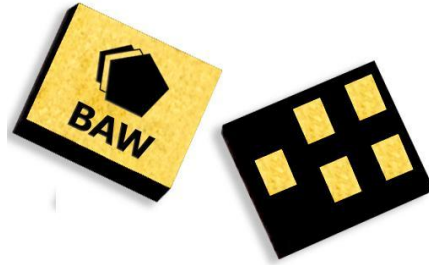



Applications

- Automotive Telematics and Infotainment
- WiFi bandpass filter that enables the coexistence of 3G/4G/LTE/TD-LTE & WiFi signals
- High-power WLAN systems
- Outdoor WiFi in Small Cells and Access Points
- Band-edge filtering of WiFi emissions
- 2.4GHz ISM Applications

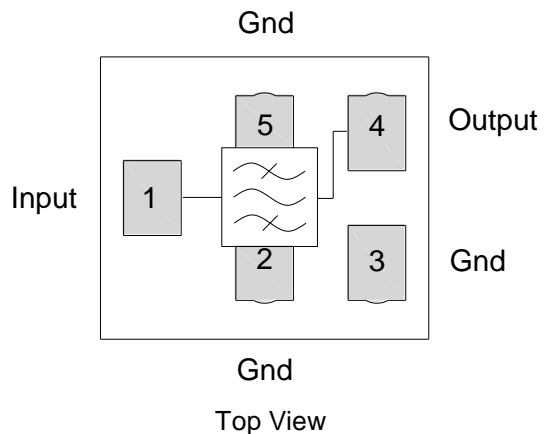


CSP-5CT package: 1.4 x 1.2 x 0.46 mm

Product Features

- Qualified for automotive applications based on AEC–Q200 standard
- Best in class rejection in LTE B38/B40 bands
- Industry leading small size: 1.4 x 1.2 x 0.46 mm
- Performance over -40 to +95 °C
- Ceramic chip-scale Package (CSP)
- Hermetically sealed
- RoHS compliant, Pb-free 

Functional Block Diagram



General Description

The 885062–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 near-in rejection.

The 885062–A 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 access points, small cell base stations, and other high power ISM band applications.

The 885062–A uses common module packaging techniques to achieve the industry standard 1.4 x 1.2 x 0.46 mm footprint. The filter has met stringent automotive requirements based on AEC-Q200 standard and is suitable for use in infotainment and telematics applications.

Pin Configuration

Pin No.	Label
1	Input
4	Output
2,3,5	Ground

Ordering Information

Part No.	Description
885062–A	Packaged Part
885062 – A–EVB	Evaluation board
Standard T/R size = 15,000 units/reel	
Minimum Order Quantity = 2.5 K units/reel	

Absolute Maximum Ratings

Parameter ⁽¹⁾	Rating	Notes:	
Operating Temperature ⁽²⁾	-40 to +125 °C	1. Operation of this device outside the parameter ranges given may cause permanent damage. 2. This represents the maximum allowable power level without electrical degradation equivalent to duration of 10,000 hours at 55 °C.	
Storage Temperature	-40 to +95 °C		
MTTF			
Input Power ⁽³⁾	+70 °C	+85 °C	+95 °C
+28 dBm	>14 M hours	>5 M hours	>2 M hours

Notes (cont.):
 3.The Input Power with WLAN OFDM signal applied.

Electrical Specifications ⁽¹⁾⁽⁶⁾

Specified Temperature Range: -30 to +85 °C (unless otherwise noted)

