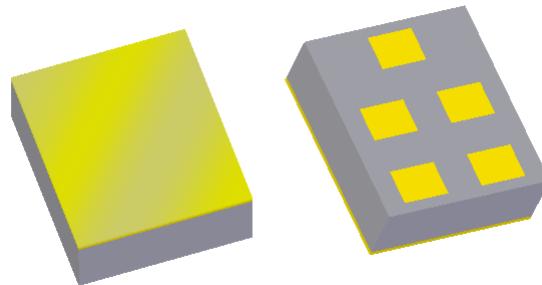


## Applications

- For GPS application
- Suitable for Automotive applications- Compliant to the AEC-Q200 reliability standard



Surface Mount 1.40 x 1.20 x 0.46 mm

## Product Features

- Compatible with leading chipset suppliers
- Low loss
- Usable bandwidth of 2 MHz
- Single-ended operation
- Ceramic Chip Scale Package (CSP)
- Hermetic
- Manufacturing facilities are certified with ISO/TS 16949:2002
- RoHS compliant (2002/95/EC), Pb-free



## General Description

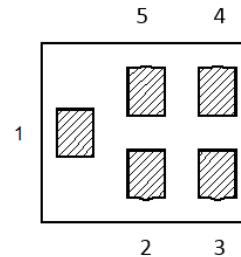
The 856561 is a high-performance SAW filter designed for GPS applications. It is suitable for Automotive applications too.

Dimensions shown are nominal in millimeters  
All tolerances are  $\pm 0.10\text{mm}$

Body: Al<sub>2</sub>O<sub>3</sub> ceramic  
Lid: Kovar or Alloy 42, Au over Ni plated  
Terminations: Au plating 0.5 - 1.0  $\mu\text{m}$ , over a 2 - 6  $\mu\text{m}$  Ni plating

## Functional Block Diagram

Top view



## Pin Configuration

Pin #	Description
1	Input
4	Output
3	Ground
2,5	Case ground

## Ordering Information

Part No.	Description
856561	Packaged part
856561-EVB	Evaluation board

Standard T/R size = 10,000 units/reel.

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

**Operating Temperature Range:** <sup>(2)</sup> -40 to +85 °C

Parameter <sup>(3)</sup>	Minimum	Typical <sup>(4)</sup>	Maximum	Unit
Center Frequency	-	1575.42	-	MHz
<i>Insertion Loss</i>				
1574.42 - 1576.42 MHz (-30 to +85 °C)	-	0.75	1.2	dB
1574.42 - 1576.42 MHz	-	0.75	1.4	dB
Absolute Attenuation <sup>(5)</sup>				
0.1 - 824 MHz	32	36	-	dB
824 - 849 MHz	33.5	36	-	dB
849 - 960 MHz	32	36	-	dB
1495 - 1515 MHz	25	31	-	dB
1635 - 1655 MHz	35	40	-	dB
1710 - 1750 MHz	35	39	-	dB
1750 - 1780 MHz	35	39	-	dB
1780 - 1785 MHz	35	39	-	dB
1850 - 1910 MHz	35	39	-	dB
1920 - 1980 MHz	35	39	-	dB
2402 - 2480 MHz	25	35	-	dB
3000 - 4000 MHz	10	15	-	dB
4000 - 6000 MHz	10	15	-	dB
<i>Input/output Return Loss</i>				
1574.42 - 1576.42 MHz	10	15	-	dB
Source Impedance (single-ended) <sup>(6)</sup>	-	50	-	Ω
Load Impedance (single-ended) <sup>(6)</sup>	-	50	-	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) Relative to zero dB
- (6) This is the optimum impedance in order to achieve the performance shown

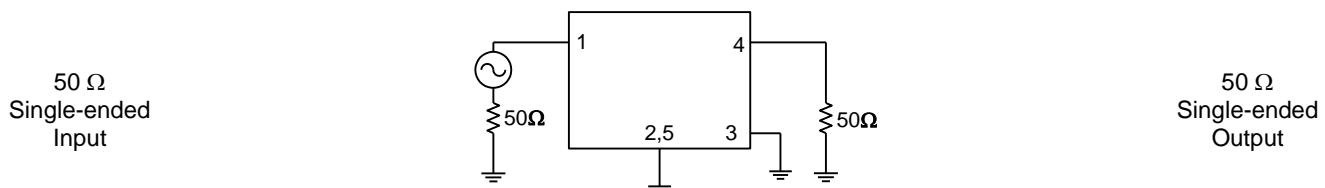
## Absolute Maximum Ratings

Parameter	Rating
Operating Temperature <sup>(7)</sup>	-40 to +85 °C
Storage Temperature	-40 to +85 °C
Power handling 824-849 Mhz, 1850-1910 Mhz	+20 dBm +20 dBm <sup>(8)</sup>

