



QPQ1280

100 MHz Band 41 BAW Filter

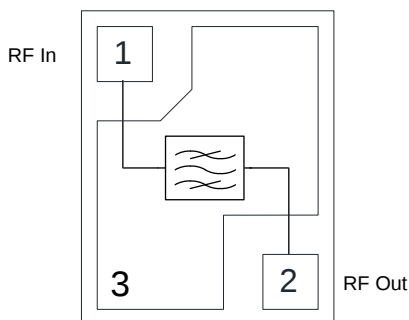
Product Overview

The QPQ1280 is an ultra-high performance Bulk Acoustic Wave (BAW) filter that provides 100 MHz bandwidth for uplink/downlink applications in Band 41. With low pass-band insertion loss and high out-of-band attenuation, the QPQ1280 is an ideal choice for TDD Macro Cells and Small Cells.

The QPQ1280 filter is fabricated using Qorvo's world class BAW technology and is housed in a compact, industry standard 2.0 mm x 1.6 mm x 0.73 mm package that is lead free and RoHS compliant.

The QPQ1280 is part of Qorvo's extensive portfolio of RF BAW and SAW filters.

Functional Block Diagram



Top View

Pin Configuration

Pin No.	Label
1	RF In
2	RF Out
3	GND



3 Pad, 2.0 mm x 1.6 mm x 0.73 mm SMT Package

Key Features

- 100 MHz Bandwidth – Band 41
- High Attenuation
- Low Insertion Loss
- Internally Matched to 50 Ohms
- Excellent Wi-Fi Rejection
- Single Input, Single Output Operation
- Small Size: 2.00 x 1.60 x 0.73 mm
- Surface Mount Device
- RoHS Compliant, Pb-Free

Applications

- Band 41
- Base Station Infrastructure
- Small Cells
- Repeaters
- Routers
- LTE Dongles
- General Purpose Wireless

Ordering Information

Part No.	Description
QPQ1280SB	5 filter modules (loose)
QPQ1280SR	100 pieces on a 7" reel
QPQ1280TR7	2,500 pieces on a 7" reel (standard)
QPQ1280PCB401	Evaluation Board

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to +125 °C
Operation Temperature	-40 to +95 °C
DC Voltage (at pin1 or pin 2)	+5 V

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability.

Life Test

Conditions ^(1,2)	Rating
+29 dBm, +95 °C	>93.7K Hrs
+29 dBm, +85 °C	>269.5K Hrs
+24 dBm, +95 °C	>1.1M Hrs

Notes:

1. Power is applied to Pin 1.
2. FD-LTE, 5 MHz, 16QAM, PAR=8.5 dB

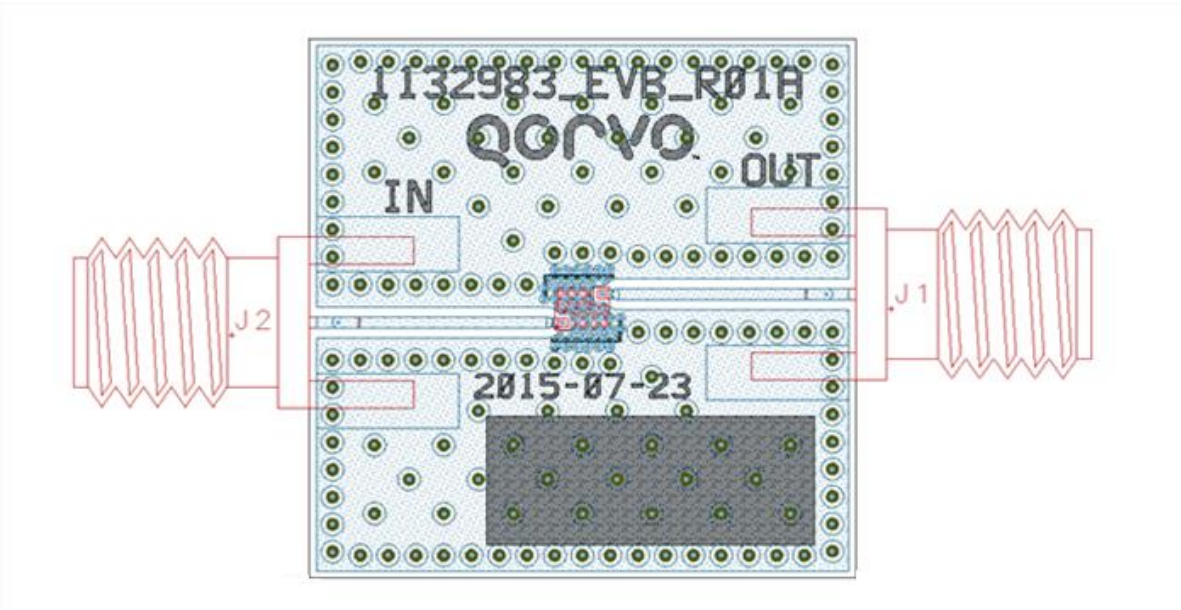
Electrical Specifications

Parameter	Conditions ^(1,2)	Min	Typ ⁽³⁾	Max	Unit
Passband		2555	-	2655	MHz
Insertion Loss	2555 – 2655 MHz	Temp.=+25 °C	-	2.6	dB
		Temp.=−40 °C to +95 °C	-	3.0	
Amplitude Variation ⁽⁴⁾	2555 – 2655 MHz	Temp.=+25 °C	-	0.8	dB
		Temp.=−40 °C to +95 °C	-	0.7	
Attenuation ⁽⁵⁾	10 – 700 MHz	41	46	-	dB
	701 – 900 MHz	27	32	-	
	901 – 1564 MHz	22	27	-	
	1565 – 1615 MHz (GPS)	35	40	-	
	1616 – 1709 MHz	35	41	-	
	1710 – 1880 MHz (B3)	26	31	-	
	1920 – 2170 MHz (B1)	20	24	-	
	2300 – 2330 MHz	35	40	-	
	2400 – 2483 MHz	45	50	-	
	2720 – 3000 MHz	15	20	-	
	3000 – 3800 MHz	30	35	-	
	3800 – 4700 MHz	16	25	-	
	4700 – 5500 MHz	33	38	-	
	5500 – 6300 MHz	23	28	-	
	6300 – 7500 MHz	25	30	-	
	7500 – 8000 MHz	10	27	-	
Input / Output VSWR			1.43:1	1.92:1	
Input / Output Return Loss		10	15	-	dB
Group delay Variation			21	40	nS
PIM	IIP3		+60		dBm
2nd Harmonic	Pin = +29 dBm		55		dBc
3rd Harmonic	Pin = +29 dBm		90		dBc

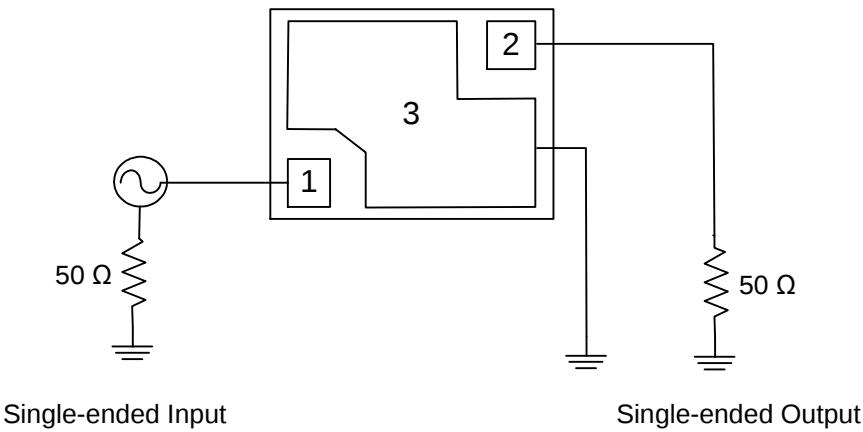
Notes:

1. Temperature Range for specified performance: -40 °C to +95 °C unless otherwise specified.
2. All specifications are based on the QORVO schematic for the main reference design shown on page 3.
3. Typical values are an average of 20 pieces measured at a temperature of +25 °C.
4. Amplitude Variation is defined as the worst difference between a peak and adjacent valley within defined frequency points
5. Attenuation is referenced to ZERO dB

Evaluation Board and Schematic - QPQ1280-PCB



- Notes:
1. Top, middle & bottom layers: 1/2 oz copper, Substrates: FR4 dielectric, .062" thick, Finish plating: Nickel: 3-8 μm thick, Gold: .03-.2 μm thick, Hole plating: Copper min .0008 μm thick.

