

General Description

QPQ1065 is a 1616.0 – 1626.5 MHz compact Iridium Band Pass Filter. This TC-SAW filter also has excellent power handling capability for low power transmitters.

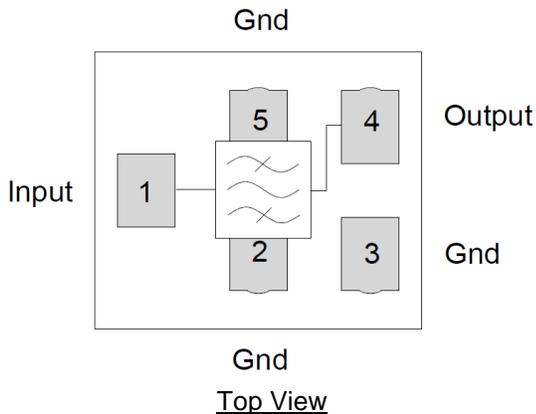
Housed in a 1.4 x 1.2 mm laminate with over mold package, this device allows for a compact and cost-effective solution for Iridium applications.

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 Iridium
- 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

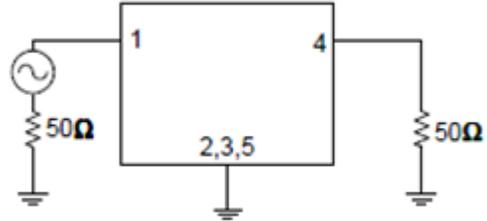
Electrical Specifications ^(1,2)

Iridium Band Pass Filter					
Parameter ⁽³⁾	Conditions	Min	Typical ⁽⁴⁾	Max	Units
Center Frequency	1616.0 - 1626.5 MHz	-	1621.25	-	MHz
Lower 2.5 dB Passband Edge	Relative to 0 dB	-	-	1616.0	MHz
Upper 2.5 dB Passband Edge	Relative to 0 dB	1626.5	-	-	MHz
Maximum Insertion Loss	1616.0 - 1626.5 MHz	-	1.5	2.5	dB
Amplitude Variation (p-p)	1616.0 - 1626.5 MHz	-	0.4	1.0	dB
Group Delay	@ 1621.25 MHz	-	23.6	26	ns
Group Delay Variation (p-p)	1616.0 - 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	1616.0 - 1626.5 MHz	-	-	2.1:1	-
Output VSWR	1616.0 - 1626.5 MHz	-	-	2.1:1	-
Nominal Impedance ⁽⁵⁾	Single Ended	-	50	-	Ohm

Notes:

- All specifications are based on the Qorvo schematics for the reference designs shown on 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)
- Optimum impedance to achieve the performance shown.

