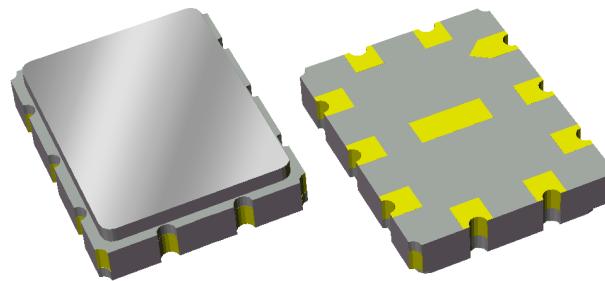


## Applications

- For broadband applications



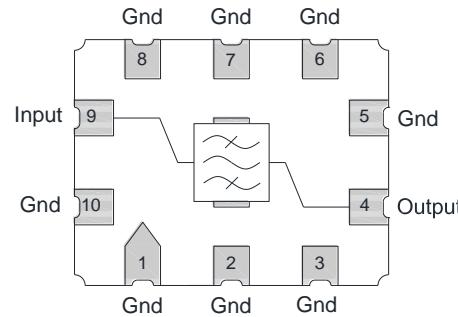
## Product Features

- Typical 3dB bandwidth of 44.0 MHz
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Replaces Sawtek P/N 851943 (BW 3dB=44 MHz)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free



## Functional Block Diagram

Top view



## General Description

The 856073 is a 140 MHz, SAW-based IF Filter. Its High Selectivity makes it an excellent choice for a wide range of applications such as instrumentation, test and measurement, terrestrial, microwave and Network Infrastructure. 856073 has a single-ended input and output and comes in an industry standard hermetically sealed surface mount package that is RoHS compliant and Pb-free.

## Pin Configuration

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

## Ordering Information

| Part No.   | Description      |
|------------|------------------|
| 856073     | Packaged Part    |
| 856073-EVB | Evaluation Board |

Standard T/R size = 2,000 units/reel

## Absolute Maximum Ratings

| Parameter            | Rating        |
|----------------------|---------------|
| Storage Temperature  | -40 to +85 °C |
| Operable Temperature | 0 to +70 °C   |

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

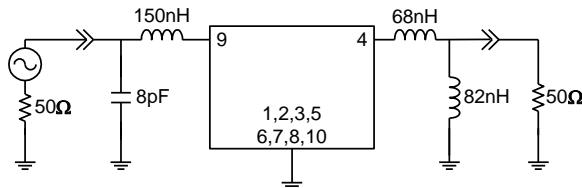
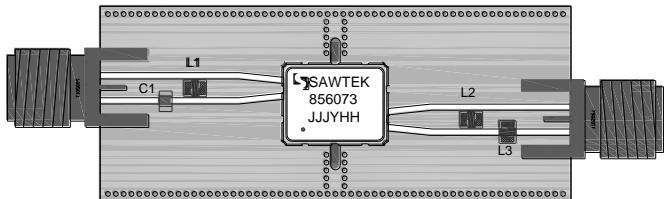
Operating Temperature Range: <sup>(2)</sup> 0 to +70 °C

| Parameter <sup>(3)</sup>            | Conditions        | Min    | Typical | Max    | Units   |
|-------------------------------------|-------------------|--------|---------|--------|---------|
| Center Frequency                    | -                 | -      | 140     | -      | MHz     |
| Maximum Insertion Loss              | -                 | -      | 21.75   | 22.5   | dB      |
| Lower 1 dB Bandedge <sup>(4)</sup>  | -                 | -      | 119.4   | 122.0  | MHz     |
| Upper 1 dB Bandedge                 | -                 | 158.0  | 160.8   | -      |         |
| Lower 3 dB Bandedge <sup>(4)</sup>  | -                 | -      | 118.0   | 119.1  | MHz     |
| Upper 3 dB Bandedge                 | -                 | 160.9  | 162.0   | -      |         |
| Lower 40 dB Bandedge <sup>(4)</sup> | -                 | 112.95 | 113.6   | -      | MHz     |
| Upper 40 dB Bandedge                | -                 | -      | 166.3   | 167.05 |         |
| Amplitude Variation                 | 122.0 – 158.0 MHz | -      | 0.5     | 1.5    | dB p-p  |
| Phase Linearity                     | 122.0 – 158.0 MHz | -      | 2.55    | 5.5    | deg p-p |
| Group Delay Variation               | 122.0 – 158.0 MHz | -      | 10.62   | 30     | ns p-p  |
| Absolute Delay                      | -                 | -      | 0.768   | -      | μsec    |
| Relative Attenuation <sup>(4)</sup> | 10 – 160 MHz      | 57     | 64      | -      | dB      |
|                                     | 60 – 112 MHz      | 48     | 57      | -      | dB      |
|                                     | 168 – 250 MHz     | 43     | 56      | -      | dB      |
|                                     | 250 – 300 MHz     | 52     | 57      | -      | dB      |
| Nominal Impedance <sup>(5)</sup>    | Single Ended      | -      | 50      | -      | Ω       |

