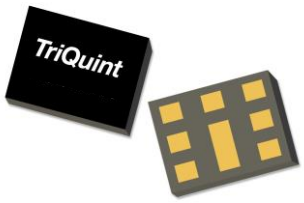
QPQ1290
Band 41 Tx / Rx Filter

Applications

- For Full Band 41 TD-LTE Tx / Rx



8-Pin 1.8 x 1.4 mm Package

Product Features

- Highly Selective BAW Filter Achieving Low Insertion Loss Over Full Bandwidth and Operating Conditions
- Excellent Wi-Fi Rejection
- Performance −20 to +85 °C
- RoHS Compliant, Pb-free Module Package

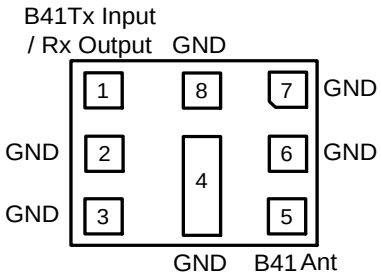
General Description

The QPQ1290 is a high-performance Bulk Acoustic Wave (BAW) Tx / Rx filter designed to meet the strict LTE rejection requirements for use in B41.

QPQ1290 is specifically designed to meet the high performance expectations of insertion loss and rejection for LTE transmit systems under all operating conditions.

The QPQ1290 uses common module packaging techniques to achieve the industry standard 1.8 x 1.4 x 0.73 mm footprint.

Functional Block Diagram



Top View

Pin Configuration

Pin No.	Label
1	B41 Tx Input / Rx Output
5	B41 Ant
2, 3, 4, 6, 7, 8	Ground*

*Note, see application section for details on optimal grounding

Ordering Information

Part No.	Description
QPQ1290	Packaged Part
QPQ1290-EVB	Evaluation board

Standard T/R size = 2500 pieces per reel

© 2015 TriQuint Semiconductor, Inc
Disclaimer: Subject to change without notice
www.triquint.com / www.qorvo.com

Absolute Maximum Ratings

Parameter	Rating
Operating Temperature	−20 to +85 °C
Storage Temperature	−40 to +85 °C
Input Power (In Pass-band, CW signal, pin1)	+29 dBm

Operation of this device outside the parameter ranges given above may cause permanent damage.

Recommended Operating Conditions

Parameter	Min	Typ	Max	Units
T_{CASE}	-20		+85	°C

Electrical specifications are measured at specified test conditions.

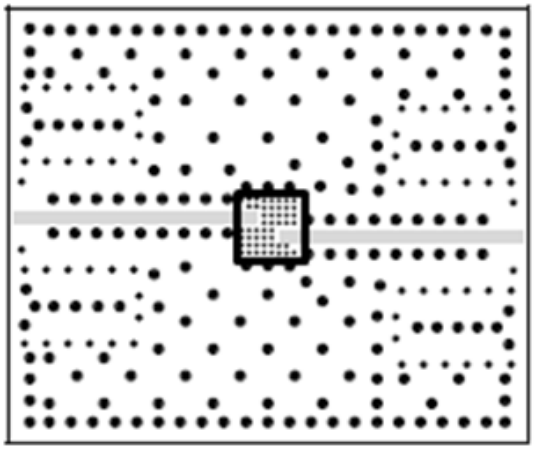
Electrical Specifications − Band 41 (1)

