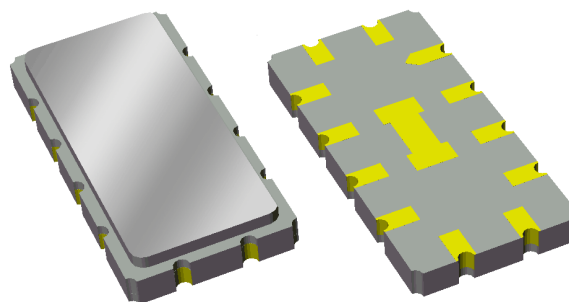


854675

70 MHz SAW Filter

Applications

- General Purpose
- For IF applications



Product Features

- Typical 3 dB Bandwidth of 30 MHz
- Low loss
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small Size
- Dimensions: 13.30 x 6.50 x 1.75mm
- Hermetically Sealed
- RoHS compliant, Pb-free



General Description

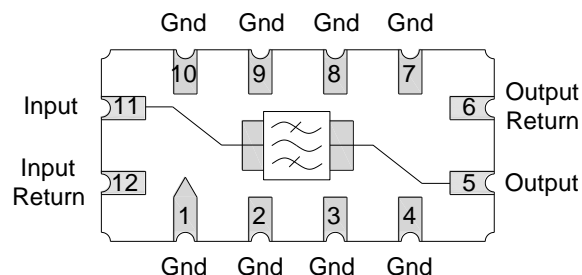
The 854675 is a high-performance IF SAW filter with a center frequency of 70 MHz and a 3dB bandwidth of 30 MHz.

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

The device is RoHS compliant and Pb-free.

Functional Block Diagram

Top view



Pin Configuration

| Pin # | Description |
|------------------|---------------|
| 11 | Input |
| 5 | Output |
| 6 | Output Return |
| 12 | Input Return |
| 1,2,3,4,7,8,9,10 | Case ground |

Ordering Information

| Part No. | Description |
|------------|------------------|
| 854675 | packaged part |
| 854675-EVB | evaluation board |

Standard T/R size = 2000 units/reel.

Specifications

Electrical Specifications ⁽¹⁾

Specified Temperature Range: +25 °C

| Parameter | Conditions | Min | Typical ⁽²⁾ | Max | Units |
|--|-------------------------|-------|------------------------|------|---------|
| Center Frequency | | 69.8 | 70 | 70.2 | MHz |
| Insertion Loss | At 70 MHz | - | 17.5 | 18.5 | dB |
| 1 dB Bandwidth ⁽³⁾ | | 28.75 | 29.15 | - | MHz |
| 3 dB Bandwidth ⁽³⁾ | | 30 | 30.3 | - | MHz |
| 40 dB Bandwidth ⁽³⁾ | | - | 37 | 38.1 | MHz |
| Passband Ripple | | - | 0.8 | 1.0 | dB p-p |
| Phase Linearity | (90% of 3 dB Bandwidth) | - | 9.7 | 13 | deg p-p |
| Group Delay Variation | (90% of 3 dB Bandwidth) | - | 50 | 90 | ns p-p |
| Absolute Delay | | - | 1.07 | - | ns p-p |
| Temperature Coefficient | | - | -94 | - | ppm/ °C |
| Source Impedance (single-ended) ⁽⁴⁾ | | - | 50 | - | Ω |
| Load Impedance (single-ended) ⁽⁴⁾ | | - | 50 | - | Ω |

Notes:

1. All specifications are based on the TriQuint schematic for the main reference design shown on page 3
2. Typical values are based on average measurements at room temperature
3. Relative to minimum insertion loss
4. This is the optimum impedance in order to achieve the performance shown