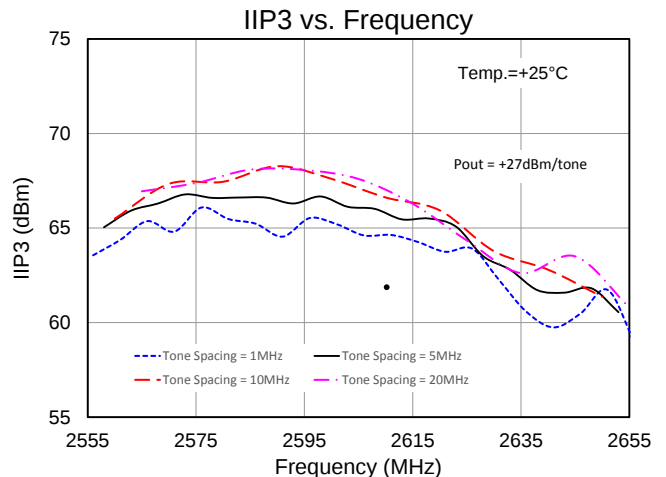
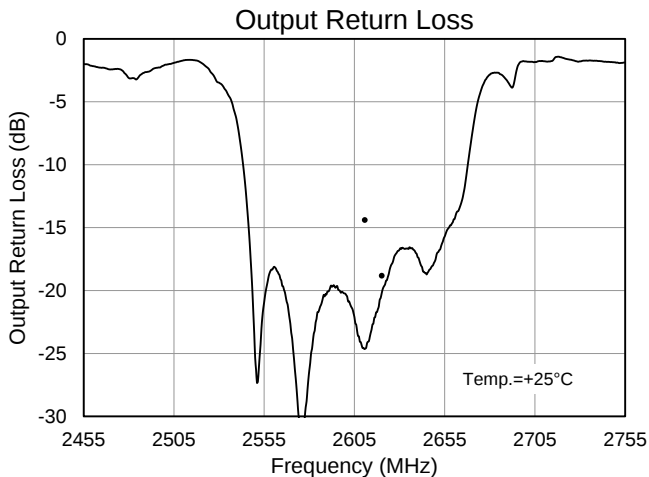
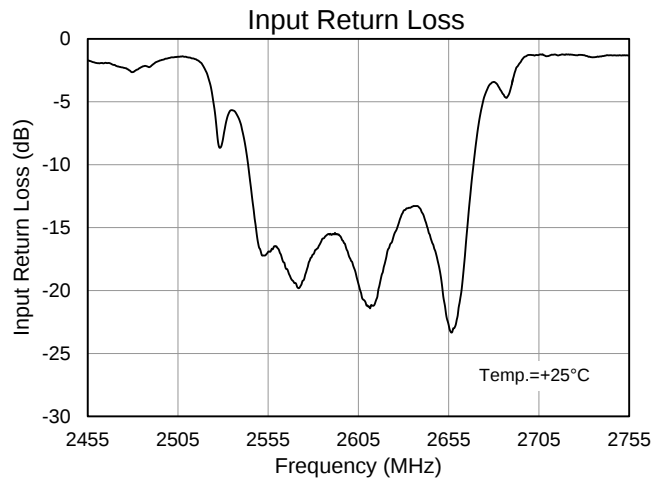
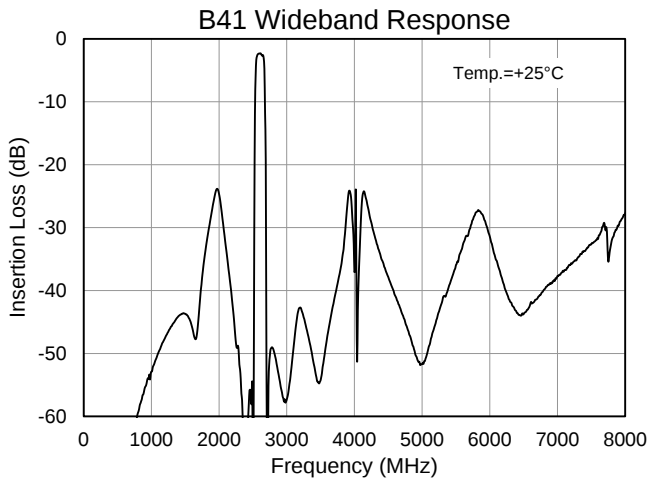
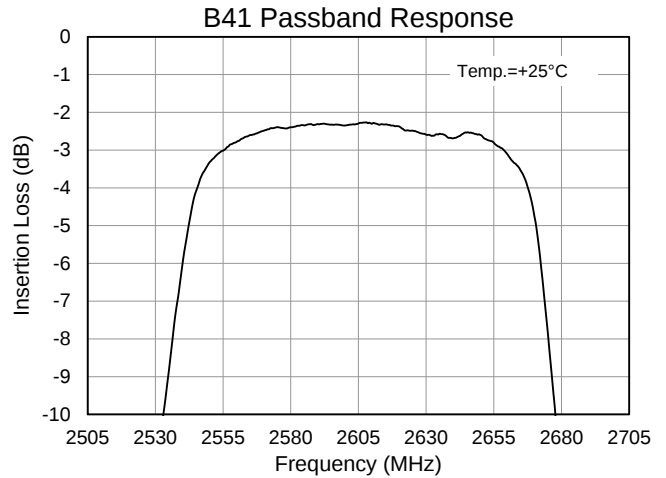
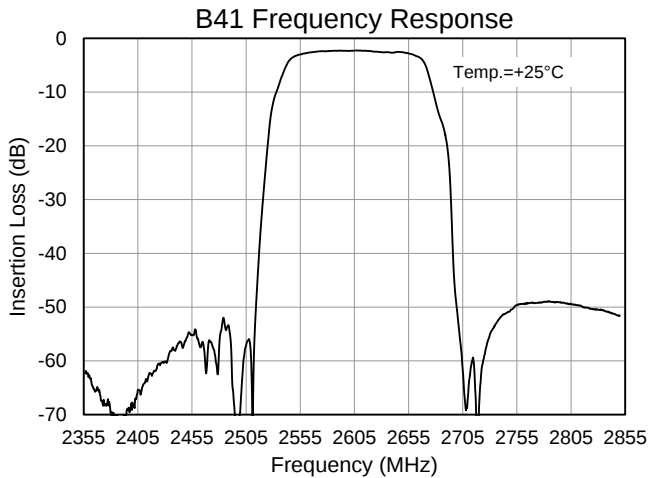