### Notes:

1. All specifications are based on the TriQuint schematics for the reference designs 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. All attenuation measurements are measured relative to minimum insertion loss
5. This is the optimum impedance in order to achieve the performance shown.

## Evaluation Board



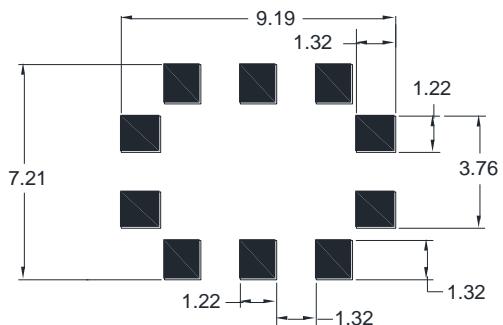
### Notes:

1. Actual matching values may vary due to PCB layout and parasitics
2. PCB: 9.00 x 7.01 x 1.50; Construction:  $\frac{1}{2}$  oz Cu Top Layer; TL Y-5A (.0075)  $\frac{1}{2}$  oz Cu Middle Layer, FR4;  $\frac{1}{2}$  oz Cu Bottom Layer. (dimensions are in inches)

## Bill of Material

| Reference Des. | Value | Description           | Manuf.      | Part Number    |
|----------------|-------|-----------------------|-------------|----------------|
| L1             | 150nH | Surface mount, 0805CS | Coilcraft   | 0805CS-151XJBC |
| L2             | 68nH  | Surface mount, 0805CS | Coilcraft   | 0805CS-680XJBC |
| L3             | 82nH  | Surface mount, 0805CS | Coilcraft   | 0805CS-820XJBC |
| C1             | 8pF   | Ceramic chip, 0805    | Murata      | GRM40COG080J50 |
| SMA            | N/A   | SMA connector         | Radiall USA | 9602-1111-018  |
| PCB            | N/A   | 3-layer               | Multiple    | 960978         |

