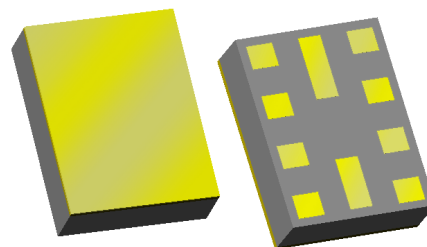


Applications

- Automotive Telematics and Infotainment
- Usable Bandwidth of 69 MHz (CH1-11)
- WiFi Access Points and Small Cells
- Band-edge filtering of WiFi signal emissions at 2390MHz and 2483.5MHz
- WiFi bandpass filter that enables the coexistence of 4G (LTE/TD-LTE) & WiFi signals
- ISM band applications such as Smart Meters
- WLAN systems (Higher power applications)



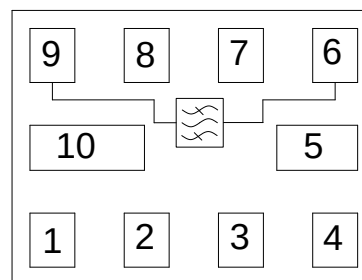
CSP-1713 package: 1.70 x 1.30 x 0.46 mm

Product Features

- Industry leading small size: 1.70 x 1.30 x 0.46 mm
- Performance over -40 to +95 °C
- High Rejection at 2390MHz, 2483.5MHz, B38/B40/B7/B41
- Ceramic chip-scale Package (CSP)
- Hermetically sealed
- RoHS compliant, Pb-free



Functional Block Diagram



Top View

General Description

The 885070-A is a high-performance, high power Bulk Acoustic Wave (BAW) band-pass filter with extremely steep skirts, simultaneously exhibiting low loss in the WiFi band and high rejection in the band-edge frequencies and adjacent LTE /TD-LTE bands.

The 885070-A also enables coexistence of WiFi and LTE signals within the same device or in close proximity to one another. Its unique power handling capability allows for implementation into high performance high power access points and small cell base stations.

The 885070-A uses common module packaging techniques to achieve the industry standard 1.7 x 1.32 x 0.46 mm footprint. The filter has met stringent automotive requirements derived from AEC-Q200 standard and is suitable for use in infotainment and telematics applications.

Pin Configuration

Pin No.	Label
9	Input
6	Input
1, 2, 3, 4, 5, 7, 8, 10	Case Ground

Ordering Information

Part No.	Description
885070-A	Packaged Part
885070-A-EVB	Evaluation board

Standard T/R size = 15,000 units/reel

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature ⁽¹⁾	-55 to + 125 °C
Operable Temperature	- 40 to + 95 °C

1. Operation of this device outside the parameter range given may cause permanent damage.
2. Input power with WLAN OFDM signal applied.

MTTF

Input Power ⁽²⁾	+ 75 °C	+ 85 °C	+ 95 °C
+23 dBm	583 M hrs.	206 M hrs.	103 M hrs.
+26 dBm	4.73 M hrs.	1.67 M hrs.	837 K hrs.
+28 dBm	191 K hrs.	67.7 K hrs.	33.8 K hrs.

