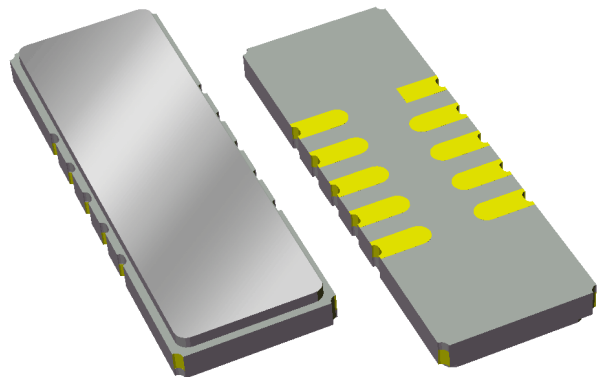


855549

242.625 MHz SAW Filter

Applications

- General Purpose
- For IF applications



Product Features

- Typical 1dB bandwidth of 1.3 MHz
- Low loss
- High Attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small Size
- Dimensions: 19.00 x 6.50 x 1.75mm
- Hermetically sealed
- **RoHS** compliant, **Pb**-free

General Description

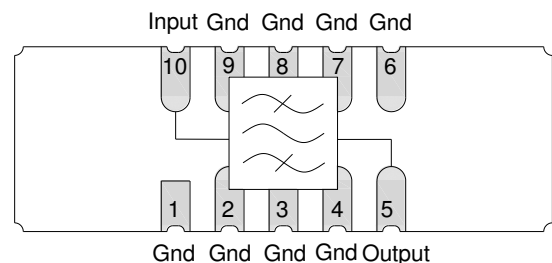
The 855549 is a high-performance IF SAW filter with a center frequency of 242.625 MHz and a 1dB bandwidth of 1.3 MHz.

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 |
|------------|------------------|
| 855549 | packaged part |
| 855549-EVB | evaluation board |

Standard T/R size = 2000 units/reel.

Specifications

Electrical Specifications ⁽¹⁾

Specified Temperature Range: ⁽²⁾ +25 °C

| Parameter ⁽³⁾ | Conditions | Min | Typical ⁽⁴⁾ | Max | Units |
|---|---------------------|---------|------------------------|---------|---------|
| Center Frequency | | - | 242.625 | - | MHz |
| Minimum Insertion Loss | | - | 18.7 | 11 | dB |
| 1.0 dB Lower Bandedge ⁽⁵⁾ | | - | 242.006 | 242.125 | MHz |
| 1.0 dB Upper Bandedge ⁽⁵⁾ | | 243.125 | 243.310 | - | MHz |
| Passband Ripple ⁽⁶⁾ (over 100% of 1dB bandwidth) | | - | 0.62 | 0.75 | dB p-p |
| Phase Ripple | 242.5 – 242.751 MHz | - | 1.4 | 5 | deg p-p |
| Relative Attenuation ⁽⁵⁾ | 20 – 240.151 MHz | 40 | 57 | - | dB |
| | 245.15 – 465.25 MHz | 40 | 56 | - | dB |
| Source Impedance (single-ended) ⁽⁷⁾ | - | - | 50 | - | Ω |
| Load Impedance (single-ended) ⁽⁷⁾ | - | - | 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 Minimum Insertion Loss
- Passband Ripple is defined as the worst case difference between a peak and an adjacent valley within defined frequency points
- This is the optimum impedance in order to achieve the performance shown

Absolute Maximum Ratings

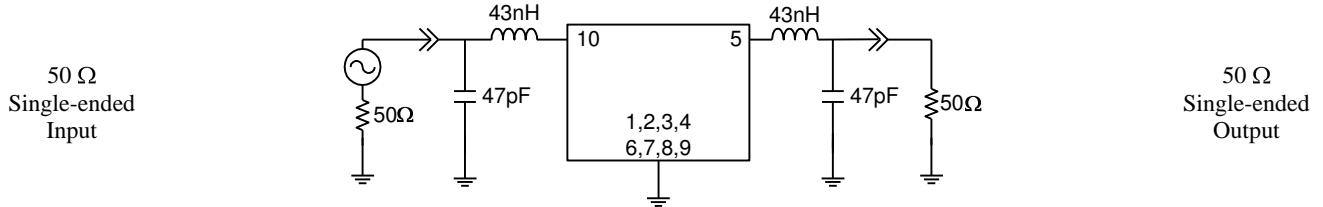
| Parameter | Rating |
|--------------------------------------|---------------|
| Operating Temperature ⁽⁸⁾ | -40 to +85 °C |
| Storage Temperature | -40 to +85 °C |

- Device may operate over this range with degraded Electrical Specifications

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

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

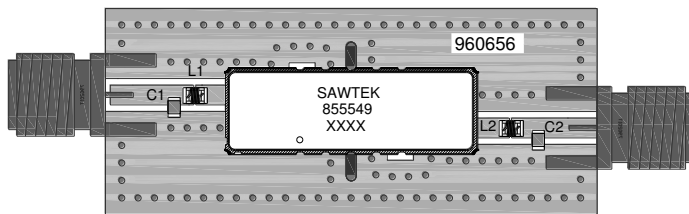
Schematic



Notes:

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

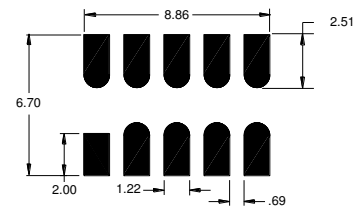
PC Board



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



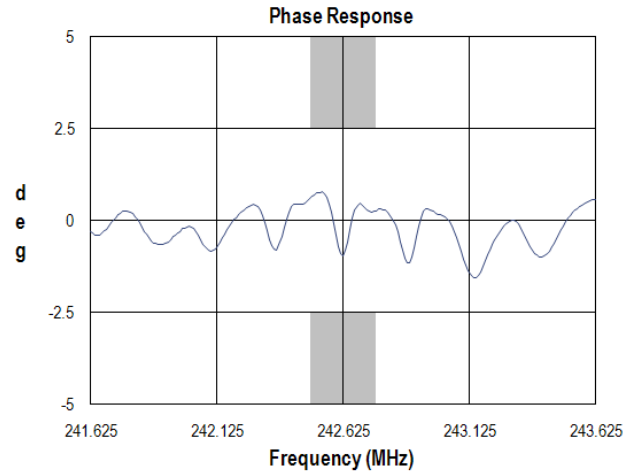
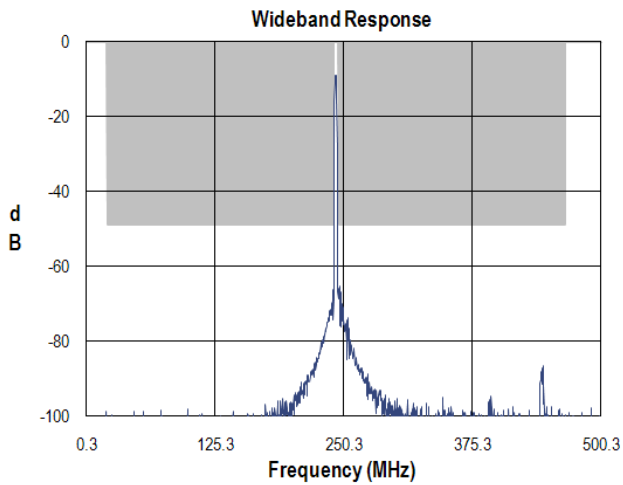
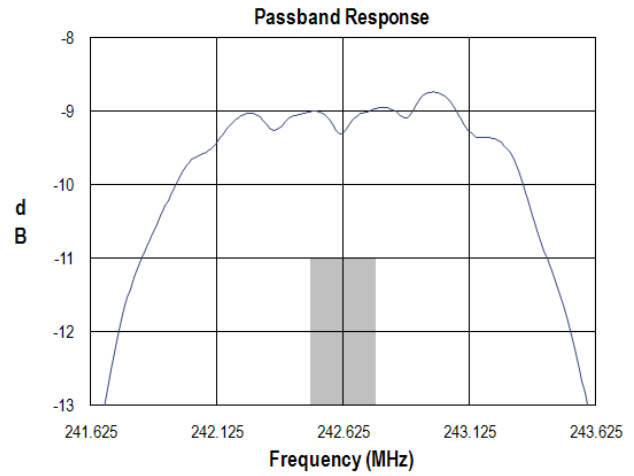
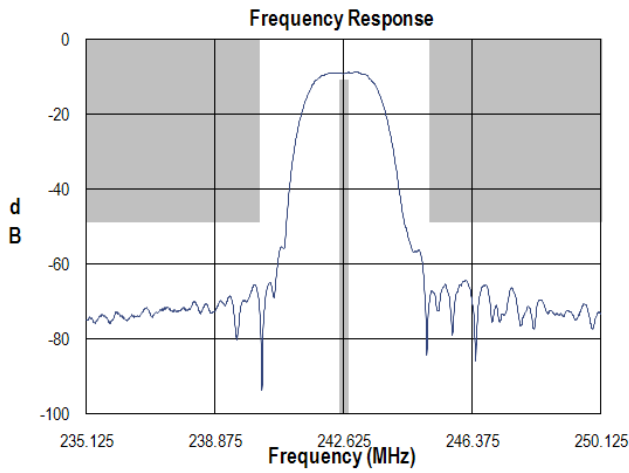
Notes:

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

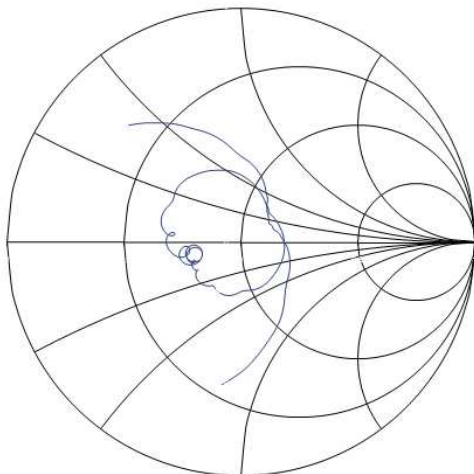
Bill of Material

| Reference Desg. | Value | Description | Manufacturer | Part Number |
|-----------------|-------|---------------------------|------------------|-------------------|
| L1 | 43nH | Coil Wire-wound, 0805, 5% | Coilcraft | 0805CS-431XJLC |
| L2 | 43nH | Coil Wire-wound, 0805, 5% | Coilcraft | 0805CS-431XJLC |
| C1 | 47pF | Chip Capacitor, 0805, 5% | MuRata | GRM2165C1H470JZ01 |
| C2 | 47pF | Chip Capacitor, 0805, 5% | MuRata | GRM2165C1H470JZ01 |
| SMA | N/A | SMA connector | Radiall USA Inc. | 9602-1111-018 |
| PCB | N/A | 3-layer | multiple | 960656 |

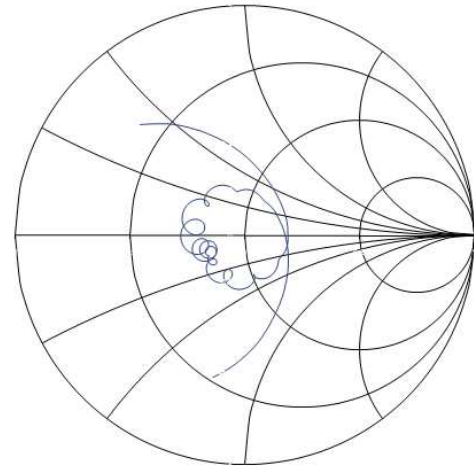
Typical Performance (at room temperature)



Input Smith Chart



Output Smith Chart

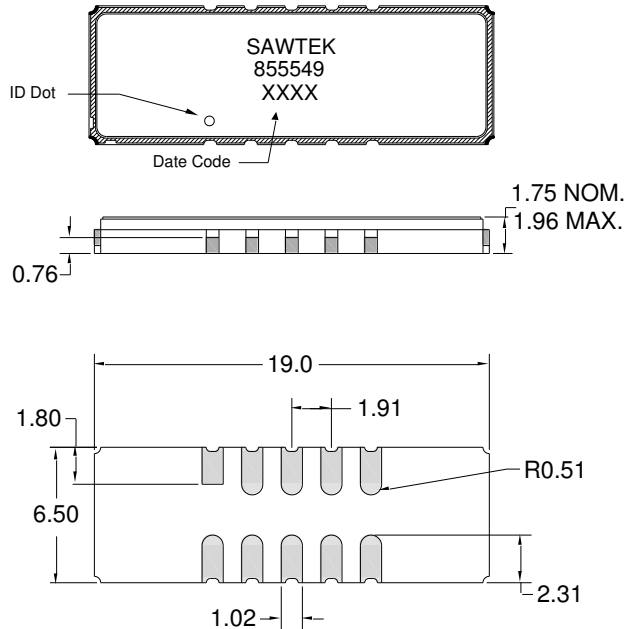


855549

242.625 MHz SAW Filter

Mechanical Information

Package Information, Dimensions and Marking



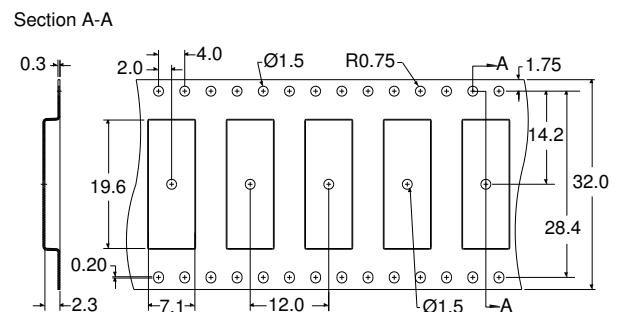
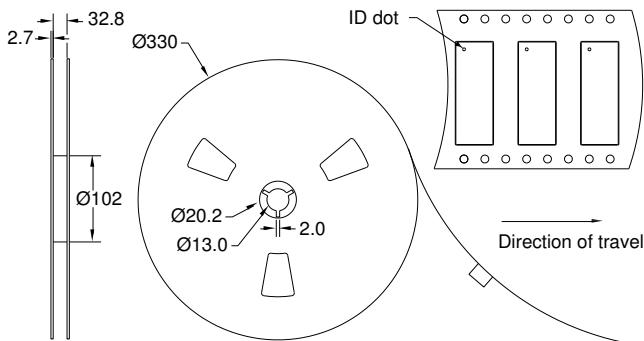
Package Style: SMP-75
Dimensions: 19.00 x 6.50 x 1.75mm

Body: Al₂O₃ 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

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: 2

Value: Passes ≥ 2000 V min.
 Test: Human Body Model (HBM)
 Standard: JEDEC Standard JESD22-A114

ESD Rating: C

Value: Passes ≥ 500 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 (C₁₅H₁₂Br₄O₂) Free
- PFOS Free
- SVHC Free

Contact Information

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