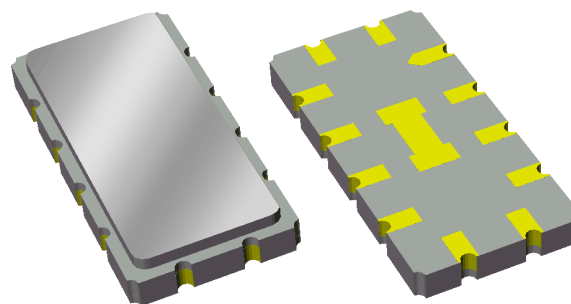


# 854668

## 70 MHz SAW Filter

### Applications

- General Purpose
- For IF applications



### Product Features

- Typical 3 dB bandwidth of 16.5 MHz
- Low loss
- High Attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small Size
- Dimensions: 13.30 x 6.50 x 1.75mm
- Hermetic **RoHS** compliant, **Pb-free**

### General Description

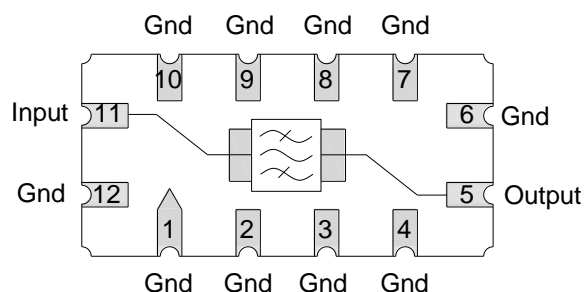
The 854668 is a high-performance IF SAW filter with a center frequency of 70 MHz and a 3.0 dB bandwidth of 16.5 MHz.

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

### Ordering Information

| Part No.   | Description      |
|------------|------------------|
| 854668     | packaged part    |
| 854668-EVB | evaluation board |

Standard T/R size = 2000 units/reel.

## Specifications

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

Specified Temperature Range: <sup>(2)</sup> +25 °C

| Parameter                                    | Conditions          | Min  | Typical <sup>(3)</sup> | Max  | Units   |
|--|---------------------|------|------------------------|------|---------|
| Center Frequency                             |                     | 69.8 | 70                     | 70.2 | MHz     |
| Insertion Loss                               | At Center Frequency | -    | 12.5                   | 13.5 | dB      |
| 1 dB Bandwidth <sup>(4)</sup>                |                     | 15.2 | 15.52                  | -    | MHz     |
| 3 dB Bandwidth <sup>(4)</sup>                |                     | 16   | 16.5                   | -    | MHz     |
| 40 dB Bandwidth <sup>(4)</sup>               |                     | -    | 21.4                   | 22   | MHz     |
| Passband Ripple                              | 62.8– 77.2 MHz      | -    | 0.27                   | 1.0  | dB p-p  |
| Phase Linearity                              | 62.8– 77.2 MHz      | -    | 7.75                   | 11.5 | ° p-p   |
| Group Delay Variation                        | 62.8– 77.2 MHz      | -    | 70                     | 100  | ns p-p  |
| Absolute Delay Variation                     | 62.8– 77.2 MHz      | -    | 1.07                   | -    | µs      |
| Temperature Coefficient                      |                     | -    | -94                    | -    | ppm/ °C |
| Source Impedance single-ended <sup>(5)</sup> |                     | -    | 50                     | -    | Ω       |
| Load Impedance single-ended <sup>(5)</sup>   |                     | -    | 50                     | -    | Ω       |

Notes:

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

### Absolute Maximum Ratings

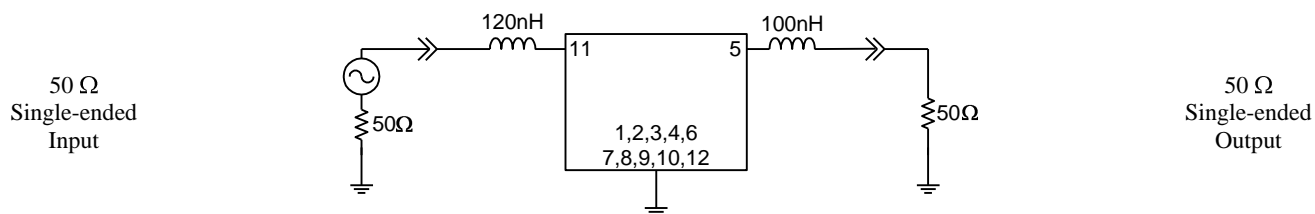
| Parameter                                | Rating        |
|--|---------------|
| Operating Temperature <sup>(6)</sup>     | -40 to +85 °C |
| Storage Temperature                      | -40 to +85 °C |
| Input Power (at +55°C for 10K hours max) | +20dBm        |

6. 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 1 – 50Ω SE Input, 50Ω SE Output

