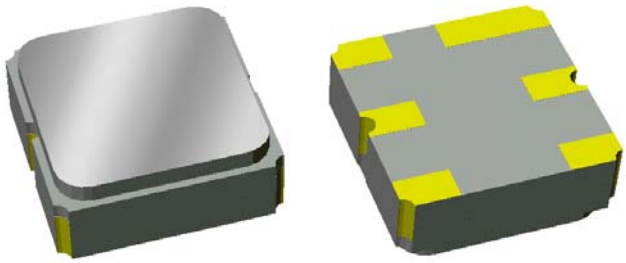
SAWTEK a TriQuint company

# Preliminary Data Sheet

# Part Number 856503
# 836.5 MHz SAW Filter

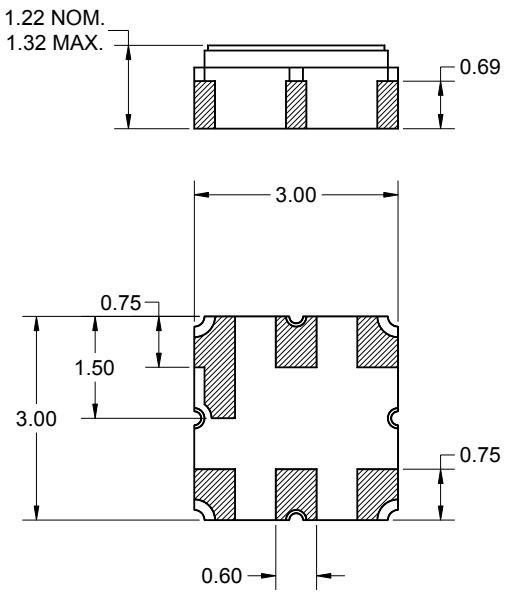
## Features

- For AMPS, CDMA and TDMA repeater and booster applications
- Usable bandwidth 25 MHz
- High attenuation
- No impedance matching required for operation at 50 Ω
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free



## Package

Surface Mount 3.00 x 3.00 x 1.22 mm

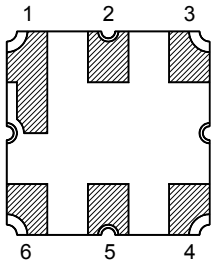



Dimensions shown are nominal in millimeters
All tolerances are ±0.15mm except overall length and width ±0.10mm

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

## Pin Configuration

Bottom View




| Pin No. | Description |
|---|---|
| 2,5 | Input/Output |
| 1,3,4,6 | Case ground |

## Electrical Specifications [1]

**Operating Temperature Range:** [2] -30 to +85 °C

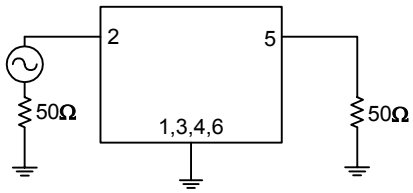
| Parameter [3] | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|
| **Center Frequency** | - | 836.5 | - | MHz |
| **Maximum Insertion Loss** | | | | |
| 824 - 849 MHz | - | 2.7 | 3.5 | dB |
| **Amplitude Variation** | | | | |
| 824 - 849 MHz | - | 0.85 | 1.5 | dB p-p |
| **Absolute Attenuation** | | | | |
| DC - 800 MHz | 40 | 50 | - | dB |
| 859 - 869 MHz (at +25 °C only) | 13 | 18 | - | dB |
| 869 - 925 MHz | 28 | 33 | - | dB |
| 925 - 2000 MHz | 40 | 45 | - | dB |
| **Input/Output Return Loss** | | | | |
| 824 - 849 MHz | 9.5 | 13.6 | - | dB |
| **Source Impedance:** [4] | - | 50 | - | Ω |
| **Load Impedance:** [4] | - | 50 | - | Ω |

**Notes:**

1. All specifications are based on the 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. This is the optimum impedance in order to achieve the performance shown