Bill of Material – QPQ1280-PCB

Ref. Des.	Value	Description	Manufacturer	Part Number
U1	N/A	Band 41 BAW Filter	Qorvo	QPQ1280
N/A	N/A	Printed Circuit Board	Qorvo	1132983
N/A	N/A	SMA Edge Connector	Radial	9602-1111-018

Performance Plots – QPQ1280-PCB

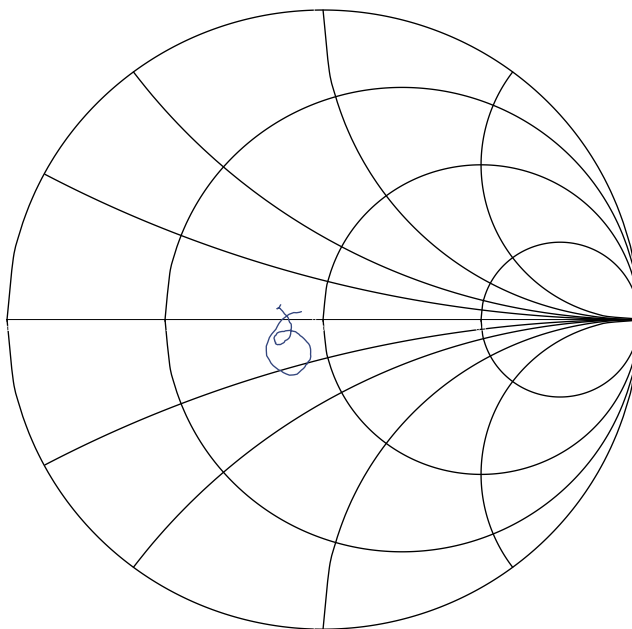
Test conditions unless otherwise noted: Temp. = +25 °C