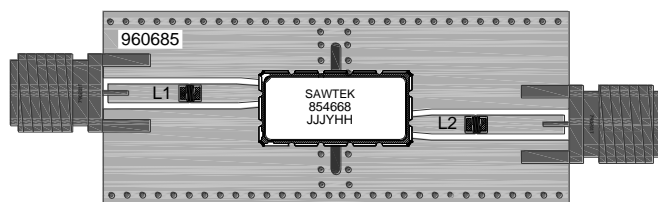
#### Schematic



#### Notes:

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

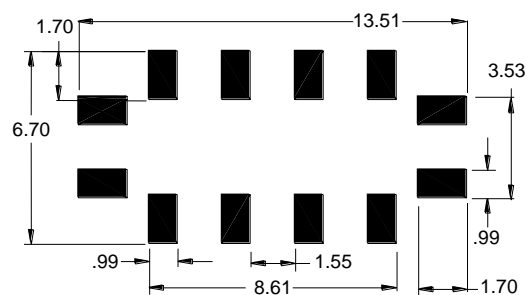
#### PC Board



#### 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.

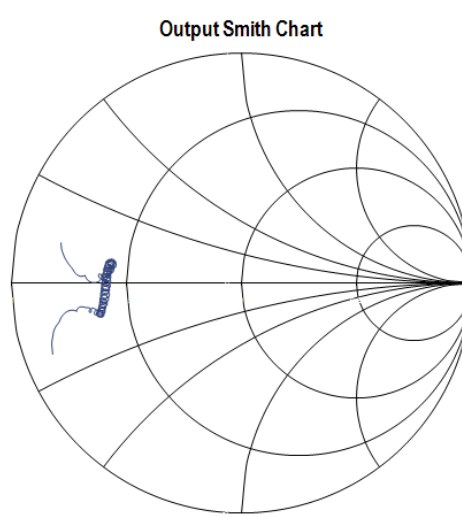
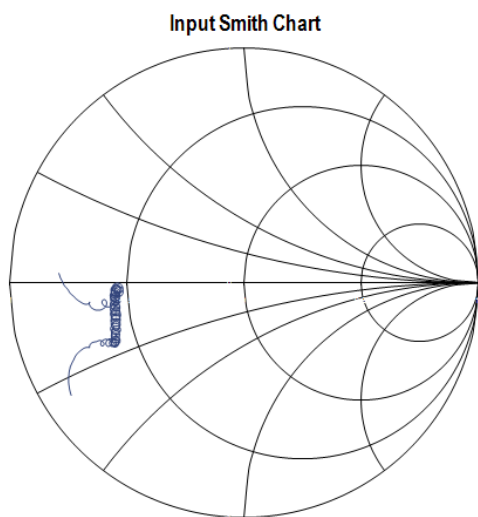
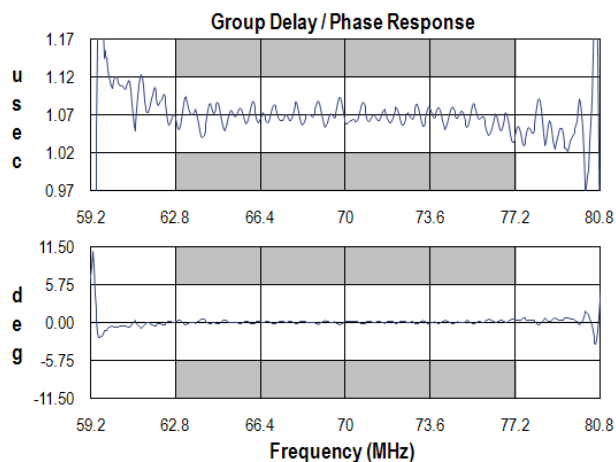
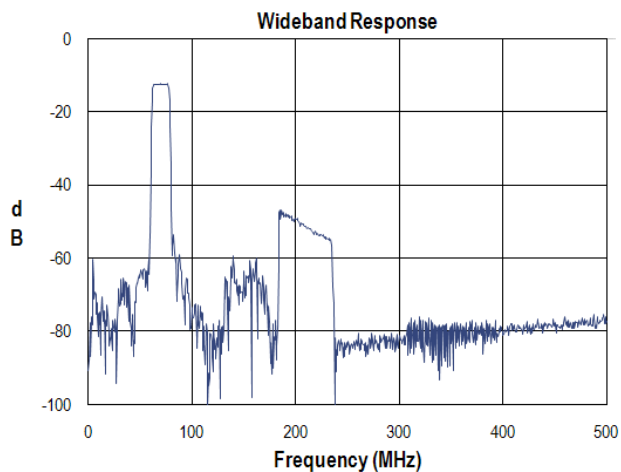
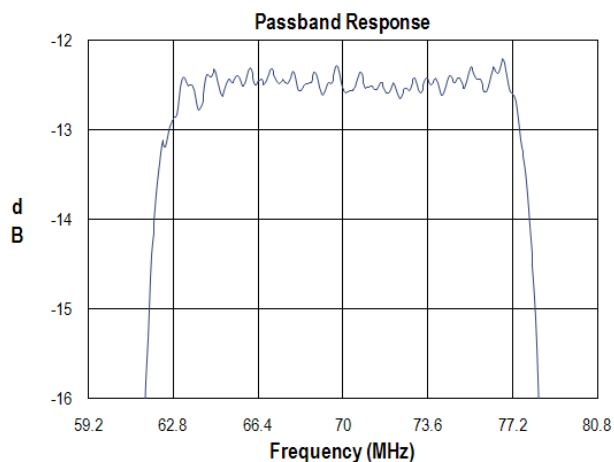
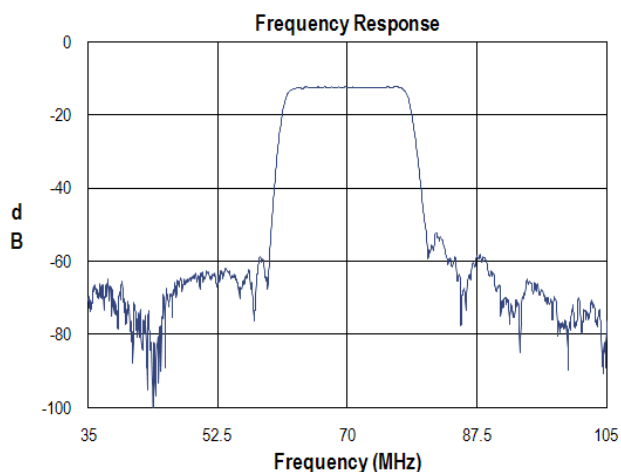
#### Bill of Material

| Reference Desg. | Value  | Description               | Manufacturer     | Part Number    |
|-----------------|--------|---------------------------|------------------|----------------|
| L1              | 120 nH | Coil Wire-wound, 0805, 5% | Coilcraft        | 0805CS-121XJBC |
| L2              | 100 nH | Coil Wire-wound, 0805, 5% | Coilcraft        | 0805CS-111XJBC |
| SMA             | N/A    | SMA connector             | Radiall USA Inc. | 9602-1111-018  |
| PCB             | N/A    | 3-layer                   | multiple         | 960685         |

