QPQ1296

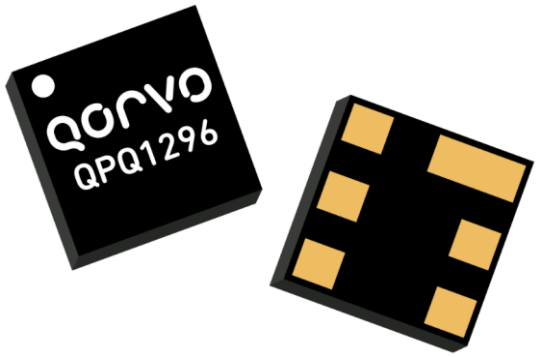
Band 25 Uplink BAW Filter

Product Overview

The QPQ1296 is an exceptionally high performance BAW filter for Band 25 Uplink. This filter is housed in a compact 3.00 x 3.00 x 0.91 mm package for base station applications.

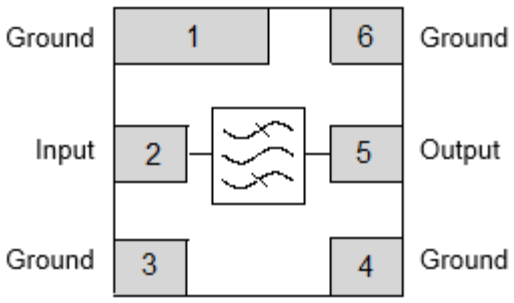
Low insertion loss, coupled with high attenuation makes this filter an ideal choice for RF filtering needs.

The QPQ1296 is part of Qorvo's extensive portfolio of RF BAW and SAW filters.



6 Pad 3.00 mm x 3.00 mm x 0.91 mm SMP

Functional Block Diagram



Top View

Key Features

- 65 MHz Bandwidth
- High Attenuation
- Low Loss
- Single-ended Operation
- Small Size: 3.00 x 3.00 x 0.91 mm
- Surface Mount Device
- RoHS Compliant, Pb-Free

Applications

- Band 25 UL
- Small Cell
- Base Station Infrastructure
- General Purpose Wireless

Pin Configuration - Single Ended

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

Ordering Information

Part No.	Description
QPQ1296SR	Sample Reel with 100 pieces
QPQ1296TR7	7" Taped Reel with 2500 pieces
QPQ1296EVB	Assembled Evaluation Board

Absolute Maximum Ratings (1)

Parameter	Rating
Storage Temperature	−40 to +125°C
Operating Temperature	0 to +70 °C
RF in (2)	+37 dBm

Notes:
1. Operation of this device outside the parameter ranges given may cause permanent damage.
2. 500ms Pulse Width, 5% Duty Cycle Pulses

Minimum Lifetime Ratings

Conditions	Rating
+27 dBm In-band at Input, +70°C, CW	>1,000,000 hours
+28 dBm In-band at Input, +55°C, CW	>800,000 hours

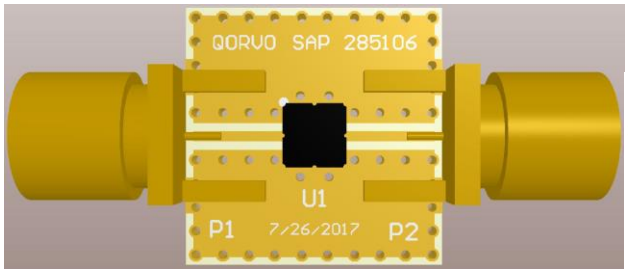
Electrical Specifications (1)

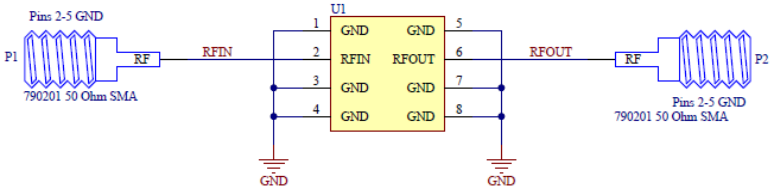
Test conditions unless otherwise specified. Temperature Range: 0 to +70 °C