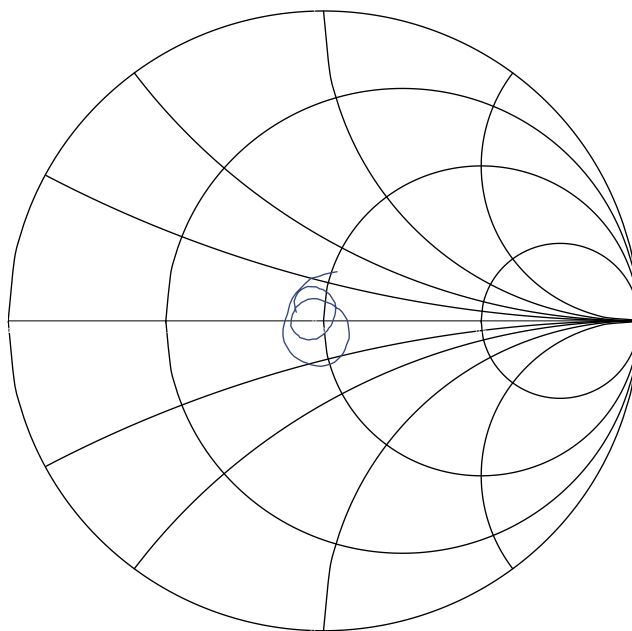
Performance Plots – QPQ1280-PCB

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

Input VSWR



Output VSWR

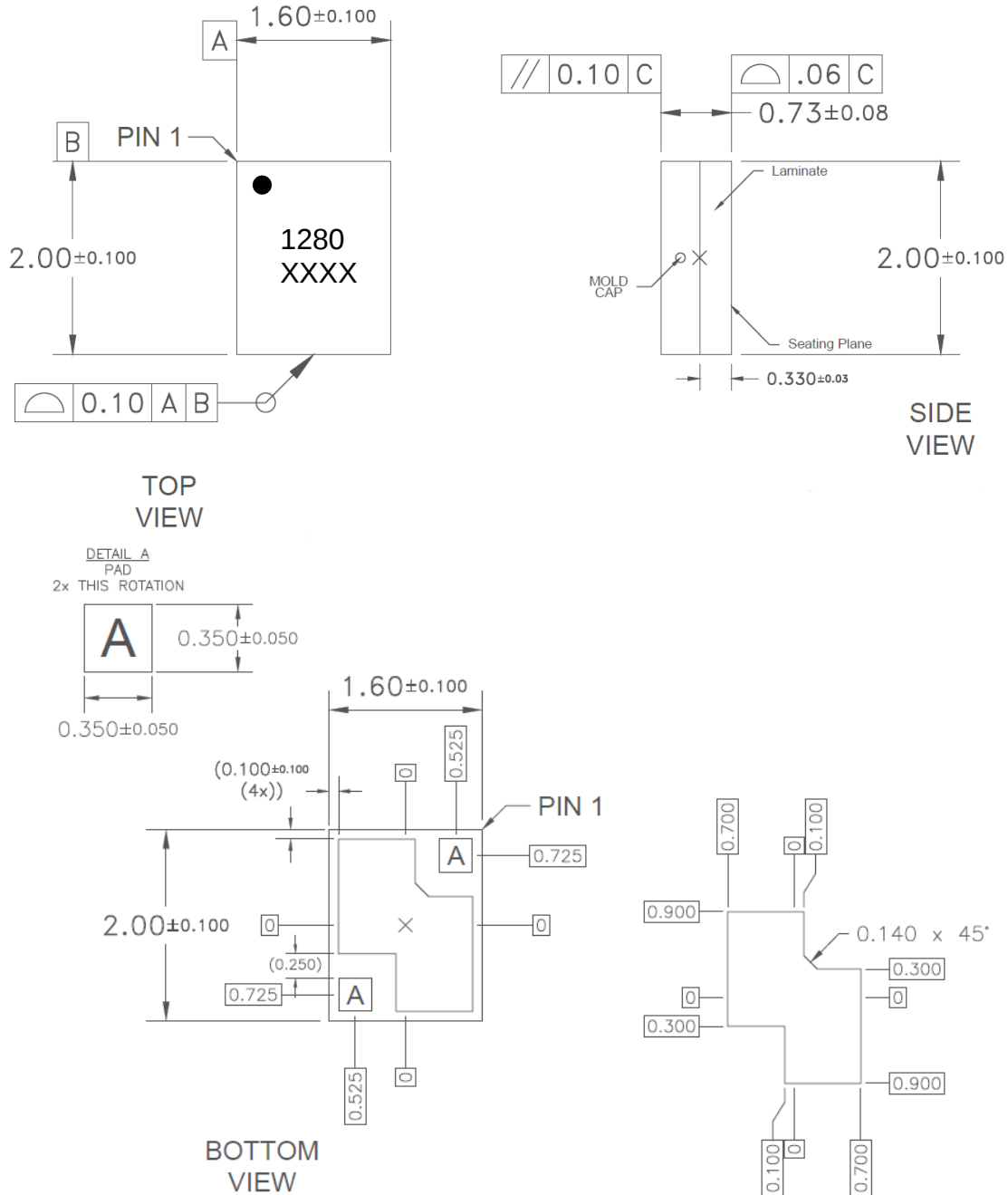


Package Marking and Dimensions

Marking

Product Identifier: 1280

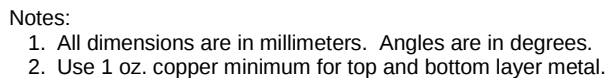