# 854668

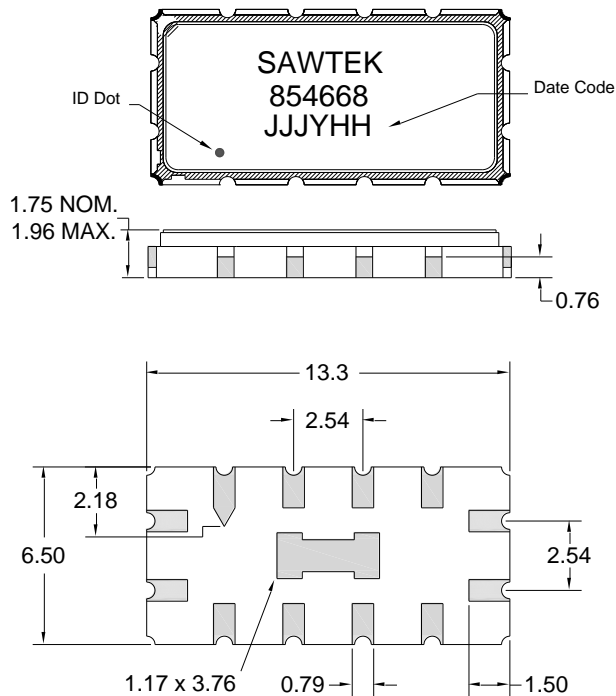
## 70 MHz SAW Filter

### Typical Performance (at room temperature)



### Mechanical Information

#### Package Information, Dimensions and Marking



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

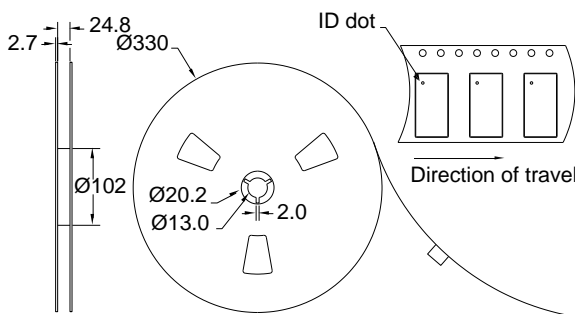
Body:  $Al_2O_3$  ceramic  
Lid: Kovar, Ni plated  
Terminations: Au plating 0.5 - 1.0  $\mu$ m, over a 2-6  $\mu$ m Ni plating

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

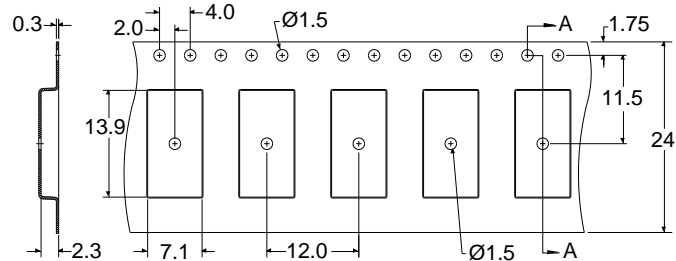
The date code consists of: day of the current year (Julian, 3 digits), Y = last digit of the year (1 digit), and HH = hour (2 digits)

### 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: 2

Value: Passes  $\geq 3800$  V min.  
Test: Human Body Model (HBM)  
Standard: JEDEC Standard JESD22-A114

ESD Rating: C

Value: Passes  $\geq 1100$  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 ( $C_{15}H_{12}Br_4O_2$ ) 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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Fax: +1.407.886.7061

For technical questions and application information:

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

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