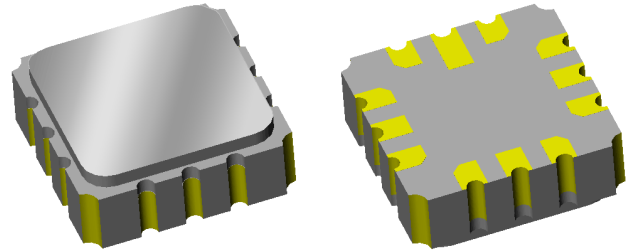


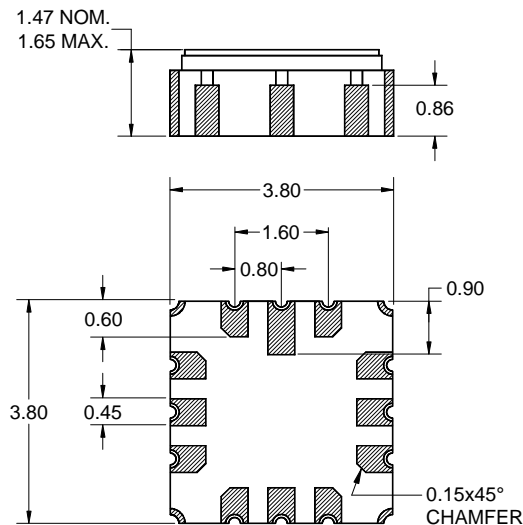
## Features

- For CDMA, WCDMA 850 and AMPS applications
- Usable bandwidth 25 MHz (each band)
- High Tx-Rx isolation
- Low insertion loss
- High attenuation
- Single-ended operation
- No matching required for operation at 50Ω
- Ceramic Surface Mount Package (SMP)
- Hermetic



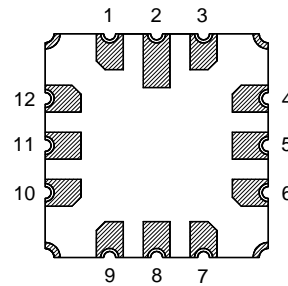
## Package

Surface Mount 3.80 x 3.80 x 1.47 mm



## Pin Configuration

Bottom View



Pin No.	Description
5	Rx
8	Antenna
11	Tx
1,2,3,4,6	Case ground
7,9,10,12	Case ground

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

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

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

Operating Temperature: <sup>(2)</sup> +25 °C

Parameter <sup>(3)</sup>	Minimum	Typical	Maximum	Unit
<b>Tx-Ant Specification</b>				
<b>Center Frequency</b>	-	836.5	-	MHz
<b>Maximum Insertion Loss <sup>(4)</sup></b> 824 - 849 MHz	-	1.9	2.3	dB
<b>Amplitude Ripple</b> 824 - 849 MHz	-	0.5	0.7	dB
<b>Absolute Attenuation</b> 10 - 750 MHz	24	30	-	dB
869 - 894 MHz	45	47	-	dB
1050 - 1100 MHz	20	28	-	dB
1250 - 1325 MHz	15	23	-	dB
<b>Second Harmonic Attenuation</b> 1648 - 1698 MHz	12	14	-	dB
<b>Third Harmonic Attenuation</b> 2472 - 2547 MHz	11	14	-	dB
<b>Return Loss at Tx Terminal <sup>(4)</sup></b> 824 - 849 MHz	10	12	-	dB
<b>Ant-Rx Specification</b>				
<b>Center Frequency</b>	-	881.5	-	MHz
<b>Maximum Insertion Loss <sup>(4)</sup></b> 869 - 894 MHz	-	2.3	3.0	dB
<b>Amplitude Ripple</b> 869 - 894 MHz	-	0.6	1.2	dB
869 - 894 MHz (over any 5 MHz span)	-	0.4	0.8	dB
<b>Absolute Attenuation</b> 10 - 779 MHz	25	32	-	dB
779 - 804 MHz	34	40	-	dB
824 - 849 MHz	52	56	-	dB
1039 - 1065 MHz	30	40	-	dB
1100 - 1270 MHz	36	45	-	dB
1648 - 1698 MHz	35	42	-	dB
2472 - 2547 MHz	20	35	-	dB
3000 - 6000 MHz	7	10	-	dB
<b>Return Loss at Rx Terminal <sup>(4)</sup></b> 869 - 894 MHz	10	12	-	dB
<b>Tx-Rx Specification</b>				
<b>Tx to Rx Isolation</b> 824 - 849 MHz	55	60	-	dB
869 - 894 MHz	45	48	-	dB

