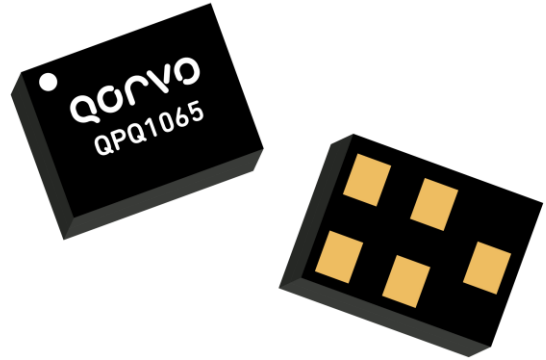


General Description

QPQ1065 is a 1616 – 1626.5 MHz AltNav Band Pass Filter in a compact size for use in any AltNav application. This TC-SAW filter also has excellent power handling capability for low power transmitters.

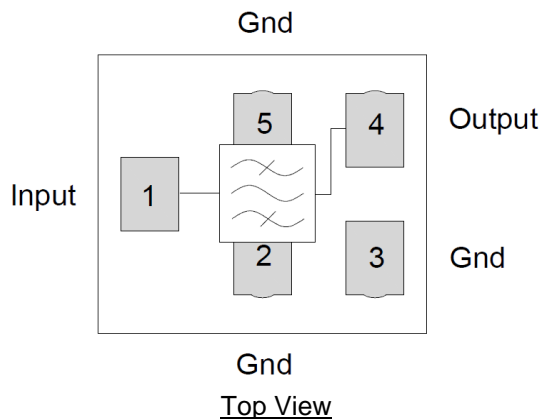
Housed in a 1.4 x 1.2 mm laminate with over mold package, this device allows for a compact and cost-effective solution for AltNav applications.

No matching components are required, making the PCB design and implementation easy.



1.4 X 1.2 X 0.84 mm

Functional Block Diagram



Pin Configuration - Single Ended

Pin No.	Label
1	RF Input ⁽¹⁾
2, 3, 5	Ground
4	RF Output ⁽¹⁾

⁽¹⁾ Blocking capacitors are required on any ports where a DC voltage may be present.

Product Features

- Frequency: 1616.0 - 1626.5 MHz
- No matching required for operation at 50Ω
- High Rejection
- Laminate with Over Mold Surface Mount Package (SMP)
- Small Size: 1.4 x 1.2 x 0.84mm

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

Applications

- General purpose AltNav
- Communication Systems

Ordering Information

Part No.	Description
QPQ1065TR7	7" Taped Reel with 2500 pieces
QPQ1065EVB01	Evaluation board

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-55 to 125°C
Operation Temperature	-55 to 105°C
RF Input Power ⁽¹⁾ - Test conditions: PW = 500ms; DC = 50% @ +25 °C	31.5 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.

⁽¹⁾ Input Power for both Input & Output ports

Minimum Lifetime Ratings

Conditions	Rating
RF Input Power ⁽¹⁾ @ Pin 1 (RFIN Port)	>10 years @ +105C

⁽¹⁾ Input Power: CW, 24 dBm

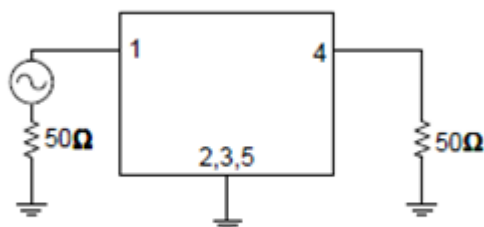
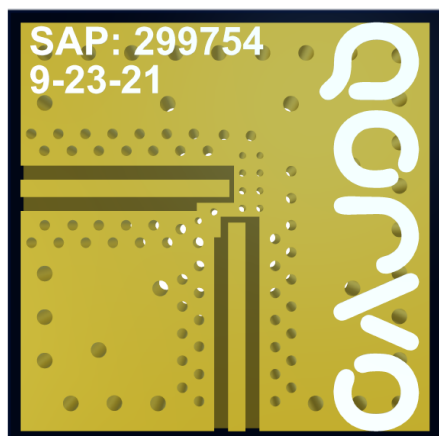
Electrical Specifications ^(1,2)