Absolute Maximum Ratings

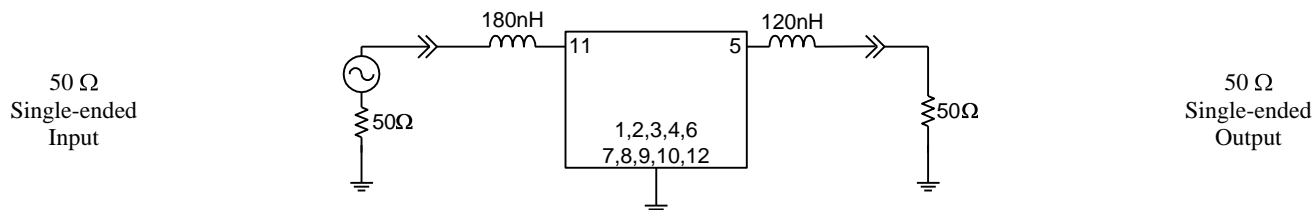
| Parameter | Rating |
|--------------------------------------|---------------|
| Operating Temperature ⁽⁵⁾ | -40 to +85 °C |
| Storage Temperature | -40 to +85 °C |

5. 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

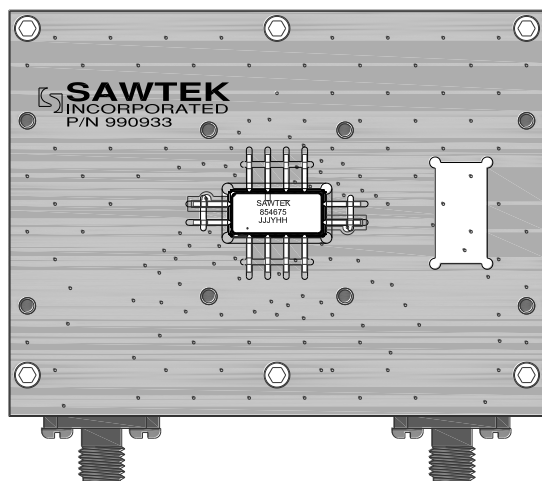
Schematic



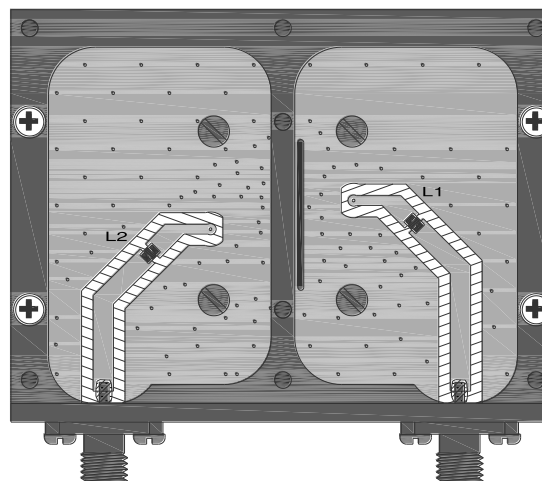
Notes:

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

Testing Fixture Top



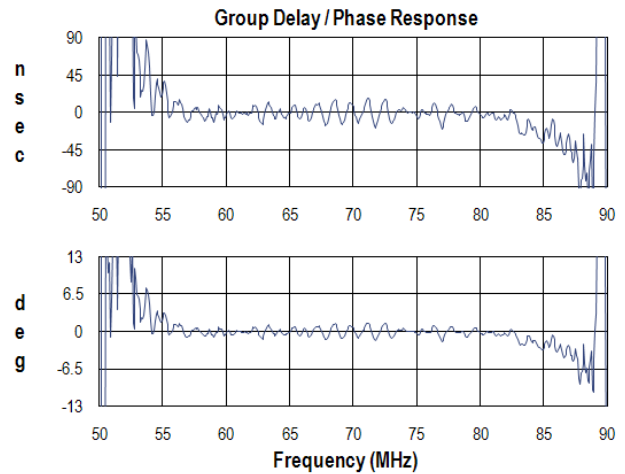
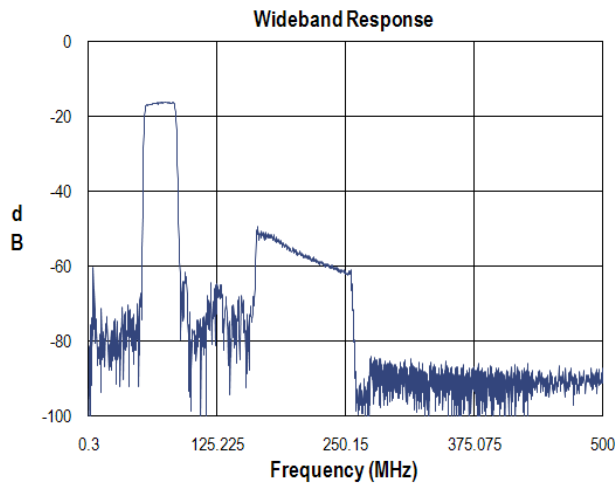
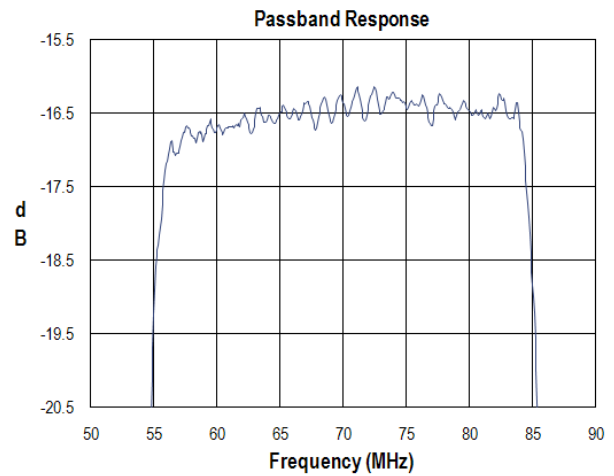
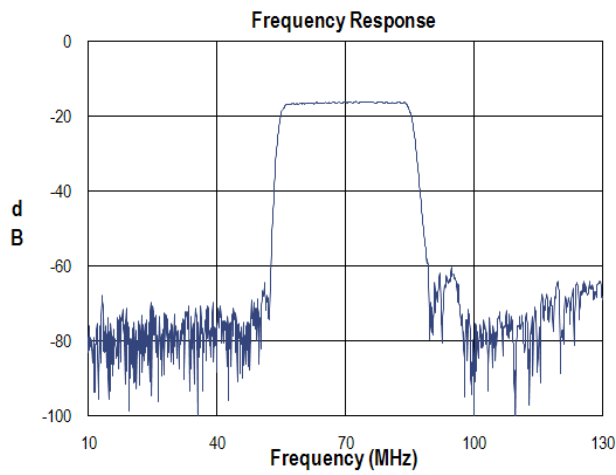
Test Fixture Bottom



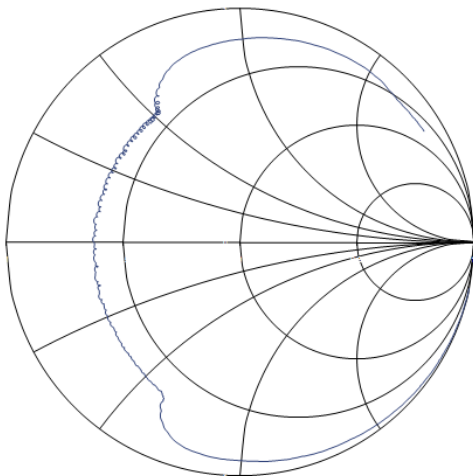
Bill of Material

| Reference Desg. | Value | Description | Manufacturer | Part Number |
|-----------------|--------|---------------------------|------------------|----------------|
| L1 | 180 nH | Coil Wire-wound, 0805, 5% | Coilcraft | 0805CS-181XJLC |
| L2 | 120 nH | Coil Wire-wound, 0805, 5% | Coilcraft | 0805CS-121XJLC |
| SMA | N/A | SMA connector | Radiall USA Inc. | 9602-1111-018 |
| PCB | N/A | 3-layer | multiple | 990933 |