Parameter ⁽²⁾	Conditions	Min	Typical ⁽³⁾	Max	Units		
Insertion Loss ⁽³⁾	2402.5 – 2421.5 MHz (WiFi Ch.1)		1.7	2.2	dB		
	2407.5 – 2426.5 MHz (WiFi Ch.2)		1.5	2.0			
	2412.5 – 2471.5 MHz (WiFi Ch.3-11)	–	1.5	1.9			
	2457.5 – 2476.5 MHz (WiFi Ch.12)		1.6	2.1			
	2462.5 – 2481.5 MHz (WiFi Ch.13)		1.7	2.2			
Amplitude Variation	2402.5 – 2421.5 MHz (WiFi Ch.1)		0.8	1.5	dB		
	2407.5 – 2426.5 MHz (WiFi Ch.2)		0.8	1.1			
	2412.5 – 2471.5 MHz (WiFi Ch.3-11)	–	0.9	1.1			
	2457.5 – 2476.5 MHz (WiFi Ch.12)		0.4	1.0			
Impulse Response Length ⁽⁴⁾	2401 – 2483 MHz	–	160	200	ns		
	100 – 2300 MHz	35	37				
	2300 – 2365 MHz ⁽⁵⁾	48	53				
	2365 – 2370 MHz ⁽⁵⁾	54	58				
	2370 – 2375 MHz (+25 to +85 °C) ⁽⁵⁾	45	61				
	2370 – 2375 MHz (-30 to +25 °C) ⁽⁵⁾	56	61				
	2375 – 2380 MHz (+25 to +85 °C) ⁽⁵⁾	25	49				
	2375 – 2380 MHz (-30 to +25 °C) ⁽⁵⁾	34	49				
	Attenuation ⁽⁴⁾	2500 – 2505 MHz (+25 to +85 °C) ⁽⁵⁾	29	41		–	dB
		2500 – 2505 MHz (-30 to +25 °C) ⁽⁵⁾	20	41			
2505 – 2570 MHz (+25 to +85 °C) ⁽⁵⁾		49	55				
2505 – 2570 MHz (-30 to +25 °C) ⁽⁵⁾		38	55				
2570 – 2620 MHz ⁽⁵⁾		45	48				
2620 – 2690 MHz ⁽⁵⁾		44	46				
Input/Output VSWR	2402.5 – 2481.5 MHz (WiFi Ch.1-13)	–	1.9	2.2			
	2 nd Harmonics	CW Tone = 2442 MHz @ 22.5 dBm	–	60		–	dBc
	3 rd Harmonics	CW Tone = 2442 MHz @ 22.5 dBm	–	138		–	

Notes:

- In production, devices will be tested at room temperature to a guard-banded specification to ensure electrical compliance over temperature.
- Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances.
- Data is the integrated value of the linear s-parameter over the indicated band at the specified temperature.
- Duration in ns between the maxima and the point 40 dB below the maxima.
- Data is the integrated value of the linear s-parameter over 5 MHz range at the specified temperature.
- An external impedance matching network with ±2 % tolerance will be necessary to achieve the stated specifications.

Electrical Specifications ⁽¹⁾⁽⁶⁾

Specified Temperature Range: –40 to +95 °C (unless otherwise noted)

Parameter ⁽²⁾	Conditions	Min	Typical ⁽³⁾	Max	Units
Insertion Loss ⁽³⁾	2402.5 – 2421.5 MHz (WiFi Ch.1)		1.7	2.2	
	2407.5 – 2426.5 MHz (WiFi Ch.2)		1.5	2.0	
	2412.5 – 2471.5 MHz (WiFi Ch.3-11)	–	1.5	2.1	dB
	2457.5 – 2476.5 MHz (WiFi Ch.12)		1.6	2.2	
	2462.5 – 2481.5 MHz (WiFi Ch.13)		1.7	2.4	
Amplitude Variation	2402.5 – 2421.5 MHz (WiFi Ch.1)		0.8	1.8	
	2407.5 – 2426.5 MHz (WiFi Ch.2)		0.8	1.1	
	2412.5 – 2471.5 MHz (WiFi Ch.3-11)	–	0.9	1.1	dB
	2457.5 – 2476.5 MHz (WiFi Ch.12)		0.4	1.0	
Impulse Response Length ⁽⁴⁾	2462.5 – 2481.5 MHz (WiFi Ch.13)		0.6	1.8	
	2401 – 2483 MHz	–	160	200	ns
	100 – 2300 MHz	35	37		
	2300 – 2365 MHz ⁽⁵⁾	48	53		
	2365 – 2370 MHz ⁽⁵⁾	54	58		
	2370 – 2375 MHz (+25 to +95 °C) ⁽⁵⁾	43	61		
	2370 – 2375 MHz (-40 to +25 °C) ⁽⁵⁾	56	61		
	2375 – 2380 MHz (+25 to +95 °C) ⁽⁵⁾	23	49		
	2375 – 2380 MHz (-40 to +25 °C) ⁽⁵⁾	34	49		
	Attenuation ⁽⁴⁾	2500 – 2505 MHz (+25 to +95 °C) ⁽⁵⁾	29	41	
2500 – 2505 MHz (-40 to +25 °C) ⁽⁵⁾		18	41	–	
2505 – 2570 MHz (+25 to +95 °C) ⁽⁵⁾		49	55		
2505 – 2570 MHz (-40 to +25 °C) ⁽⁵⁾		35	55		
2570 – 2620 MHz ⁽⁵⁾		45	48		
2620 – 2690 MHz ⁽⁵⁾		44	46		
4800 – 5000 MHz		38	43		
7200 – 7500 MHz		36	40		
Input/Output VSWR	2402.5 – 2481.5 MHz (WiFi Ch.1-13)	–	1.9	2.2	
	2 nd Harmonics CW Tone = 2442 MHz @ 22.5 dBm	–	60	–	dBc
3 rd Harmonics	CW Tone = 2442 MHz @ 22.5 dBm	–	138	–	dBc

