QPQ1284

Band 41 BAW Band Pass Filter - 60MHz

Product Overview

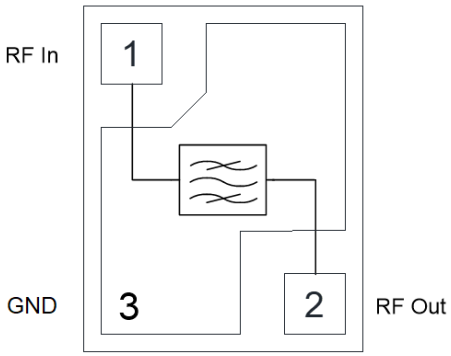
The QPQ1284 is an exceptionally high performance BAW Filter for sub-Band 41 uplink / downlink. This filter is housed in a compact 2 x 1.6 mm package for base station applications.

Low insertion loss, coupled with high out of band attenuation makes this filter an ideal choice for TDD Macro Cells and Small Cells.

The QPQ1284 is part of Qorvo's extensive portfolio of RF BAW and SAW filters.

3 Pad 2.00 mm x 1.60 mm x 0.915 mm SMP

Functional Block Diagram



Top View

Pin Configuration - Single Ended

Pin No.	Label	Function
1	RF In	RF Input to Module
2	RF Out	RF Output from Module
3	GND	Filter Module Ground

Key Features

- 60 MHz Bandwidth – Band 41 Sub-band
- Low Insertion Loss
- High Out of Band Attenuation
- Excellent Wi-Fi Rejection
- Wide Temperature Range: -40 °C to +95 °C
- High Power Rating: 29 dBm at +95 °C
- No External Matching Required
- Small Size: 2.00 x 1.60 x 0.915 mm Surface Mount Package (SMP)
- RoHS Compliant, Pb-Free

Applications

- Base Stations Infrastructure
- Small Cells
- Repeaters
- Routers
- LTE Dongles
- General Purpose Wireless

Ordering Information

Part No.	Description
QPQ1284SR	Sample Reel with 100 pieces
QPQ1284TR7	7" Taped Reel with 2500 pieces
QPQ1284EVB	Assembled Evaluation Board

Absolute Maximum Ratings (1)

Parameter	Rating
Storage Temperature	−40 to +125°C
Operating Temperature (2)	-40 to +95 °C

Notes:
1. Operation of this device outside the parameter ranges given may cause permanent damage.
2. Device will function but it is not guaranteed to meet electrical specifications