AltNav Band Pass Filter					
Parameter ⁽³⁾	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency	1616.00 - 1626.5 MHz	-	1621.25	-	MHz
Lower 2.5 dB Passband Edge	Relative to 0 dB	-	-	1616	MHz
Upper 2.5 dB Passband Edge	Relative to 0 dB	1626.5	-	-	MHz
Maximum Insertion Loss	1616.00 - 1626.5 MHz	-	1.5	2.5	dB
Amplitude Variation (p-p)	1616.00 - 1626.5 MHz	-	0.4	1.0	dB
Group Delay	@ 1621.25 MHz	-	23.6	26	ns
Group Delay Variation (p-p)	1616.00 - 1626.5 MHz	-	4.9	12	ns
Absolute Attenuation (Relative to 0 dB)	10 - 1543.25 MHz	35	45	-	dB
	1560.42 – 1590.42 MHz	32	35	-	
	1699.25 - 2500 MHz	35	44	-	
Input VSWR	1616.00 - 1626.5 MHz	-	-	2.1:1	-
Output VSWR	1616.00 - 1626.5 MHz	-	-	2.1:1	-
Nominal Impedance ⁽⁵⁾	Single Ended	-	50	-	Ohm

Notes:

1. All specifications are based on the Qorvo schematics for the reference designs shown on page 3.
2. In production, devices will be tested at room temperature to a guard banded specification to ensure electrical compliance over temperature.
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacture tolerances.
4. Typical values are based on average measurements at room temperature on pcb. (25 °C ±5 °C)
5. Optimum impedance to achieve the performance shown.