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. Data is the integrated value of the linear s-parameter over the indicated band at the specified temperature.
4. Duration in ns between the maxima and the point 40 dB below the maxima.
5. Data is the integrated value of the linear s-parameter over 5 MHz range at the specified temperature.
6. An external impedance matching network with ±2 % tolerance will be necessary to achieve the stated specifications.

Electrical Specifications ⁽¹⁾⁽⁶⁾

Specified Temperature Range: 0 to +70 °C (unless otherwise noted)

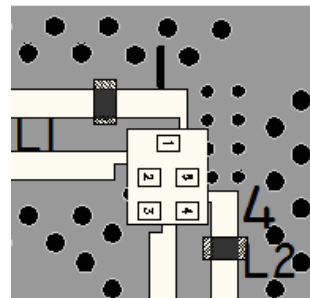
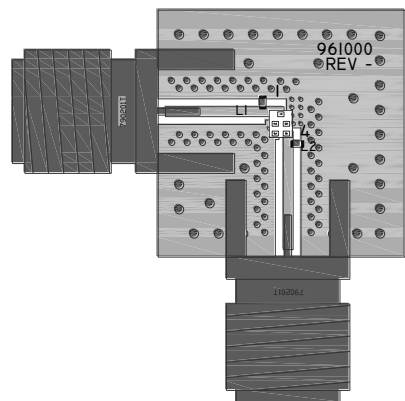
Parameter ⁽²⁾	Conditions	Min	Typical ⁽³⁾	Max	Units
Insertion Loss ⁽³⁾	2402.5 – 2421.5 MHz (WiFi Ch.1)		1.7	2.2	
	2407.5 – 2426.5 MHz (WiFi Ch.2)		1.5	2.0	
	2412.5 – 2471.5 MHz (WiFi Ch.3-11)	–	1.5	1.9	dB
	2457.5 – 2476.5 MHz (WiFi Ch.12)		1.6	2.1	
	2462.5 – 2481.5 MHz (WiFi Ch.13)		1.7	2.2	
Amplitude Variation	2402.5 – 2421.5 MHz (WiFi Ch.1)		0.8	1.5	
	2407.5 – 2426.5 MHz (WiFi Ch.2)		0.8	1.1	
	2412.5 – 2471.5 MHz (WiFi Ch.3-11)	–	0.9	1.1	dB
	2457.5 – 2476.5 MHz (WiFi Ch.12)		0.4	1.0	
Impulse Response Length ⁽⁴⁾	2462.5 – 2481.5 MHz (WiFi Ch.13)		0.6	1.6	
	2401 – 2483 MHz	–	160	200	ns
	100 – 2300 MHz	35	37		
	2300 – 2365 MHz ⁽⁵⁾	48	53		
	2365 – 2370 MHz ⁽⁵⁾	54	58		
	2370 – 2375 MHz (+25 to +70 °C) ⁽⁵⁾	46	61		
	2370 – 2375 MHz (0 to +25 °C) ⁽⁵⁾	56	61		
	2375 – 2380 MHz (+25 to +70 °C) ⁽⁵⁾	27	49		
	2375 – 2380 MHz (0 to +25 °C) ⁽⁵⁾	34	49		
	Attenuation ⁽⁴⁾	2500 – 2505 MHz (+25 to +70 °C) ⁽⁵⁾	29	41	
2500 – 2505 MHz (0 to +25 °C) ⁽⁵⁾		26	41	–	
2505 – 2570 MHz (+25 to +70 °C) ⁽⁵⁾		49	55		
2505 – 2570 MHz (0 to +25 °C) ⁽⁵⁾		40	55		
2570 – 2620 MHz ⁽⁵⁾		45	48		
2620 – 2690 MHz ⁽⁵⁾		44	46		
4800 – 5000 MHz		38	43		
7200 – 7500 MHz		36	40		
Input/Output VSWR	2402.5 – 2481.5 MHz (WiFi Ch.1-13)	–	1.9	2.2	
	2 nd Harmonics CW Tone = 2442 MHz @ 22.5 dBm	–	60	–	dBc
3 rd Harmonics	CW Tone = 2442 MHz @ 22.5 dBm	–	138	–	dBc