Parameter	Conditions (1, 2)	Min	Typ	Max	Unit
Insertion Loss (2)	1850 – 1913 MHz	-	2.0	3.5	dB
	1913 – 1915 MHz	-	2.7	7.0	dB
Input VSWR	1850 – 1915 MHz	-	1.7:1	2.0	-
Output VSWR	1850 – 1913 MHz	-	1.7:1	2.3	-
	1913 – 1915 MHz	-	1.8:1	2.75	-
Attenuation (4)	1922.5 – 1930 MHz at +25°C	17	37	-	dB
	1930 – 1995 MHz	35	38	-	dB
	2110 – 2155 MHz	35	40	-	dB
	2155 – 2800 MHz	30	34	-	dB
	2800 – 3000 MHz	27	33	-	dB
	3000 – 6000 MHz	15	21	-	dB

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 – QPQ1296EVB

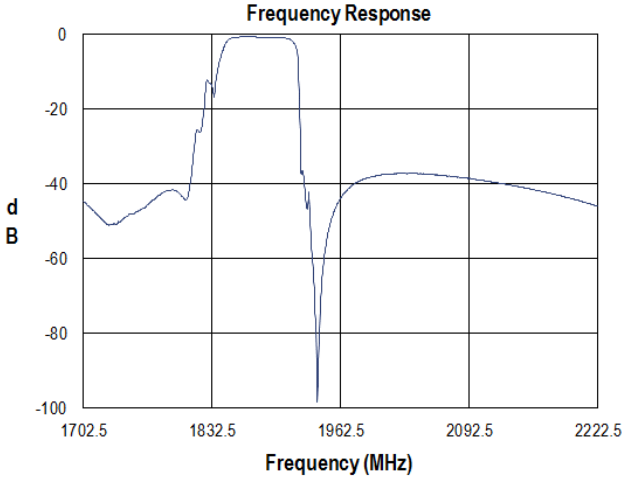




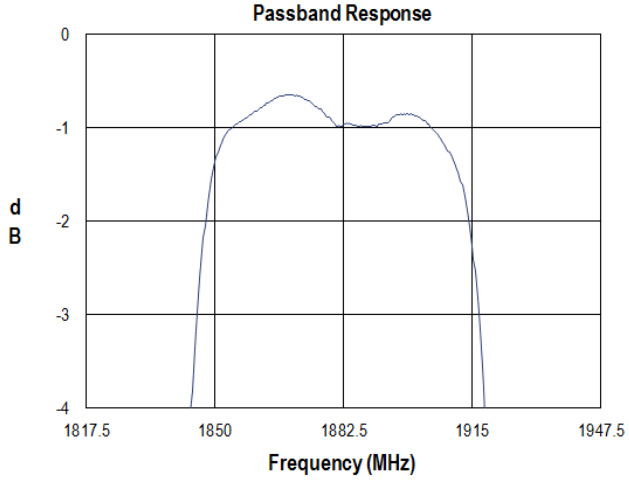