Minimum Lifetime Ratings

Conditions	Rating
29 dBm LTE (1), +95°C	110,000 hours

Notes:
1. Modulation of 64 QAM, 5MHz BW, 25 RB, PAR 8 dB

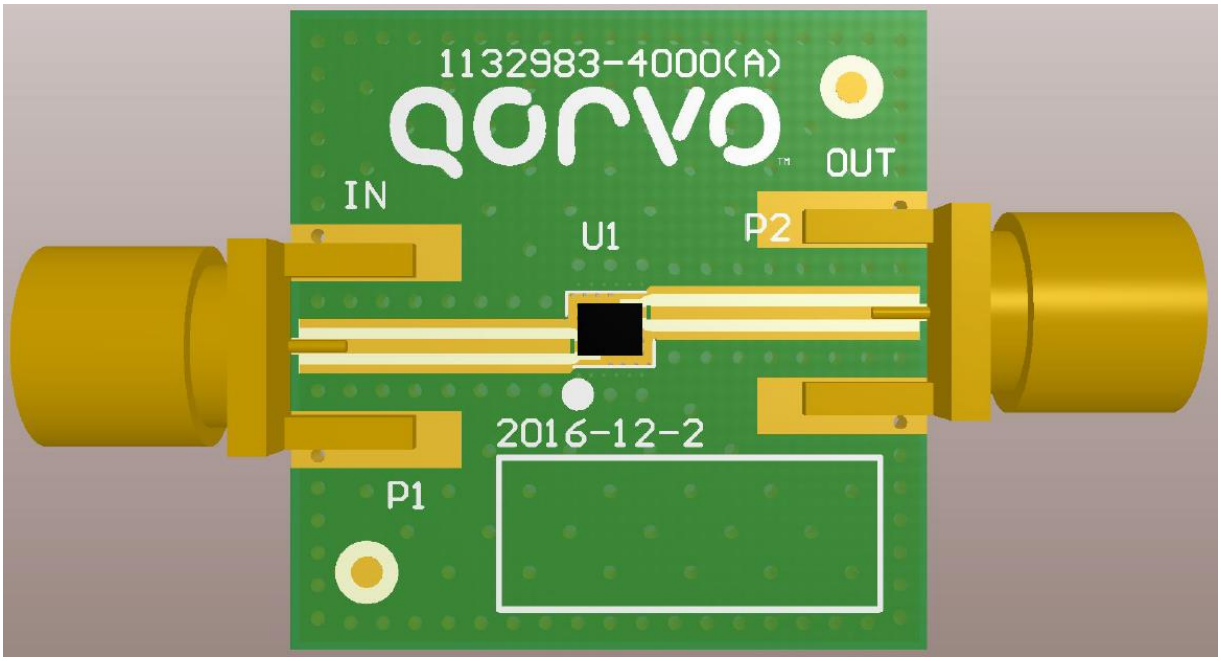
Electrical Specification (1)

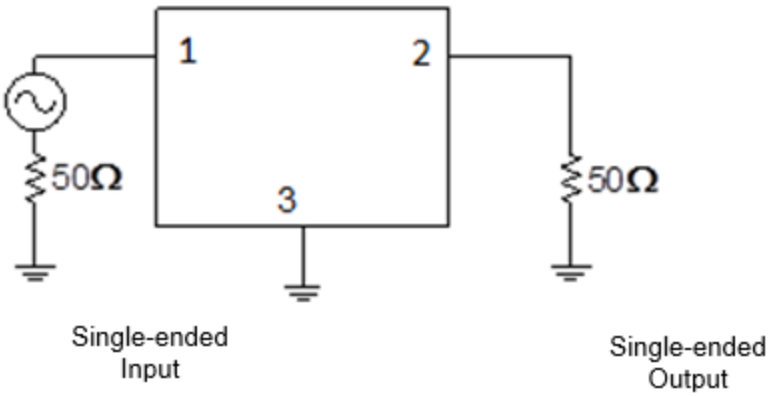
Operating Temperature Range: −40 to +95 °C

Parameter	Conditions	Min	Typ	Max	Units
Passband		2575	-	2635	MHz
Insertion Loss (2)	Max over 2575 – 2635 MHz	-	2.6	3.7	dB
Amplitude Variation	Over 2575 – 2635 MHz	-	1.4	2.3	dB
	Over passband in a 5 MHz window	-	0.6	1.1	dB
Attenuation (3)	10 – 960 MHz	30	47	-	dB
	960 – 1710 MHz	30	37	-	
	1710 – 1880 MHz	30	36	-	
	1880 – 1920 MHz	30	35	-	
	1920 – 2170 MHz	30	35	-	
	2170 – 2400 MHz	30	35	-	
	2400 – 2490 MHz	30	35	-	
	2490 – 2555 MHz	7	16	-	
	2655 – 2750 MHz	7	18	-	
	2750 – 4100 MHz	35	40	-	
	4100 – 4200 MHz	20	28	-	
	4200 – 4900 MHz	35	45	-	
	4900 – 6000 MHz	35	40	-	
	6000 – 8000 MHz	25	31	-	
	11422.36 – 11485.36 MHz	30	35	-	
	12110.6 – 12170.6 MHz	30	37	-	
Input / Output VSWR	Input / Output Port	-	1.7:1	2.1:1	