Electrical Specifications ⁽¹⁾

Conditions unless otherwise noted: Temperature Range -40 to +95 °C

Parameter ⁽²⁾	Conditions	Min	Typical ⁽³⁾	Max	Units
Insertion Loss ⁽⁴⁾	2402.5 – 2421.5 MHz (WiFi Ch.1)	–	1.2	1.7	dB
	2407.5 – 2426.5 MHz (WiFi Ch.2)		1.0	1.2	
	2412.5 – 2461.5 MHz (WiFi Ch.3-9)		0.8	1.1	
	2447.5 – 2466.5 MHz (WiFi Ch.10)		0.9	1.2	
	2452.5 – 2471.5 MHz (WiFi Ch.11)		1.0	1.7	
Amplitude Variation	2402.5 – 2421.5 MHz (WiFi Ch.1)	–	1.5	3.0	dB
	2407.5 – 2426.5 MHz (WiFi Ch.2)		0.8	1.2	
	2412.5 – 2461.5 MHz (WiFi Ch.3-9)		0.5	1.0	
	2447.5 – 2466.5 MHz (WiFi Ch.10)		0.5	1.2	
	2452.5 – 2471.5 MHz (WiFi Ch.11)		1.0	3.5	
Attenuation	100 – 2300 MHz	20	23	–	dB
	2300 – 2370 MHz ⁽⁵⁾	20	25	–	
	2370 – 2390 MHz ⁽⁵⁾	15	19	–	
	2483.5 – 2500 MHz ⁽⁵⁾	15	24	–	
	2500 – 2520 MHz ⁽⁵⁾	25	38	–	
	2520 – 2570 MHz ⁽⁵⁾	28	31	–	
	2570 – 2620 MHz ⁽⁵⁾	25	28	–	
	2620 – 2690 MHz ⁽⁵⁾	25	27	–	
Input/Output VSWR	2402.5 – 2471.5 MHz	–	1.5 ⁽⁶⁾	2.1 ⁽⁶⁾	–
Source/Load Impedance ⁽⁷⁾		–	50	–	Ω

Notes:

1. In production, devices will be tested at room temperature to a guard-banded specification to ensure electrical compliance over temperature.
2. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances.
3. This is the typical performance at only 25 °C.
4. Data is the integrated value of the linear s-parameter over a 19 MHz window in the indicated band at the specified temperature.
5. Data is the integrated value of the linear s-parameter over a 5 MHz range at the specified temperature.
6. An external impedance matching network with ±2 % tolerance will be necessary to achieve the stated specifications.
7. This is the optimum impedance in order to achieve the performance shown.

Electrical Specifications ⁽¹⁾

Conditions unless otherwise noted: Temperature Range -30 to +85 °C

Parameter ⁽²⁾	Conditions	Min	Typical ⁽³⁾	Max	Units
Insertion Loss ⁽⁴⁾	2402.5 – 2421.5 MHz (WiFi Ch.1)	–	1.2	1.6	dB
	2407.5 – 2426.5 MHz (WiFi Ch.2)		1.0	1.2	
	2412.5 – 2461.5 MHz (WiFi Ch.3-9)		0.8	1.1	
	2447.5 – 2466.5 MHz (WiFi Ch.10)		0.9	1.2	
	2452.5 – 2471.5 MHz (WiFi Ch.11)		1.0	1.6	
Amplitude Variation	2402.5 – 2421.5 MHz (WiFi Ch.1)	–	1.5	2.8	dB
	2407.5 – 2426.5 MHz (WiFi Ch.2)		0.8	1.2	
	2412.5 – 2461.5 MHz (WiFi Ch.3-9)		0.5	1.0	
	2447.5 – 2466.5 MHz (WiFi Ch.10)		0.5	1.2	
	2452.5 – 2471.5 MHz (WiFi Ch.11)		1.0	3.0	
Attenuation	100 – 2300 MHz	20	23	–	dB
	2300 – 2370 MHz ⁽⁵⁾	20	25	–	
	2370 – 2390 MHz ⁽⁵⁾	15	19	–	
	2483.5 – 2500 MHz ⁽⁵⁾	15	24	–	
	2500 – 2520 MHz ⁽⁵⁾	25	38	–	
	2520 – 2570 MHz ⁽⁵⁾	28	31	–	
	2570 – 2620 MHz ⁽⁵⁾	25	28	–	
	2620 – 2690 MHz ⁽⁵⁾	25	27	–	
	4800 – 5000 MHz	25	29	–	
Input/Output VSWR	2402.5 – 2471.5 MHz	–	1.5 ⁽⁶⁾	1.8 ⁽⁶⁾	–
Source/Load Impedance ⁽⁷⁾		–	50	–	Ω

Notes:

1. In production, devices will be tested at room temperature to a guard-banded specification to ensure electrical compliance over temperature.
2. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances.
3. This is the typical performance at only 25 °C.
4. Data is the integrated value of the linear s-parameter over a 19 MHz window in the indicated band at the specified temperature.
5. Data is the integrated value of the linear s-parameter over a 5 MHz range at the specified temperature.
6. An external impedance matching network with ±2 % tolerance will be necessary to achieve the stated specifications.
7. This is the optimum impedance in order to achieve the performance shown.