**Notes:**

1. All specifications are based on the test circuit shown on page 5
2. This specification is valid for room temperature only. The specification over the full temperature range(s) is available on the next page(s)
3. Electrical margin has been built into the design to account for the variations due to manufacturing tolerances
4. Excluding losses due to PCB

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

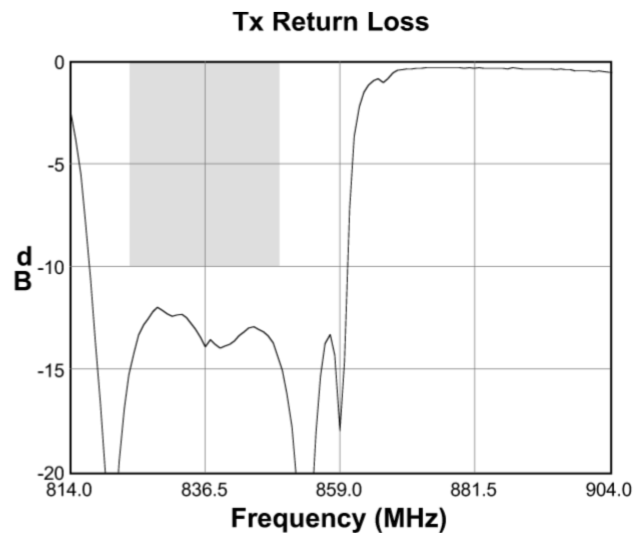
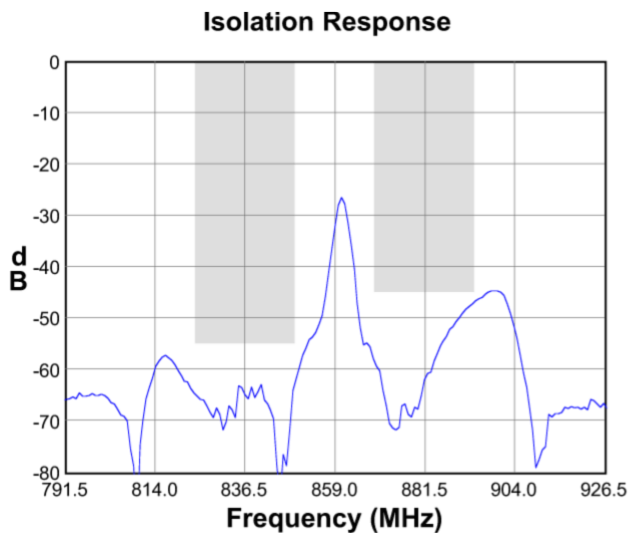
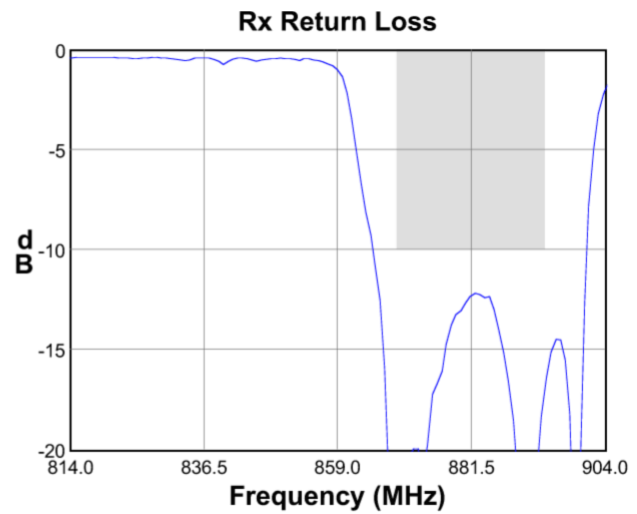
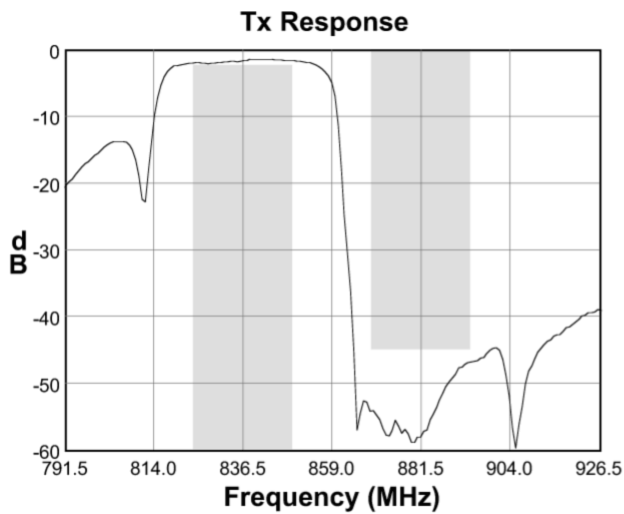
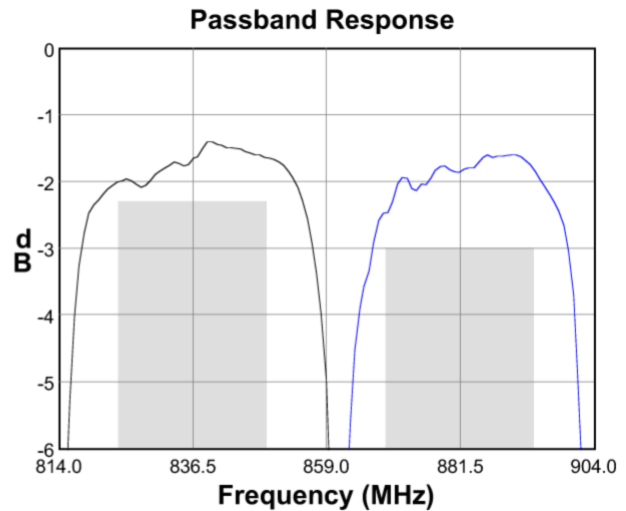
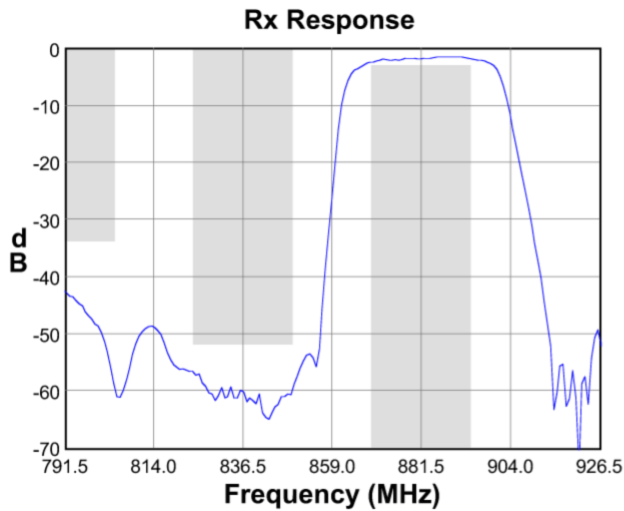
Operating Temperature Range: <sup>(2)</sup> -30 to +85 °C

