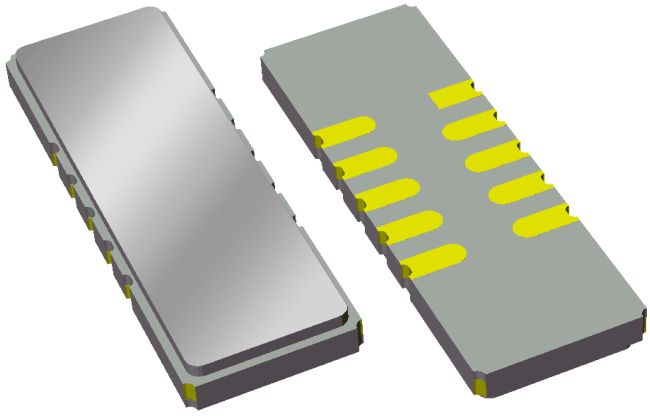
TriQuint SEMICONDUCTOR

# Data Sheet

# Part Number 856064
# 140 MHz SAW Filter

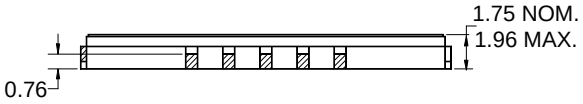
## Features

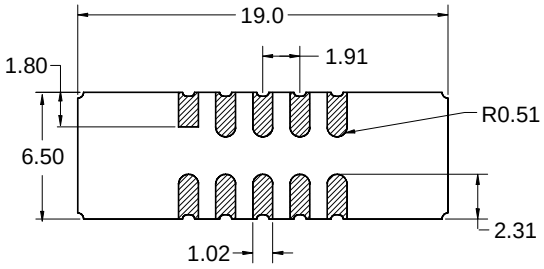
- For IF applications
- Typical 3dB bandwidth of 2 MHz
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Replaces Sawtek P/N 851905 (BW 3dB = 2.0MHz)
- Hermetic
- **RoHS** compliant (2002/95/EC), **Pb**-free



## Package

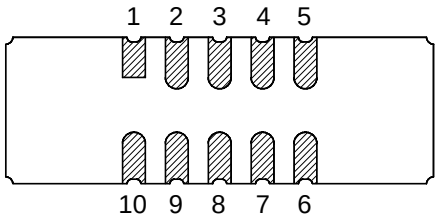
Surface Mount 19.00 x 6.50 x 1.75 mm
SMP-75B




## Pin Configuration

Bottom View




**Single-ended Configuration**

| Pin No. | Description |
|---|---|
| 10 | RF input |
| 5 | RF output |
| 1,6 | Ground |
| 2,3,4 | Case Ground |
| 7,8,9 | Case Ground |