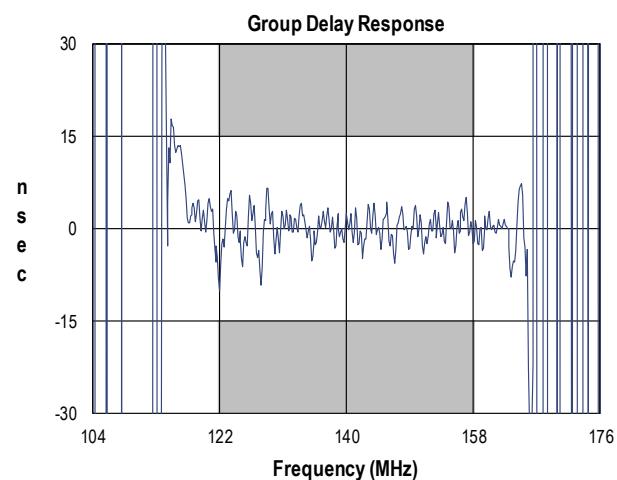
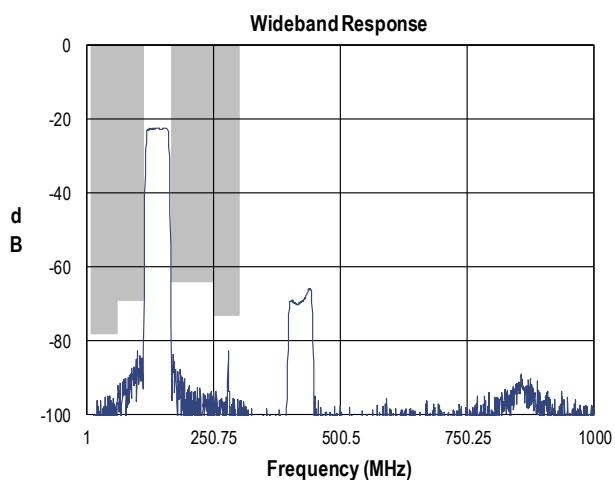
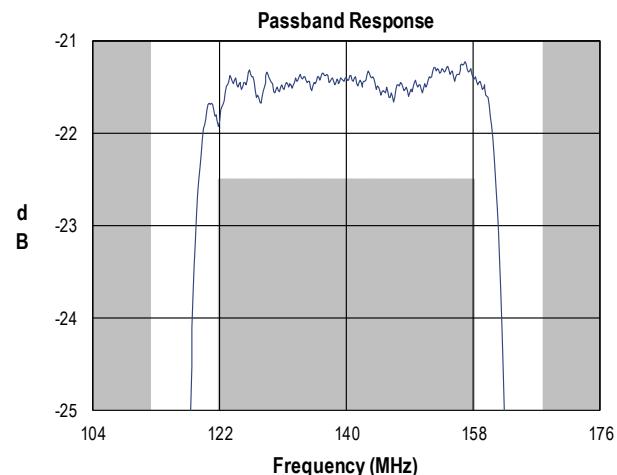
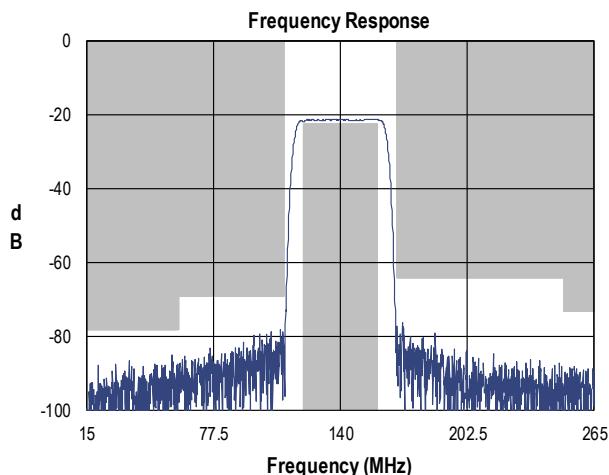
## PCB Mounting Pattern



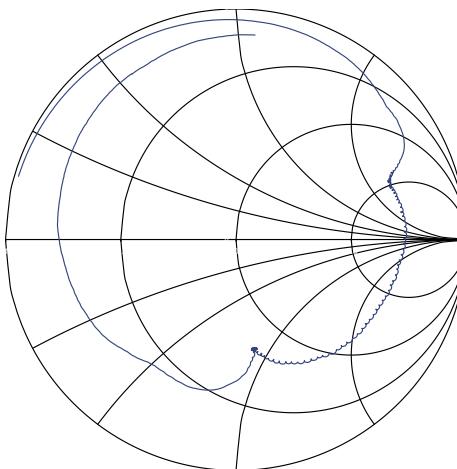
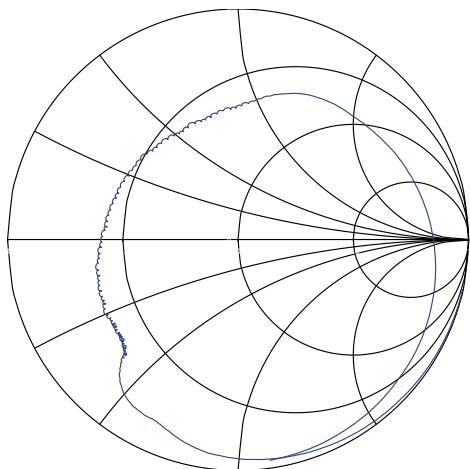
### Notes:

1. All dimensions are typical in millimeters. Angles are in degrees.
2. This drawing specifies the mounting pattern used on the TriQuint evaluation board for this product. Some modification may be necessary to suit end user assembly materials and processes

