



TQQ7307

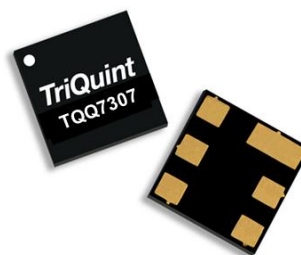
2535 MHz LTE Band 7 Uplink BAW Filter

Product Overview

The TQQ7307 is a general-purpose uplink BAW filter for LTE Band 73. This filter is housed in a compact 3 x 3 x 1.02 mm package for base station applications.

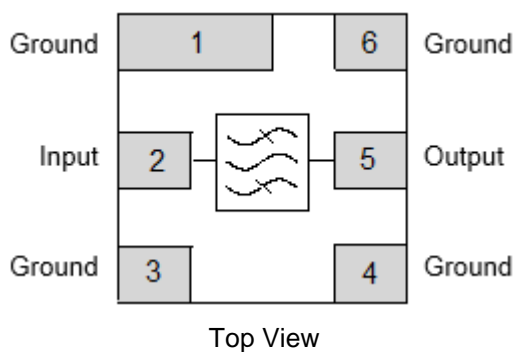
Low insertion loss, coupled with high attenuation makes this filter an ideal choice for uplink RF filtering needs.

The TQQ7307 is part of Qorvo's extensive portfolio of RF Baw and SAW filters.



6 Pin 3 x 3 mm leadless SMT Package

Functional Block Diagram



Pin Configuration - Single Ended

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

Key Features

- 70 MHz Bandwidth
- High Attenuation
- Low Loss
- Single-ended Operation
- Small Size: 3.00 x 3.00 x 1.02 mm
- Surface Mount Device
- RoHS Compliant, Pb-Free

Performance is typical across frequency. Please reference electrical specification table and data plots for more details.

Applications

- LTE Band 7 Uplink Infrastructure
- Base Station Infrastructure
- General Purpose Wireless

Ordering Information

Part No.	Description
TQQ7307	2535 LTE Band 7 UL BAW Filter
TQQ7307-EVB	Evaluation Board

Standard T/R size = 2500 pieces on a 13" reel

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40 to +95°C
RF Input Power (CW, +55°C for 10,000 hours)	+30 dBm

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.

Recommended Operating Conditions

Parameter	Min	Typ.	Max	Units
T _{CASE}	-40		+85	°C

Electrical specifications are measured at specified test conditions.

Electrical Specifications ^(1,2,3)

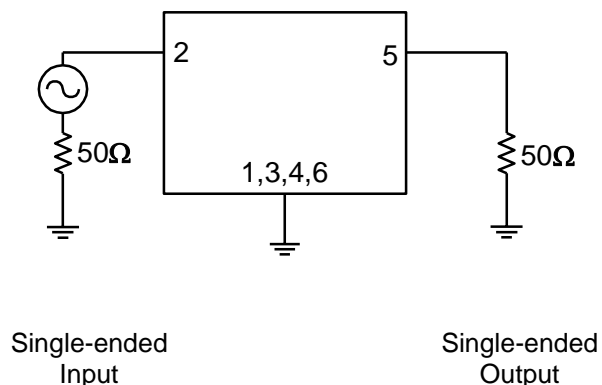
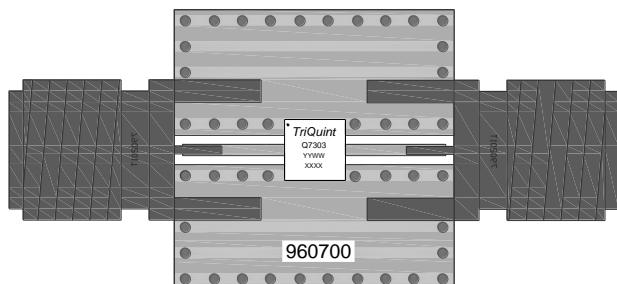
Test conditions unless otherwise noted: Temperature Range = +25 °C, 50 Ω system