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

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

TriQuint SEMICONDUCTOR

# Data Sheet

# Part Number 856064
# 140 MHz SAW Filter

## Electrical Specifications [1]

**Operating Temperature Range:** [2] 0 to +70 °C

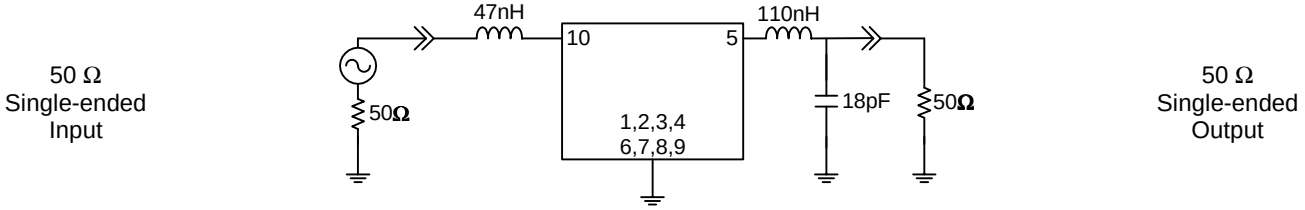
| Parameter [3] | Minimum | Typical [4] | Maximum | Unit |
|---|---|---|---|---|
| **Center Frequency** | - | 140 | - | MHz |
| **Minimum Insertion Loss** | - | 21.50 | 22.186 | dB |
| **Lower 1 dB Band Edge** [5] | - | 139.06 | 139.155 | MHz |
| **Upper 1 dB Band Edge** [5] | 140.845 | 140.94 | - | MHz |
| **Lower 3 dB Band Edge** [5] | - | 138.91 | 138.978 | MHz |
| **Upper 3 dB Band Edge** [5] | 141.022 | 141.09 | - | MHz |
| **Lower 40 dB Band Edge** [5] | 138.272 | 138.31 | - | MHz |
| **Upper 40 dB Band Edge** [5] | - | 141.67 | 141.726 | MHz |
| **Amplitude Variation** 139.15 – 140.85 MHz | - | 0.5 | 1.0 | dB p-p |
| **Phase Linearity** 139.15 – 140.85 MHz | - | 1.8 | 3.5 | º p-p |
| **Group Delay Variation** 139.15 – 140.85 MHz | - | 85 | 180 | ns p-p |
| **Relative Attenuation** [5] | | | | |
| 15 – 136 MHz | 60 | 64 | - | dB |
| 144 – 220 MHz | 45 | 56 | - | dB |
| 220 – 230 MHz | 38 | 46 | - | dB |
| 230 – 250 MHz | 45 | 65 | - | dB |
| 250 – 260 MHz | 26 | 31 | - | dB |
| 260 – 350 MHz | 45 | 65 | - | dB |
| **Source Impedance (single-ended)** [6] | - | 50 | - | Ω |
| **Load Impedance (single-ended)** [6] | - | 50 | - | Ω |
| **Substrate Material** | - | Quartz | - | - |

**Notes:**

1. All specifications are based on the TriQuint test circuit shown below
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. Typical values are based on average measurements at room temperature
5. Relative to minimum insertion loss
6. This is the optimum impedance in order to achieve the performance shown

