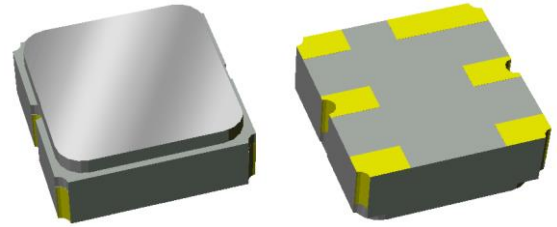


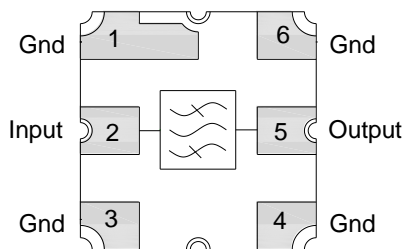
General Description

857216 is a general purpose RF filter designed in a 3x3mm hermetic package



SMP-12 3.00 X 3.00 X 1.22 mm

Functional Block Diagram



Top View

Pin Configuration - Single Ended

Pin No.	Label
1, 3, 4 6	Ground
2	Input
5	Output

Product Features

- Usable bandwidth 10 MHz
- High attenuation
- Low Loss
- Excellent power handling
- Single-ended operation
- No matching required for operation at 50Ω
- Small Size: 3.00 x 3.00 x 1.22 mm
- Ceramic Surface Mount Package (SMP)
- Hermetically sealed
- **RoHS** compliant, **Pb-free**

Applications

- General purpose RF filter

Ordering Information

Part No.	Description
857216	Packaged Part
857216-EVB	Evaluation board
Standard T/R size = 5000 units/reel	

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature ⁽¹⁾	-55 to +125 °C
Operable Temperature ⁽²⁾	-55 to +85 °C
RF Input Power ⁽³⁾	15 dBm

Notes:

1. Operation of this device outside the parameter ranges given may cause permanent damage.
2. Specifications are not guaranteed over all operable conditions
3. Input power with applied CW signal at +85 °C for 10K hours

Electrical Specifications ⁽¹⁾

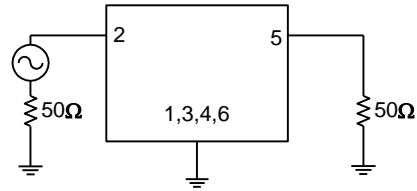
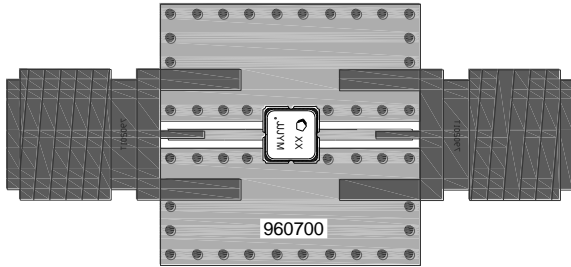
Test conditions unless otherwise noted: ⁽²⁾ Temp = -55 to +85 °C

Parameter ⁽³⁾	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency		-	1030	-	MHz
Maximum Insertion Loss	1025 – 1035 MHz	-	2.3	4.0	dB
Amplitude Variation ⁽⁵⁾	1025 – 1035 MHz	-	0.18	1.25	dB p-p
Group Delay Variation	1025 – 1035 MHz	-	10.21	38	ns
1.25 dB Lower Bandedge ⁽⁶⁾		-	1020	1025	MHz
1.25 dB Upper Bandedge		1035	1041	-	MHz
Relative Attenuation ⁽⁷⁾	500 – 946 MHz	53	64	-	dB
	946 – 980 MHz	50	63	-	dB
	980 – 990 MHz	48	54	-	dB
	1080 – 1100 MHz	50	66	-	dB
	1100 – 1250 MHz	54	59	-	dB
	1250 – 1600 MHz	47	53	-	dB
Source Impedance ⁽⁸⁾	Single-ended	-	50	-	Ohms
Load Impedance ⁽⁸⁾	Single-ended	-	50	-	Ohms

Notes:

1. All specifications are based on the Qorvo schematics for the reference designs shown on page 3.
2. In production, devices will be tested at room temperature to a guard banded 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. Amplitude Variation is defined as the difference between the lowest loss and the highest loss within defined frequency points
6. Relative to loss 1030 MHz
7. Relative to zero dB
8. This is the optimum impedance in order to achieve the performance shown

Evaluation Board – 857216-EVB



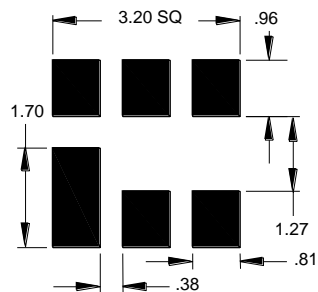
Notes:

1. No Impedance matching required.
2. PCB Fab Notes:
 - Top & bottom layers: 1 oz. copper per layer
 - Substrates: FR4 dielectric, 031" thick
 - Finish plating: Nickel: 3-8μm thick, Gold: .03 - .2μm thick
 - Hole plating: Copper min .0008μm thick