Parameter	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Passband Frequency		2500	-	2570	MHz
Center Frequency		-	2535	-	MHz
3.5 dB Bandwidth		-	83	-	MHz
Maximum Insertion Loss	2500 - 2570 MHz	-	2.0	3.5	dB
Amplitude Variation ⁽⁵⁾	2500 - 2570 MHz	-	0.9	2.4	dB
Group Delay Variation ⁽⁶⁾	2500 - 2570 MHz	-	14	30	ns (p-p)
	Any 5 MHz band in passband	-	7	13	
Input VSWR	2500 - 2570 MHz	-	1.9:1	2.4:1	Ratio
Output VSWR	2500 - 2570 MHz	-	1.8:1	2.4:1	
Stopband Attenuation (Relative to 0 dB)	0.9 - 1100 MHz	36	40	-	dB
	1100 - 2170 MHz	30	34	-	
	2170 - 2260 MHz	38	45	-	
	2260 - 2450 MHz	32	39	-	
	2450 - 2480 MHz	12	20	-	
	2590 - 2620 MHz	8	12	-	
	2620 - 2690 MHz	40	48	-	
	2690 - 2900 MHz	40	47	-	
	2900 - 3800 MHz	30	37	-	
	3800 - 5000 MHz	13	17	-	
	5000 - 6000 MHz	-	4	-	
Source / Load Impedance ⁽⁷⁾	Single Ended	-	50	-	Ω

Notes:

- All specifications are based on the Qorvo schematics for the reference designs shown in page 3.
- In production, devices will be tested at room temperature to a guard banded specification to ensure electrical compliance over temperature.
- Electrical margin has been built into the design to account for the variations due to temperature drift and manufacture tolerances.
- Typical values are based on average measurements at room temperature on pcb. (25 °C ±5 °C)
- This is defined as the difference between the maximum and minimum insertion loss within the specified band.
- This is defined as the worst-case difference between a peak and adjacent valley within defined frequency points.
- Optimum impedance to achieve the performance shown.

Evaluation Board and Schematic – TQQ7307-EVB



Bill of Material – TQQ7307-EVB

Reference Des.	Value	Description	Manuf.	Part Number
U1	n/a	2535 MHz Band 7 Uplink BAW Filter	Qorvo	TQQ7307
n/a	n/a	Printed Circuit Board	Qorvo	960700
n/a	n/a	SMA Edge Connector	Radiall	9602-1111-018

