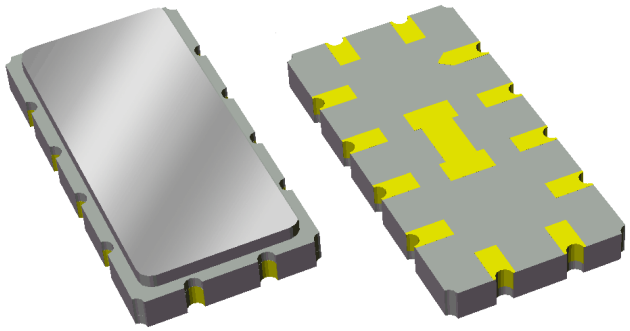
TriQuint SEMICONDUCTOR

# Data Sheet

# Part Number 854923
## 140 MHz SAW Filter

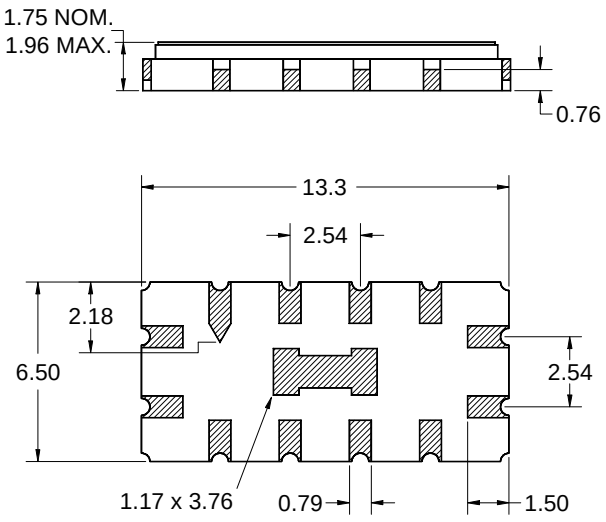
## Features

- For Broadband applications
- Usable bandwidth of 22 MHz
- Typical 3 dB bandwidth of 23.16 MHz
- Low loss
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- **RoHS** compliant (2002/95/EC), **Pb**-free



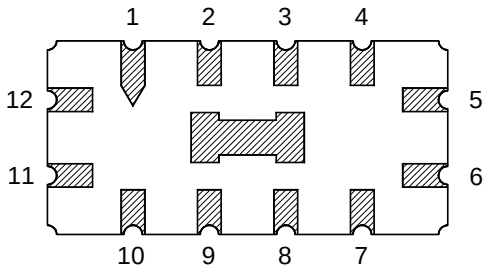
## Package

Surface Mount 13.30 x 6.50 x 1.75 mm
SMP-53




## Pin Configuration

Bottom View




**Single-ended Configuration**

| Pin No. | Description |
|---|---|
| 11 | Input |
| 5 | Output |
| 6,12 | Ground |
| 1,2,3,4 | CaseGround |
| 7,8,9,10 | Case Ground |