Electrical Specifications ⁽¹⁾

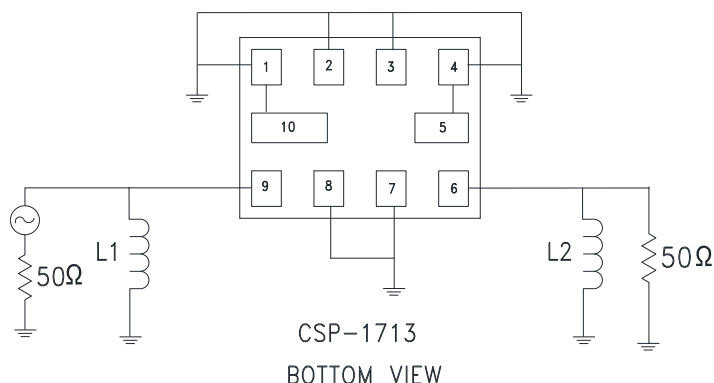
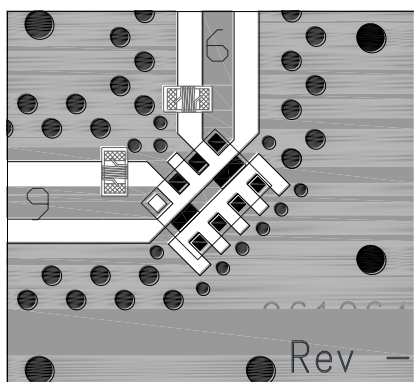
Conditions unless otherwise noted: Temperature Range 0 to +70 °C

Parameter ⁽²⁾	Conditions	Min	Typical ⁽³⁾	Max	Units
Insertion Loss ⁽⁴⁾	2402.5 – 2421.5 MHz (WiFi Ch.1)	–	1.2	1.5	dB
	2407.5 – 2426.5 MHz (WiFi Ch.2)		1.0	1.2	
	2412.5 – 2461.5 MHz (WiFi Ch.3-9)		0.8	1.1	
	2447.5 – 2466.5 MHz (WiFi Ch.10)		0.9	1.2	
	2452.5 – 2471.5 MHz (WiFi Ch.11)		1.0	1.5	
Amplitude Variation	2402.5 – 2421.5 MHz (WiFi Ch.1)	–	1.5	2.5	dB
	2407.5 – 2426.5 MHz (WiFi Ch.2)		0.8	1.1	
	2412.5 – 2461.5 MHz (WiFi Ch.3-9)		0.5	1.0	
	2447.5 – 2466.5 MHz (WiFi Ch.10)		0.5	1.1	
	2452.5 – 2471.5 MHz (WiFi Ch.11)		1.0	2.8	
Attenuation	100 – 2300 MHz	20	23	–	dB
	2300 – 2370 MHz ⁽⁵⁾	20	25	–	
	2370 – 2390 MHz ⁽⁵⁾	15	19	–	
	2483.5 – 2500 MHz ⁽⁵⁾	15	24	–	
	2500 – 2520 MHz ⁽⁵⁾	25	38	–	
	2520 – 2570 MHz ⁽⁵⁾	28	31	–	
	2570 – 2620 MHz ⁽⁵⁾	25	28	–	
	2620 – 2690 MHz ⁽⁵⁾	25	27	–	
	4800 – 5000 MHz	25	29	–	
Input/Output VSWR	2402.5 – 2471.5 MHz	–	1.5 ⁽⁶⁾	1.8 ⁽⁶⁾	–
Source/Load Impedance ⁽⁷⁾		–	50	–	Ω