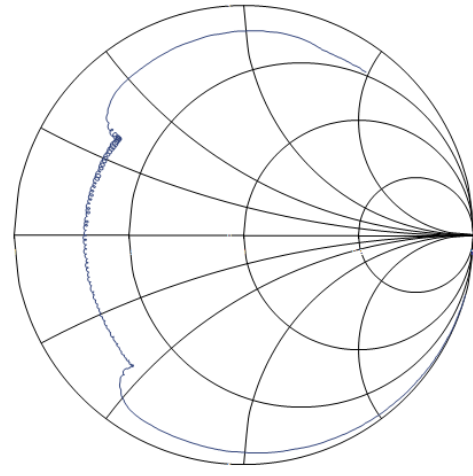
Typical Performance (at room temperature)



Input Smith Chart

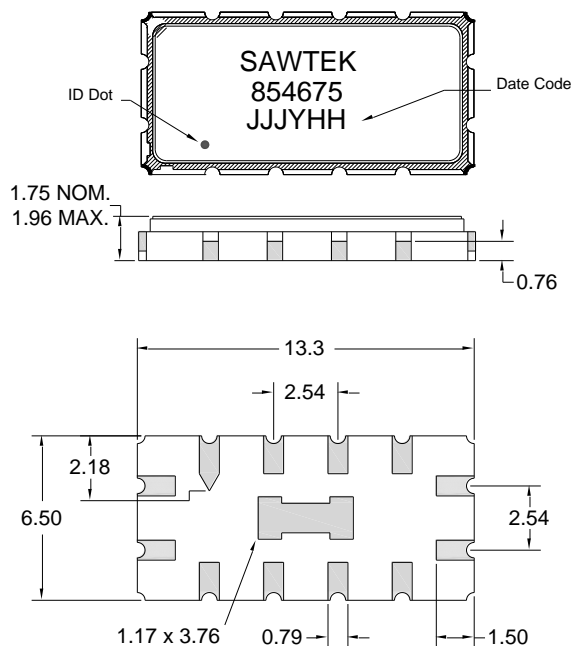


Output Smith Chart



Mechanical Information

Package Information, Dimensions and Marking



Package Style: SMP-53
Dimensions: 13.30 x 6.50 x 1.75mm

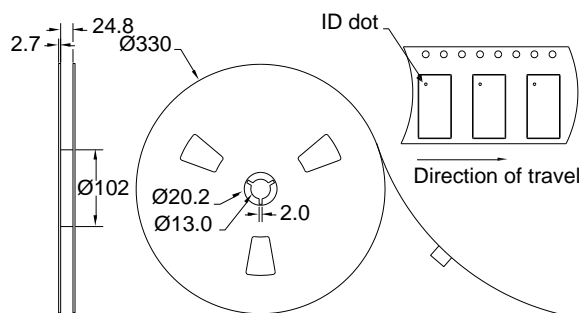
Body: Al_2O_3 ceramic
Lid: Kovar, Ni plated
Terminations: Au plating 0.5 - 1.0 μ m, over a 2-6 μ m Ni plating

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

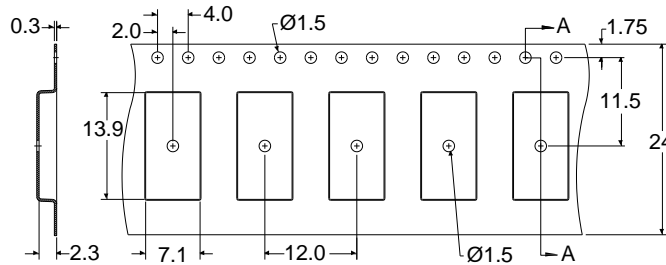
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

Tape and Reel Information

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



Section A-A



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 (C₁₅H₁₂Br₄O₂) Free
- PFOS Free
- SVHC Free

Contact Information

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