TriQuint SEMICONDUCTOR

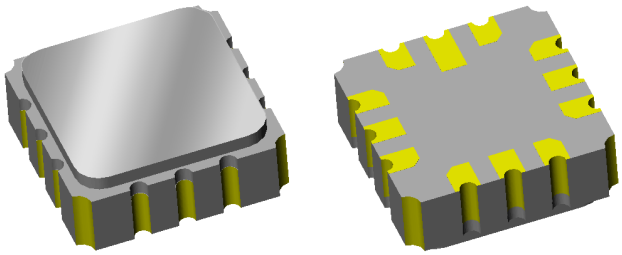
Data Sheet

Part Number 856450

836.5/881.5 MHz SAW Duplexer

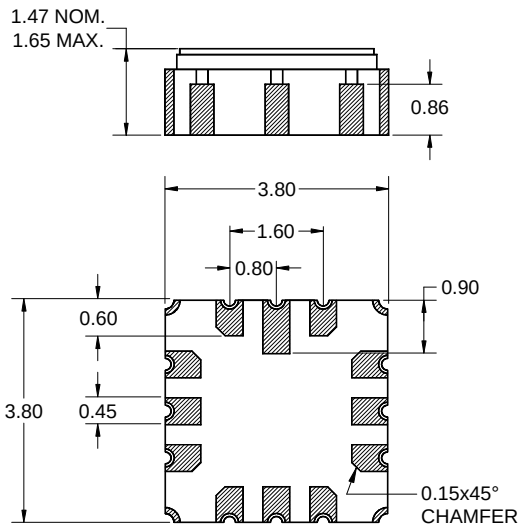
Features

- 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



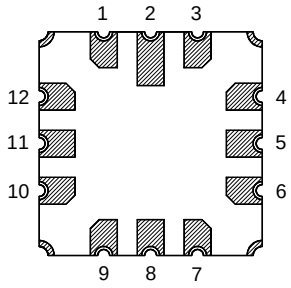
Package

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 ±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: [2] +25 °C

Parameter [3]	Minimum	Typical	Maximum	Unit
Tx-Ant Specification				
Center Frequency	-	836.5	-	MHz
Maximum Insertion Loss [4]				
824 - 849 MHz	-	1.9	2.3	dB
Amplitude Ripple				
824 - 849 MHz	-	0.5	0.7	dB
Absolute Attenuation				
10 - 750 MHz	24	30	-	dB
869 - 894 MHz	45	47	-	dB
1050 - 1100 MHz	20	28	-	dB
1250 - 1325 MHz	15	23	-	dB
Second Harmonic Attenuation				
1648 - 1698 MHz	12	14	-	dB
Third Harmonic Attenuation				
2472 - 2547 MHz	11	14	-	dB
Return Loss at Tx Terminal [4]				
824 - 849 MHz	10	12	-	dB
Ant-Rx Specification				
Center Frequency	-	881.5	-	MHz
Maximum Insertion Loss [4]				
869 - 894 MHz	-	2.3	3.0	dB
Amplitude Ripple				
869 - 894 MHz	-	0.6	1.2	dB
869 - 894 MHz (over any 5 MHz span)	-	0.4	0.8	dB
Absolute Attenuation				
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
Return Loss at Rx Terminal [4]				
869 - 894 MHz	10	12	-	dB
Tx-Rx Specification				
Tx to Rx Isolation				
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 [1]

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

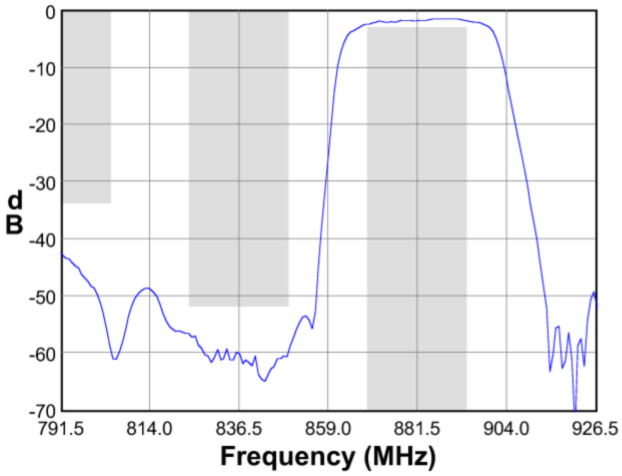
Parameter [3]	Minimum	Typical	Maximum	Unit
Tx-Ant Specification				
Center Frequency	-	836.5	-	MHz
Maximum Insertion Loss [4]				
824 - 849 MHz	-	1.9	2.5	dB
Amplitude Ripple				
824 - 849 MHz	-	0.6	1	dB
Absolute Attenuation				
10 - 750 MHz	24	30	-	dB
869 - 894 MHz	44	47	-	dB
1050 - 1100 MHz	20	28	-	dB
1250 - 1325 MHz	14	23	-	dB
Second Harmonic Attenuation				
1648 - 1698 MHz	12	14	-	dB
Third Harmonic Attenuation				
2472 - 2547 MHz	11	14	-	dB
Return Loss at Tx Terminal [4]				
824 - 849 MHz	10	12	-	dB
Ant-Rx Specification				
Center Frequency	-	881.5	-	MHz
Maximum Insertion Loss [4]				
869 - 894 MHz	-	2.6	3.2	dB
Amplitude Ripple				
869 - 894 MHz	-	0.9	1.4	dB
869 - 894 MHz (over any 5 MHz span)	-	0.4	0.8	dB
Absolute Attenuation				
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
Return Loss at Rx Terminal [4]				
869 - 894 MHz	9	12	-	dB
Tx-Rx Specification				
Tx to Rx Isolation				
824 - 849 MHz	54	59	-	dB
869 - 894 MHz	44	47	-	dB