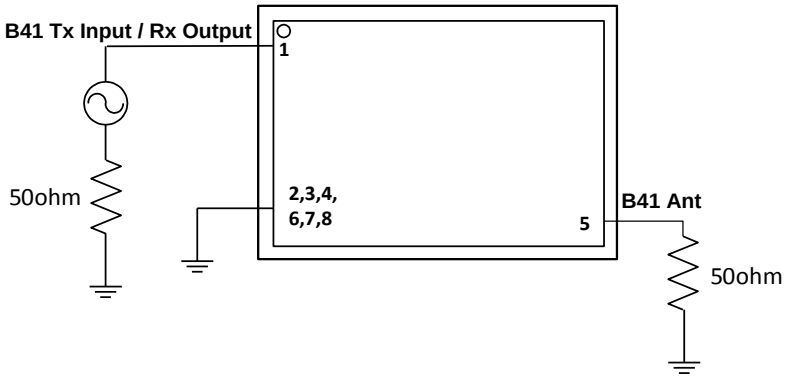
Parameter	Conditions	−20 °C to +85 °C Min	Typ (2)	Max	Units
Insertion Loss	2496 – 2500 MHz	-	3.1	3.9	dB
	2500 – 2686 MHz	-	2.7	3.3	dB
	2686 – 2690 MHz	-	2.2	3.1	dB
Passband Ripple(3)	2496 – 2690 MHz	-	1.1	2.2	dB
VSWR In	2496 – 2690 MHz	-	1.7	-	-
	2500-2550 MHz	-	1.7	2.1	-
	2590-2690 MHz	-	1.6	2.1	-
Return Loss(4)	2515-2520 MHz	-	14	-	dB
VSWR Out	2515-2520 MHz	-	1.7	-	-
	2496 – 2690 MHz	-	1.5	2.3	-
	2500-2550 MHz	-	1.7	2.3	-
Attenuation	10 - 1564 MHz	45	50	-	dB
	1565 - 1615 MHz	36	46	-	dB
	1616-2400 MHz	5	6	-	dB
	2401 – 2453(5) MHz	40	44	-	dB
	2436 – 2468(5) MHz	42	51	-	dB
	2451 – 2473(5) MHz	38	47	-	dB
	2456-2478(5) MHz	21	41	-	dB
	2461- 2483(5) MHz	10	24	-	dB
	2775-4991(6) MHz	12	15	-	dB
	4992 - 5380 MHz	27	32	-	dB
	5381 - 7487 MHz	21	23	-	dB
	7488 – 8000 MHz	16	22	-	dB

Notes:
1. All specifications are based on the Qorvo schematic for the main reference design shown on page 3
2. Typical values are values of a nominal part at +25 °C.
3. Measured as Amplitude Variation.
4. Return Loss (2515-2520) MHz to catch 180° rotated parts.
5. Averaging |S21| over the center 19 MHz of the channels and converting to dB value.
6. Measured as Attenuation rejection 2775-3000 MHz.

© 2015 TriQuint Semiconductor, Inc
Disclaimer: Subject to change without notice
www.triquint.com / www.qorvo.com

Reference Design – TX / RX 50 Ohms SE / Ant 50 Ohms SE





Notes:

1. Top, middle & bottom layers: 35 µm Cu finished thickness plated up to 25 µm Substrates: Isola FR-408HR
   Finish plating: Silver
   Hole plating: Via fill
2. Grey indicates metalized area
3. This footprint represents a recommendation only
4. For solder pad recommendation see mechanical information
5. Pin 1 is in the same corner as the ID dot (see page 4 Marking).