Evaluation Board – QPQ1065-EVB



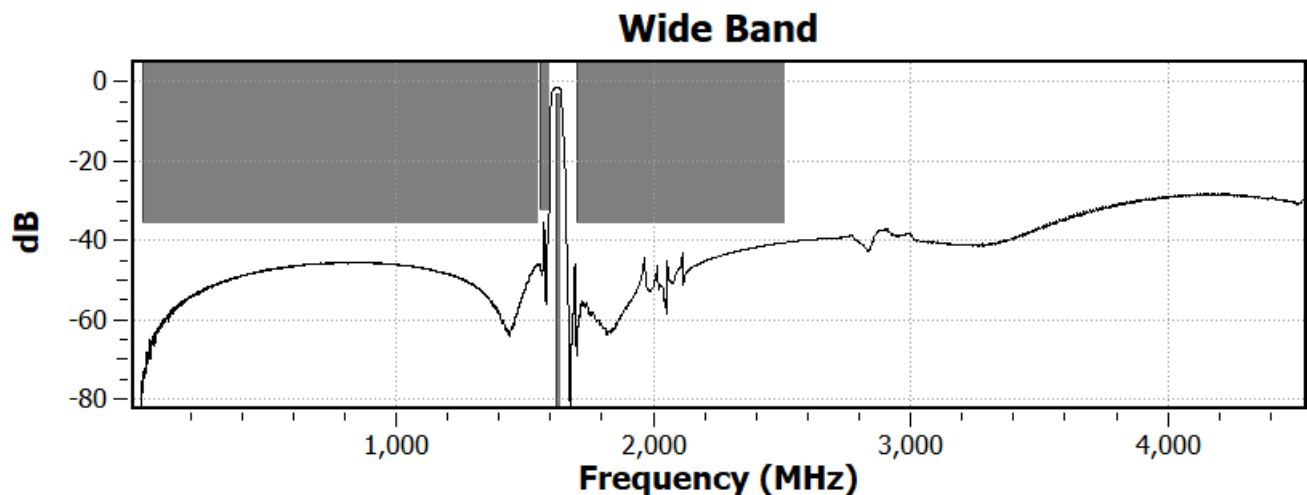
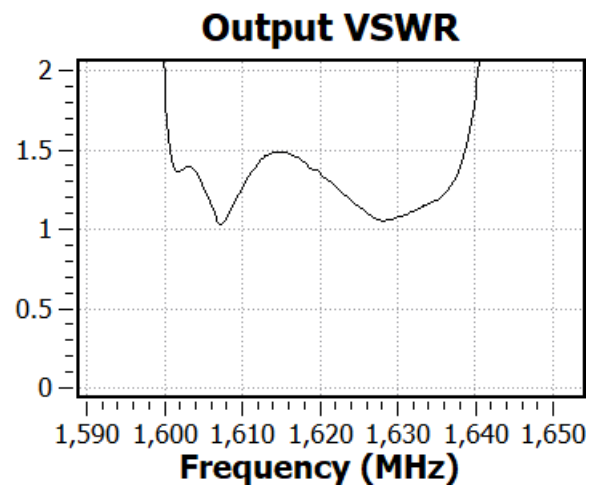
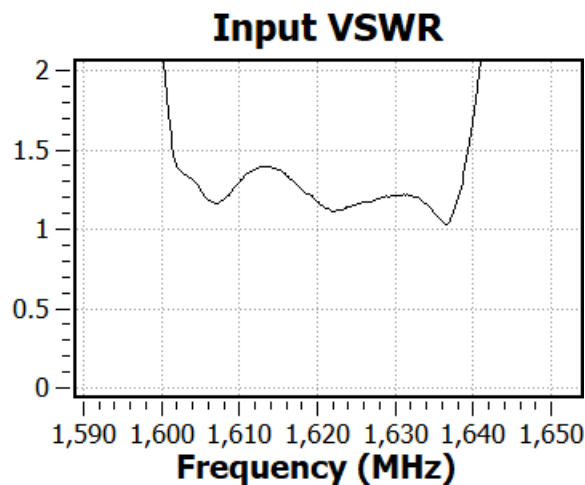
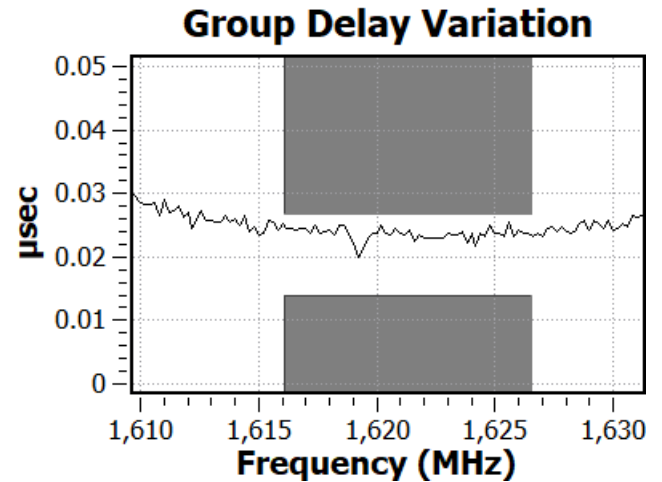
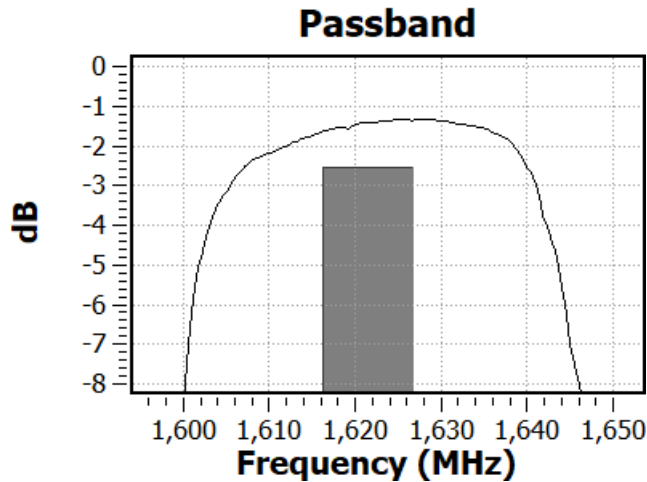
Notes: Blocking capacitors are required on any RF ports where a DC voltage may be present.