Parameter <sup>(3)</sup>	Minimum	Typical	Maximum	Unit
<b>Tx-Ant Specification</b>				
<b>Center Frequency</b>	-	836.5	-	MHz
<b>Maximum Insertion Loss <sup>(4)</sup></b> 824 - 849 MHz	-	1.9	2.5	dB
<b>Amplitude Ripple</b> 824 - 849 MHz	-	0.6	1	dB
<b>Absolute Attenuation</b> 10 - 750 MHz	24	30	-	dB
869 - 894 MHz	44	47	-	dB
1050 - 1100 MHz	20	28	-	dB
1250 - 1325 MHz	14	23	-	dB
<b>Second Harmonic Attenuation</b> 1648 - 1698 MHz	12	14	-	dB
<b>Third Harmonic Attenuation</b> 2472 - 2547 MHz	11	14	-	dB
<b>Return Loss at Tx Terminal <sup>(4)</sup></b> 824 - 849 MHz	10	12	-	dB
<b>Ant-Rx Specification</b>				
<b>Center Frequency</b>	-	881.5	-	MHz
<b>Maximum Insertion Loss <sup>(4)</sup></b> 869 - 894 MHz	-	2.6	3.2	dB
<b>Amplitude Ripple</b> 869 - 894 MHz	-	0.9	1.4	dB
869 - 894 MHz (over any 5 MHz span)	-	0.4	0.8	dB
<b>Absolute Attenuation</b> 10 - 779 MHz	25	32	-	dB
779 - 804 MHz	34	40	-	dB
824 - 849 MHz	50	56	-	dB
1039 - 1065 MHz	30	40	-	dB
1100 - 1270 MHz	36	45	-	dB
1648 - 1698 MHz	35	42	-	dB
2472 - 2547 MHz	20	35	-	dB
3000 - 6000 MHz	7	10	-	dB
<b>Return Loss at Rx Terminal <sup>(4)</sup></b> 869 - 894 MHz	9	12	-	dB
<b>Tx-Rx Specification</b>				
<b>Tx to Rx Isolation</b> 824 - 849 MHz	54	59	-	dB
869 - 894 MHz	44	47	-	dB