Notes:
1. All specifications are based on the QORVO schematic for the main reference design.
2. Maximum Insertion Loss within defined frequency range.
3. Attenuation is referenced to zero dB

Evaluation Board and Schematic – QPQ1284EVB



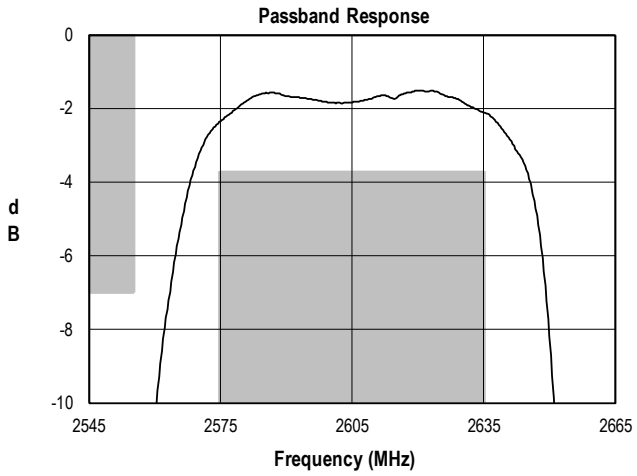


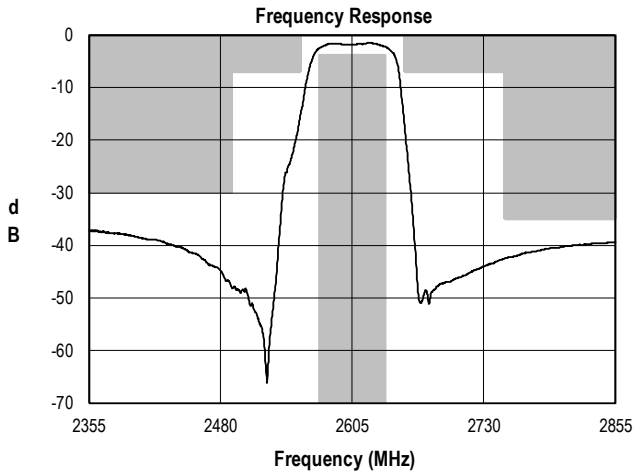
Bill of Material – QPQ1284EVB

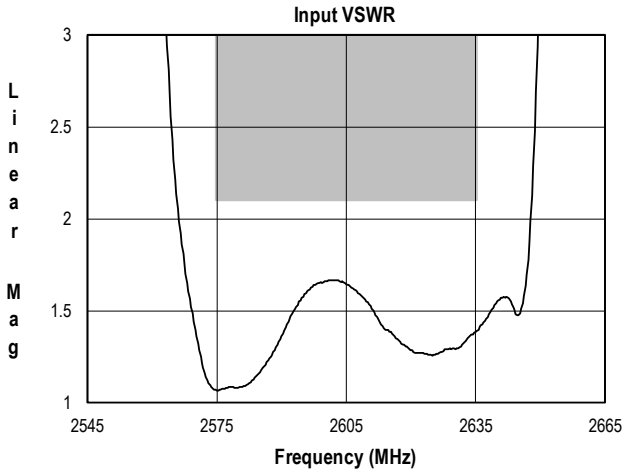
Reference Des.	Value	Description	Manuf.	Part Number
U1	-	Band 41 BAW Filter	Qorvo	QPQ1284
PCB	-	Printed Circuit Board	Qorvo	1132983
P1, P2	-	SMA Edge Connector	Radiall	9602-1111-018