Bill of Material – QPQ1065-EVB

Reference Des.	Value	Description	Manuf.	Part Number
DUT	-	1616 - 1626.5 AltNav SAW Filter	Qorvo	QPQ1065
SMA	-	SMA connector	Various	
PCB	-	Printed Circuit Board	Various	

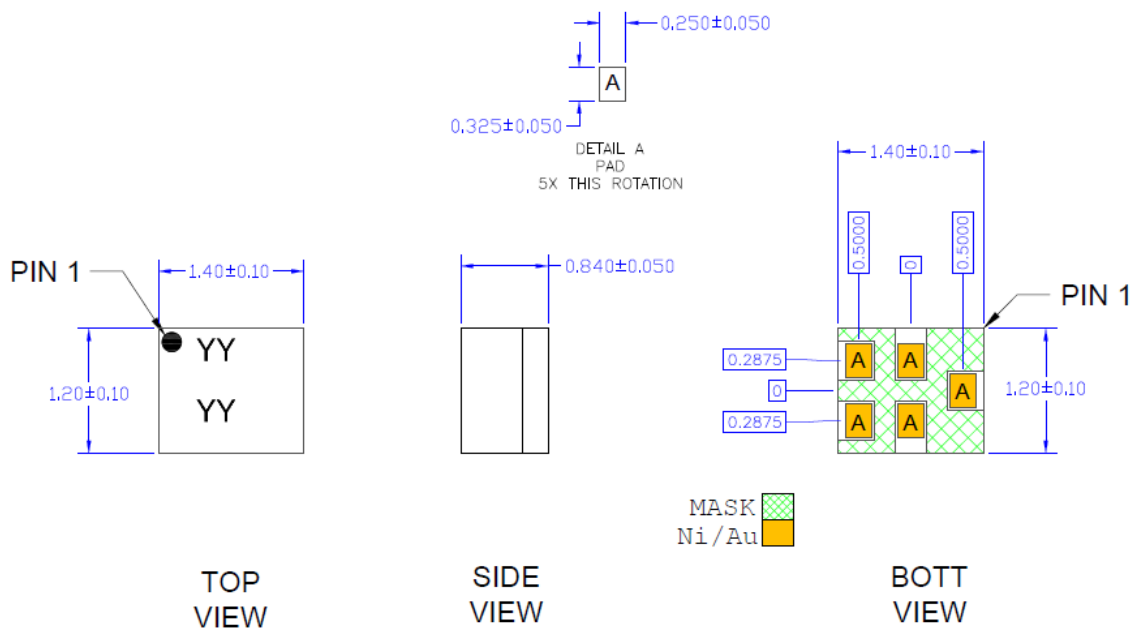
Typical Performances

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



Package Marking and Dimensions

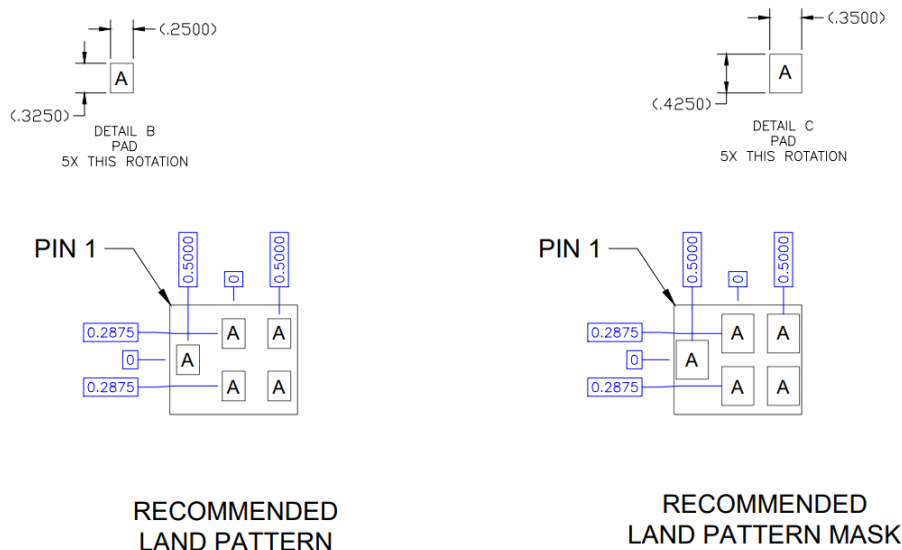
Marking: Trace Code – YYYY



Notes:

1. All dimensions are in millimeters. Angles are in degrees.
2. The terminal #1 identifier and terminal numbering conform to JESD 95-1 SPP-012

PCB Mounting Pattern