Evaluation Board PCB Information

Top, middle & bottom layers: 1 oz copper

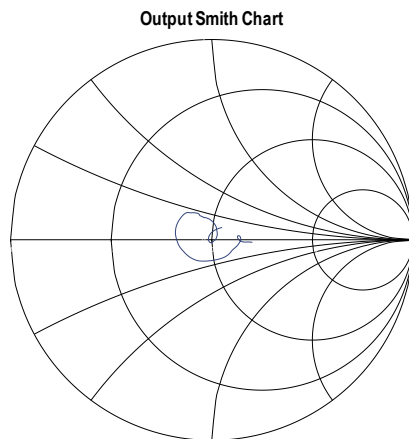
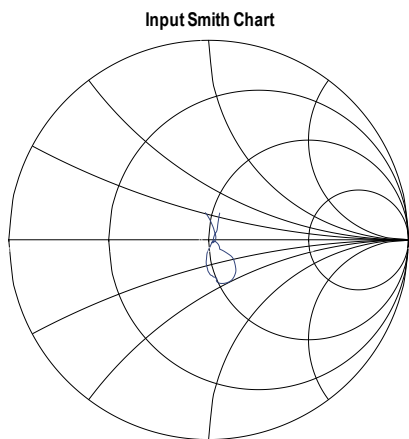
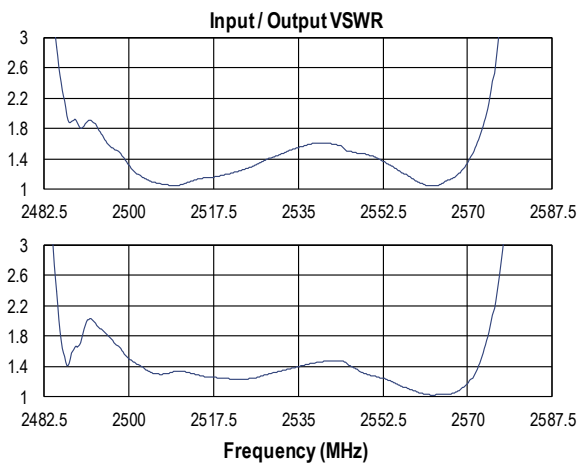
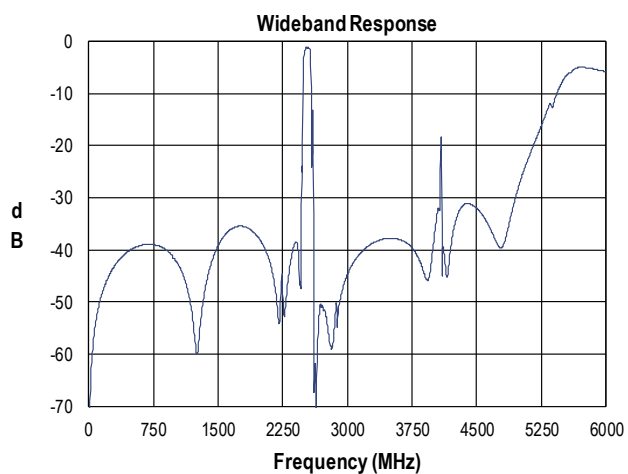
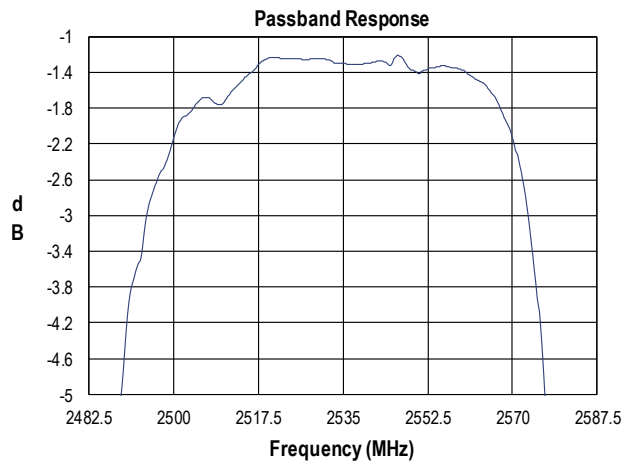
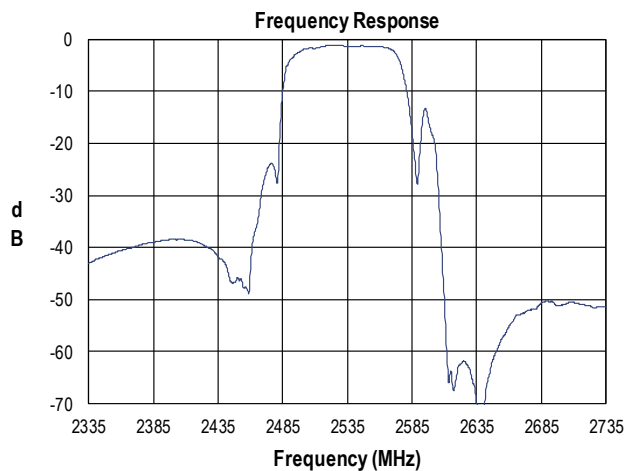
Substrates: FR4 dielectric, 0.031" thick