Notes:

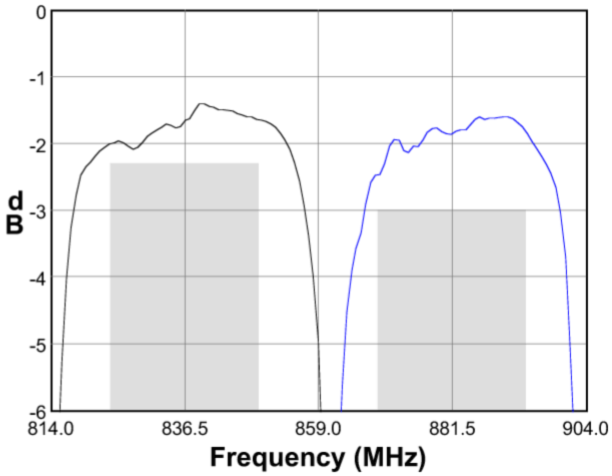
1. All specifications are based on the test circuit shown on page 5
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature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

Typical Performance

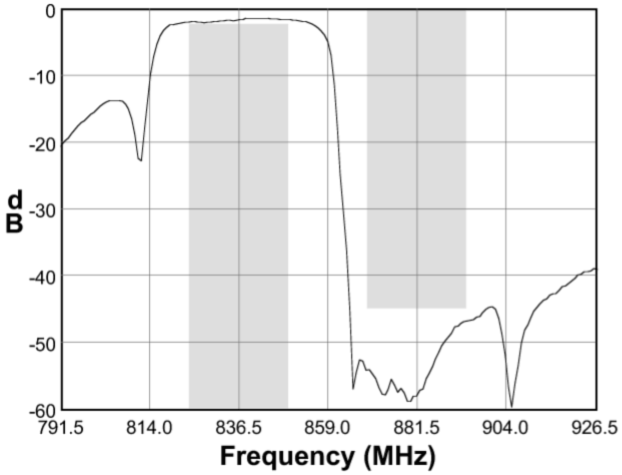
Rx Response



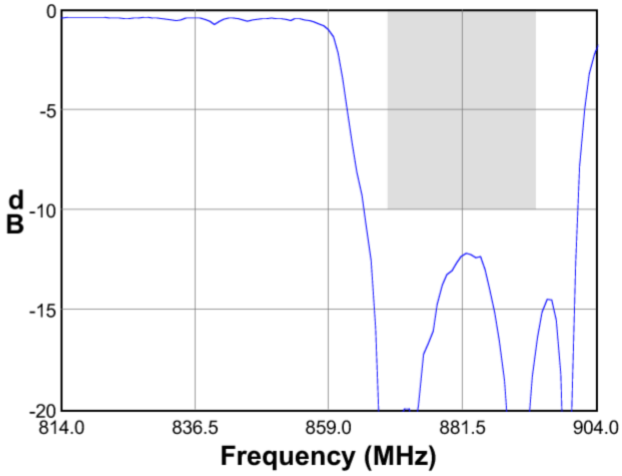
Passband Response



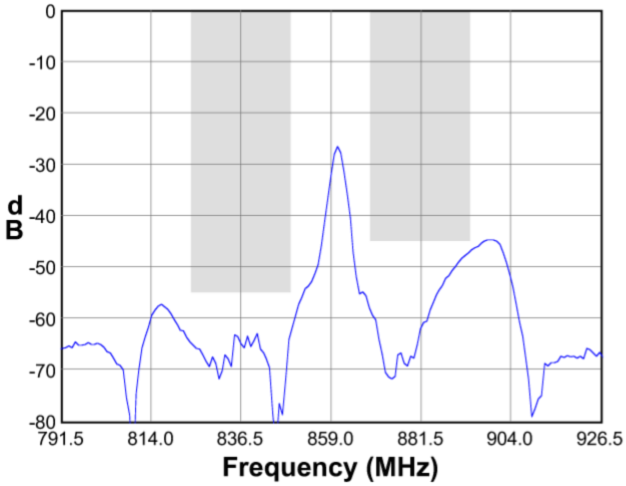
Tx Response



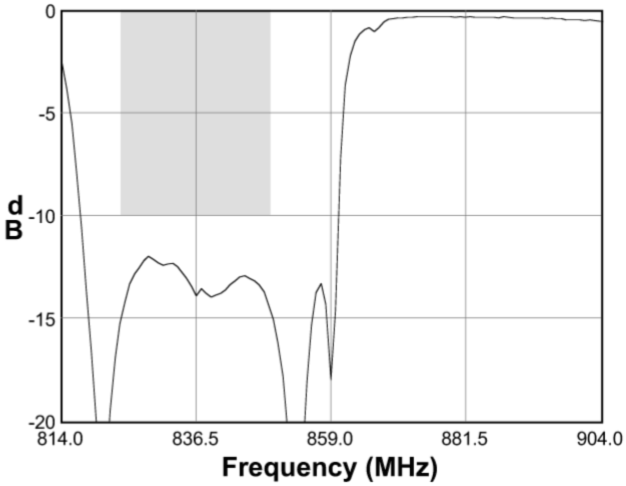
Rx Return Loss



Isolation Response



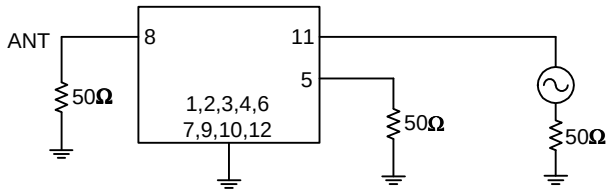
Tx Return Loss



Part Number 856450
836.5/881.5 MHz SAW Duplexer

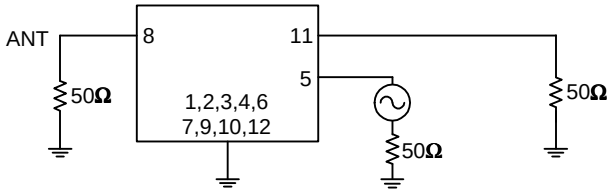
