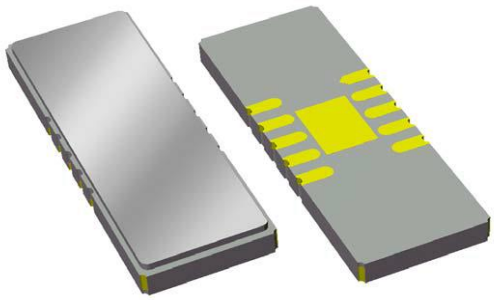
# 855739

## *70 MHz SAW Filter*

## Applications

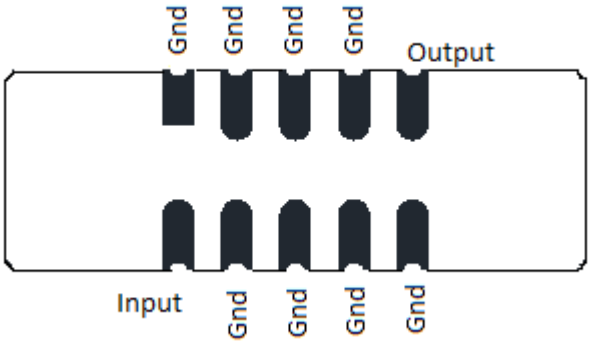
- For broadband applications



## Product Features

- High Attenuation
- Typical 3 dB bandwidth of 2.2 MHz
- Single-ended operation
- Matching required for operation at 50 Ω
- Replaces Sawtek P/N 851546 ( BW 3 dB =2.0 MHz)
- Ceramic Surface Mount Package (SMP)
- Hermetically sealed

## Functional Block Diagram




## General Description

The 855739 is a 70 MHz, SAW-based IF Filter. It's High Selectivity makes it an excellent choice for a wide range of applications such as instrumentation, test and measurement, military, terrestrial microwave and Network Infrastructure. 855739 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 No. | Label |
|---|---|
| 10 | Input |
| 5 | Output |
| 1,2,3,4,6,7,8,9 | Case Ground |

## Ordering Information

| Part No. | Description |
|---|---|
| 855739 | Packaged part |
| 855739-EVB | Evaluation board |

Standard T/R size = 1,000 units/reel



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## Absolute Maximum Ratings

| Parameter | Rating |
|---|---|
| Storage Temperature (1) | -40 to + 85 ° C |
| Operating Temperature (1) | 0 to + 70 ° C |

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

## Electrical Specifications (1)

Operating Temperature Range (2) 0 ° C to + 70 ° C.

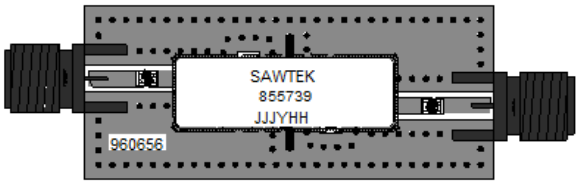
| Parameter (3) | Conditions | Min | Typ (3) | Max | Units |
|---|---|---|---|---|---|
| Center Frequency | | - | 70 | – | MHz |
| Minimum Insertion Loss | | - | 23 | 24.25 | dB |
| Lower 1 dB Bandedge (4)<br>Upper 1 dB Bandedge | | –<br>70.87 | 69<br>71 | 69.13<br>– | MHz |
| Lower 3 dB Bandedge (4)<br>Upper 3 dB Bandedge | | –<br>71.06 | 68.9<br>71.1 | 68.94<br>– | MHz |
| Lower 40 dB Bandedge (4)<br>Upper 40 dB Bandedge | | 68.21<br>– | 68.3<br>71.7 | –<br>71.79 | MHz |
| Amplitude Variation | 69.35 – 70.65 MHz | – | 0.6 | 1 | dB p-p |
| Phase Linearity | 69.35 – 70.65 MHz | – | 1.7 | 3 | Deg p-p |
| Group Delay Variation | 69.35 – 70.65 MHz | – | 70 | 110 | nsec |
| Absolute Delay | – | – | 2.3 | – | µs |
| (4) Relative Attenuation | 10.00 – 67.75 MHz<br>72.25 – 125.00 MHz<br>125.00 – 145.00 MHz<br>145.00 – 200.00 MHz | 50<br>50<br>45<br>50 | 60<br>60<br>50<br>60 | –<br>–<br>–<br>– | dB |
| Source Impedance (5) | | – | 50 | – | Ω |
| Load Impedance (5) | | – | 50 | – | Ω |
| Substrate | | – | $LiTaO_3$ | – | – |
| Temperature Coefficient of Frequency | | – | 23 | – | Ppm/ ° C |