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

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

## Electrical Specifications [1]

**Operating Temperature Range:** [2] -40 to +85 °C

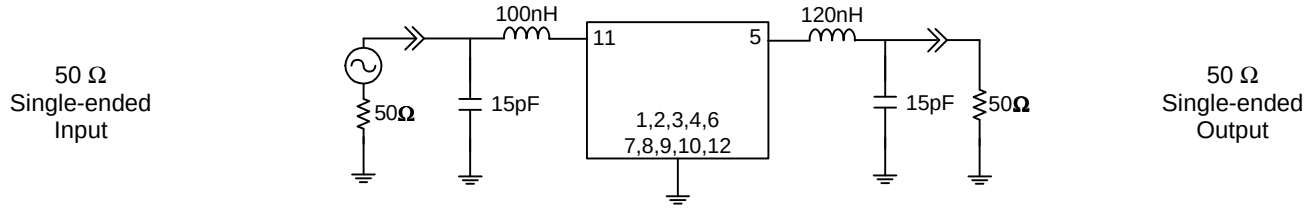
| Parameter [3] | Minimum | Typical [4] | Maximum | Unit |
|---|---|---|---|---|
| **Center Frequency** | 139.6 | 140 | 140.4 | MHz |
| **Insertion Loss at Center Frequency** | - | 11.33 | 13 | dB |
| **1 dB Bandwidth** | 22 | 23.16 | - | MHz |
| **3 dB Bandwidth** | 23.9 | 24.26 | - | MHz |
| **35 dB Bandwidth** | - | 28.85 | 33.5 | MHz |
| **Passband Ripple**<br>130.44 – 149.56 MHz | - | 0.56 | 1 | dB p-p |
| **Phase Linearity**<br>130.44 – 149.56 MHz | - | 6.1 | 14 | ° p-p |
| **Group Delay Variation**<br>130.44 – 149.56 MHz | - | 34 | 100 | ns p-p |
| **Absolute Delay** | - | 0.8 | - | nsec |
| **Temperature Coefficient** | - | -94 | - | ppm/°C |
| **Source Impedance (single-ended)** [5]<br>**Load Impedance (single-ended)** [5] | -<br>- | 50<br>50 | -<br>- | Ω<br>Ω |

**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. This is the optimum impedance in order to achieve the performance shown