Notes:

1. In production, devices will be tested at room temperature to a guard-banded specification to ensure electrical compliance over temperature.
2. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances.
3. This is the typical performance at only 25 °C.
4. Data is the integrated value of the linear s-parameter over a 19 MHz window in the indicated band at the specified temperature.
5. Data is the integrated value of the linear s-parameter over a 5 MHz range at the specified temperature.
6. An external impedance matching network with ±2 % tolerance will be necessary to achieve the stated specifications.
7. This is the optimum impedance in order to achieve the performance shown.

Evaluation Board



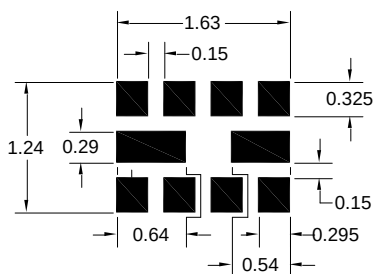
Notes:

1. Matching component values shown are for the specified TriQuint evaluation board. Value adjustment may be required in end user product circuits depending on component manufacturer and PCB material.
2. PCB: .500 x .500 x .062; Construction: ½ oz Cu Top Layer; TLY-5A (.0075) ½ oz Cu Middle Layer, FR4; ½ oz Cu Bottom Layer. (dimensions are in inches)

Bill of Material

Reference Des.	Value	Description	Manuf.	Part Number
L1	20nH	Chip Inductor, 0402, $\pm 3\%$	Murata	LQW15AN20NG00
L2	20nH	Chip Inductor, 0402, $\pm 3\%$	Murata	LQW15AN20NG00
SMA	N/A	SMA connector	Radiall USA	9602-1111-018
PCB	N/A	3-layer	Multiple	961064

PCB Mounting Pattern

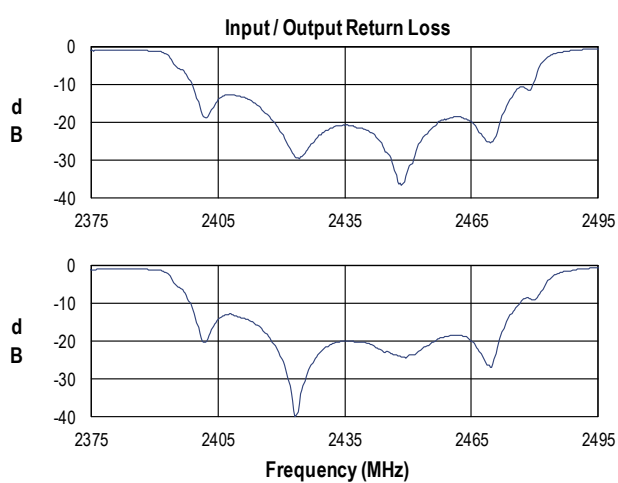
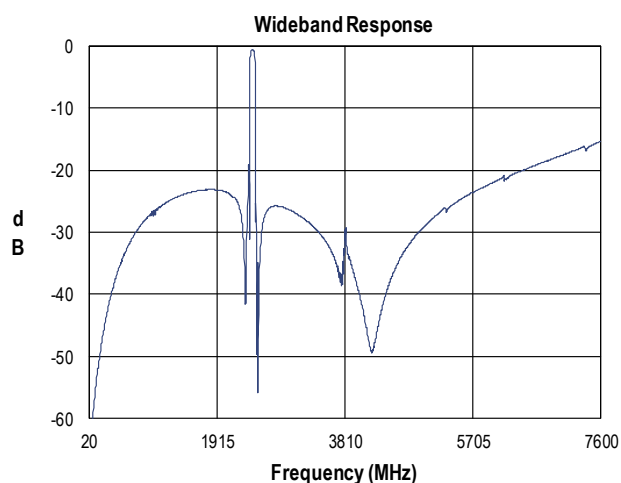
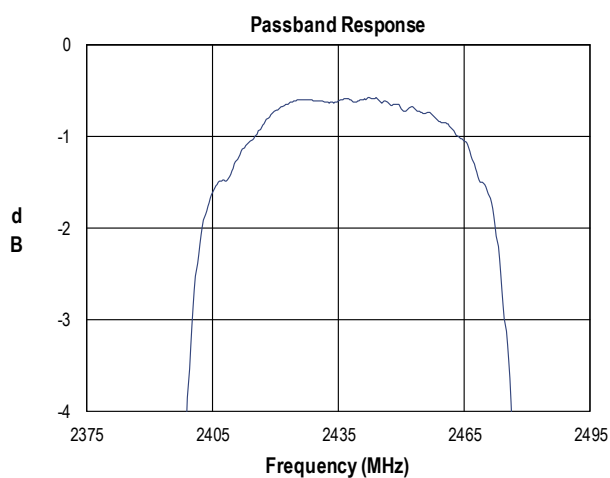
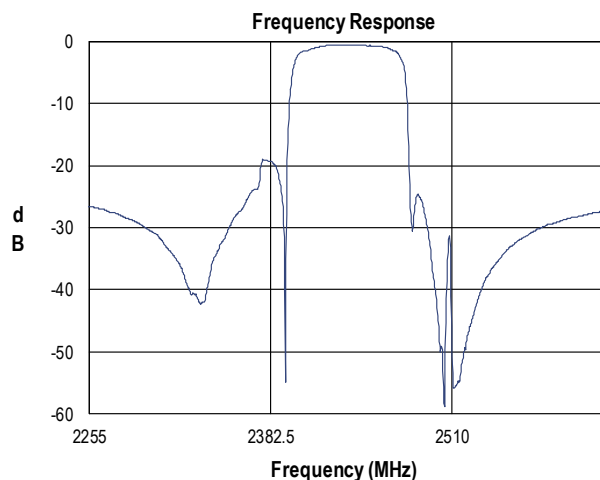