Finish plating: Nickel: 3-8μm thick, Gold: 0.03-0.2μm thick

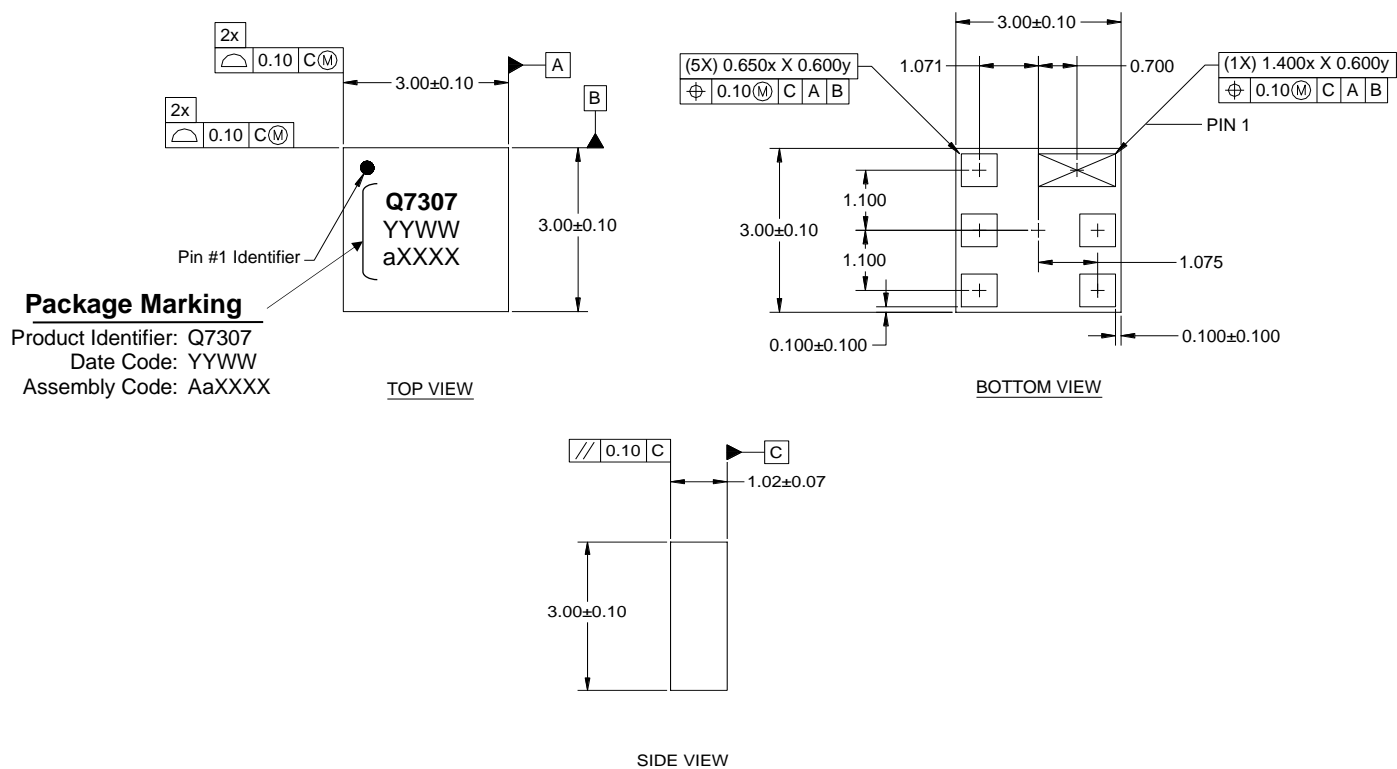
Hole plating: Copper min. 0.0008μm thick

Typical Performances

Test conditions unless otherwise noted: Temp = +25 °C, 50 Ω system



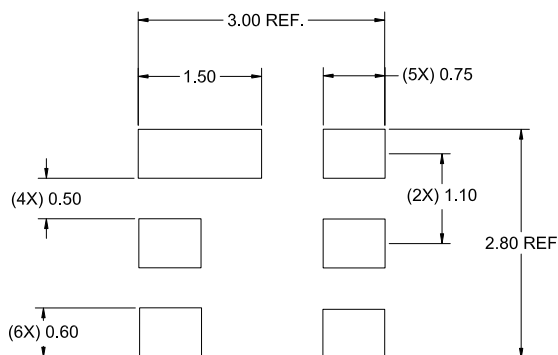
Package Marking and Dimensions



Notes:

1. All dimensions are in millimeters
2. All tolerances are ± 0.15 mm except overall length and width ± 0.10 mm
3. Contact plating: ENIG (Electroless Nickel Immersion Gold)
4. Terminations: $0.5 - 1.0 \mu\text{m}$ Au plating, over a $2 - 6 \mu\text{m}$ Ni plating

PCB Mounting Pattern

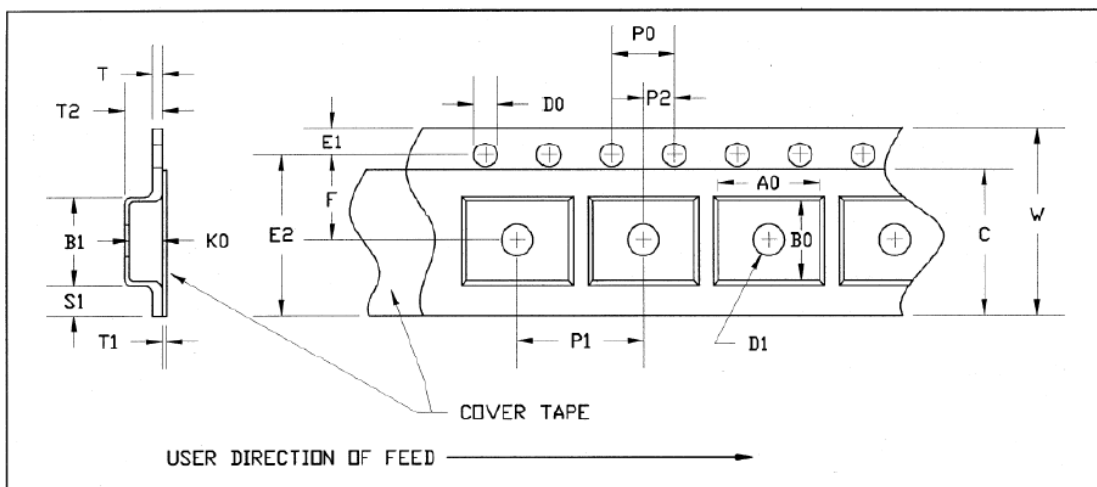


Notes:

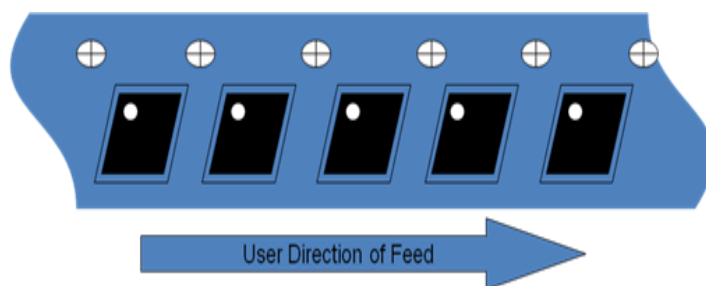
1. All dimensions are in millimeters. Angles are in degrees.
2. Use 1 oz. copper minimum for top and bottom layer metal.

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 13" reel.