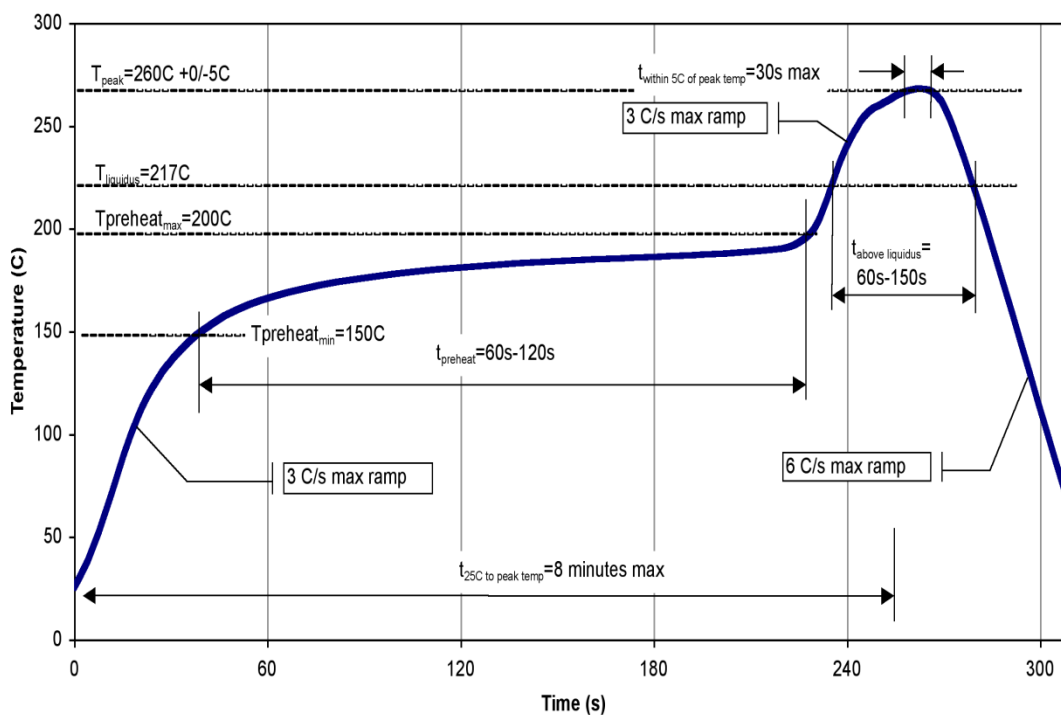
Notes:

1. All dimensions are in millimeters. Angles are in degrees. .

Assembly Notes

1. Compatible with both Lead-free solder (260°C peak reflow temperature) and tin/lead (245°C peak reflow temp.) soldering processes.
2. Contact plating: ENEPIG

Recommended Soldering Profile



Handling Precautions

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



Caution!
ESD-Sensitive Device

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
- SVHC Free
- PFOS 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

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