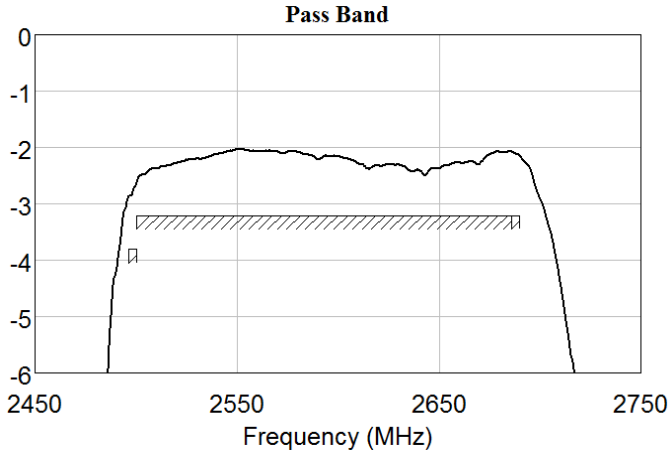
Bill of Material – QPQ1290-PCB

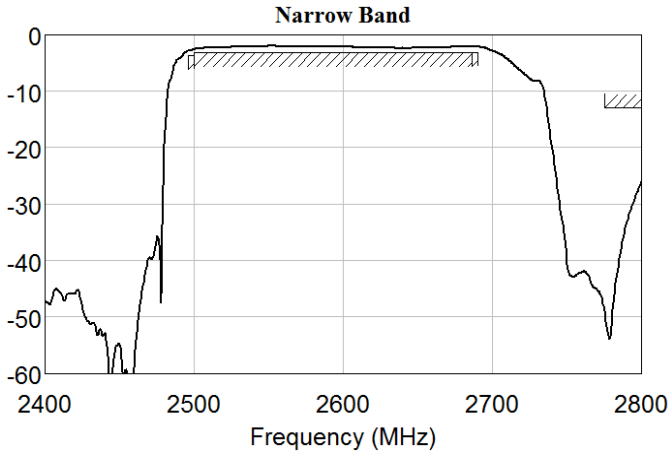
Reference Des.	Value	Description	Manuf.	Part Number
PCB	N/A	3-layer	multiple	QPQ1290_EVB_R03B

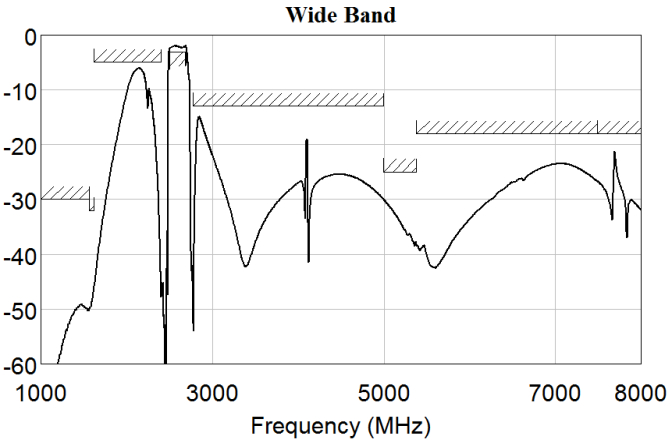
© 2015 TriQuint Semiconductor, Inc
Disclaimer: Subject to change without notice
www.triquint.com / www.qorvo.com

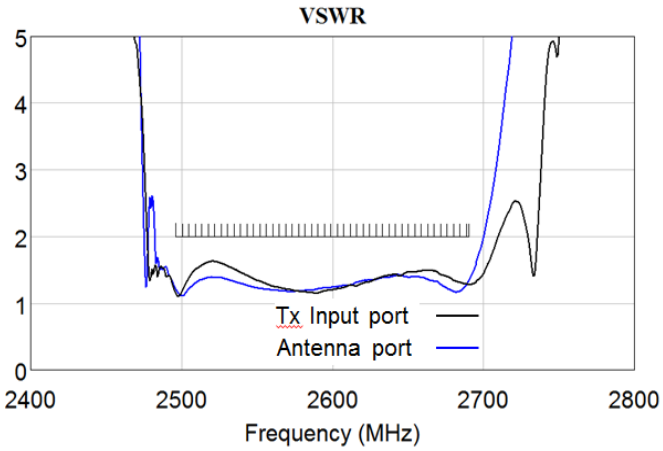
Performance Plots – Band 41

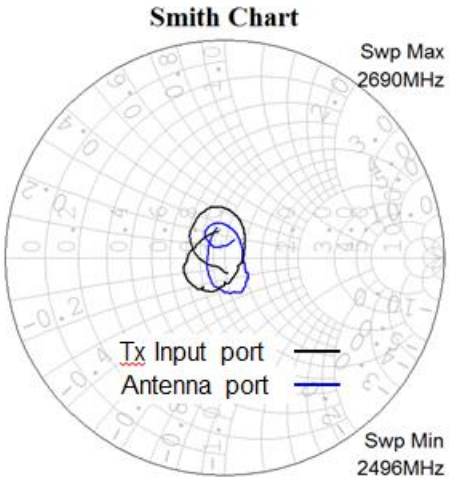
Test conditions unless otherwise noted: Temp= +25°C