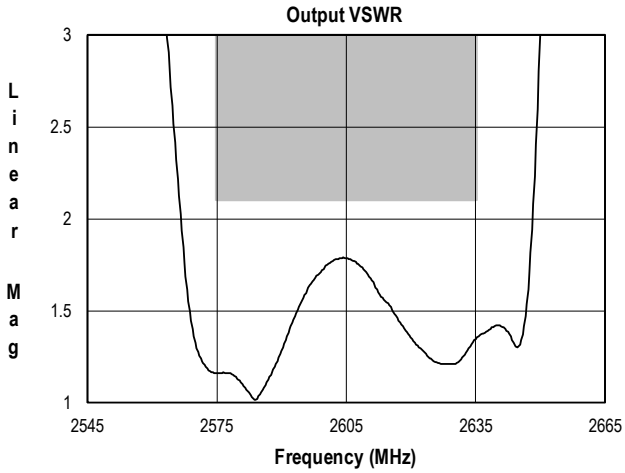
Performance Plots

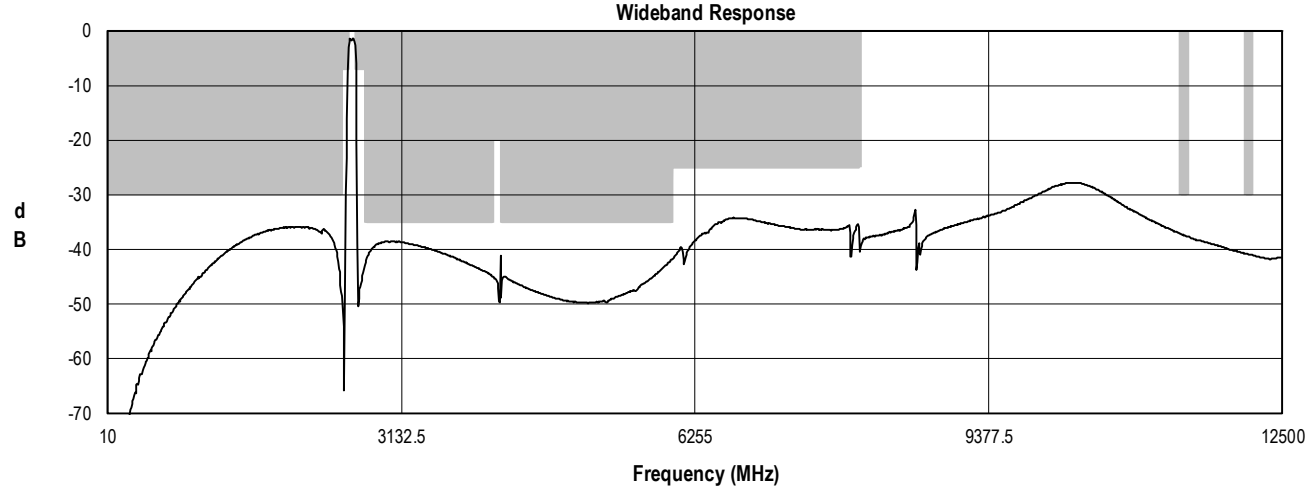
Test conditions unless otherwise noted: Temp= +25°C







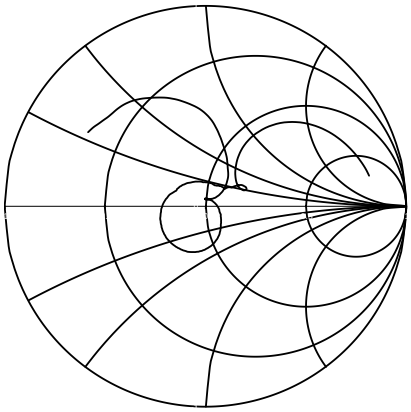




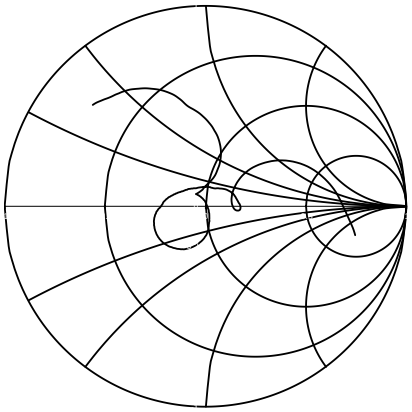
Performance Plots (continue)

