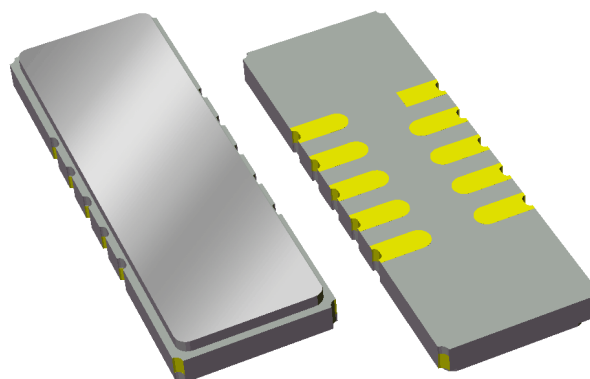


855579

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

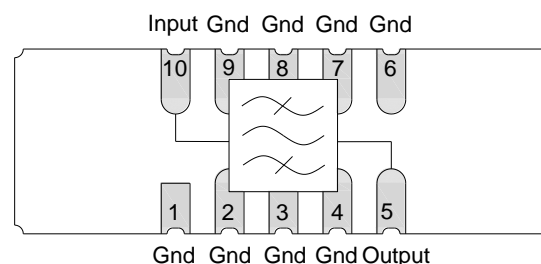
The 855579 is a high-performance IF SAW filter with a center frequency of 140 MHz and a 3 dB bandwidth of 1.7 MHz.

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 ⁽¹⁾

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

Parameter ⁽³⁾	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency		-	140	-	MHz
Insertion Loss	at 140 MHz	-	11	14	dB
Lower 1.0 dB Band Edge ⁽⁵⁾		-	139.3	139.6	MHz
Upper 1.0 dB Band Edge ⁽⁵⁾		140.4	140.7	-	MHz
Lower 3.0 dB Band Edge ⁽⁵⁾		-	139.1	-	MHz
Upper 3.0 dB Band Edge ⁽⁵⁾		-	140.8	-	MHz
Amplitude Variation ⁽⁶⁾	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 ⁽⁵⁾	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) ⁽⁷⁾	-	-	50	-	Ω
Load Impedance (single-ended) ⁽⁷⁾	-	-	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 insertion loss at center frequency
6. Amplitude Variation is defined as the difference between the lowest loss and the highest loss within defined frequency points
7. 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

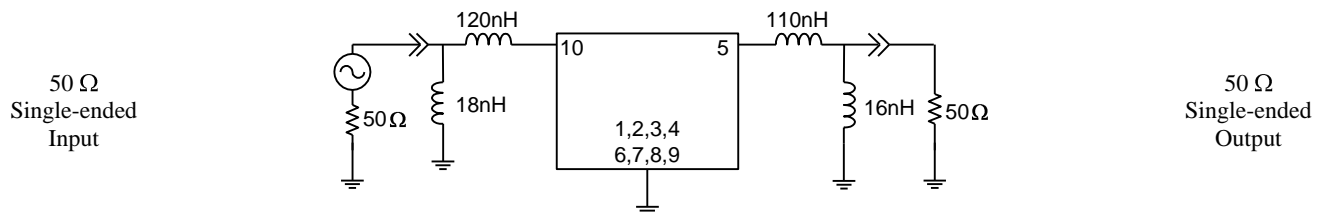
Operation of this device outside the parameter ranges given above may cause permanent damage.

855579

140 MHz SAW Filter

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

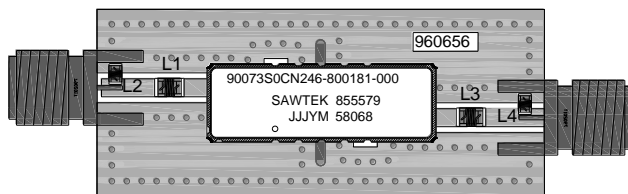
Schematic



Notes:

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

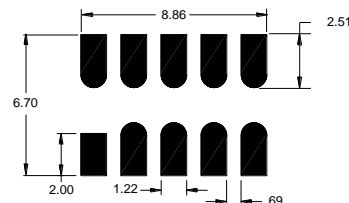
PC Board



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.

