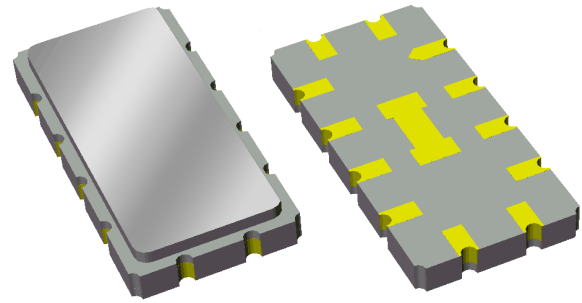


# 854565

## 350 MHz SAW Filter

### Applications

- General Purpose
- For IF applications



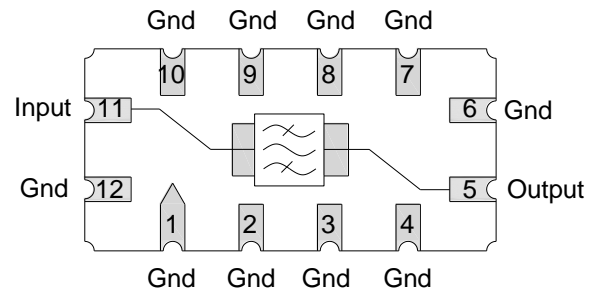
### Product Features

- Typical 1 dB Bandwidth of 1.2 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



### Functional Block Diagram

Top view



### General Description

The 854565 is a high-performance IF SAW filter with a center frequency of 350 MHz and an 1 dB bandwidth of 1.2 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.

### Pin Configuration Single-ended

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

### Ordering Information

| Part No.   | Description      |
|------------|------------------|
| 854565     | packaged part    |
| 854565-EVB | evaluation board |

Standard T/R size = 2000 units/reel.

## Specifications

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

Specified Temperature Range: +25 °C

| Parameter                                      | Conditions        | Min    | Typical <sup>(2)</sup> | Max    | Units   |
|--|-------------------|--------|------------------------|--------|---------|
| Center Frequency                               |                   | 349.85 | 350                    | 350.15 | MHz     |
| Insertion Loss                                 | At 350 MHz        | -      | 10.2                   | 12     | dB      |
| 1 dB Bandwidth <sup>(3)</sup>                  |                   | 1.0    | 1.2                    | -      | MHz     |
| 40 dB Bandwidth <sup>(3)</sup>                 |                   | -      | 3.3                    | 4.5    | MHz     |
| Group Delay Variation                          | 349.5 – 350.5 MHz | -      | 80                     | 270    | ns p-p  |
| Phase Ripple                                   | 349.5 – 350.5 MHz | -      | 2.6                    | 6.0    | deg p-p |
| Triple Transit suppression                     |                   | 40     | 43                     | -      | dB      |
| Source Impedance (single-ended) <sup>(4)</sup> |                   | -      | 50                     | -      | Ω       |
| Load Impedance (single-ended) <sup>(4)</sup>   |                   | -      | 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

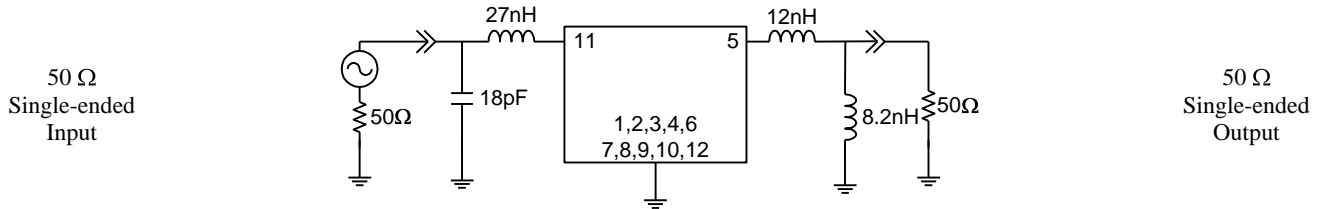
| Parameter                            | Rating        |
|--------------------------------------|---------------|
| Operating Temperature <sup>(5)</sup> | -40 to +85 °C |
| Storage Temperature                  | -40 to +85 °C |