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

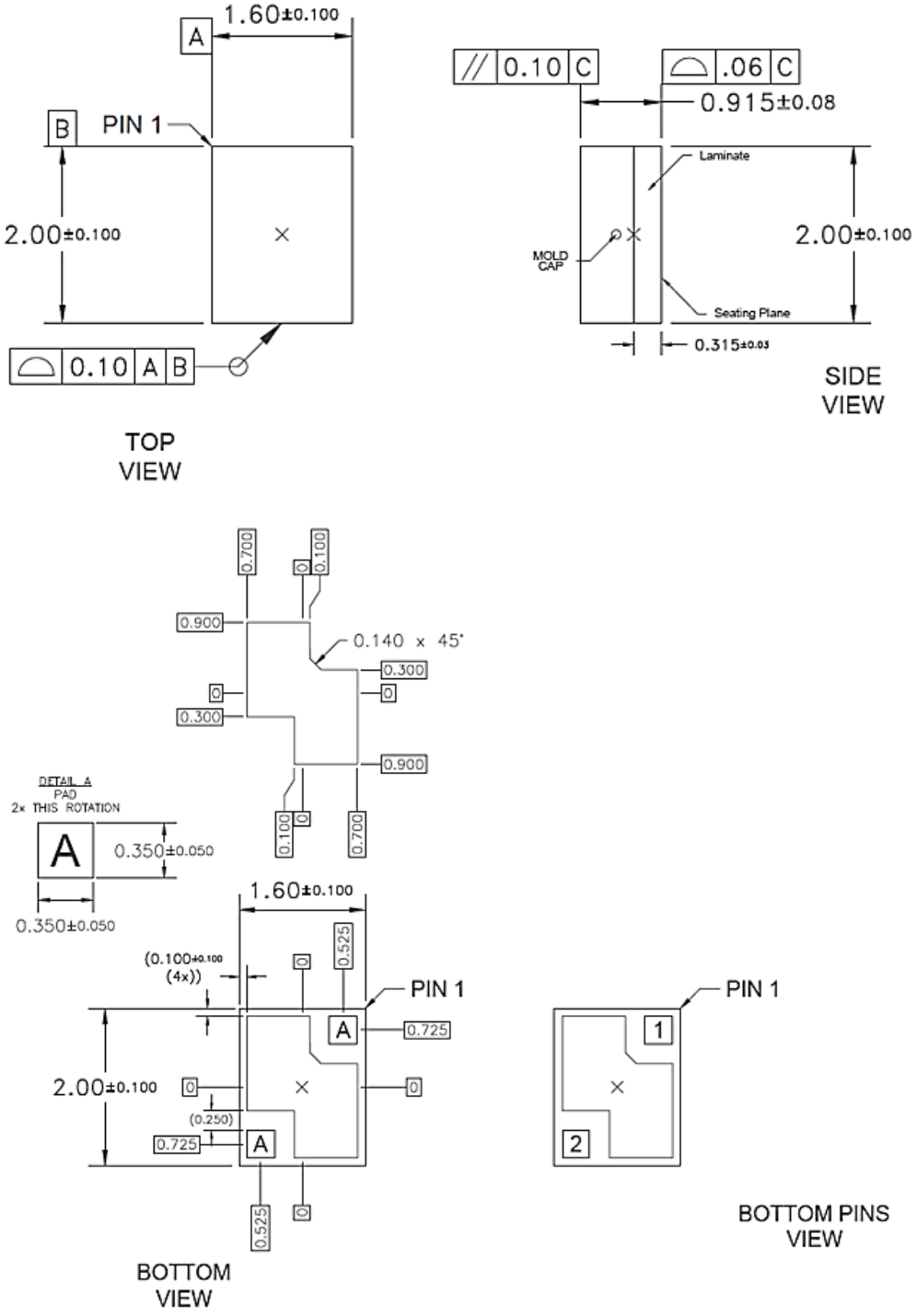
Input Smith Chart



Output Smith Chart

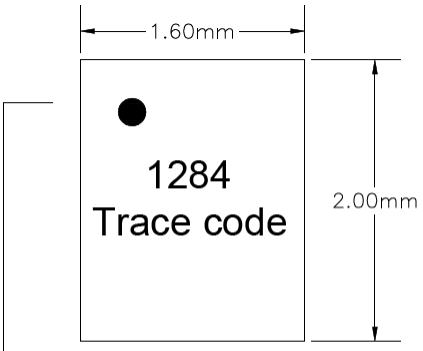


Package Dimensions



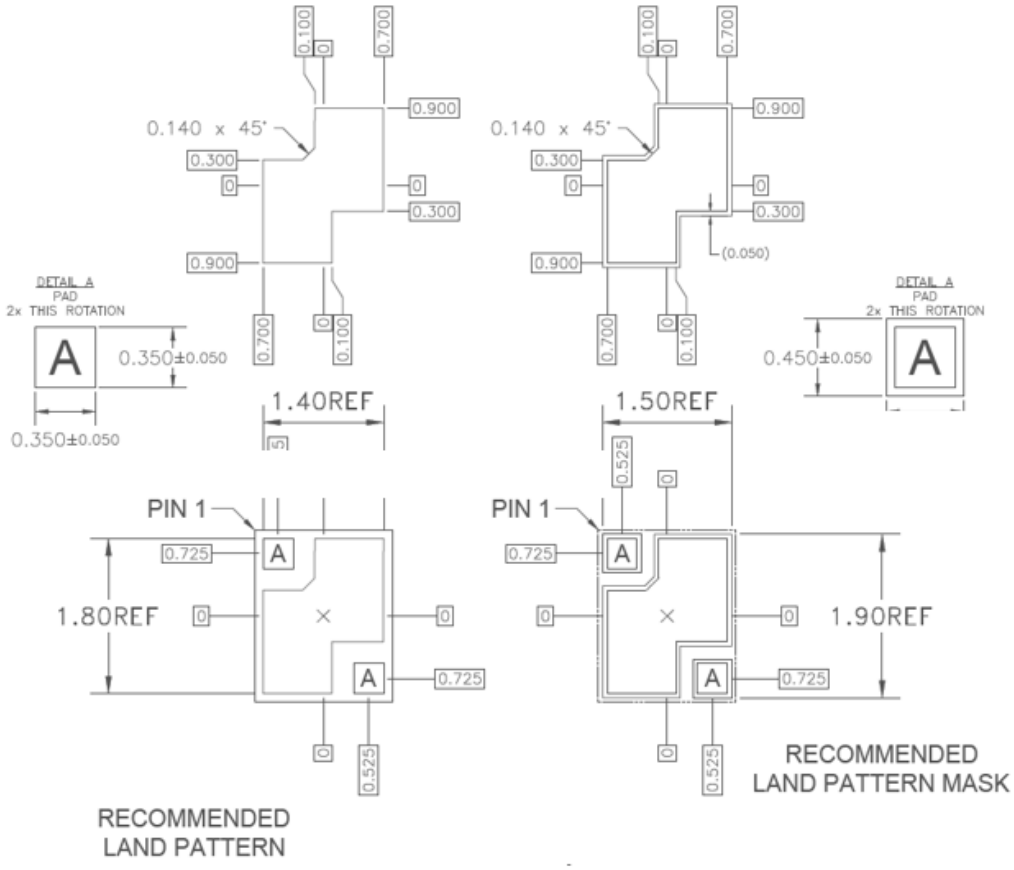
Notes:
1. All dimensions are in millimeters. Angles are in degrees.
2. Dimension and tolerance formats conform to ASME Y14.4M-1994.
3. The terminal #1 identifier and terminal numbering conform to JESD 95-1 SPP-012.