Notes:

- In production, devices will be tested at room temperature to a guard-banded specification to ensure electrical compliance over temperature.
- Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances.
- Data is the integrated value of the linear s-parameter over the indicated band at the specified temperature.
- Duration in ns between the maxima and the point 40 dB below the maxima.
- Data is the integrated value of the linear s-parameter over 5 MHz range at the specified temperature.
- An external impedance matching network with $\pm 2\%$ tolerance will be necessary to achieve the stated specifications.

961000 PC Board

PCB Routing Detail



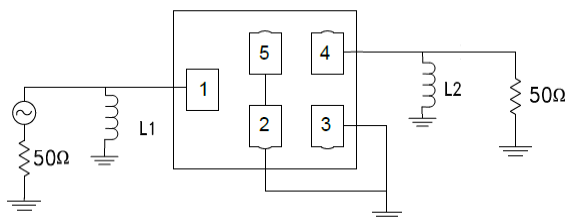
Notes:

1. Top, middle & bottom layers: 1 oz copper
2. Substrates: FR4 dielectric , .031" thick
3. Finish plating: Nickel: 3-8 μm
4. Hole plating: Copper min .0008 μm thick

Notes:

1. Grey indicates metalized area
2. This footprint represents a recommendation only
3. For solder pad recommendation see mechanical information

Schematic



Top View

Pin Functions

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

Notes:

1. The actual matching values may vary due to PCB layout and parasitics.

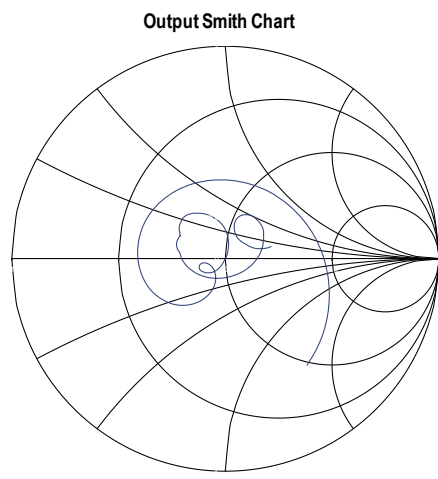
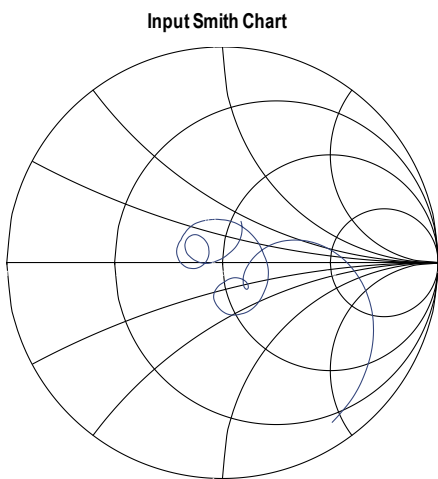
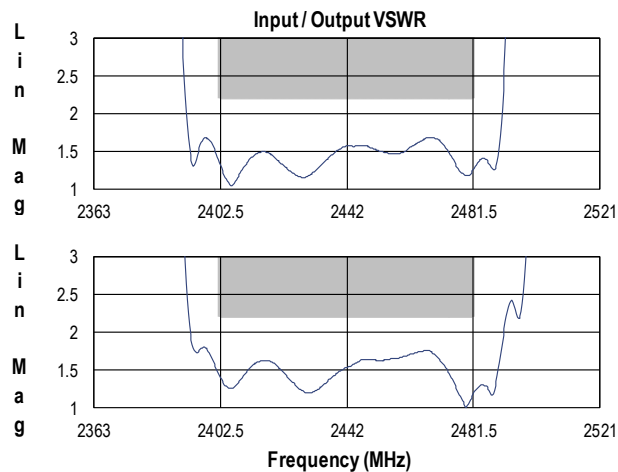
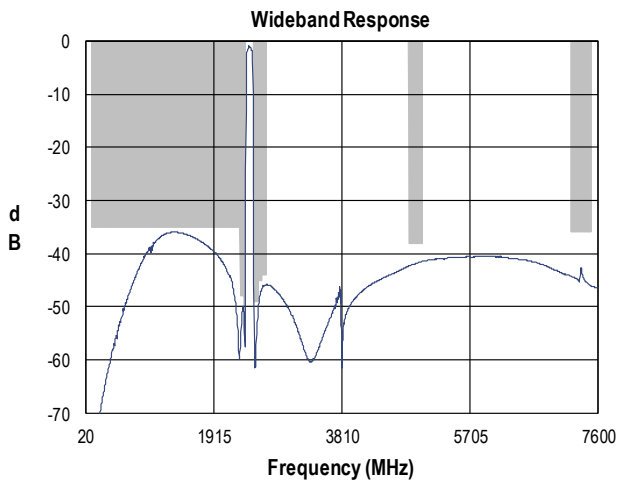
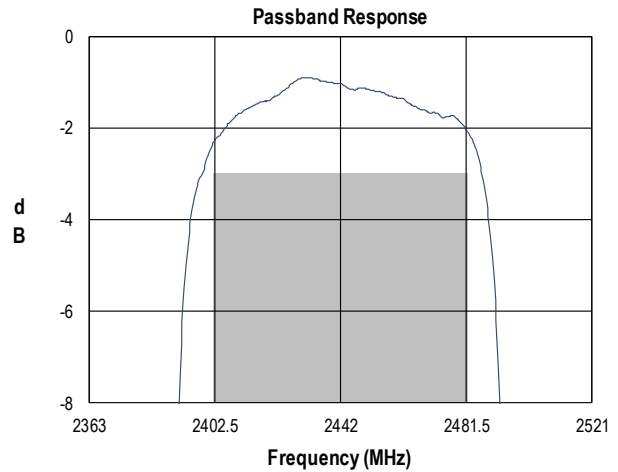
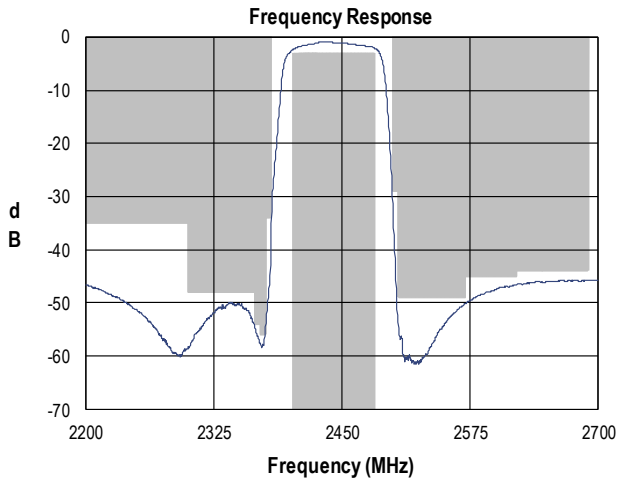
Bill of Material – 960568