Assembly Code: XXXX



Notes:

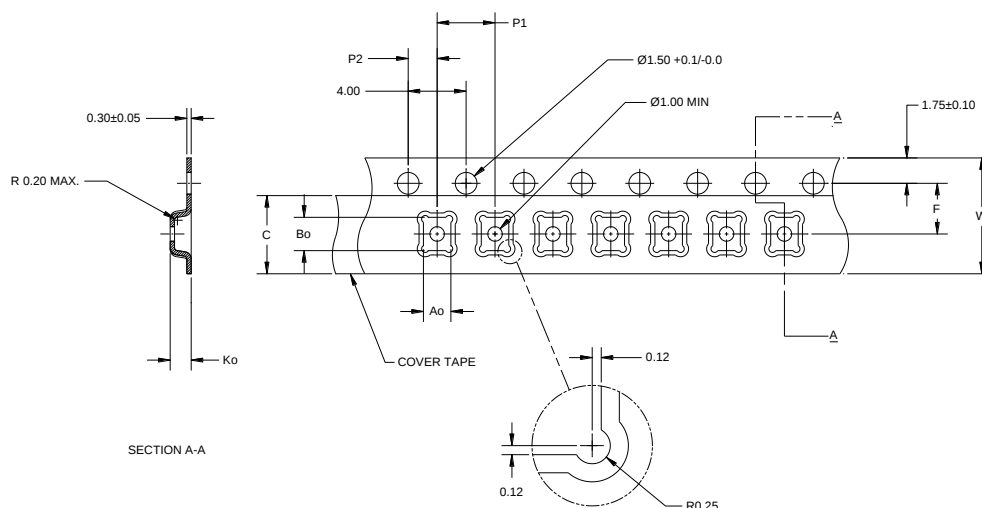
1. All dimensions are in millimeters. Angles are in degrees.
2. Dimension and tolerance formats conform to ASME Y14.4M-1994.
3. The terminal #1 identifier and terminal numbering conform to JESD 95-1 SPP-012.