Notes:

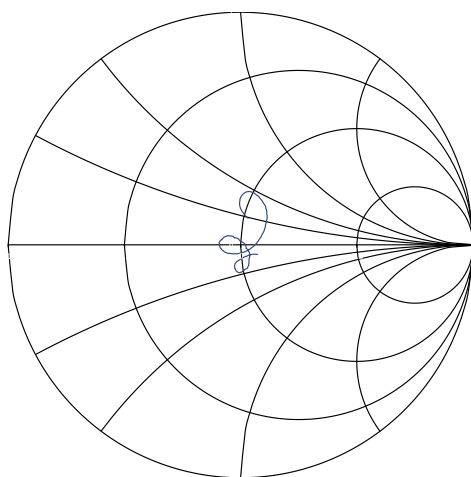
1. All dimensions are in millimeters. Angles are in degrees.
2. This drawing specifies the mounting pattern used on the TriQuint evaluation board for this product. Some modification may be necessary to suit end user assembly materials and processes.

Performance Plots – PCB 961064

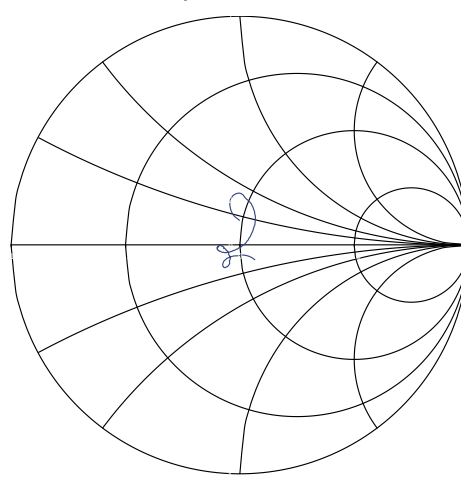
Test conditions unless otherwise noted: Temp.= +25 °C