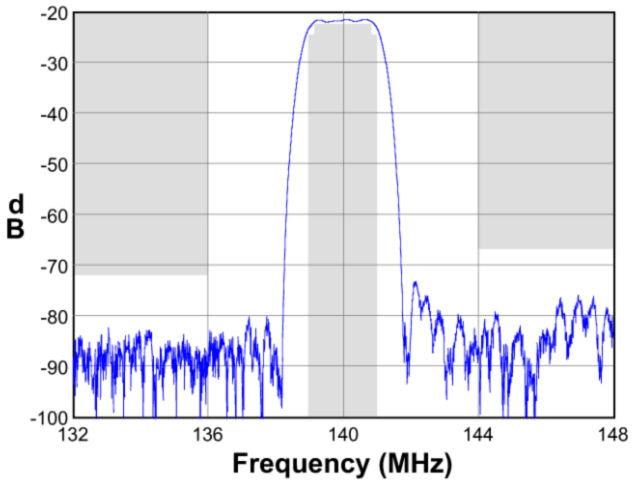
**Test Circuit:**

Actual matching values may vary due to PCB layout and parasitics

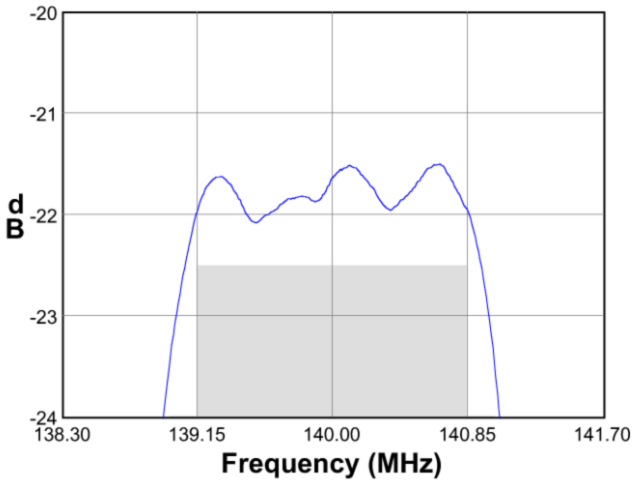


## Typical Performance (at room temperature)

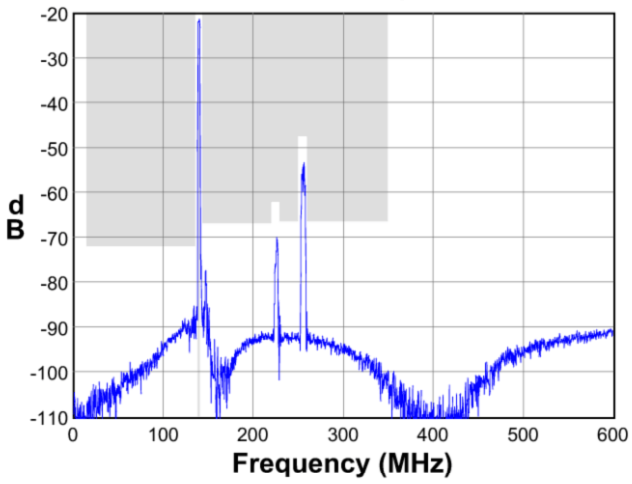
### Frequency Response



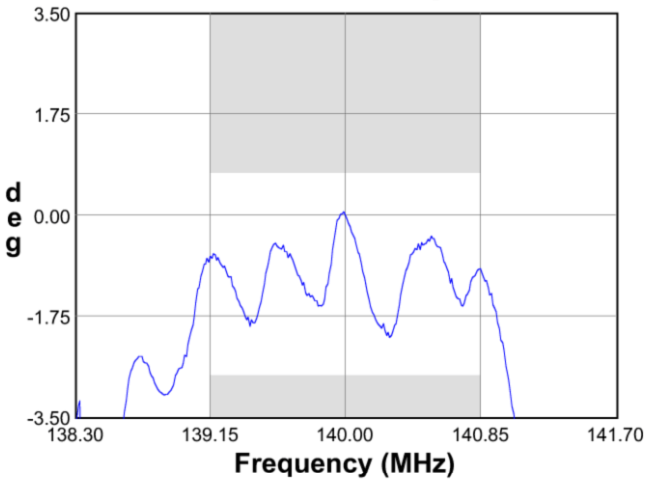

### Passband Response



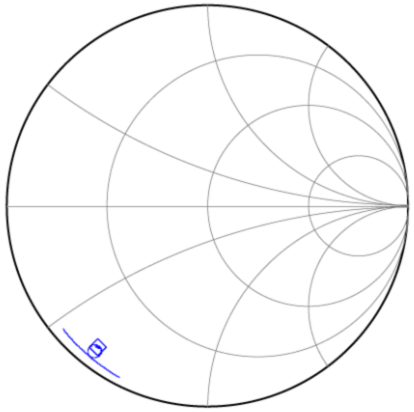

### Wideband Response



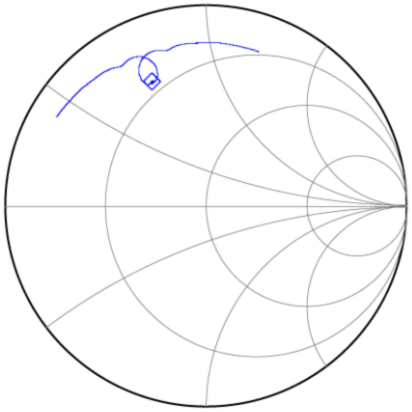

### Phase Linearity




### Input Smith Chart



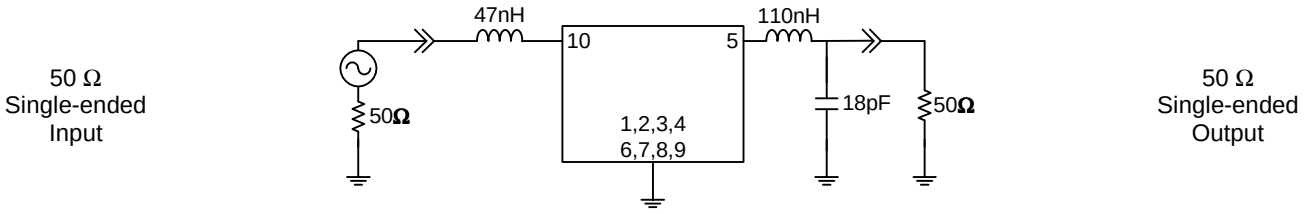
### Output Smith Chart



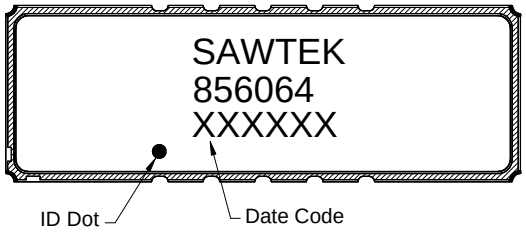
# Part Number 856064
# 140 MHz SAW Filter

## Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

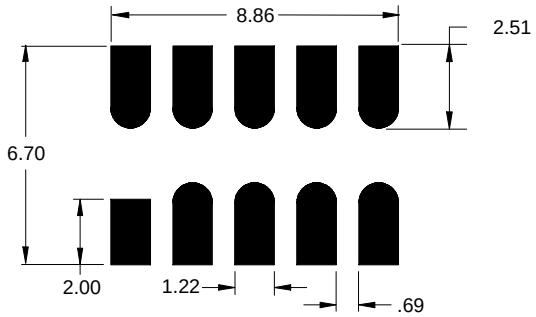



## Marking



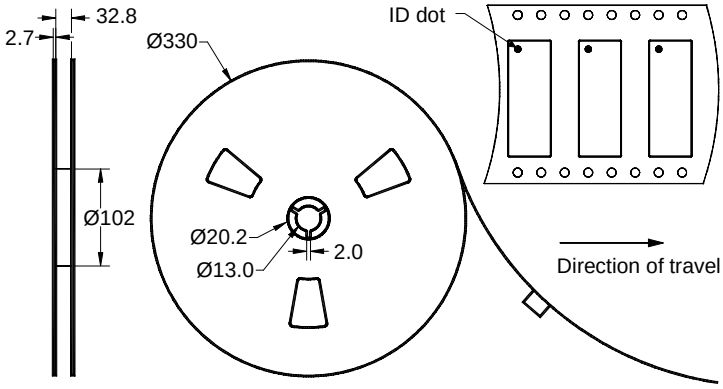

The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

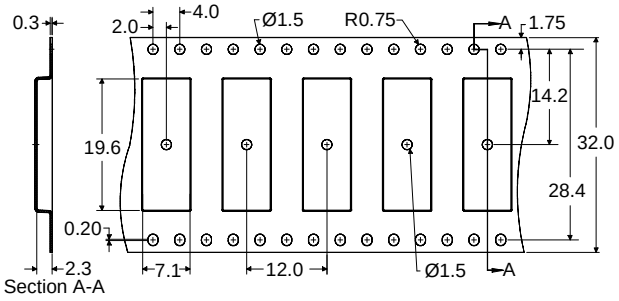
## PCB Footprint




This footprint represents a recommendation only
Dimensions shown are nominal in millimeters

## Tape and Reel




Dimensions shown are nominal in millimeters
Packaging quantity: 2000 units/reel

TriQuint SEMICONDUCTOR

# Data Sheet

# Part Number 856064
# 140 MHz SAW Filter

## Maximum Ratings

| Parameter | Symbol | Minimum | Maximum | Unit |
|---|---|---|---|---|
| Operating Temperature Range | T | 0 | +70 | $^{o}$C |
| Storage Temperature Range | $T_{stg}$ | -40 | +85 | $^{o}$C |

## Important Notes

### Warnings

- Electrostatic Sensitive Device (ESD)
- Avoid ultrasonic exposure

### RoHS Compliance

- This product complies with EU directive 2002/95/EC (RoHS)

### Solderability

- Compatible with JESD22-B102, Pb-free process, 260C peak reflow temperature (see soldering profile)

## Links to Additional Technical Information

PCB Layout Tips | Qualification Flowchart | Soldering Profile

S-Parameters | RoHS Information | Other Technical Information

TriQuint's liability is limited only to the Surface Acoustic Wave (SAW) component(s) described in this data sheet. TriQuint does not accept any liability for applications, processes, circuits or assemblies, which are implemented using any TriQuint component described in this data sheet.

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