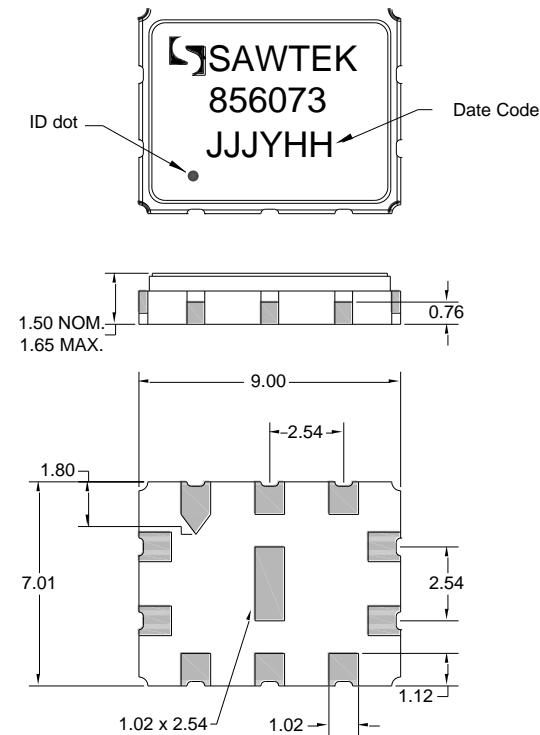
## Performance Plots



**Input Smith Chart**



## Package Information, Marking and Dimensions



Package Style: SMP 35B  
Dimensions: 9.00 x 7.01 x 1.50 mm

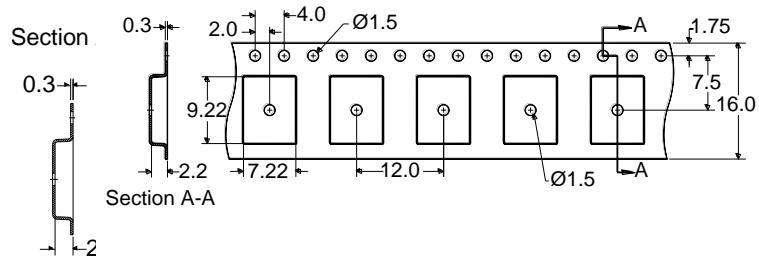
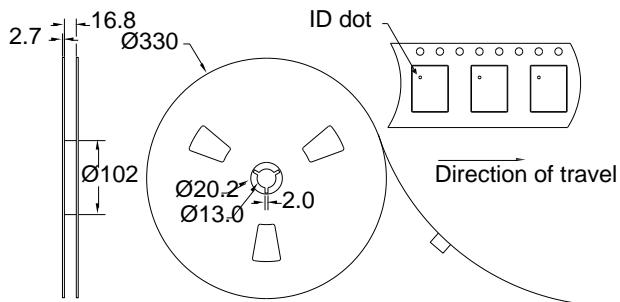
Package for Surface Mount Technology  
Terminations: Au plating 0.5 - 1.0 $\mu$ m, over a 2-6 $\mu$ m Ni Plating

The date code consists of: JJJ = Julian, 3 digits  
Y = last digit of year and HH = hour 2 digits

### Notes:

1. All dimensions shown are typical in millimeters.
2. An asterisk (\*) in front of the marking code indicates prototype.
3. All tolerances are  $\pm 0.15$ mm except overall length and width  $\pm 0.10$ mm.

## Tape and Reel Information



## Product Compliance Information

### ESD Sensitivity Ratings



Caution! ESD-Sensitive Device

ESD Rating: 1B  
 Test: Human Body Model (HBM)  
 Standard: ESDA/JEDEC JS-001-2012

ESD Rating: B  
 Test: Machine Model (MM)  
 Standard: JEDEC Standard JESD22-A115

### MSL Rating

Not applicable. Hermetic package.  
 Test: 260 °C convection reflow  
 Standard: JEDEC Standard IPC/JEDEC J-STD-020

### Solderability

Compatible with the latest version of J-STD-020, lead free solder, 260°C

Refer to [Soldering Profile](#) for recommended guidelines.

### RoHS Compliance

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:

Web: [www.triquint.com](http://www.triquint.com)      Tel: **877-800-8584**  
 Email: [customer.support@qorvo.com](mailto:customer.support@qorvo.com)

For information about the merger of RFMD and TriQuint as Qorvo:

Web: [www.qorvo.com](http://www.qorvo.com)

For technical questions and application information:      Email: [flapplication.engineering@tqs.com](mailto:flapplication.engineering@tqs.com)

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