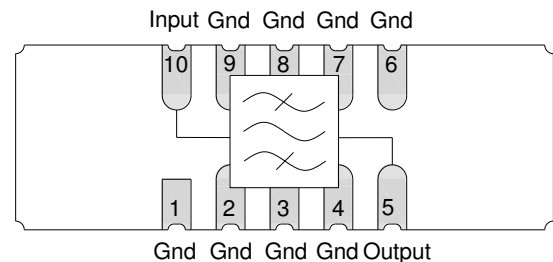
The 855579 is a high-performance IF SAW filter with a center frequency of 140 MHz and a 3 dB bandwidth of 1.7 MHz.

It features low loss with excellent attenuation, and is designed to be used with a single ended input and output.

This device is RoHS compliant and Pb-free.

### Functional Block Diagram

Top view



### Pin Configuration

Pin # SE	Description
10	Input
5	Output
1,6	Ground
2,3,4,7,8,9	Case ground

### Ordering Information

Part No.	Description
855579	packaged part
855579-EVB	evaluation board

Standard T/R size = 2000 units/reel.

## Specifications

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

Specified Temperature Range: <sup>(2)</sup> -40 to +85 °C

Parameter <sup>(3)</sup>	Conditions	Min	Typical <sup>(4)</sup>	Max	Units
Center Frequency		-	140	-	MHz
Insertion Loss	at 140 MHz	-	11	14	dB
Lower 1.0 dB Band Edge <sup>(5)</sup>		-	139.3	139.6	MHz
Upper 1.0 dB Band Edge <sup>(5)</sup>		140.4	140.7	-	MHz
Lower 3.0 dB Band Edge <sup>(5)</sup>		-	139.1	-	MHz
Upper 3.0 dB Band Edge <sup>(5)</sup>		-	140.8	-	MHz
Amplitude Variation <sup>(6)</sup>	139.662 – 140.338 MHz	-	0.4	0.8	dB p-p
Phase Ripple	139.662 – 140.338 MHz	-	3.0	6.0	dB p-p
Relative Attenuation <sup>(5)</sup>	10 – 137 MHz	45	54	-	dB
	142 – 143 MHz	40	48	-	dB
	143 – 250 MHz	45	47	-	dB
	250 – 290 MHz	40	54	-	dB
	290 – 400 MHz	45	60	-	dB
Source Impedance (single-ended) <sup>(7)</sup>	-	-	50	-	Ω
Load Impedance (single-ended) <sup>(7)</sup>	-	-	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 insertion loss at center frequency
- Amplitude Variation is defined as the difference between the lowest loss and the highest loss within defined frequency points
- This is the optimum impedance in order to achieve the performance shown

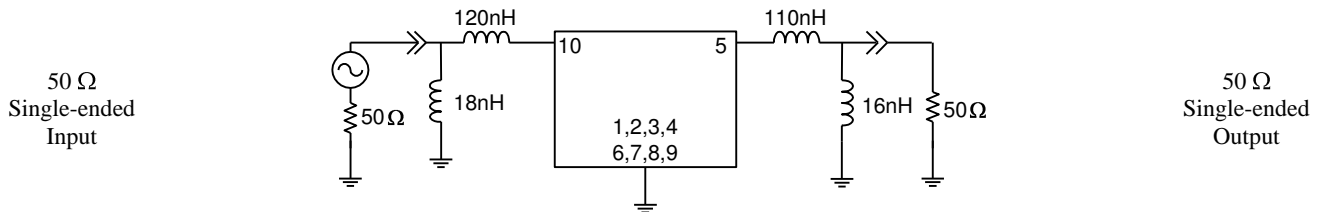
### Absolute Maximum Ratings

Parameter	Rating
Operating Temperature	-40 to +85 °C
Storage Temperature	-40 to +85 °C

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

**Reference Design – 50Ω SE Input, 50Ω SE Output**

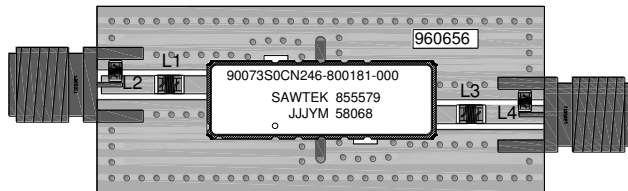
**Schematic**



Notes:

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

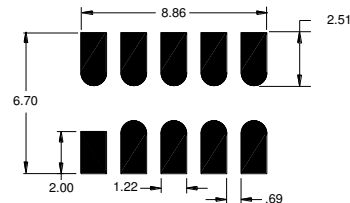
**PC Board**



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**



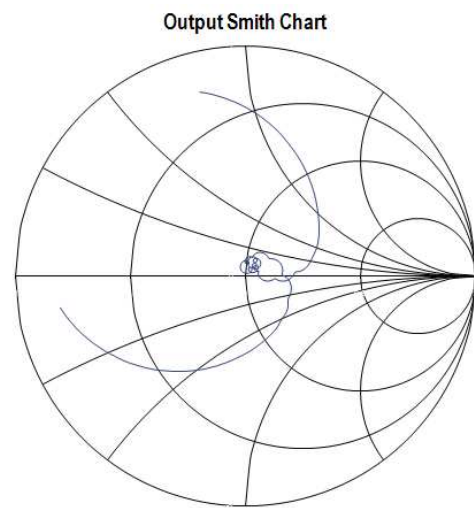
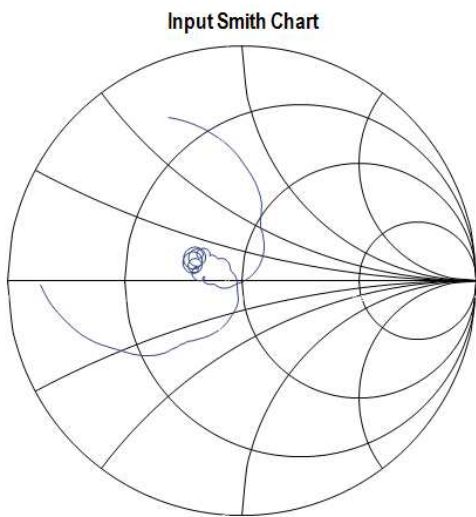
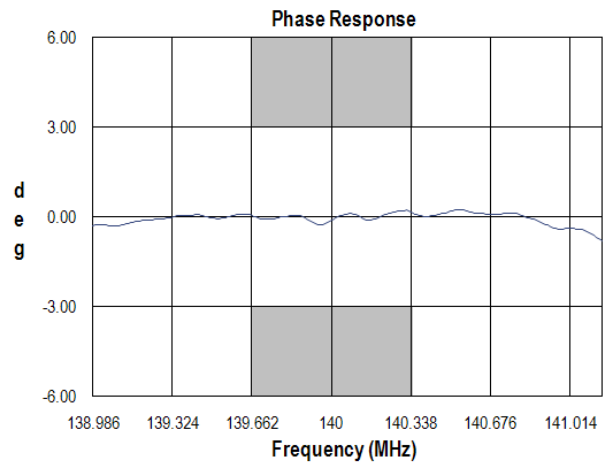
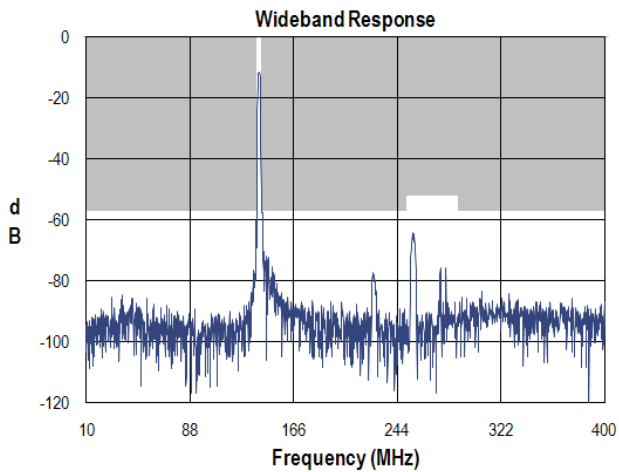
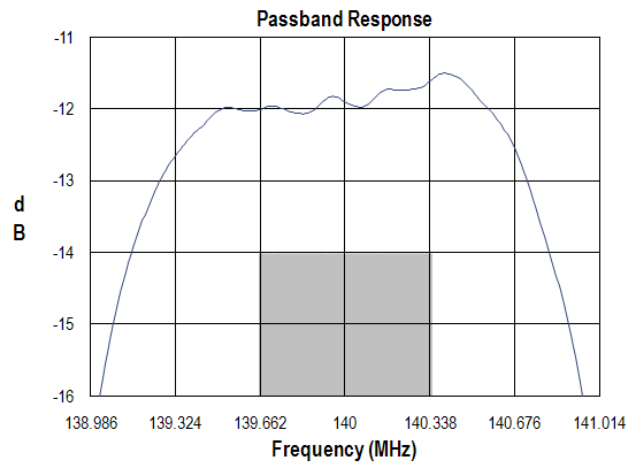
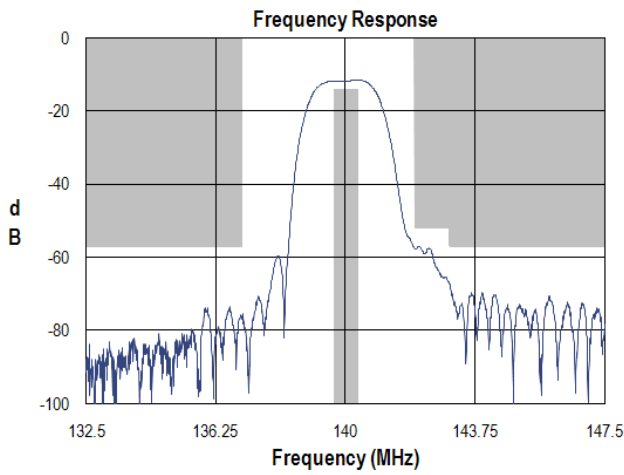
Notes:

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

**Bill of Material**

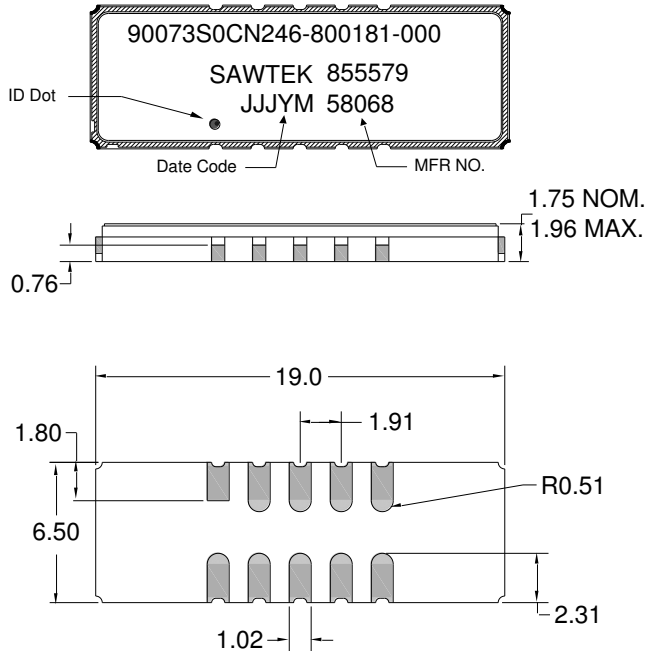
Reference Desg.	Value	Description	Manufacturer	Part Number
L1	120nH	Coil Wire-wound, 0805, 5%	Coilcraft	0805CS-121XJLC
L2	18nH	Coil Wire-wound, 0603, 5%	Coilcraft	0603CS-18NXJBC
L3	110nH	Coil Wire-wound, 0805, 5%	Coilcraft	0805CS-111XJLC
L4	16nH	Coil Wire-wound, 0603 5%	Coilcraft	0603CS-16NXJBC
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	multiple	960656

**Typical Performance** (at room temperature)



**Mechanical Information**

**Package Information, Dimensions and Marking**



Package Style: SMP-75  
 Dimensions: 19.00 x 6.50 x 1.75mm

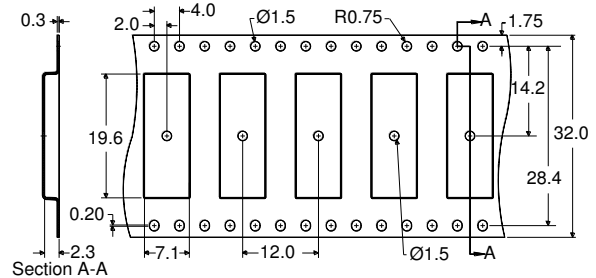
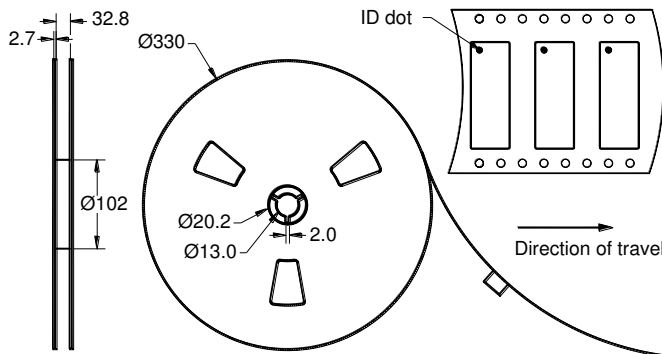
Body: Al<sub>2</sub>O<sub>3</sub> ceramic  
 Lid: Kovar, Ni plated  
 Terminations: Au plating 0.5 - 1.0µm, over a 2-6µm Ni plating

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

The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and M= manufacturing code

**Tape and Reel Information**

Standard T/R size = 2000 units/reel. All dimensions are in millimeters



## Product Compliance Information

### ESD Information



#### Caution! ESD-Sensitive Device

ESD Rating: 3A

Value: Passes  $\geq 4100$ .  
Test: Human Body Model (HBM)  
Standard: JEDEC Standard JESD22-A114

ESD Rating: C

Value: Passes  $\geq 1000$ .  
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:** [applications.engineering@tqs.com](mailto:applications.engineering@tqs.com)

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