Test Circuits

50 Ω
Single-ended



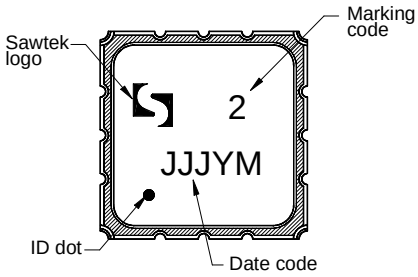
Tx Circuit

50 Ω
Single-ended



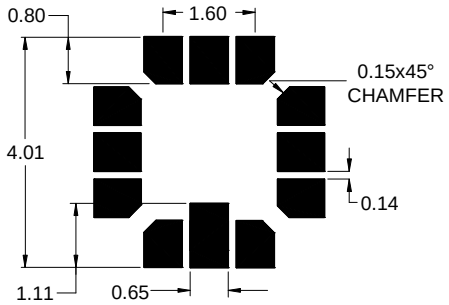
Rx Circuit

Marking



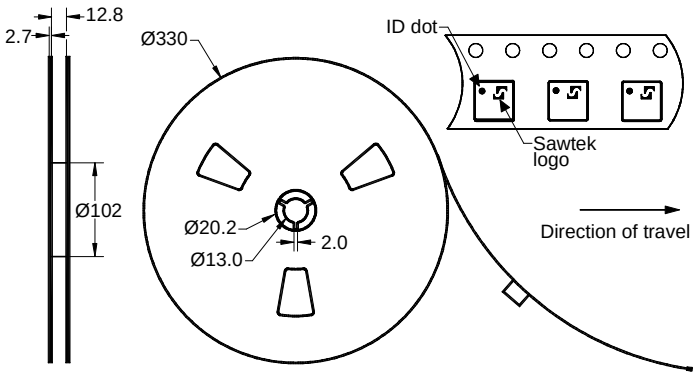
The date code consists of: JJJ = Julian day,
Y = last digit of year, M = manufacturing site code

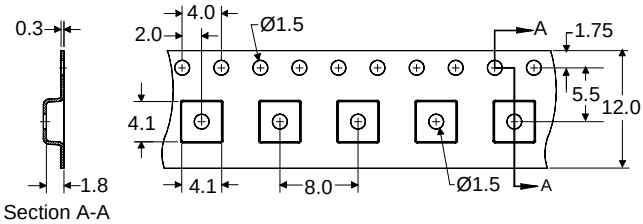
PCB Footprint



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

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Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-25	+80	^{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

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