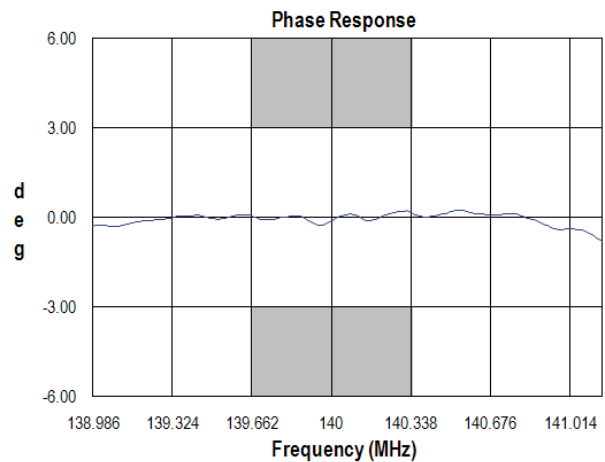
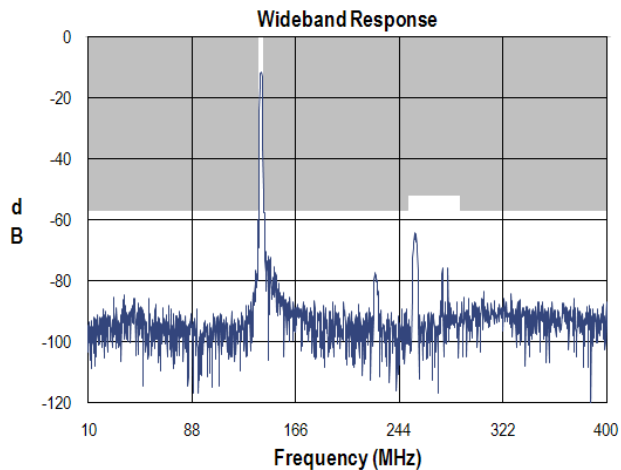
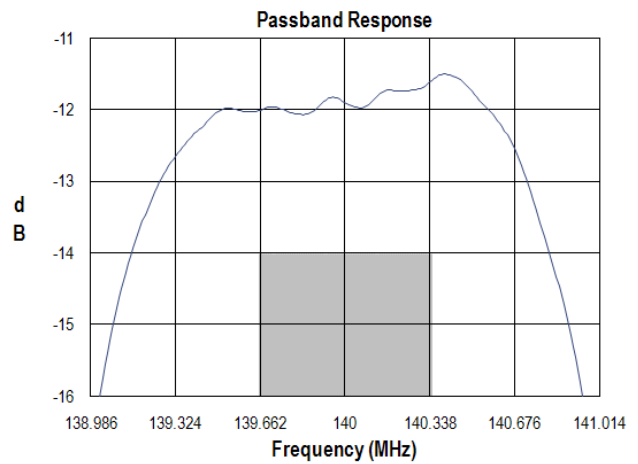
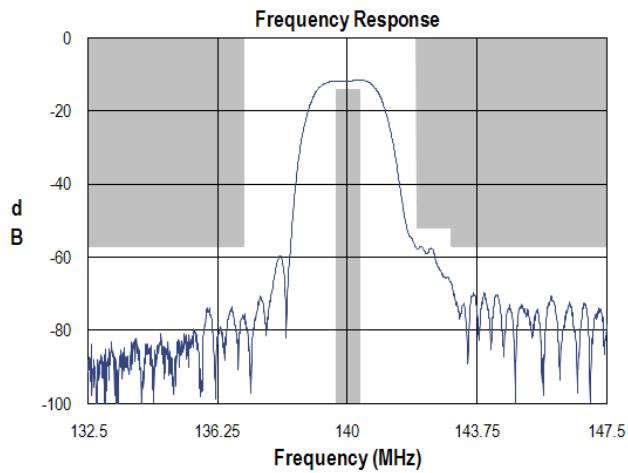
Bill of Material