Performance Plots

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

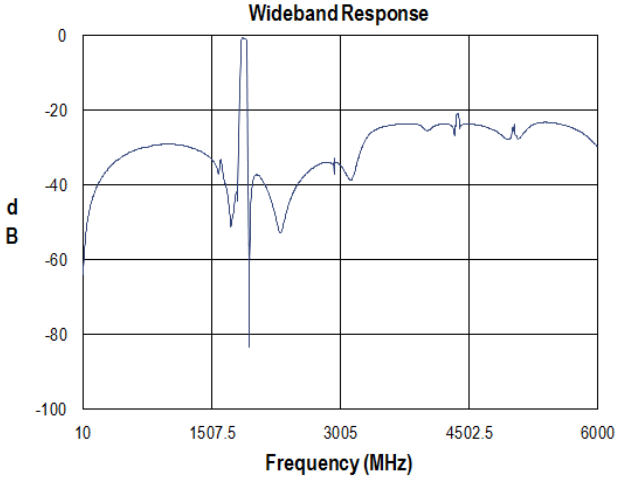
Frequency Response



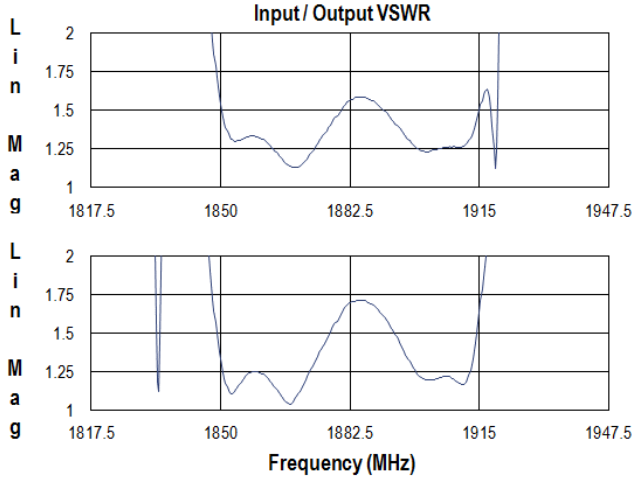
Passband Response



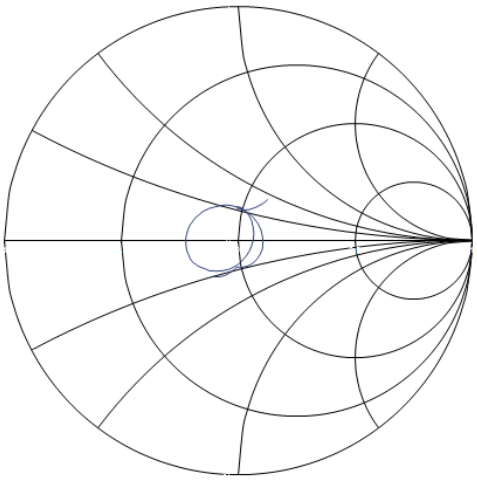
Wideband Response



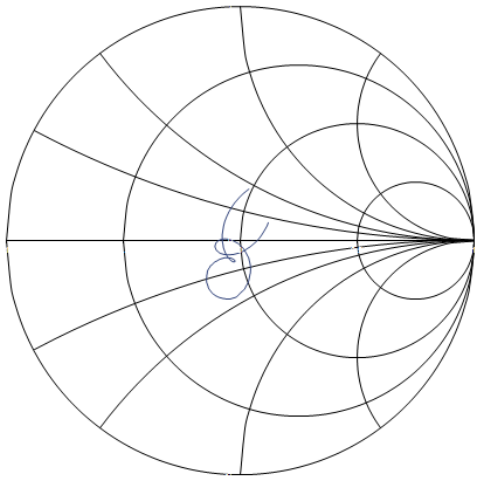
Input / Output VSWR



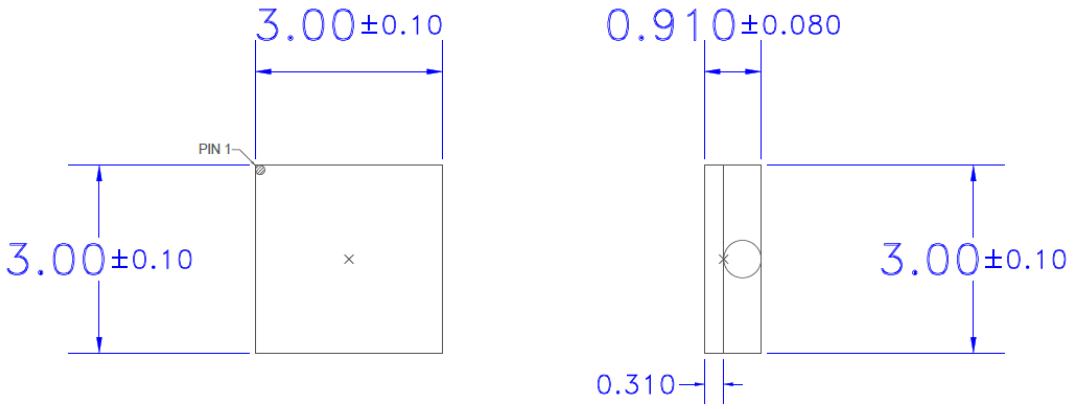
Input Smith Chart



Output Smith Chart

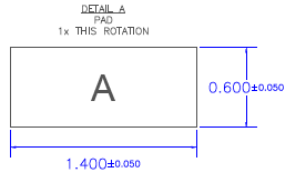


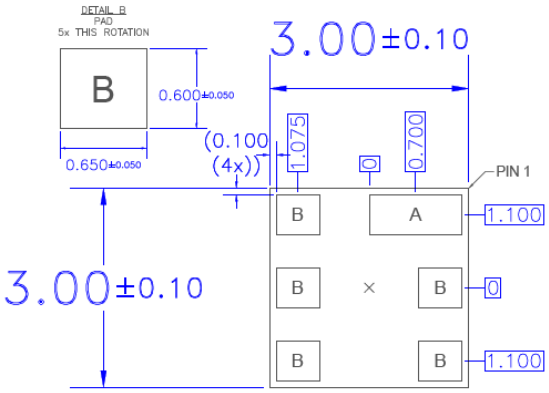
Package Dimensions

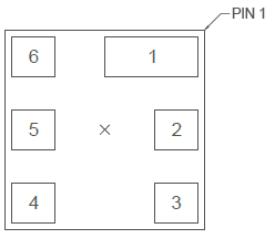


TOP VIEW

SIDE VIEW