Evaluation Board – QPQ1065-EVB



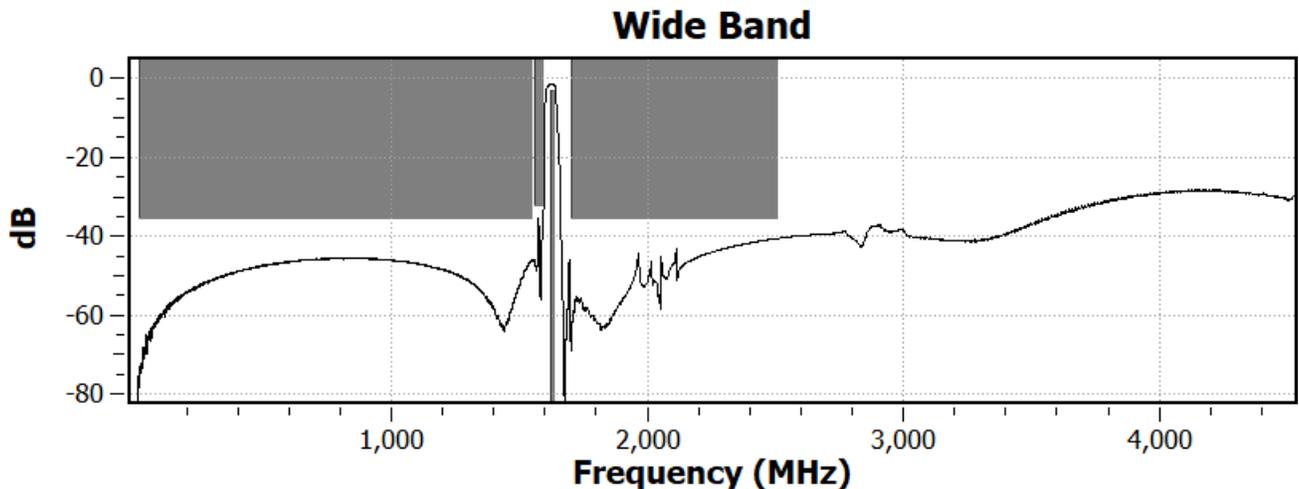
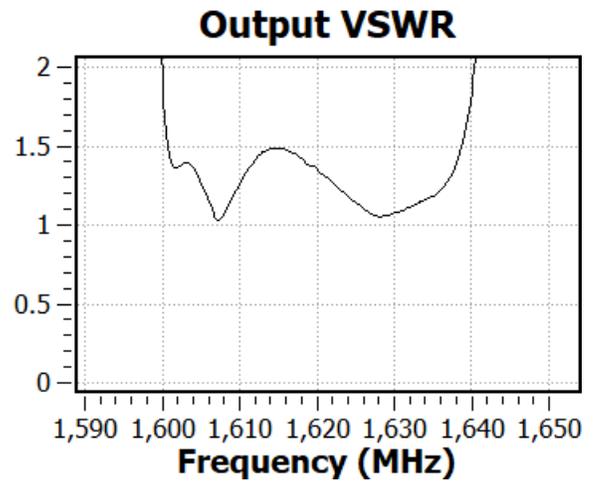
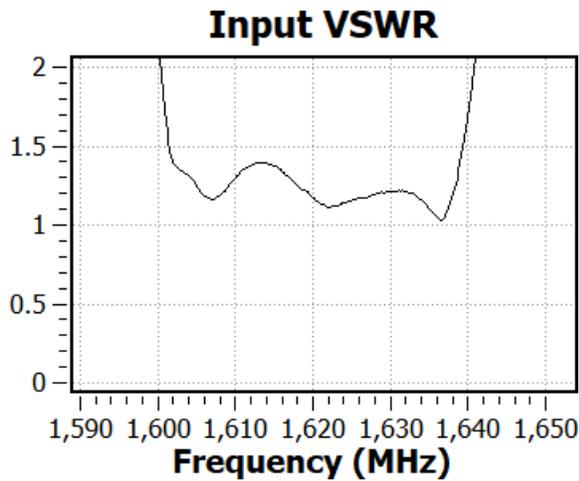
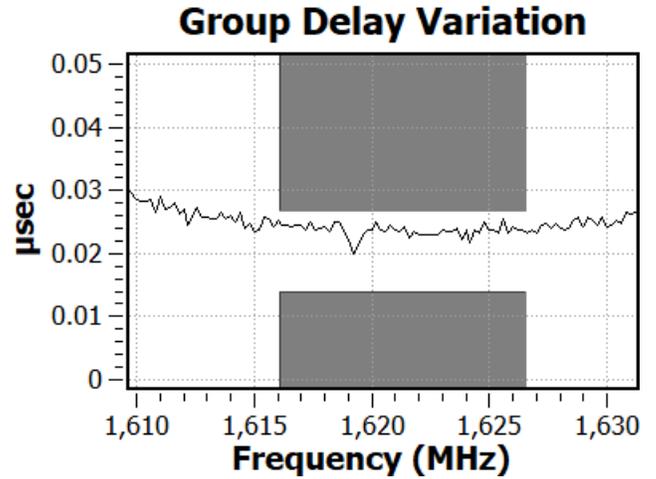
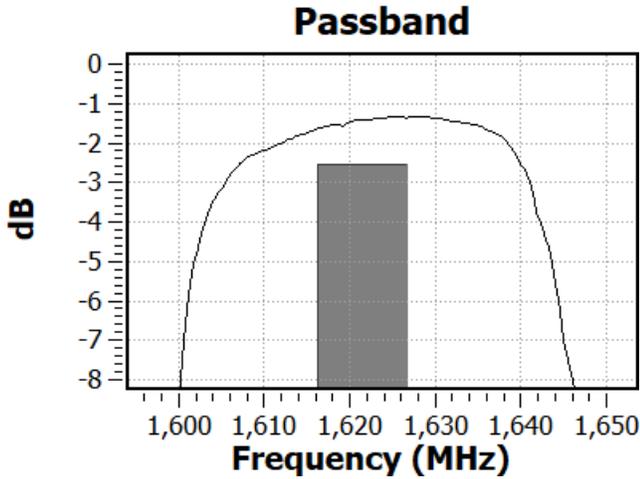
Notes: Blocking capacitors are required on any RF ports where a DC voltage may be present.