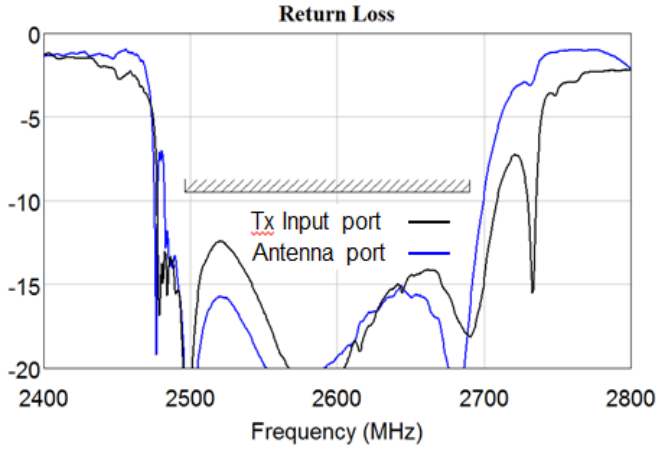








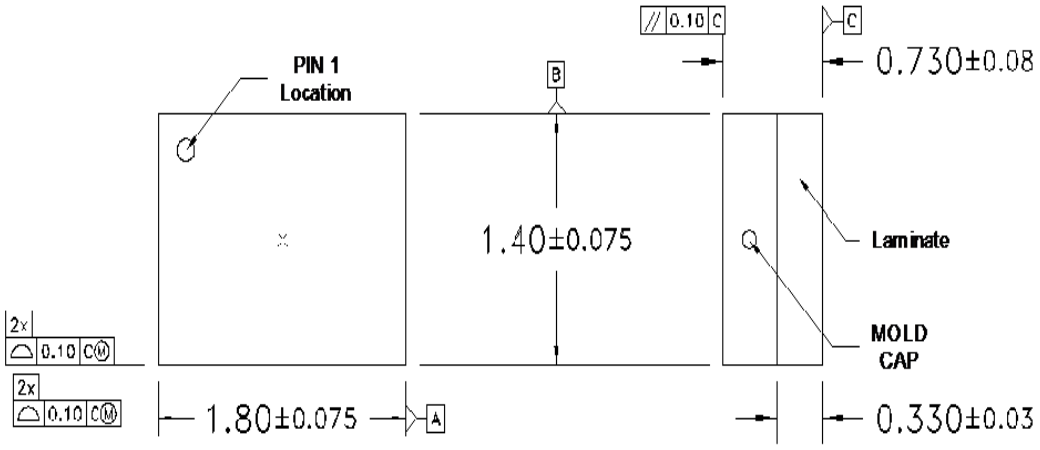




Disclaimer: Subject to change without notice
© 2015 TriQuint Semiconductor, Inc
www.triquint.com / www.qorvo.com