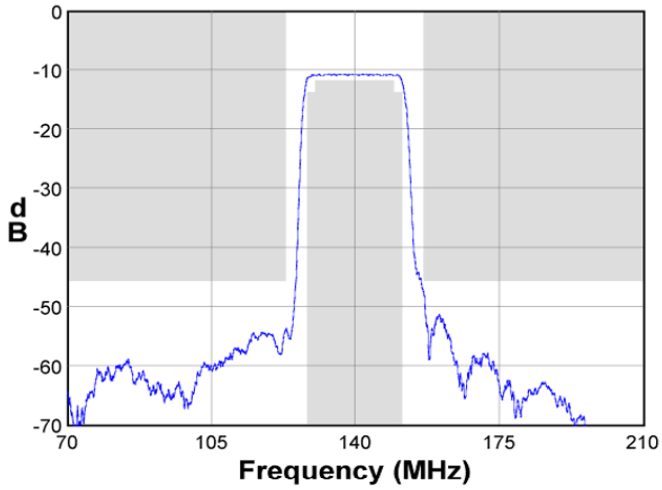
**Test Circuit:**

Actual matching values may vary due to PCB layout and parasitics

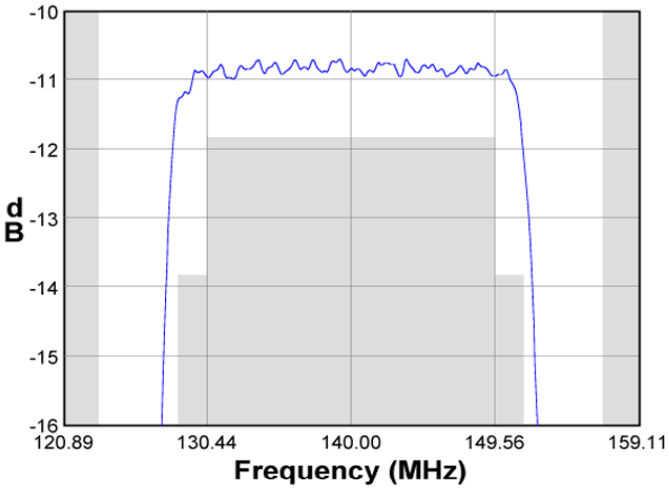


## Typical Performance (at room temperature)

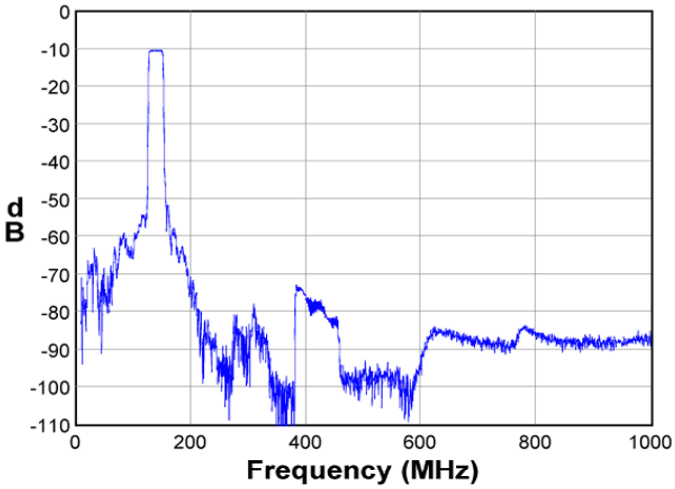
### Frequency Response



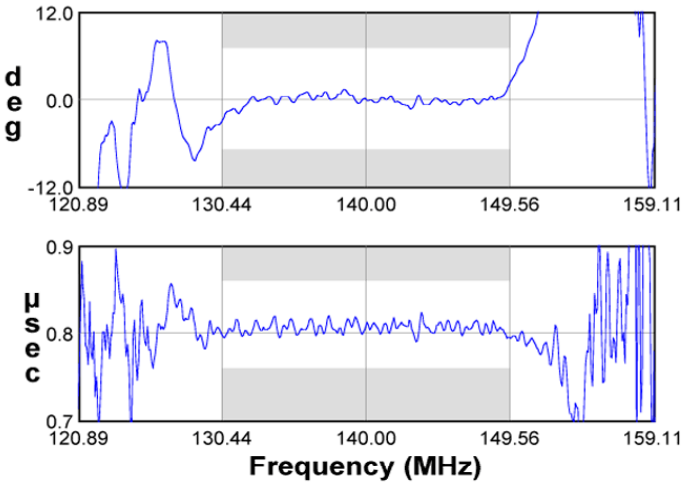

### Passband Response



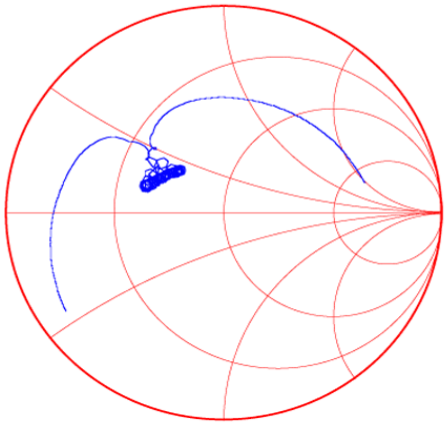

### Wide Response



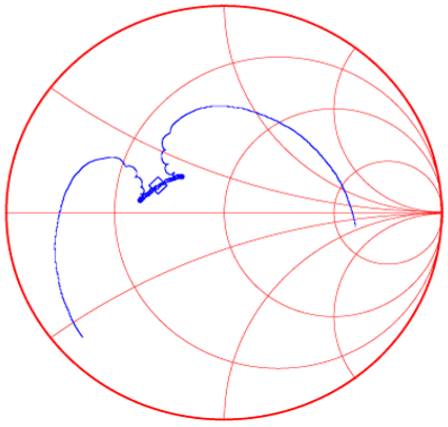

### Phase \ Group Delay




### Input Smith Chart



### Output Smith Chart



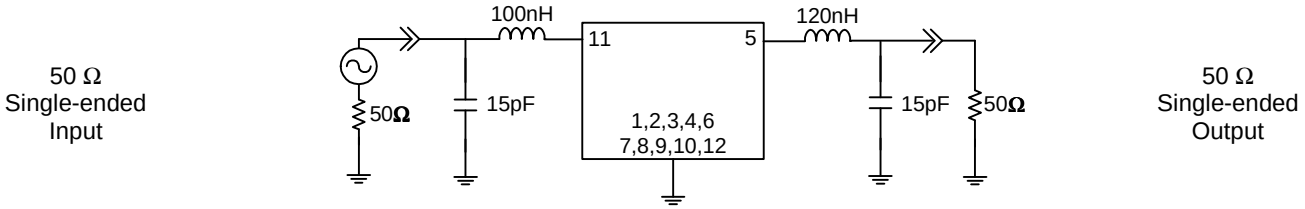
TriQuint SEMICONDUCTOR

# Data Sheet

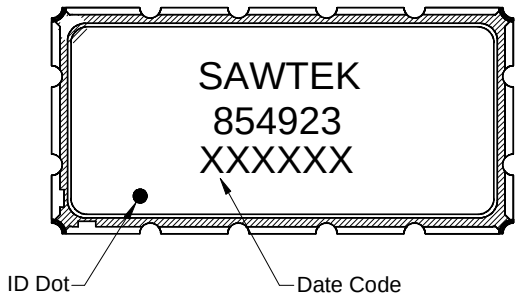
# Part Number 854923
## 140 MHz SAW Filter

## Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

