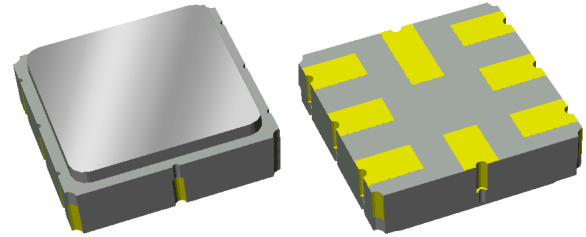


# 857179

## 1090 MHz SAW Filter

### Applications

- For Military applications



### Product Features

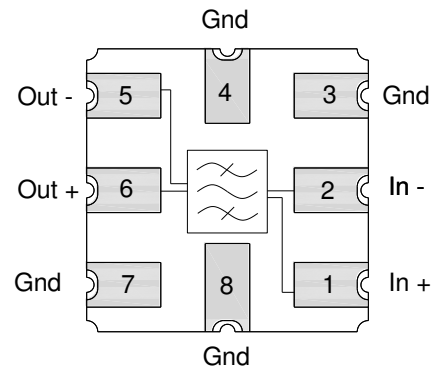
- Usable bandwidth 10 MHz
- Low Loss
- Balanced operation
- Matching is required for optimum performance at 50Ω
- Small Size: 3.80 x 3.80 x 1.27 mm
- Ceramic Surface Mount Package (SMP)
- Hermetically Sealed
- RoHS compliant, Pb-free

### General Description

857179 is a general purpose filter designed in a 3.8 x 3.8 mm hermetic package with low insertion loss and high attenuation.

### Functional Block Diagram

Top view



### Pin Configuration

Pin #	Balanced	Description
1		Input +
2		Input -
6		Output +
5		Output -
3,4,7,8		Case Ground

### Ordering Information

Part No.	Description
857179	packaged part
857179-EVB	evaluation board

Standard T/R size = 4000 units/reel.

## Specifications

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

Specified Temperature Range: <sup>(2)</sup> -55 to +85 °C

Parameter <sup>(3)</sup>	Conditions	Min	Typical <sup>(4)</sup>	Max	Units
Center Frequency		-	1090	-	MHz
Maximum Insertion Loss <sup>(5)</sup>	1085 – 1095 MHz	-	5.6	6.3	dB
Lower 1.25 dB Bandedge <sup>(6)</sup>		-	1073	1085	MHz
Upper 1.25 dB Bandedge <sup>(6)</sup>		1095	1100	-	MHz
Amplitude Variation <sup>(7)</sup>	1085 – 1095 MHz	-	0.2	1.25	dB p-p
Group Delay Ripple <sup>(7)</sup>	1085 – 1095 MHz	-	7.0	20	ns p-p
Absolute Attenuation <sup>(8)</sup>	500 – 1006 MHz	55	68	-	dB
	1006 – 1050 MHz	50	56	-	dB
	1140 – 1160 MHz	50	70	-	dB
	1160 – 1600 MHz	55	67	-	dB
Source Impedance <sup>(9)</sup>	Single-ended	-	50	-	Ω
Load Impedance <sup>(9)</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, unless otherwise noted
5. Referenced to maximum insertion loss within the specified frequency points
6. Relative to insertion loss at center frequency
7. Total variation over the defined frequency range.
8. Absolute Attenuation measurements are referenced to zero dB
9. This is the optimum impedance in order to achieve the performance shown

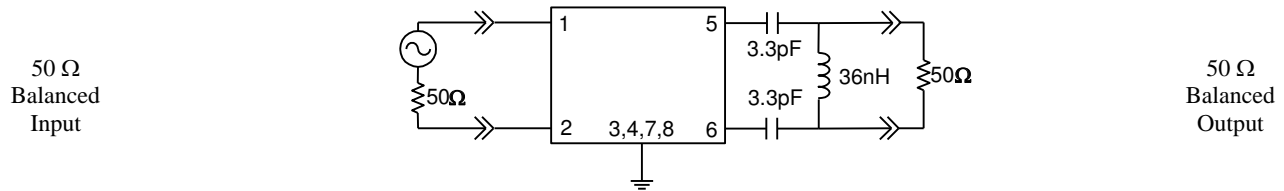
### Absolute Maximum Ratings

Parameter	Rating
Operable Temperature	-55 to +85 °C
Storage Temperature	-55 to +85 °C

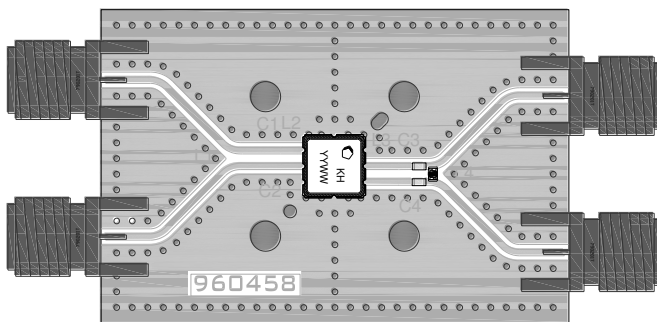
Operation of this device outside the parameter ranges given above may cause permanent damage.