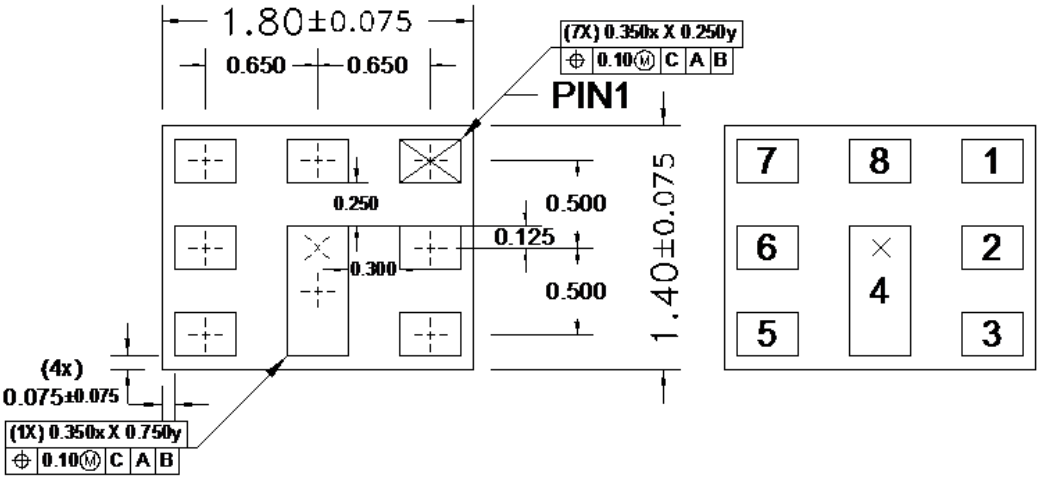
Mechanical Information

Package Marking and Dimensions



Top View

Side View



Bottom View

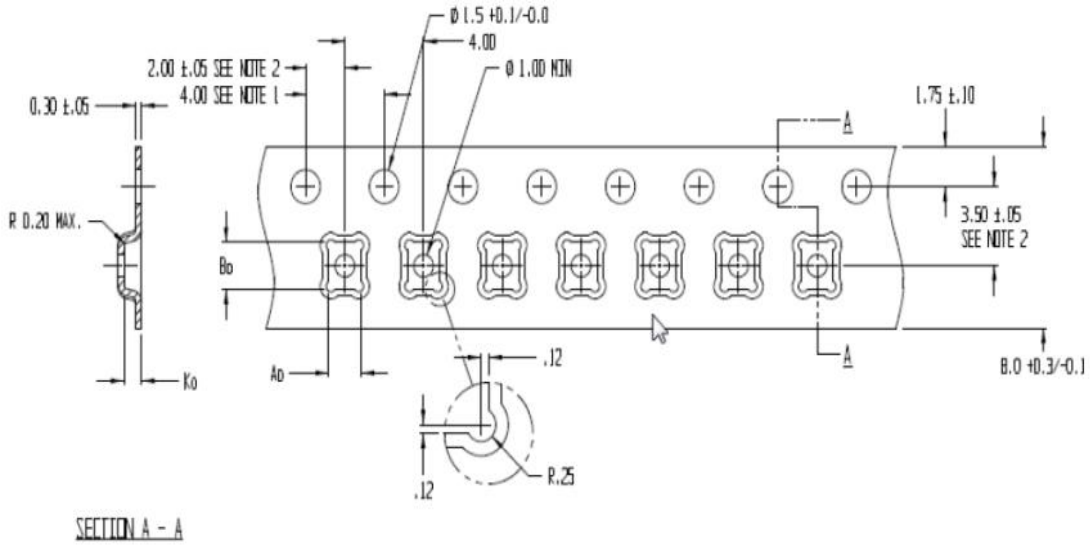
Bottom Pins View

Notes:
1. Package Style: Laminate Overmold Module
2. Dimensions: 1.8 x 1.4 x 0.73 mm
3. All dimensions shown are nominal in millimeters

Disclaimer: Subject to change without notice
© 2015 TriQuint Semiconductor, Inc
www.triquint.com / www.qorvo.com

Tape and Reel Information

Tape and reel specifications for this part are also available on the TriQuint website.
Standard T/R size = 2,500 pieces per reel. All dimensions are in millimeters.



Feature	Measure	Symbol	Size (in)
Cavity	Length	A0	1.66
	Width	B0	2.06
	Depth	K0	0.90
	Pitch	P1	4.0
Centerline Distance	Cavity to Perforation - Length Direction	P2	2.00
	Cavity to Perforation - Width Direction	F	3.50
Cover Tape	Width	C	8.0
Carrier Tape	Width	W	5.4

© 2015 TriQuint Semiconductor, Inc