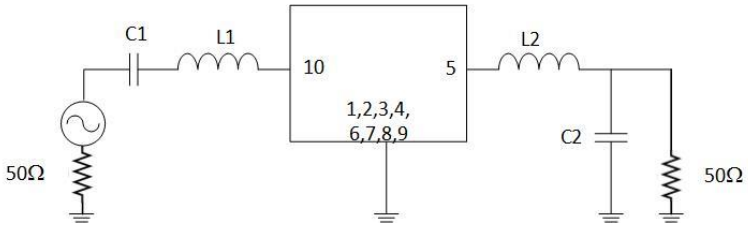
Notes:
1. All specifications are based on the TriQuint schematic shown on page 3
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations 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.



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## Evaluation Board



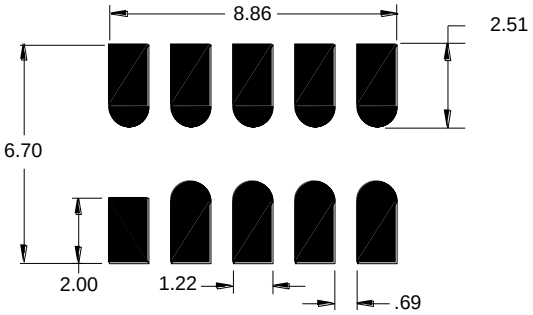

Notes:

1. Matching component values shown are for the specified TriQuint evaluation board. Value adjustment may be required in end user product circuits depending on component manufacturer and PCB material.
2. PCB: Body*: $Al_2O_3$* ceramic , Lid*: Kovar, Ni* plated , Terminations: *Au* plating 0.5 – 1.0µm, over a 2 – 6µm *Ni* plating

## Bill of Material

| Reference Des. | Value | Description | Manuf. | Part Number |
|---|---|---|---|---|
| L1 | 680 nH | Coil Wire-wound,805CS | Coilcraft | 0805CS-681NXJBC |
| L2 | 39 nH | Coil Wire-wound, 805CS | Coilcraft | 0805CS-390NXJBC |
| C1 | 9 pF | Ceramic Chip, 805 | Murata | GRM40COG090J50V |
| C2 | 120 pF | Ceramic Chip, 805 | Murata | GRM40COG121J50V |
| SMA | N/A | SMA connector | Radiall USA | 9602-1111-018 |
| PCB | N/A | 3-layer | Multiple | 960656 |

## PCB Mounting Pattern




Notes:

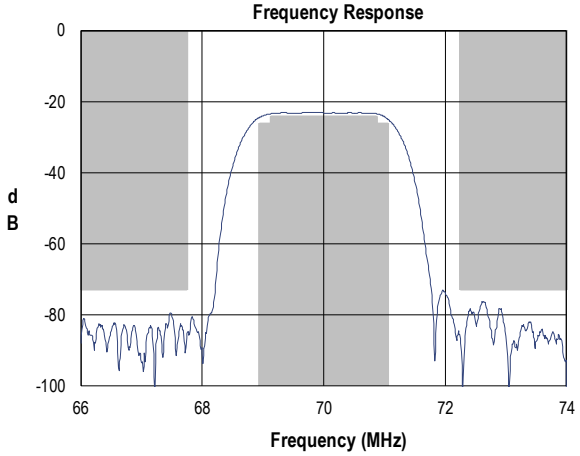
1. All dimensions are in millimeters. Angles are in degrees.
2. This drawing specifies the mounting pattern used on the TriQuint evaluation board for this product. Some modification may be necessary to suit end user assembly materials and processes.