**Reference Design**

**Schematic**

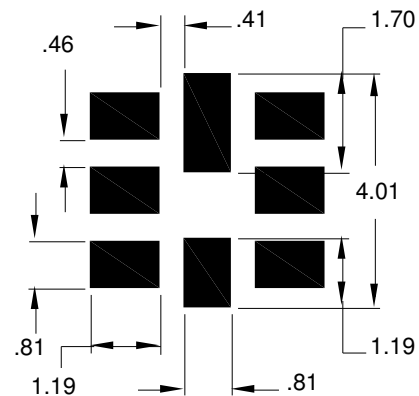


**PC Board**



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**

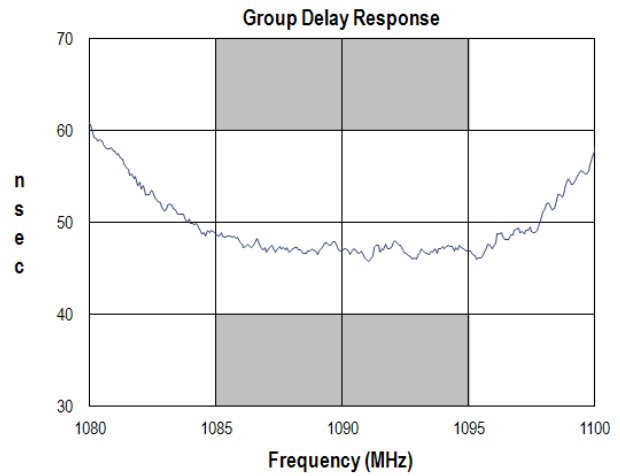
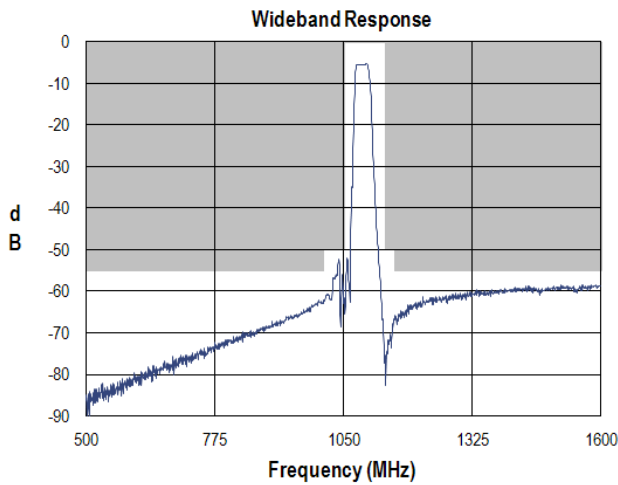
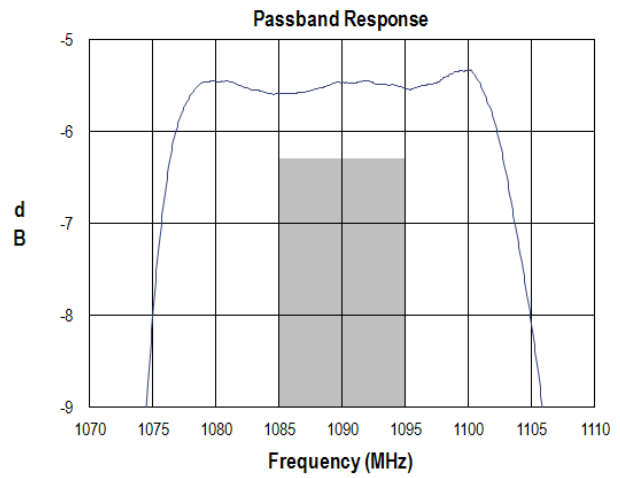
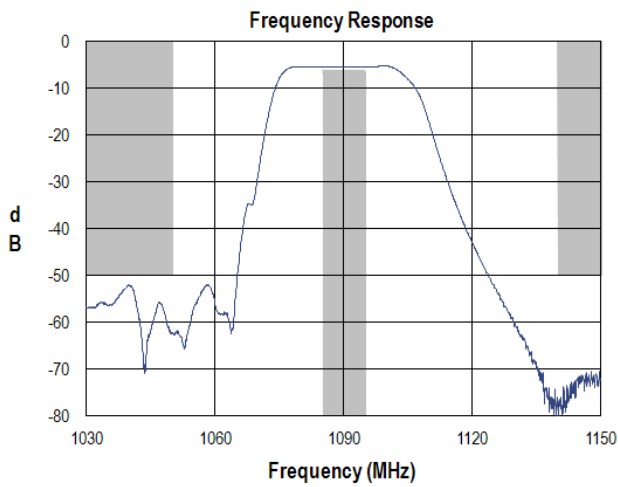


Notes:  
 1. All dimensions are in millimeters.  
 2. This footprint represents a recommendation only.