**Notes:**

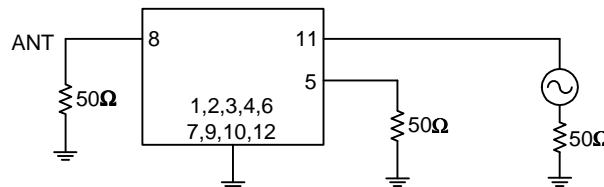
1. All specifications are based on the test circuit shown on page 5
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. Excluding losses due to PCB

**Typical Performance**



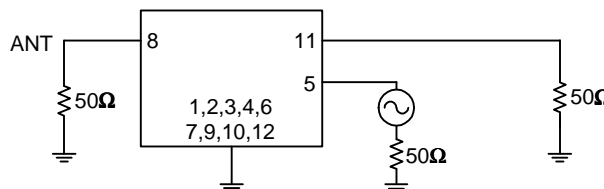
**Test Circuits**

50 Ω  
Single-ended



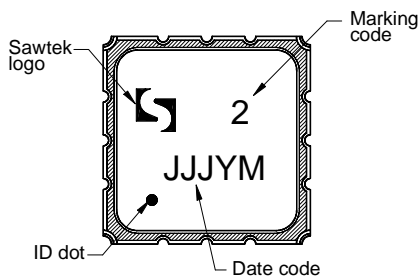
Tx Circuit

50 Ω  
Single-ended



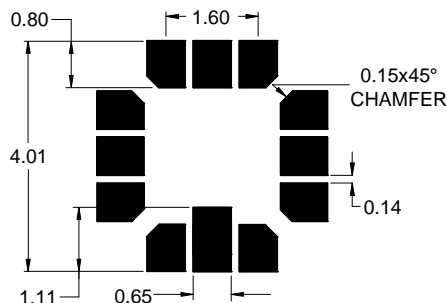
Rx Circuit

**Marking**



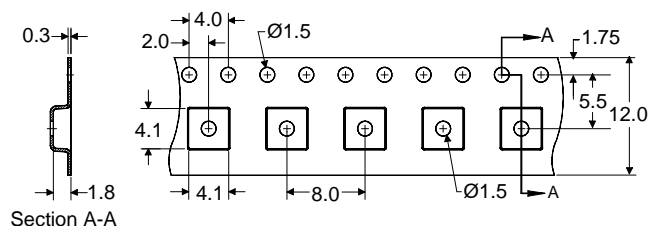
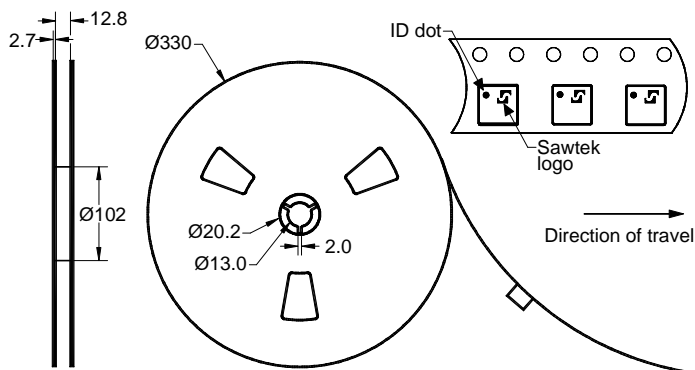
The date code consists of: JJJ = Julian day,  
Y = last digit of year, M = manufacturing site code

**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: 4000 units/reel

### Maximum Ratings


Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-25	+80	°C
Storage Temperature Range	T <sub>stg</sub>	-40	+85	°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. Sawtek does not accept any liability for applications, processes, circuits or assemblies which are implemented using any Sawtek component described in this data sheet.

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

Or contact one of our worldwide  
Network of [sales offices](#),  
[Representatives or distributors](#)