Bill of Material – 857216-EVB

Reference Des.	Value	Description	Manuf.	Part Number
DUT	-	1030 MHz SAW filter	Qorvo	857216
SMA	-	SMA connector	Radiall USA Inc.	9602-1111-018
PCB	-	3-Layer	Multiple	960700

PCB Mounting Pattern

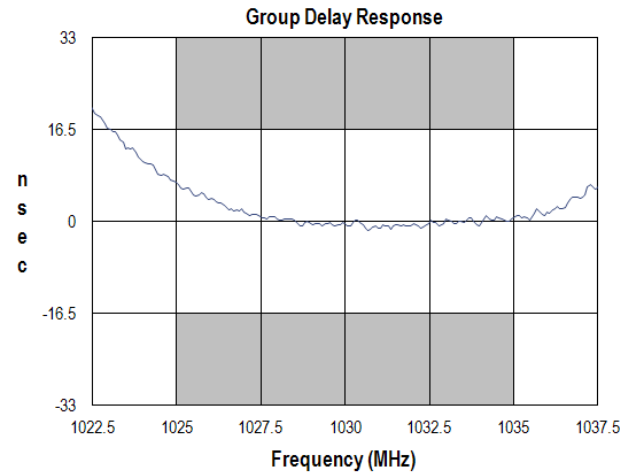
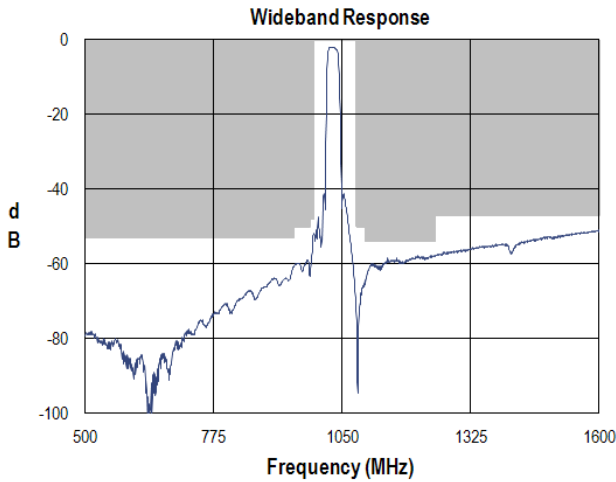
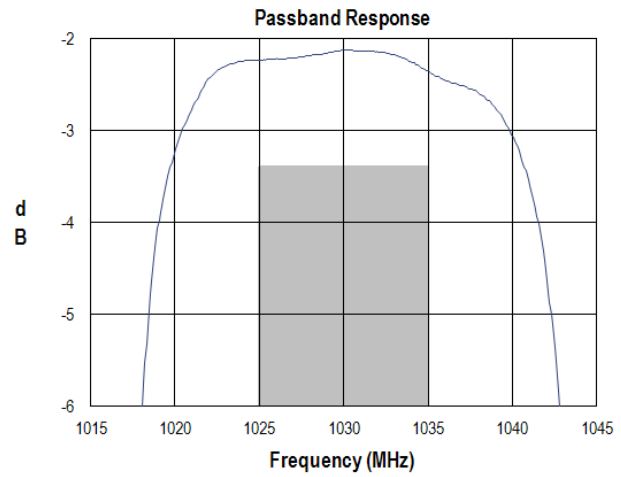
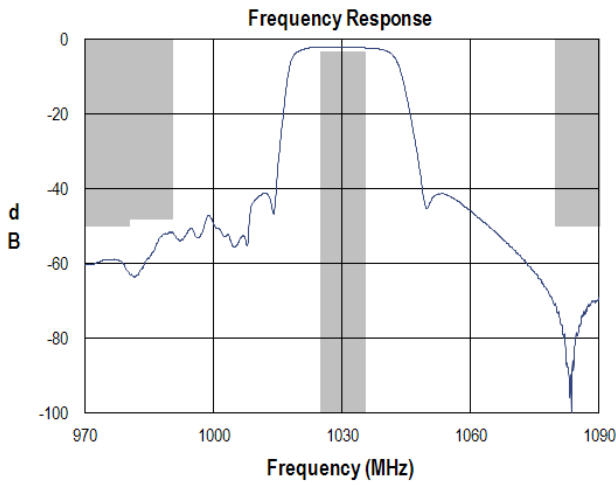


Notes:

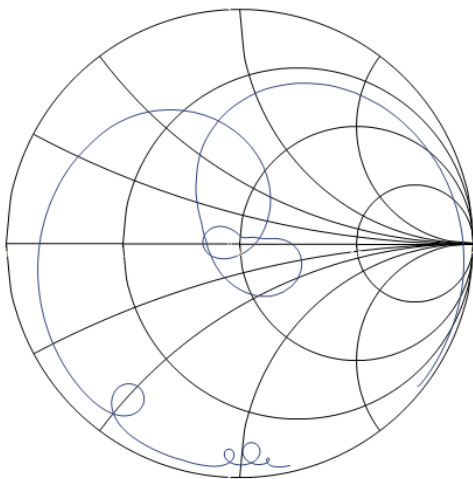
1. All dimensions are in millimeters. Angles are in degrees.
2. This drawing specifies the mounting pattern used on the Qorvo evaluation board for this product. Some modification may be necessary to suit end user assembly materials and processes.