**Test Circuit:**

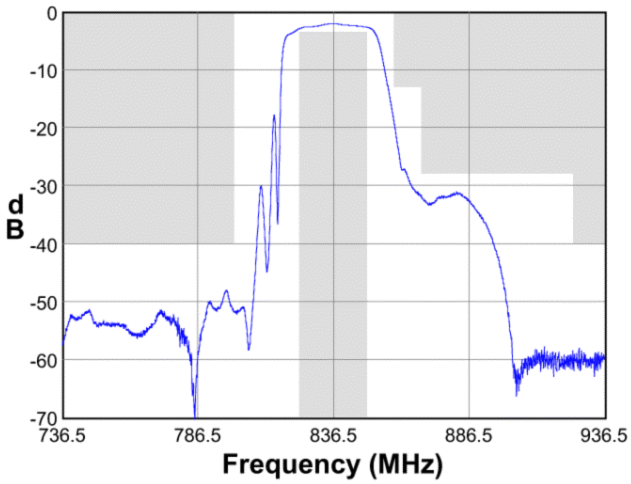
50 Ω
Single-ended



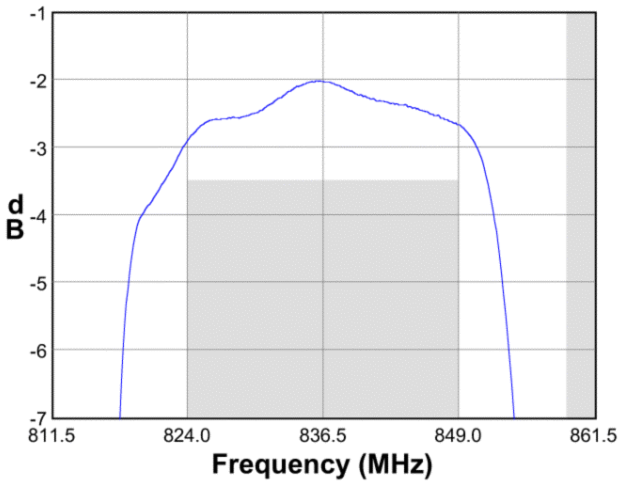

No impedance matching required

## Typical Performance (at +25°C)

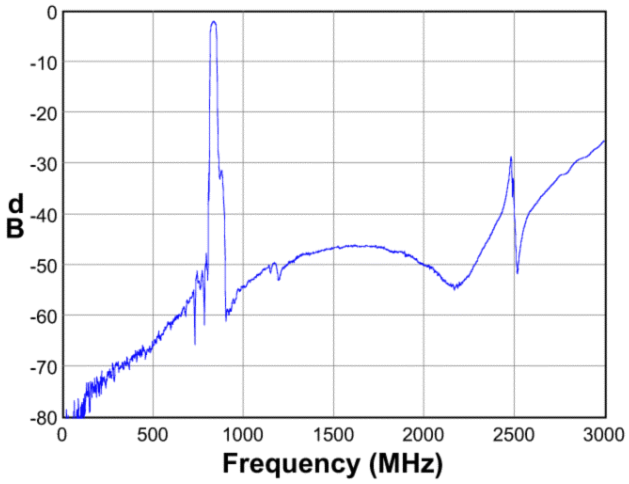
### Frequency Response



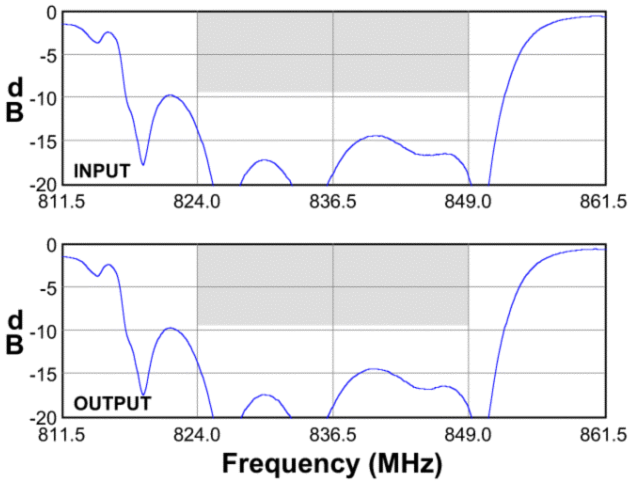

### Passband Response



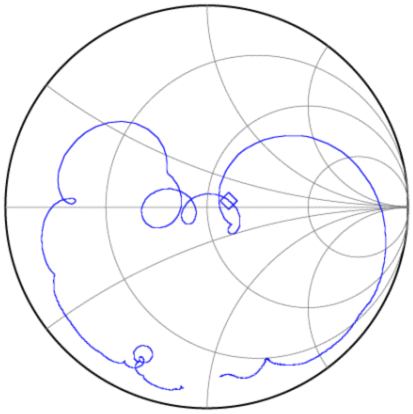

### Wideband Response



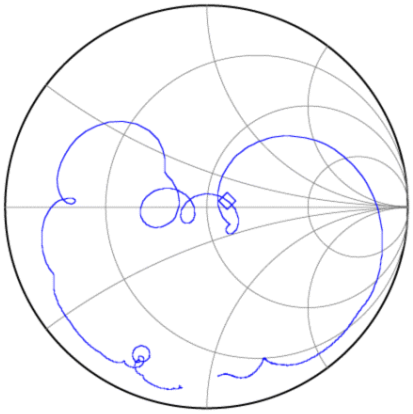

### Input/Output Return Loss




### Input Smith Chart



### Output Smith Chart



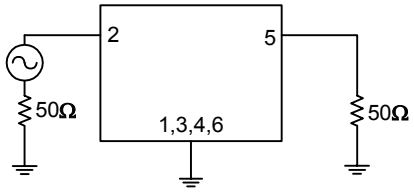
SAWTEK a TriQuint company

# Preliminary Data Sheet

## Part Number 856503
## 836.5 MHz SAW Filter

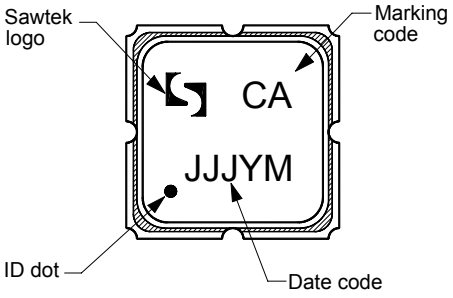
## Matching Schematics

50 Ω
Single-ended



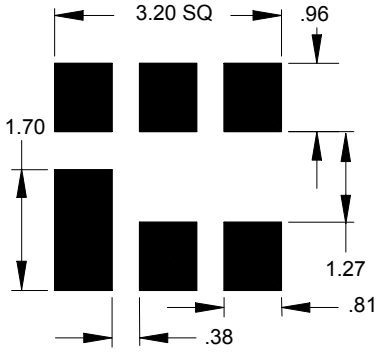

No impedance matching required

## Marking



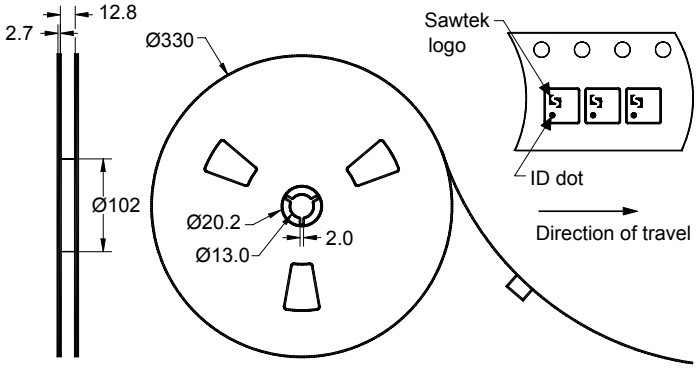