Standard T/R size = 2500 units/ 7" reel. All dimensions are in millimeters

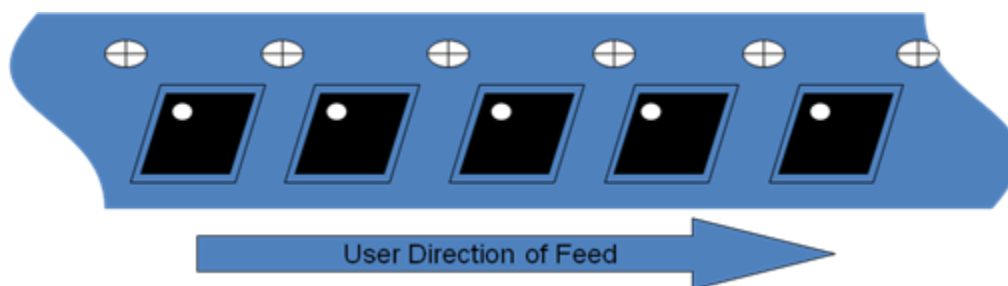


Tape and Reel Information – Carrier and Cover Tape Dimensions

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

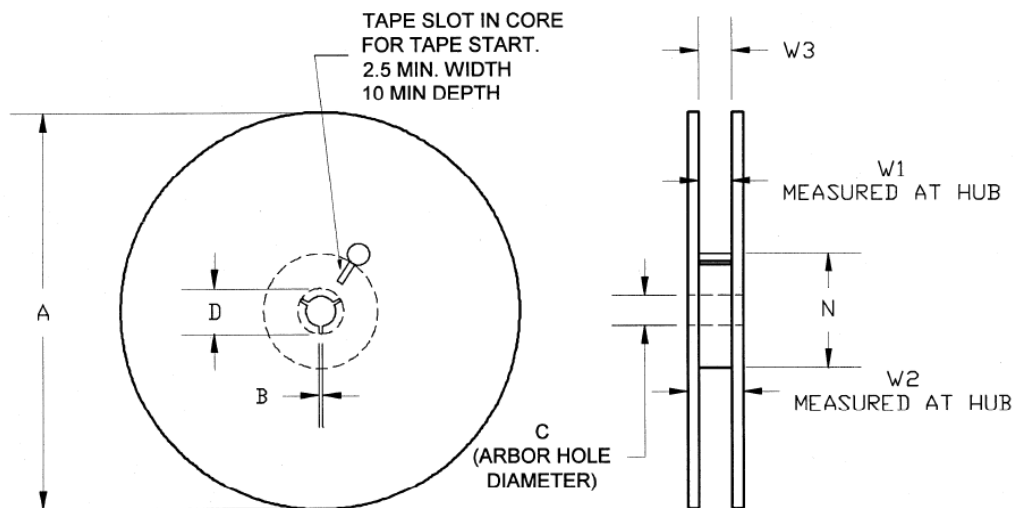


Feature	Measure	Symbol	Size (in)	Size (mm)
Cavity	Length	A0	0.077	1.95
	Width	B0	0.093	2.35
	Depth	K0	0.045	1.15
	Pitch	P1	0.157	4.00
Centerline Distance	Cavity to Perforation - Length Direction	P2	0.079	2.00
	Cavity to Perforation - Width Direction	F	0.138	3.50
Cover Tape	Width	C	0.213	5.40
Carrier 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 1C	ANSI / ESD / JEDEC JS-001
ESD – Charged Device Model (CDM)	Class C3	ANSI / ESD / JEDEC JS-002
MSL – Moisture Sensitivity Level	Level 3	IPC/JEDEC J-STD-020



Caution!
ESD-Sensitive Device

Solderability

Compatible with lead-free (260°C max. reflow temp.) soldering process.

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 (C₁₅H₁₂Br₄O₂) Free
- PFOS Free
- SVHC Free



Contact Information

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

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Email: customer.support@qorvo.com

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

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