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

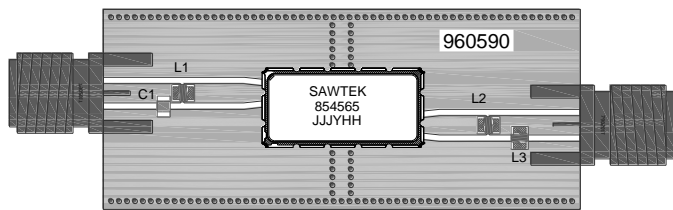
#### Schematic



Notes:

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

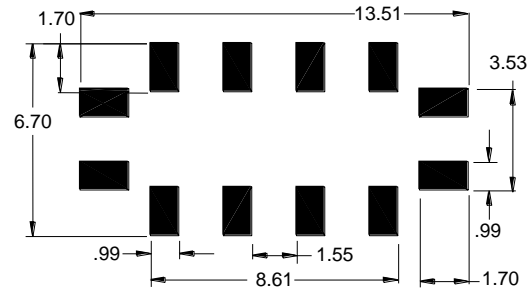
#### PC Board



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



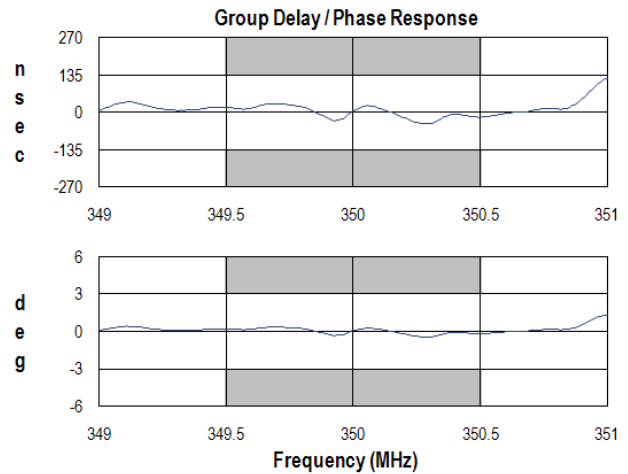
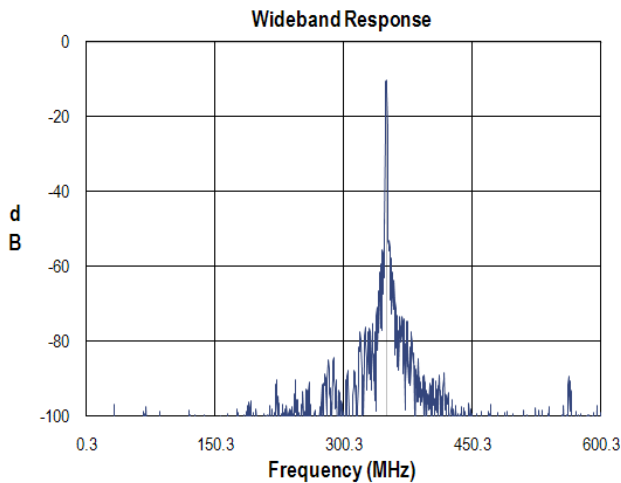
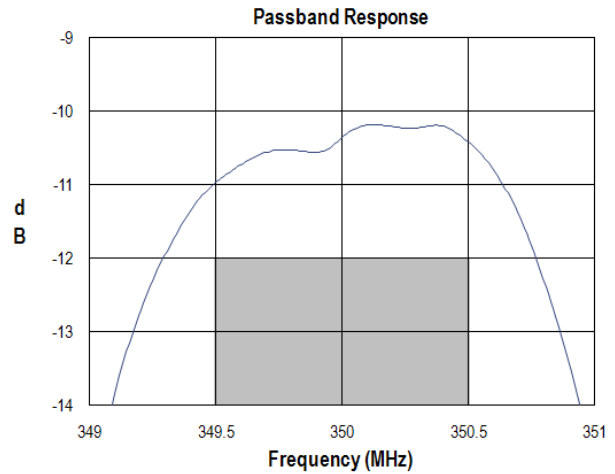
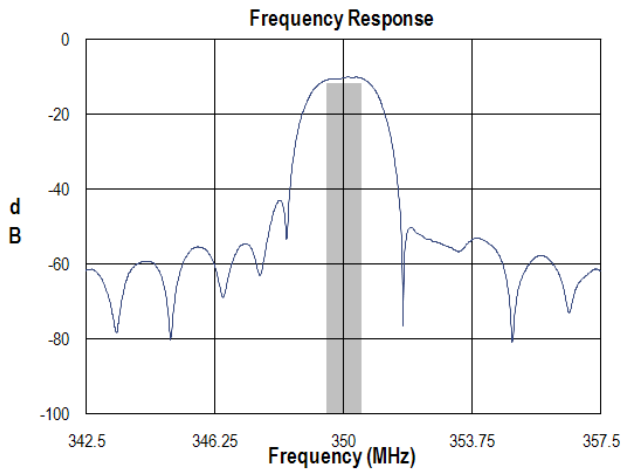
Notes:

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

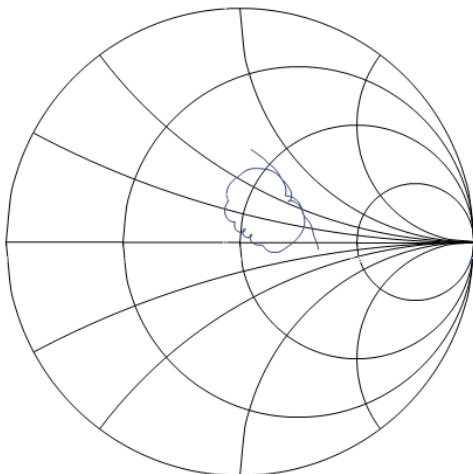
#### Bill of Material

| Reference Desg. | Value   | Description               | Manufacturer     | Part Number       |
|-----------------|---------|---------------------------|------------------|-------------------|
| L1              | 27 nH   | Coil Wire-wound,0805, 5%  | Coilcraft        | 0805CS-270XJLC    |
| L2              | 12 nH   | Coil Wire-wound, 0805, 5% | Coilcraft        | 0805CS-120XJLC    |
| L3              | 8.2 nH  | Coil Wire-wound, 0805, 5% | Coilcraft        | 0805CS-082XJLC    |
| C1              | 18.0 pF | Chip Capacitor,0805, 5%   | MuRata           | GRM2165C1H180JZ01 |
| SMA             | N/A     | SMA connector             | Radiall USA Inc. | 9602-1111-018     |
| PCB             | N/A     | 3-layer                   | multiple         | 960590            |

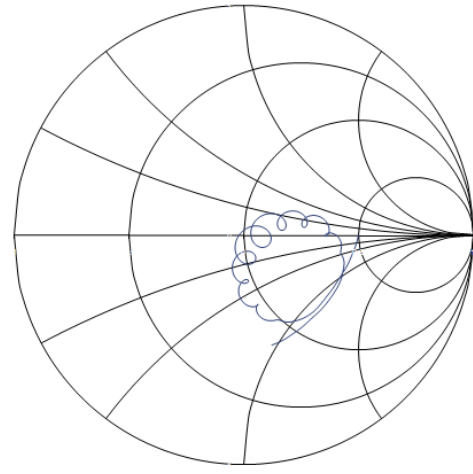
**Typical Performance (at room temperature)**