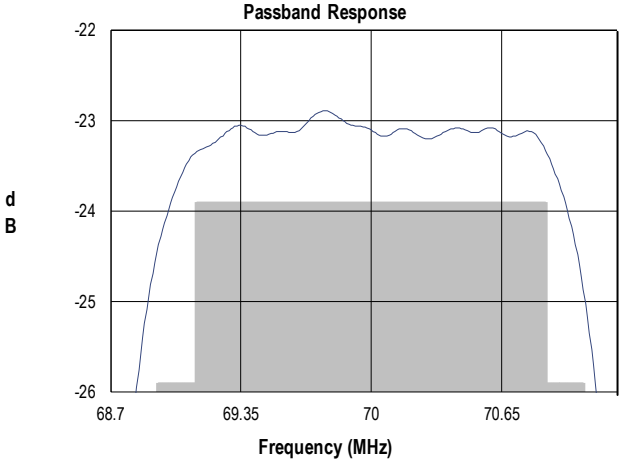
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## Performance Plots

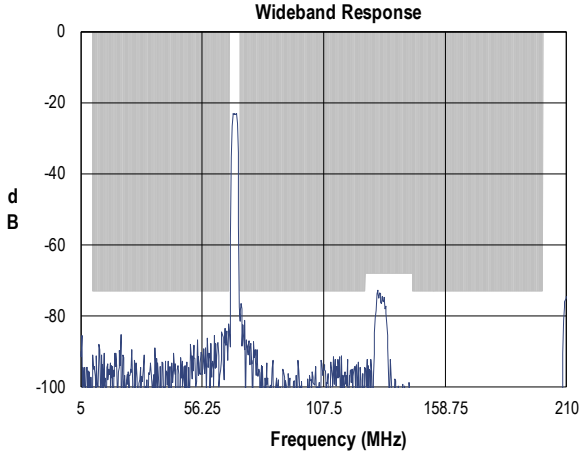
Frequency Response



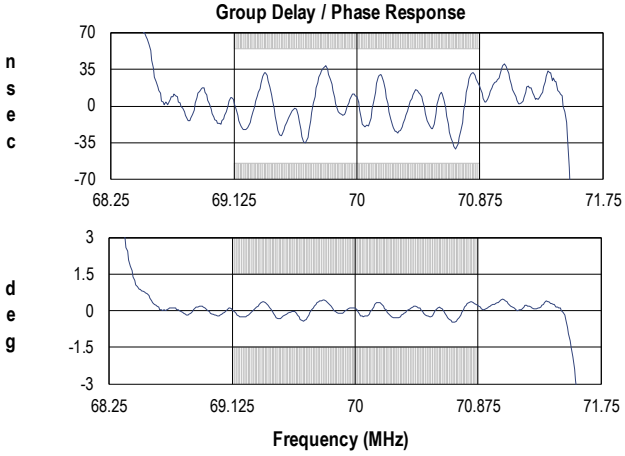

Passband Response



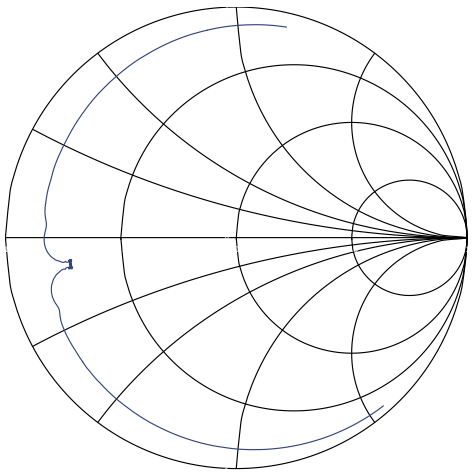

Wideband Response



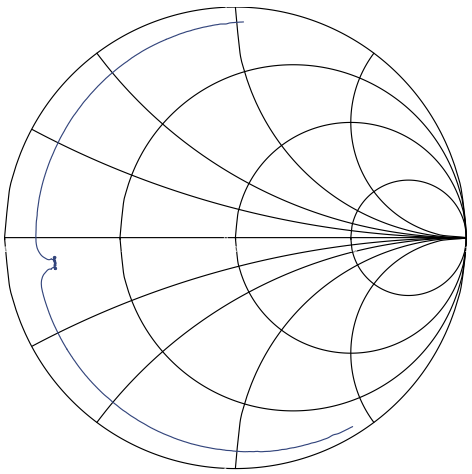

Group Delay / Phase Response




Input Smith Chart



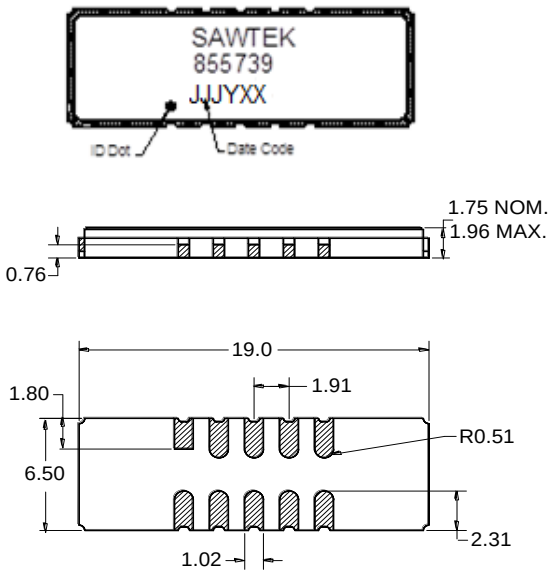
Output Smith Chart





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## Package Information, Marking and Dimensions




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

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

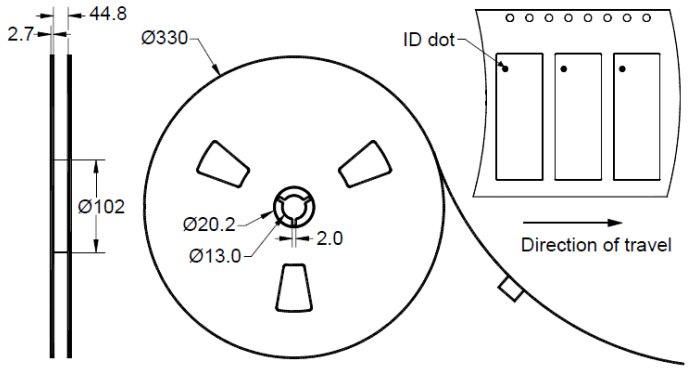
All dimensions shown are nominal in millimeters
All tolerances are ±0.15mm except overall length and width +0.15mm/ -0.10r

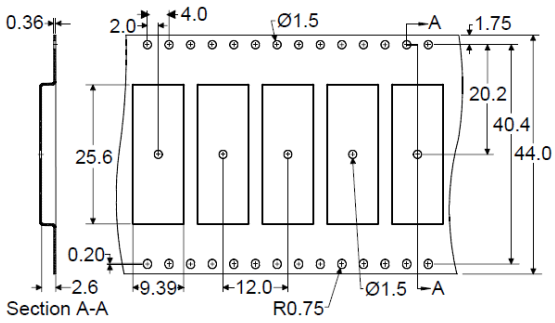
The date code consists of day of the current year (Julian, 3 digits), Y = last digit of the year, and X = The hour of the day military (2 digits)

Notes:

1. All dimensions shown are typical in millimeters
2. An ink stamp “PROTO” may be added after laser marking for prototypes.
3. Add the letter C after the date code for parts produced in Costa Rica.

## Tape and Reel information




Dimensions shown are nominal in millimeters
Packaging quantity: 1000 units/reel

Standard T/R size = 1000 units/reel. All dimensions are in millimeters.



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# Product Compliance Information

## ESD Sensitivity Ratings



Caution! ESD-Sensitive Device

ESD Class: TBD
Test: Human Body Model (HBM)
Standard: JEDEC JS-001

ESD Class: TBD
Test: Charge Device Model (CDM)
Standard: JEDEC JES-002

## MSL Rating

Not applicable. Hermetic package

## Solderability

Compatible with both lead-free (260°C maximum reflow temperature) and tin/lead (245°C maximum reflow temperature) soldering processes.

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 **Tel: 877-800-8584**
**Email:** customer.support@qorvo.com

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

**Web:** www.qorvo.com

For technical questions and application information: **Email:** flapplication.engineering@tqs.com

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