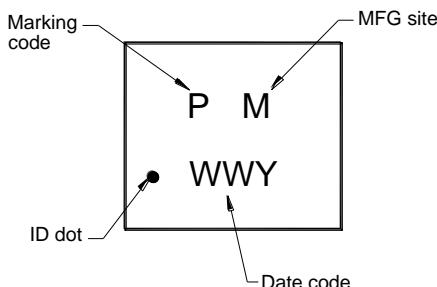
Notes:

(7) The SAW filter will function over the recommended range without degradation in reliability or permanent change in performance, but is not guaranteed to meet electrical specifications.  
 (8) Power handling will be CW signal for 10,000 hours at +55 °

## Matching Schematics

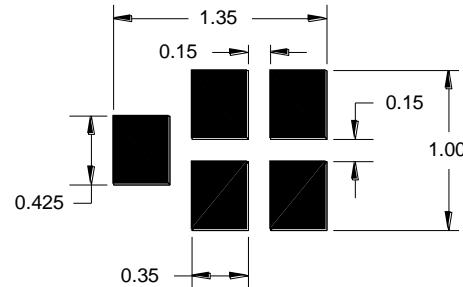


## Marking



The date code consists of: WW = 2 digit week,  
 Y = last digit of year, M = manufacturing site code

## PCB Footprint

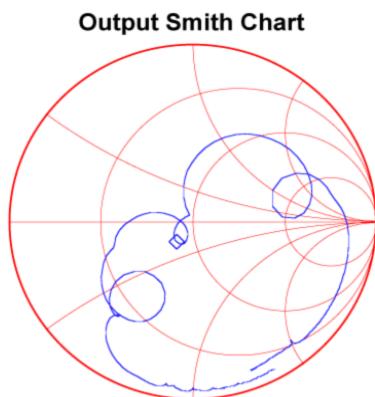
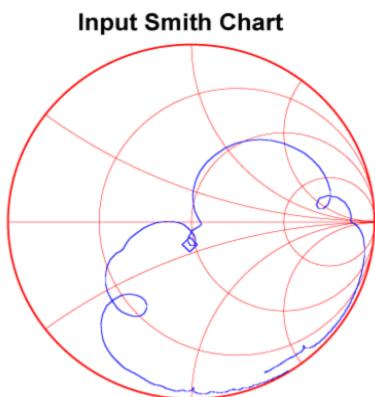
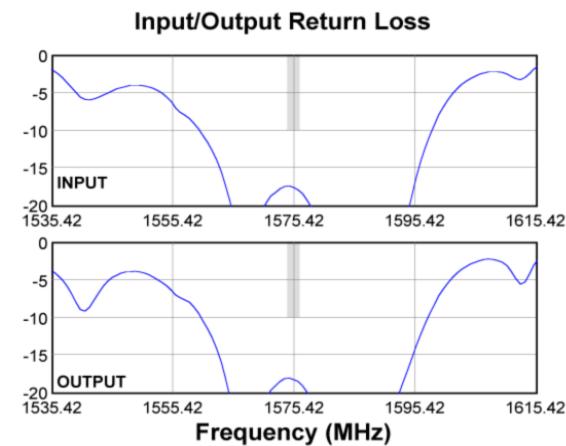
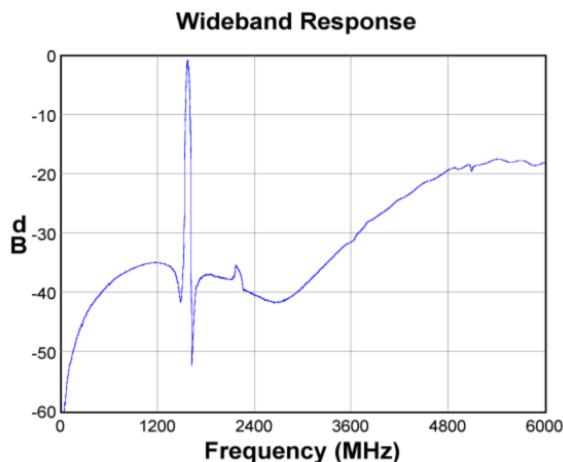
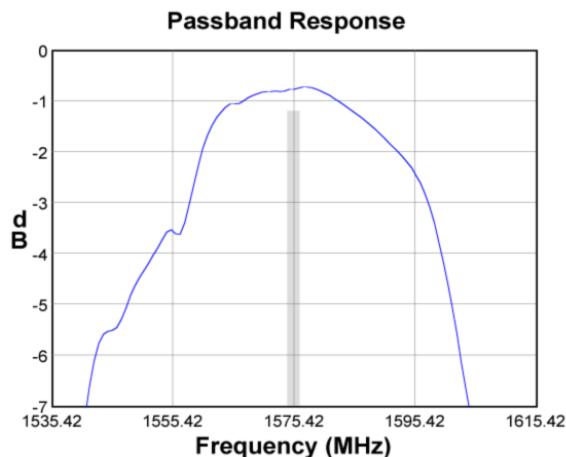
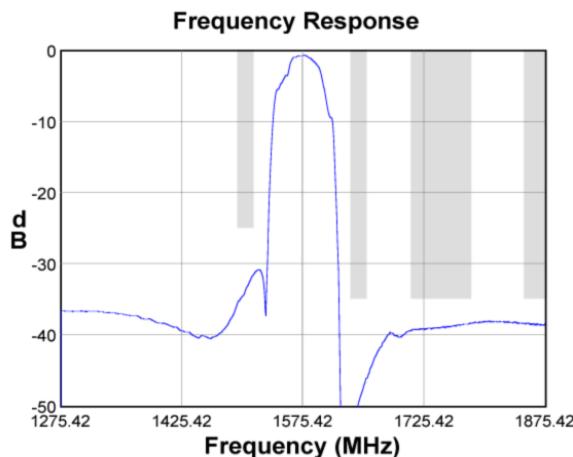