Typical Performance

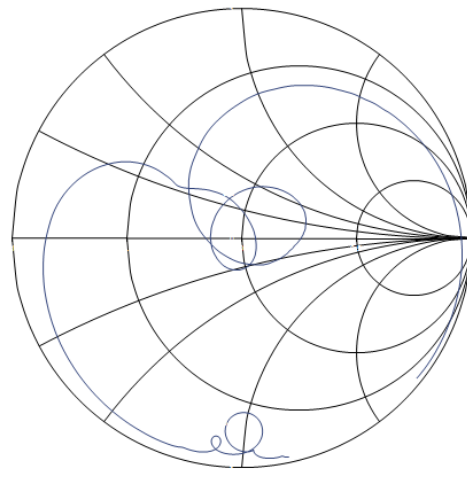
Test conditions unless otherwise noted: Temp= +25°C



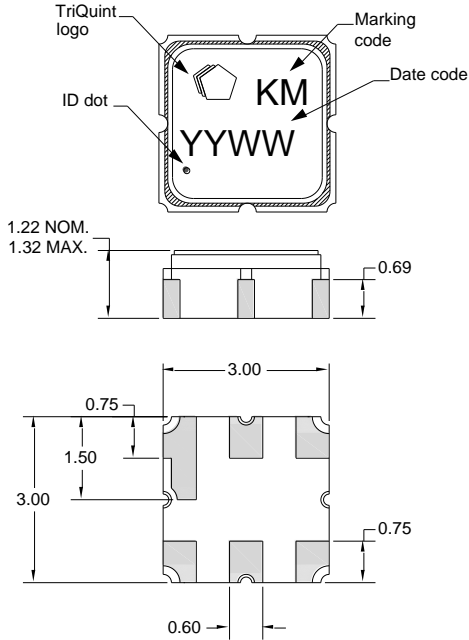
Input Smith Chart



Output Smith Chart



Package Information, Marking and Dimensions



Package Style: SMP-12A
Dimensions: 3.00 x 3.00 x 1.22 mm

Body: Al_2O_3 ceramic
Lid: Kovar, 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

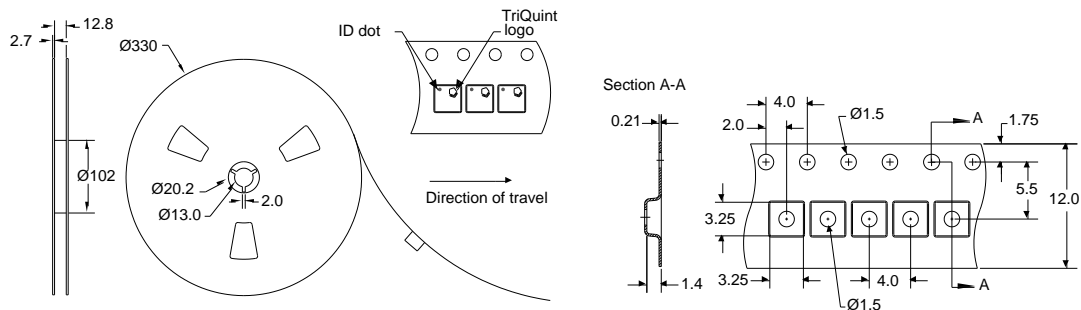
The date code consists of, YY = last 2 digits of the year, and WW = 2 digits of worked week

Notes:

1. All dimensions shown are typical in millimeters
2. An asterisk (*) in front of the marking code indicates prototype.

Tape and Reel Information

Standard T/R size = 5000 units/reel. All dimensions are in millimeters



Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	Class 1A	ESDA / JEDEC JS-001-2012
ESD – Charged Device Model (CDM)	Class C1	JEDEC Standard JESD22-A115
MSL – Moisture Sensitivity Level	N/A, Hermetic Package	IPC/JEDEC J-STD-020



Caution!
ESD-Sensitive Device

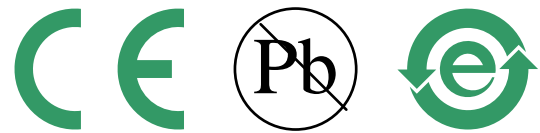
Compatible with both lead-free (260°C max. reflow temp.) and tin/lead (245°C max. reflow temp.) soldering processes. Solder profiles available upon request.

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:

- Lead Free
- Halogen Free (Chlorine, Bromine)
- Antimony Free
- TBBP-A (C₁₅H₁₂Br₄O₂) Free
- PFOS Free
- SVHC Free
- Qorvo Green



Contact Information

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

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For technical questions and application information: **Email:** fapplication.engineering@qorvo.com

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