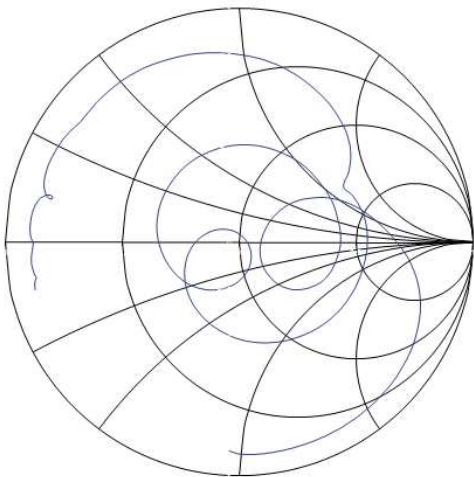
**Bill of Material**

Reference Desg.	Value	Description	Manufacturer	Part Number
L1	36nH	Coil Wire-wound, 0402, 5%	Murata	LQW15AN36NJ00
C1	3.3pF	Chip Capacitor, 0402, 5%	Murata	GRM1555C1H3R3GZ01
C2	3.3pF	Chip Capacitor, 0402, 5%	Murata	GRM1555C1H3R3GZ01
SMA	N/A	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	N/A	3-layer	multiple	960458

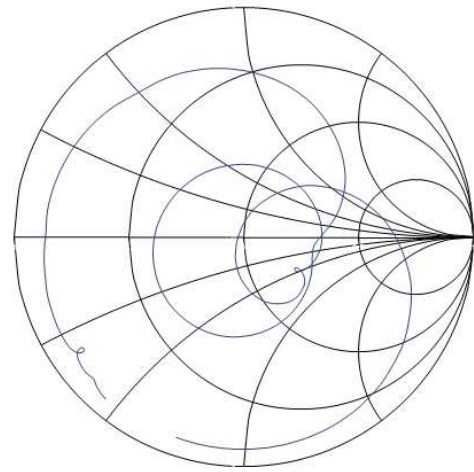
### Typical Performance (at room temperature)



Input Smith Chart

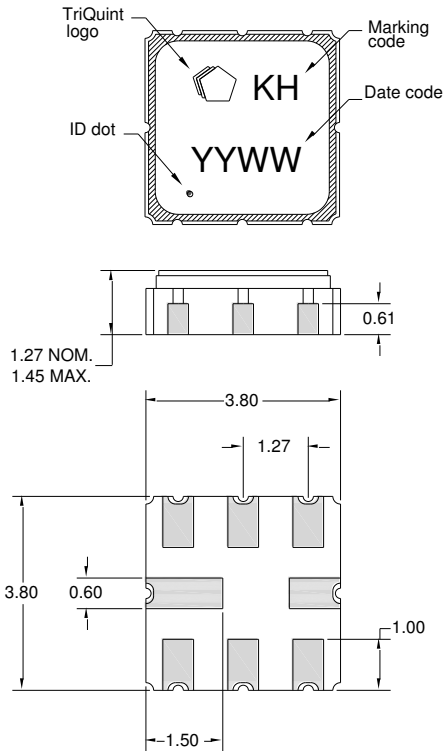


Output Smith Chart



**Mechanical Information**

**Package Information, Dimensions and Marking**



Package Style: SMP-15  
 Dimensions: 3.80 x 3.80 x 1.27 mm

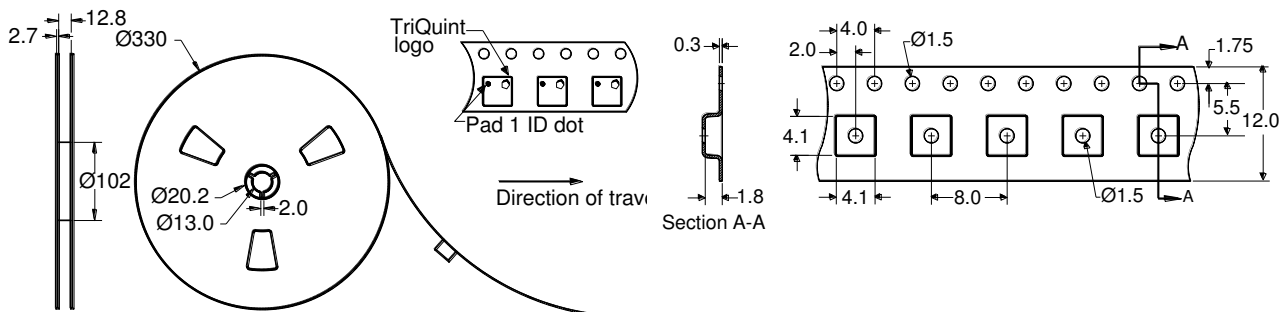
Body: Al<sub>2</sub>O<sub>3</sub> ceramic  
 Lid: Kovar, Ni plated  
 Terminations: Au plating 0.5 - 1.0µm, over a 2-6µm Ni plating

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

The date code consists of: YY =The last two digits of the year (2 Digits), WW = the calendar week of the year (2 Digits)

**Tape and Reel Information**

Standard T/R size = 4000 units/reel. All dimensions are in millimeters



## Product Compliance Information

### ESD Information



#### Caution! ESD-Sensitive Device

ESD Rating: TBD

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

ESD Rating: TBD

Value: Passes  $\geq$  TBD 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 (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

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

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