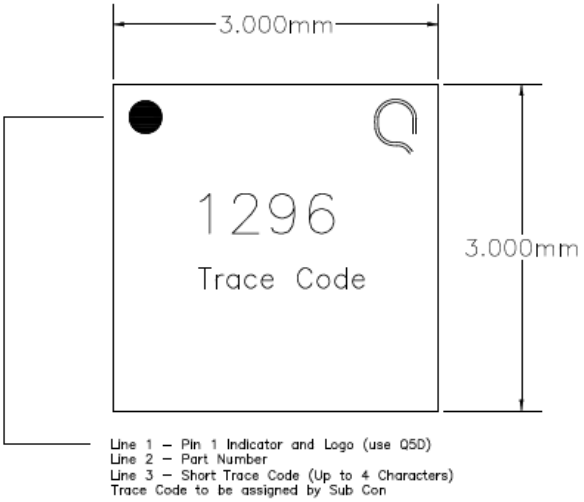


BOTTOM VIEW

BOTTOM PINS VIEW

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



PCB Mounting Pattern

RECOMMENDED
LAND PATTERN

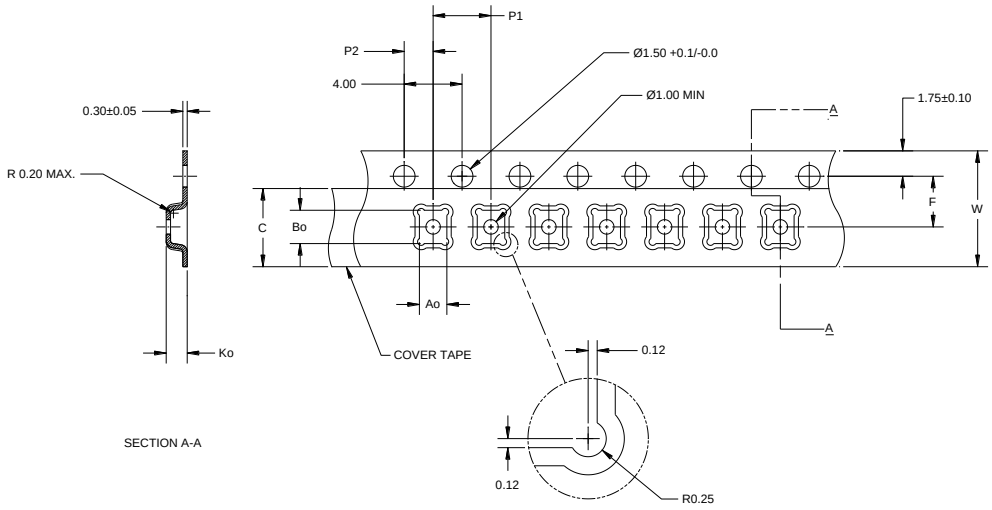
RECOMMENDED
LAND PATTERN MASK

Notes:

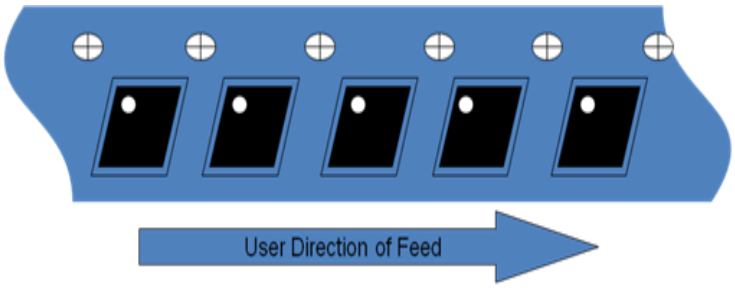
1. All dimensions are in millimeters. Angles are in degrees.
2. This drawing specifies the mounting pattern used on the Qorvo evaluation board for this product. Some modification may be necessary to suit end user assembly materials and processes.

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.