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

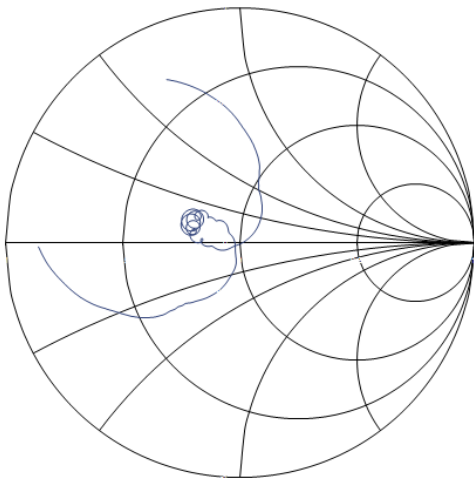
855579

140 MHz SAW Filter

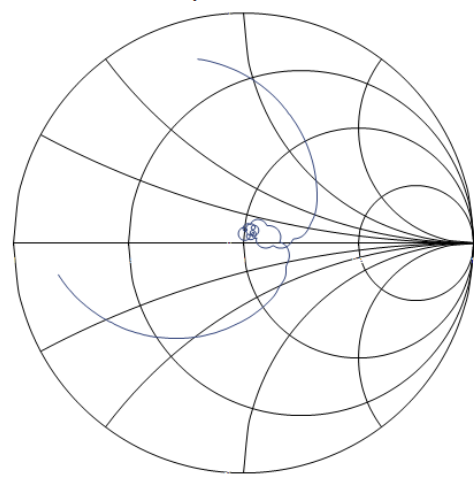
Typical Performance (at room temperature)



Input Smith Chart

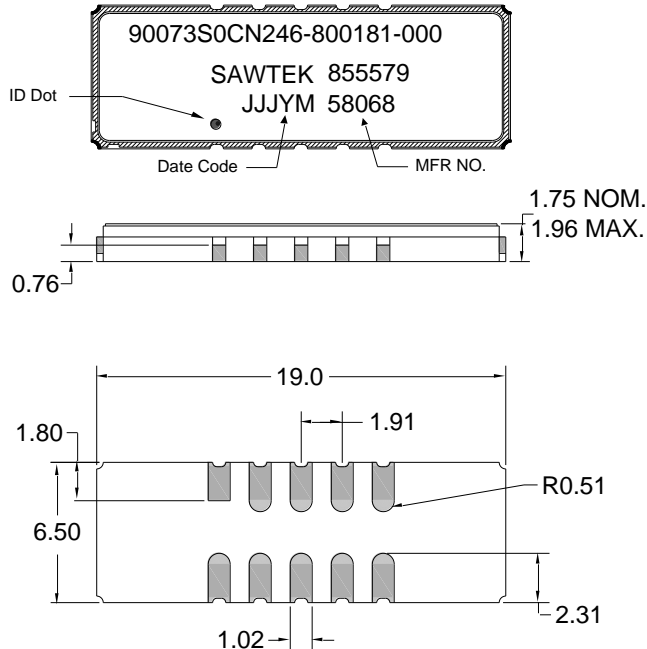


Output Smith Chart



Mechanical Information

Package Information, Dimensions and Marking



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

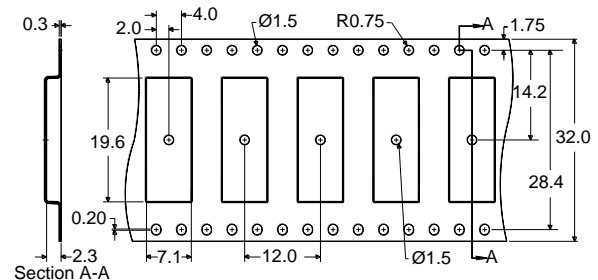
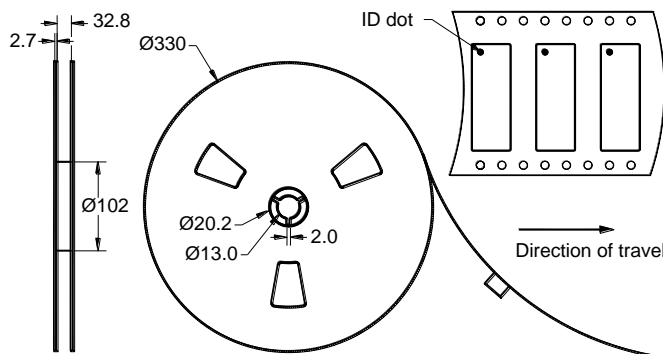
Body: Al_2O_3 ceramic
Lid: Kovar, Ni plated
Terminations: Au plating 0.5 - 1.0 μ m, over a 2-6 μ m Ni plating

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), 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 ≥ 4100 .
Test: Human Body Model (HBM)
Standard: JEDEC Standard JESD22-A114

ESD Rating: C

Value: Passes ≥ 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 ($C_{15}H_{12}Br_4O_2$) Free
- PFOS Free
- SVHC Free

Contact Information

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