Package Marking



Line 1: Pin 1 Indicator
Line 2: Shortened part number
Line 3: 4-digit Trace code

PCB Mounting Pattern

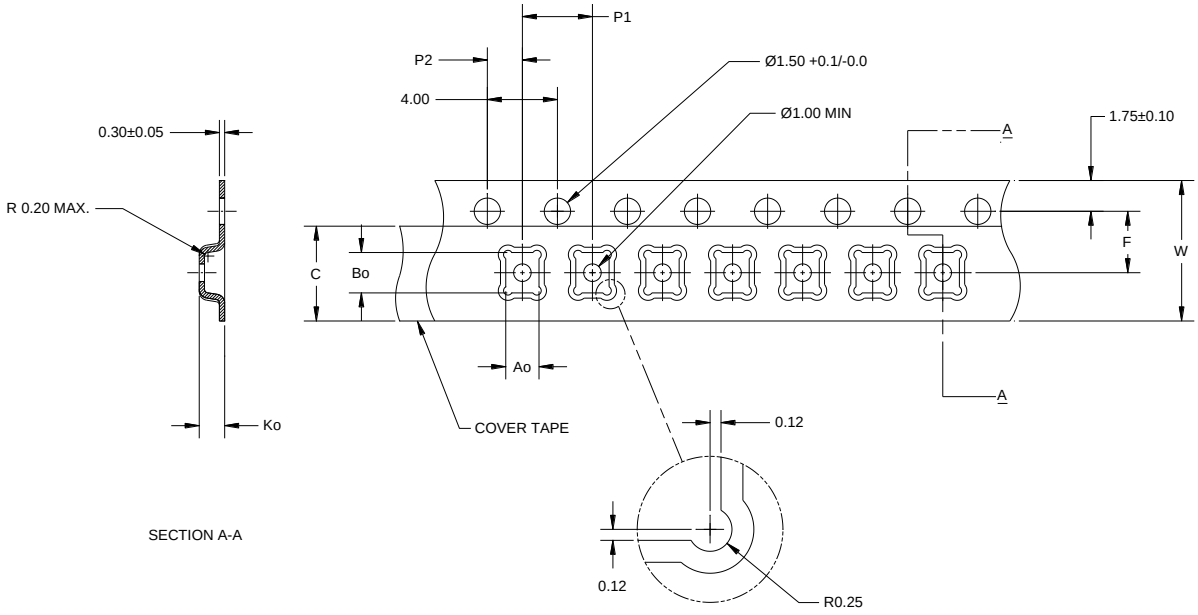


Notes:

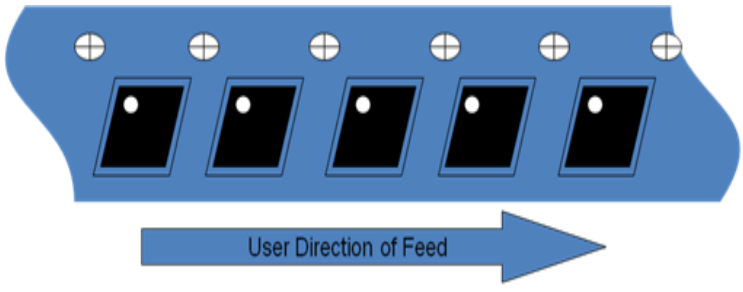
1. All dimensions are in millimeters. Angles are in degrees.
2. This drawing specifies the mounting pattern used on the Qorvo evaluation board for this product. Some modification may be necessary to suit end user assembly materials and processes.

Tape and Reel Information – Carrier and Cover Tape Dimensions

Tape and reel specifications for this part are also available on the Qorvo website.
Standard T/R size = 2500 pieces on a 7” reel.