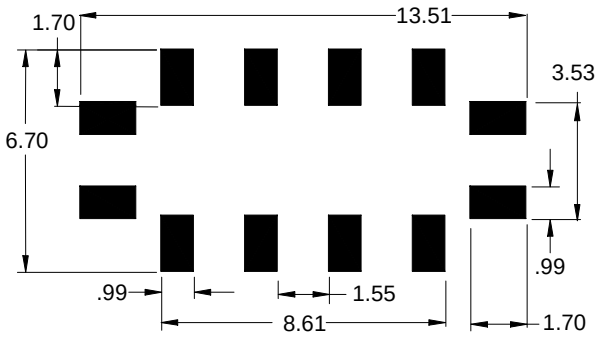



## Marking



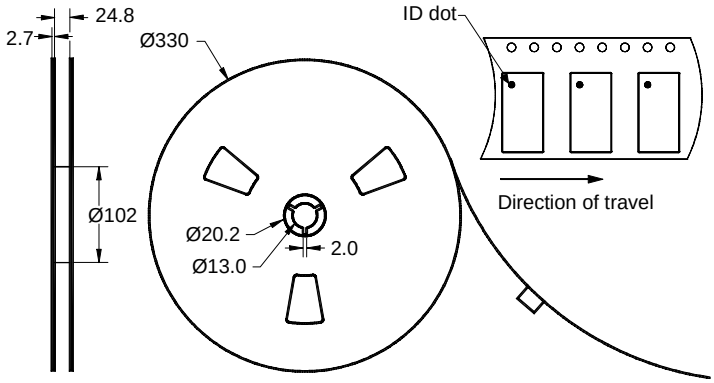

The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

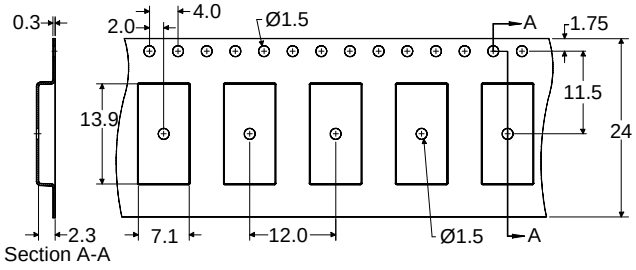
## PCB Footprint




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 854923
## 140 MHz SAW Filter

## Maximum Ratings

| Parameter | Symbol | Minimum | Maximum | Unit |
|---|---|---|---|---|
| Operating Temperature Range | T | -40 | +85 | $^{o}$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



## Contact Information

TriQuint SEMICONDUCTOR
PO Box 609501
Orlando, FL 32860-9501
USA

Phone: +1 (407) 886-8860
Fax: +1 (407) 886-7061
Email: info-product@tqs.com
Web: www.triquint.com

Or contact one of our worldwide Network of sales offices, Representatives or distributors