The date code consists of: JJJ = Julian day,
Y = last digit of year, M = manufacturing site code

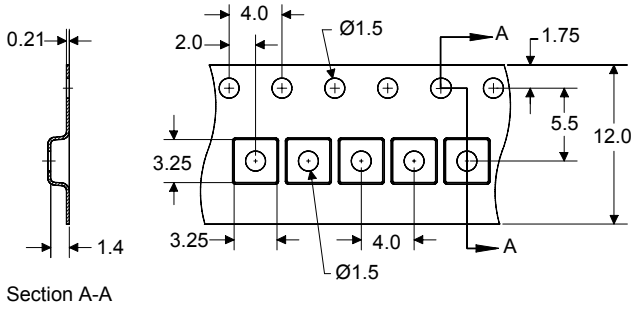
## PCB Footprint




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

## Tape and Reel




Dimensions shown are nominal in millimeters
Packaging quantity: 5000 units/reel

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## Maximum Ratings

| Parameter | Symbol | Minimum | Maximum | Unit |
|---|---|---|---|---|
| Operating Temperature Range | T | -30 | +85 | °C |
| Storage Temperature Range | $T_{stg}$ | -40 | +85 | °C |
| RF Power | $P_{in}$ | - | +10 | dBm |

## 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 JEDEC J-STD-020C **Pb**-free process, **260°C** 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

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