Bill of Material – QPQ1065-EVB

Reference Des.	Value	Description	Manuf.	Part Number
DUT	-	1616.0 - 1626.5 Iridium SAW Filter	Qorvo	QPQ1065
SMA	-	SMA connector	Various	
PCB	-	Printed Circuit Board	Various	

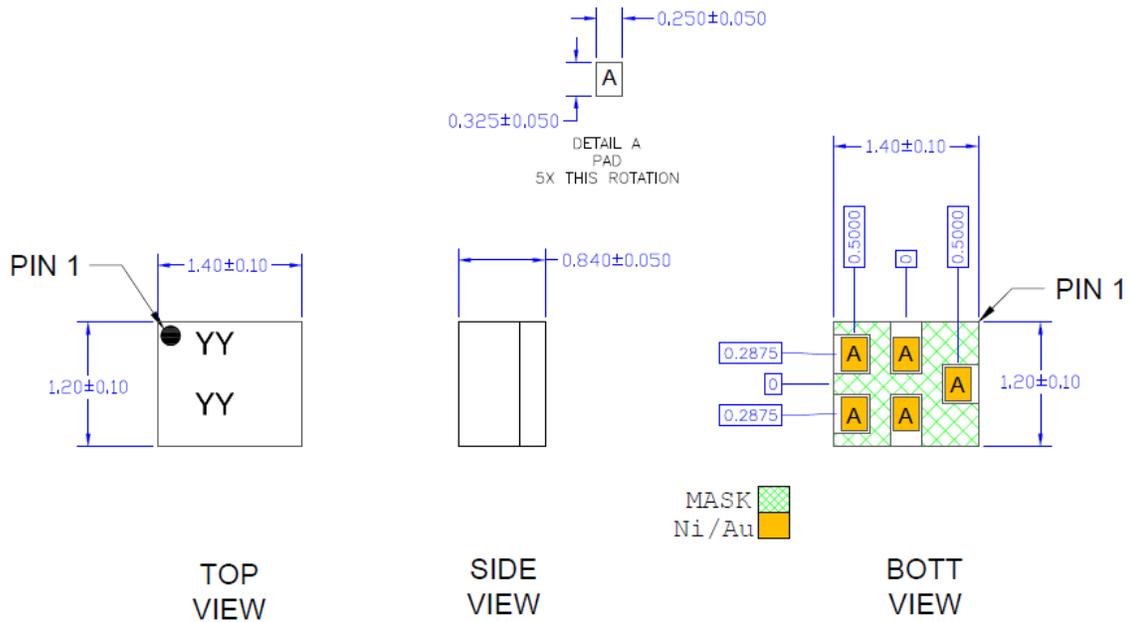
Typical Performances

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