Reference Des.	Value	Description	Manuf.	Part Number
L1	9.1 nH	Chip Inductor, 0201, $\pm 2\%$	Murata	LQP03TN9N1J02
L2	6.8 nH	Chip Inductor, 0201, $\pm 2\%$	Murata	LQP03TN6N8J02
SMA	N/A	SMA connector	Radiall USA	96202-1111-018
PCB	N/A	3-layer	Multiple	960100

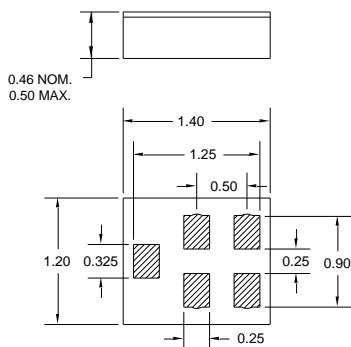
Performance Plots

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

Typical Performance (at room temperature)



Package Information, Marking and Dimensions

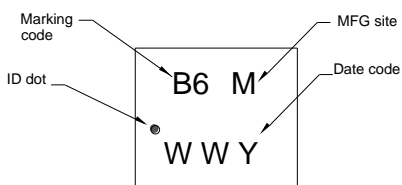


Package Style: CSP-5CT
 Dimensions: 1.4 x 1.2 x 0.46 mm

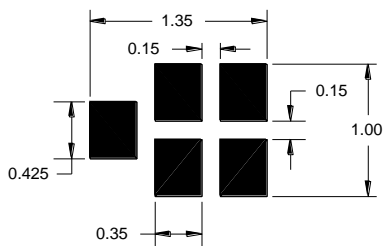
Body: Al_2O_3 ceramic
 Lid: Kovar or Alloy 42, Au over Ni plated
 Terminations: Au plating 0.5 - 1.0 μ m, over a 2-6 μ m Ni plating

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

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



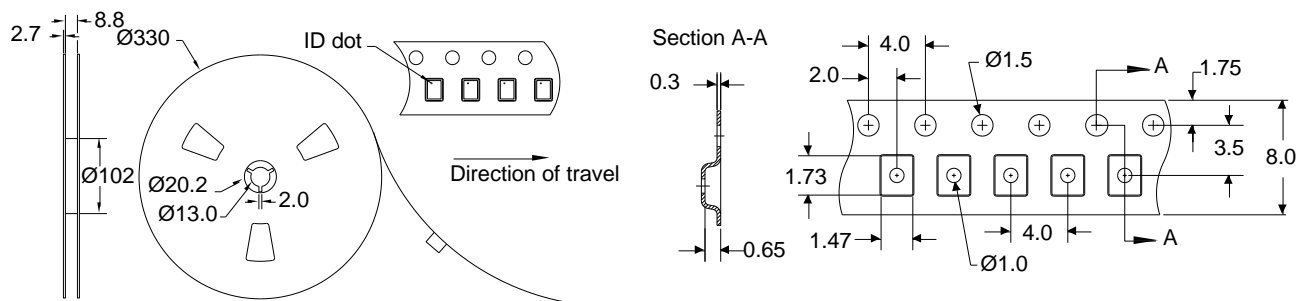
PCB Mounting Pattern



- 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.

Tape and Reel information

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



Product Compliance Information

ESD Sensitivity Ratings



Caution! ESD-Sensitive Device

ESD Rating: Class 1B
Value: 800 V
Test: Human Body Model (HBM)
Standard: ESDA/JEDEC JS-001-2012

ESD Rating: 350 V
Value: 350 V
Test: Machine Model (MM)
Standard: JEDEC Standard JESD22-A115

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, and information about TriQuint:

Web: www.triquint.com
Email: info-sales@tqs.com

Tel: +1.407.886.8860
Fax: +1.407.886.7061

For technical questions and application information:

Email: flapplication.engineering@tqs.com

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.