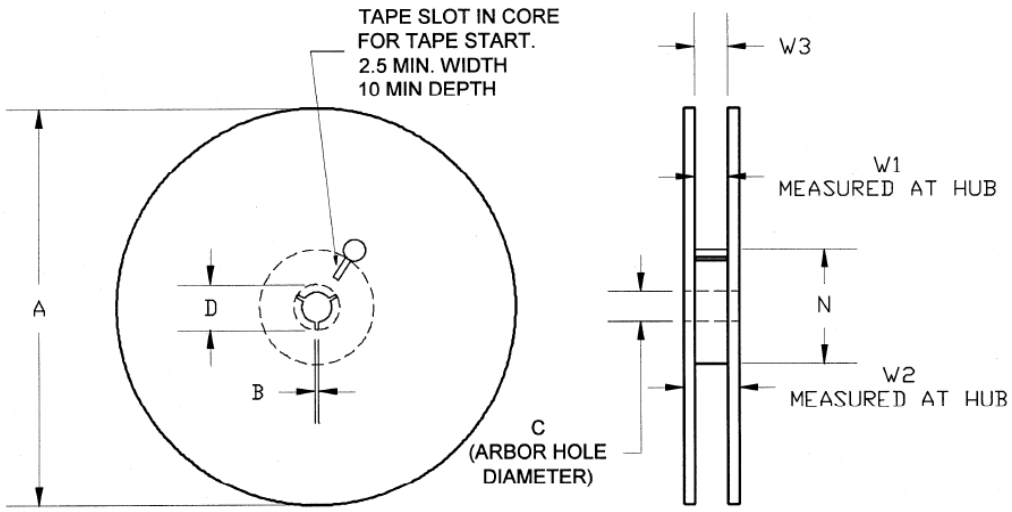


Feature	Measure	Symbol	Size (in)	Size (mm)
Cavity	Length	A0	0.092	2.34
	Width	B0	0.112	2.85
	Depth	K0	0.043	1.10
	Pitch	P1	0.157	4.00
Centerline Distance	Cavity to Perforation - Length Direction	P2	0.079	2.00
	Cavity to Perforation - Width Direction	F	0.138	3.50
Cover Tape	Width	C	0.213	5.40
Carrier Tape	Width	W	0.315	8.00



Tape and Reel Information – Reel Dimensions

Tape and reel specifications for this part are also available on the Qorvo website.
Standard T/R size = 2500 pieces on a 7” reel.



Feature	Measure	Symbol	Size (in)	Size (mm)
Flange	Diameter	A	6.969	177.0
	Thickness	W2	0.559	14.2
	Space Between Flange	W1	0.346	8.8
Hub	Outer Diameter	N	2.283	58.0
	Arbor Hole Diameter	C	0.512	13.0
	Key Slit Width	B	0.079	2.0
	Key Slit Diameter	D	0.787	20.0

Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	Class 1A	ESDA / JEDEC JS-001-2012
ESD – Charged Device Model (CDM)	Class C3	ESDA / JEDEC JS-002-2014
MSL – Moisture Sensitivity Level	Level 3	IPC/JEDEC J-STD-020

Caution!
ESD-Sensitive Device

Solderability

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.

Contact Plating: ENIG (Electroless Nickel Immersion Gold)

RoHS Compliance

This part is compliant with 2011/65/EU RoHS directive (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment) as amended by Directive 2015/863/EU.

This product also has the following attributes:

- Lead Free
- Halogen Free (Chlorine, Bromine)
- Antimony Free
- TBBP-A ($C_{15}H_{12}Br_4O_2$) Free
- PFOS Free
- SVHC Free

Contact Information

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

Web: www.qorvo.com **Tel: 1-844-890-8163**

Email: customer.support@qorvo.com

For technical questions and application information:

Email: appsupport@qorvo.com

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