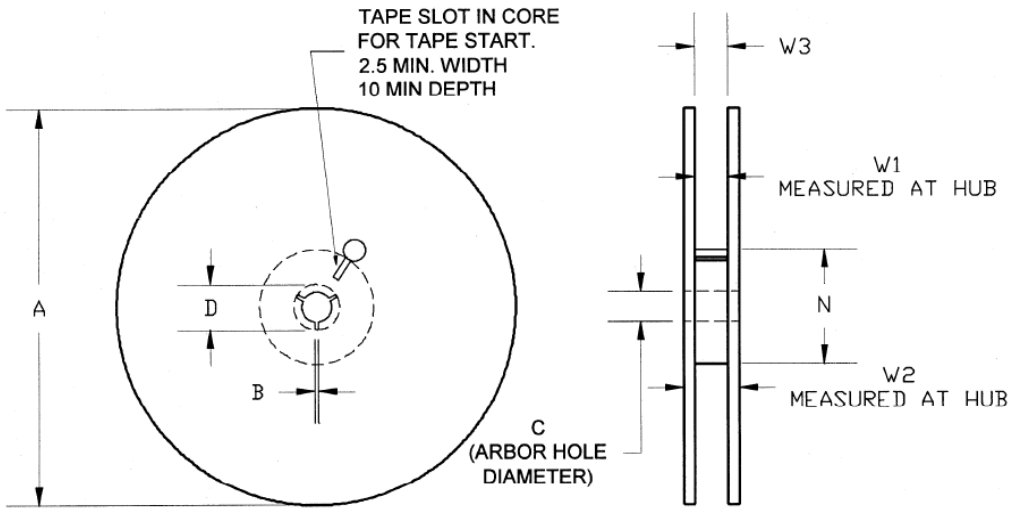


Feature	Measure	Symbol	Size (in)	Size (mm)
Cavity	Length	A0	0.132	3.35
	Width	B0	0.132	3.35
	Depth	K0	0.051	1.30
	Pitch	P1	0.157	4.00
Centerline Distance	Cavity to Perforation - Length Direction	P2	0.079	2.00
	Cavity to Perforation - Width Direction	F	0.138	3.50
Cover Tape	Width	C	0.213	5.40
Carrier 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	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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Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru

www.lifeelectronics.ru