This footprint represents a recommendation only  
 Dimensions shown are nominal in millimeters

Notes:

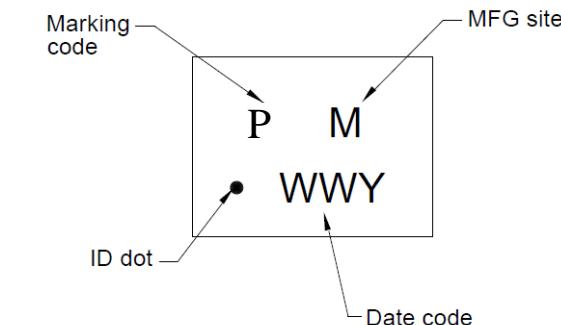
1. Actual matching may vary due to PCB layout and parasitic

**Typical Performance (at room temperature)**



## Mechanical Information

### Package Information, Dimensions and Marking

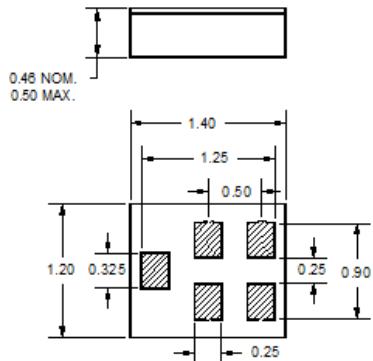


Package Style: CSP-5BT  
 Dimensions: 1.40 x 1.20 x 0.46 mm

Body:  $Al_2O_3$  ceramic  
 Lid: Kovar or Alloy 42, Au over Ni plated  
 Terminations: Au plating 0.5 - 1.0 $\mu$ m, over a 2-6 $\mu$ m Ni plating

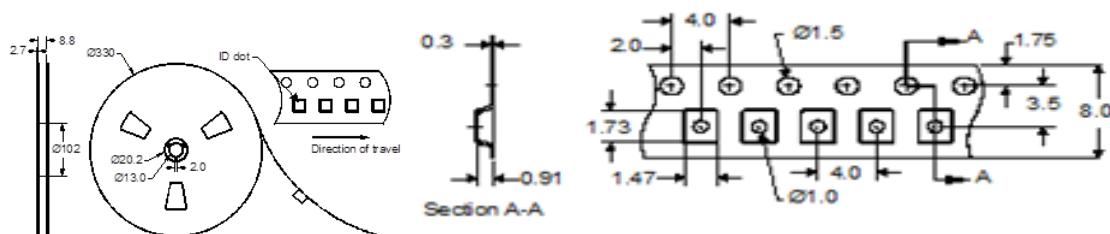
All dimensions shown are nominal in millimeters  
 All tolerances are  $\pm 0.15$ mm except overall length and width :  $\pm 0.10$ mm

The date code consists of:  
 WW = 2 digit week,  
 Y = Last digit of year,  
 M = Manufacturing site code



## Tape and Reel Information

Standard T/R size = 10,000 units/reel. All dimensions are in millimeters



## Product Compliance Information

### ESD Information



#### Caution! ESD-Sensitive Device

ESD Rating: 3A

Value: TBD.

Test: Human Body Model (HBM)

Standard: JEDEC Standard JESD22-A114

ESD Rating: C

Value: TBD

Test: Machine Model (MM)

Standard: JEDEC Standard JESD22-A115

### MSL Rating

Devices are Hermetic, therefore MSL is not applicable

### Solderability

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

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

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, and information about TriQuint:

Web: [www.triquint.com](http://www.triquint.com)  
Email: [info-sales@tqs.com](mailto:info-sales@tqs.com)

Tel: +1.407.886.8860  
Fax: +1.407.886.7061

## Important Notice

The information contained herein is believed to be reliable. TriQuint makes no warranties regarding the information contained herein. TriQuint assumes no responsibility or liability whatsoever for any of the information contained herein. TriQuint assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for TriQuint products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.

TriQuint products are not warranted or authorized for use as critical components in medical, life-saving, or life-sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Qorvo](#):

[856561](#)