**Input Smith Chart**

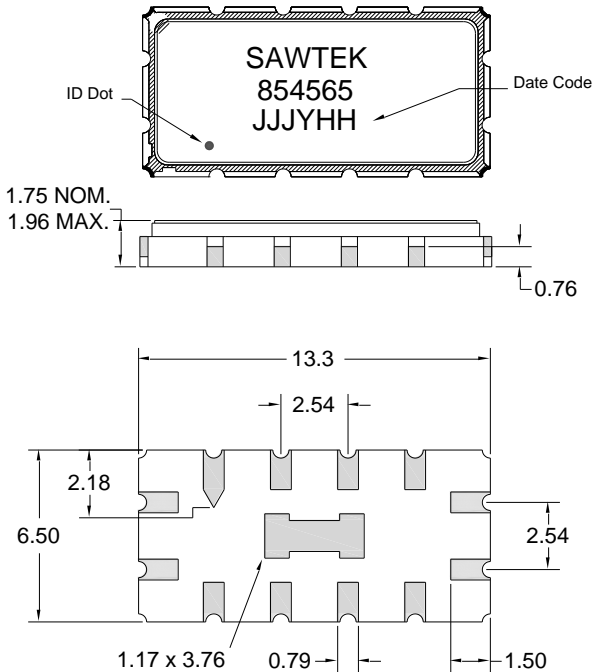


**Output Smith Chart**



**Mechanical Information**

**Package Information, Dimensions and Marking**



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

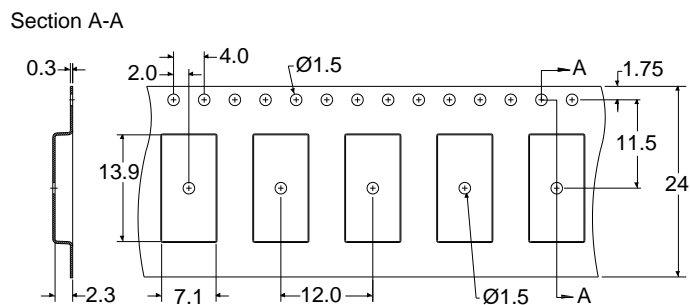
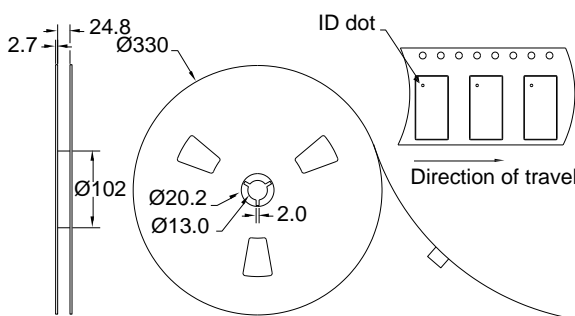
Body:  $Al_2O_3$  ceramic  
 Lid: Kovar, Ni plated  
 Terminations: Au plating 0.5 - 1.0 $\mu$ m, over a 2-6 $\mu$ m Ni plating

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), 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



## Product Compliance Information

### ESD Information



#### Caution! ESD-Sensitive Device

ESD Rating: 1C

Value: Passes  $\geq 1500$  V min.  
Test: Human Body Model (HBM)  
Standard: JEDEC Standard JESD22-A114

ESD Rating: C

Value: Passes  $\geq 500$  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 (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:

Web: [www.triquint.com](http://www.triquint.com)  
Email: [info-sales@tqs.com](mailto:info-sales@tqs.com)

Tel: +1.407.886.8860  
Fax: +1.407.886.7061

For technical questions and application information:

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

## Important Notice

The information contained herein is believed to be reliable. TriQuint makes no warranties regarding the information contained herein. TriQuint assumes no responsibility or liability whatsoever for any of the information contained herein. TriQuint assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for TriQuint products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.

TriQuint products are not warranted or authorized for use as critical components in medical, life-saving, or life-sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.