Package Marking and Dimensions

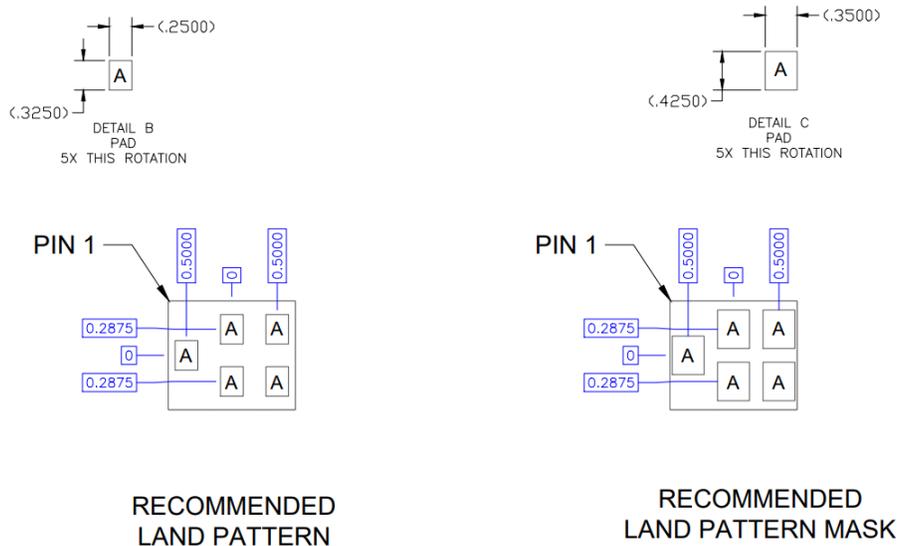
Marking: Trace Code – YYY Y



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



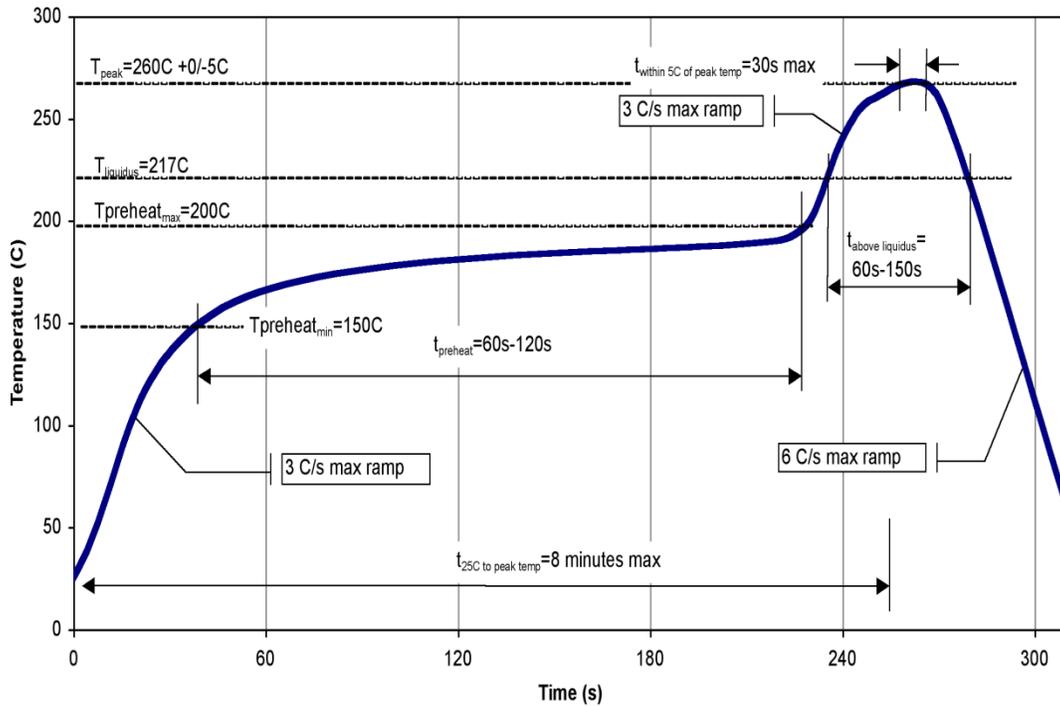
Notes:

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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