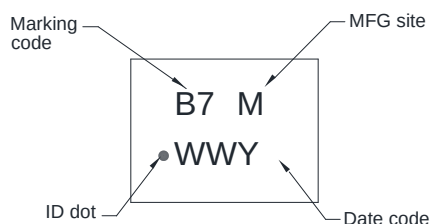
Input Smith Chart



Output Smith Chart

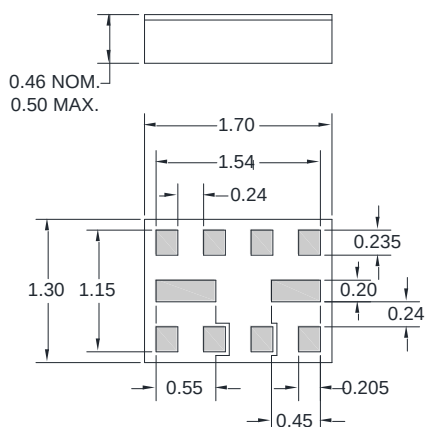


Package Information, Marking and Dimensions



Package Style: CSP-1713
Dimensions: 1.7 x 1.3 x 0.50 mm

Body: Al_2O_3 ceramic
Lid: Kovar or Alloy42, Au over Ni plated
Terminations: Au plating 0.5 - 1.0 μm , over a 2-6 μm Ni plating

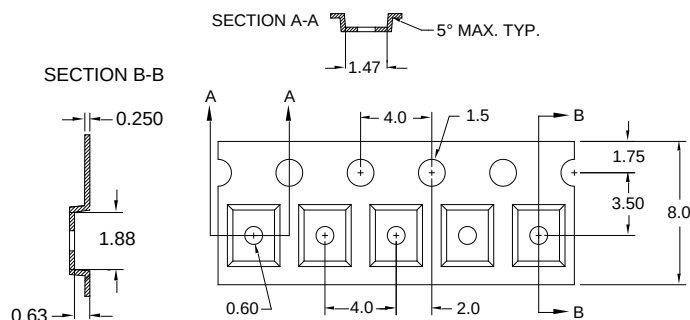
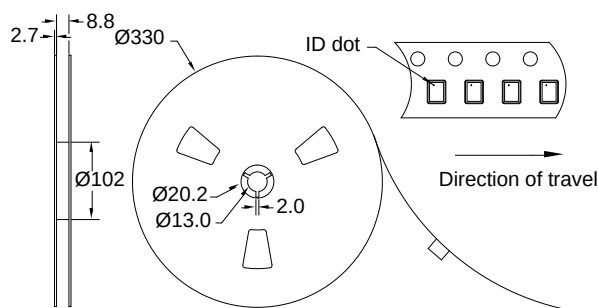


The Marking Code is correlated with the Part Number
M=Manufacturing Site Code (Blank for Apopka, C for Costa Rica)
The Date Code consists of:
WW = 2 digit week
Y=The last digit of the year

Notes:

1. All dimensions shown are typical in millimeters
2. All tolerances are ± 0.05 mm except overall length and width ± 0.10 mm.
3. An asterisk (*) in front of the marking code indicates prototype.

Tape and Reel information



Standard T/R size= 15,000 units/reel. All dimensions are in millimeters.

Product Compliance Information

ESD Sensitivity Ratings



Caution! ESD-Sensitive Device

ESD Rating: Class 3A
Test: Human Body Model (HBM)
Standard: ESDA/JEDEC JS-001

ESD Rating: Class C3
Test: Charged Device Model (CDM)
Standard: JEDEC Standard JESD22-C101

MSL Rating

Not applicable. Hermetic package.

Solderability

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

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

RoHs Compliance

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 (C₁₅H₁₂Br₄O₂) Free
- PFOS Free
- SVHC Free

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations:

Web: www.triquint.com

Tel: 877-800-8584

Email: customer.support@qorvo.com

For information about the merger of RFMD and TriQuint as Qorvo:

Web: www.qorvo.com

For technical questions and application information:

Email: flapplication.engineering@tqs.com

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