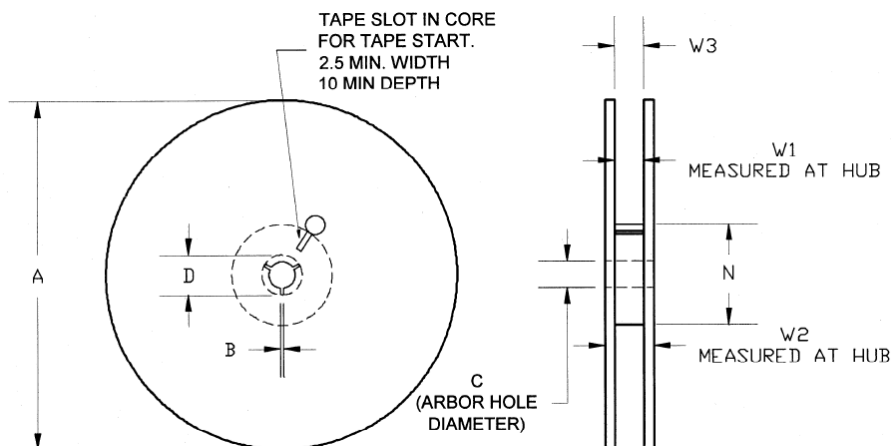


Feature	Measure	Symbol	Size (in)	Size (mm)
Cavity	Length	A0	0.126	3.20
	Width	B0	0.126	3.20
	Depth	K0	0.047	1.20
	Pitch	P1	0.157	4.00
Centerline Distance	Cavity to Perforation - Length Direction	P2	0.079	2.00
	Cavity to Perforation - Width Direction	F	0.217	5.50
Cover Tape	Width	C	0.362	9.20
Carrier Tape	Width	W	0.472	12.0



Tape and Reel Information – Reel Dimensions

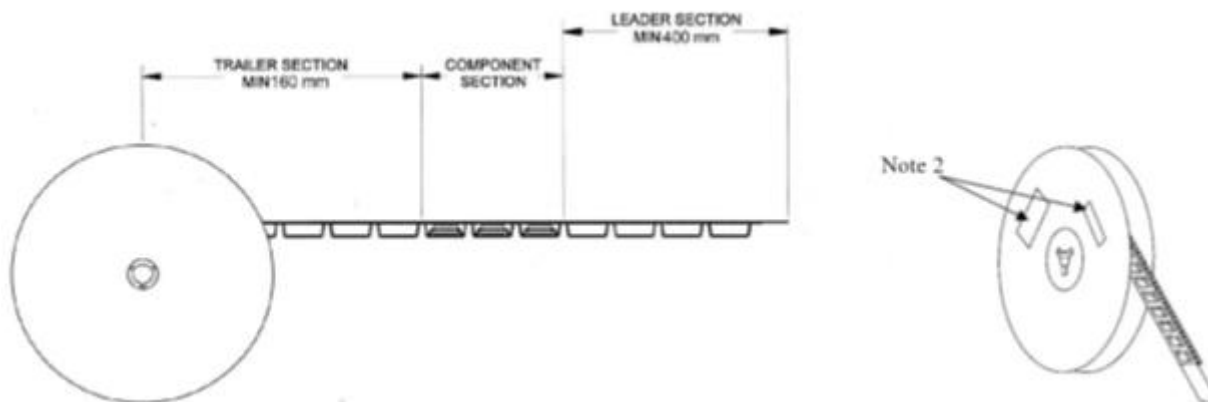
Tape and reel specifications for this part are also available on the Qorvo website.
Standard T/R size = 2500 pieces on a 13" reel.



Feature	Measure	Symbol	Size (in)	Size (mm)
Flange	Diameter	A	12.992	330.0
	Thickness	W2	0.717	18.2
	Space Between Flange	W1	0.504	12.8
Hub	Outer Diameter	N	4.016	102.0
	Arbor Hole Diameter	C	0.512	13.0
	Key Slit Width	B	0.079	2.0
	Key Slit Diameter	D	0.795	20.2

Tape and Reel Information – Tape Length and Label Placement

Standard T/R size = 2500 pieces on a 13" reel.



Notes:

1. Empty part cavities at the trailing and leading ends are sealed with cover tape. See EIA 481.
2. Labels are placed on the flange opposite the sprockets in the carrier tape.

Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	Class 1B	ESDA / JEDEC JS-001-2012
ESD – Machine Model (MM)	Class B	ESDA / JEDEC JESD22-A115F
MSL – Moisture Sensitivity Level	Level 3	IPC/JEDEC J-STD-020



Caution!
ESD-Sensitive Device

Solderability

Compatible with both lead-free solder (260°C peak reflow temperature) and tin/lead (245°C peak 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 (C₁₅H₁₂Br₄O₂) Free
- PFOS Free



Contact Information

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

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