

### Product Overview

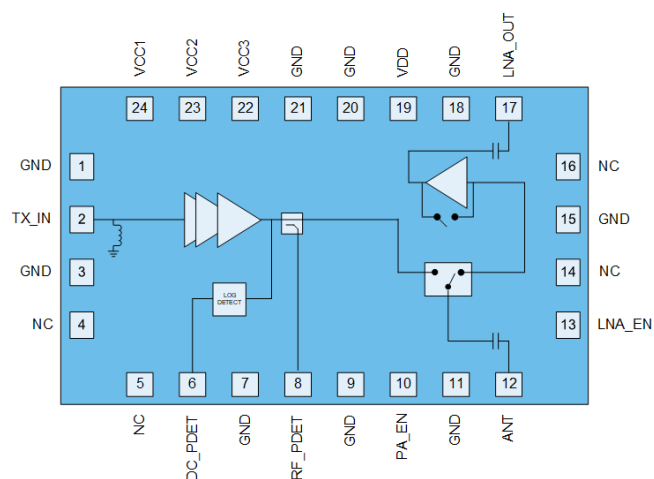
The Qorvo® QPF4658 is an integrated front end module (FEM) designed for Wi-Fi 6 & 6E (802.11ax) systems. The compact form factor and integrated matching minimizes layout area in the application.

Performance is focused on optimizing the PA for a 5V supply voltage that conserves power consumption while maintaining the highest linear output power and leading edge throughput. This is done across a wide bandwidth enabling operation in all channels from UNII5-8 (5.9 to 7.1GHz)

Integrated die level filtering for 2nd and 3rd harmonics as well as 2.4 GHz rejection for DBDC operation are included. A coupler with RF output as well as a broadrange, constant slope voltage logarithmic power detector is provided for application feedback

The QPF4658 integrates a 6-7 GHz power amplifier (PA), single pole two throw switch (SP2T) and bypassable low noise amplifier (LNA) into a single device.

### Functional Block Diagram



Top View



24 Pad 5 x 3 mm Laminate Package

### Key Features

- 5935 – 7125 MHz
- $P_{OUT} = +17$  dBm MCS11 HE160 -43dB Dynamic EVM
- $P_{OUT} = +19$  dBm MCS11 HE80 -43dB Dynamic EVM
- $P_{OUT} = +23$  dBm MCS11 HE80 -35dB Dynamic EVM
- $P_{OUT} = +27$  dBm MCS0 HE20 Spectral Mask Compliance
- Optimized for +5 V Operation
- 31 dB Tx Gain
- 1.9 dB Noise Figure
- 14.5 dB Rx Gain & 7.5 dB Bypass Loss
- 25 dB 2.4 GHz Rejection on Rx Path
- Integrated RF & DC Logarithmic Power Detector

### Applications

- Access Points
- Wireless Routers
- Residential Gateways
- Customer Premise Equipment
- Internet of Things

### Ordering Information

Part Number	Description
QPF4658SB	Sample bag with 5 pieces
QPF4658SR	7" reel with 100 pieces
QPF4658TR13	13" reel with 5,000 pieces
QPF4658EVB	Assembled Evaluation Board

## Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	Class 1C (1000 V)	ANSI/ESD/JEDEC JS-001
ESD – Charged Device Model (CDM)	Class C3 (1000 V)	ANSI/ESD/JEDEC JS-002
MSL – Moisture Sensitivity Level	MSL 3	IPC/JEDEC J-STD-020



Caution!

ESD sensitive device

## Solderability

Compatible with both lead-free (260 °C max. reflow temperature) and tin/lead (245 °C max. reflow temperature) soldering processes.

Package lead plating: Electroless Ni/Electroless Pd/Immersion Au (ENEPIG)

## RoHS Compliance

This part is compliant with the 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:

- Leadfree
- Halogen Free (Chlorine, Bromine)
- Antimony Free
- TBBP-A (C<sub>15</sub>H<sub>12</sub>Br<sub>4</sub>O<sub>2</sub>) Free
- SVHC Free
- PFOS Free

## Contact Information

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

**Web:** [www.qorvo.com](http://www.qorvo.com)

**Tel:** 1-844-890-8163

**Email:** [customer.support@qorvo.com](mailto:customer.support@qorvo.com)

## Important Notice

The information contained in this Data Sheet and any associated documents ("Data Sheet Information") is believed to be reliable; however, Qorvo makes no warranties regarding the Data Sheet Information and assumes no responsibility or liability whatsoever for the use of said information. All Data Sheet Information is subject to change without notice. Customers should obtain and verify the latest relevant Data Sheet Information before placing orders for Qorvo® products. Data Sheet Information or the use thereof does not grant, explicitly, implicitly or otherwise any rights or licenses to any third party with respect to patents or any other intellectual property whether with regard to such Data Sheet Information itself or anything described by such information.

DATA SHEET INFORMATION DOES NOT CONSTITUTE A WARRANTY WITH RESPECT TO THE PRODUCTS DESCRIBED HEREIN, AND QORVO HEREBY DISCLAIMS ANY AND ALL WARRANTIES WITH RESPECT TO SUCH PRODUCTS WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Without limiting the generality of the foregoing, Qorvo® products are not warranted or authorized for use as critical components in medical, life-saving, or life-sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death. Applications described in the Data Sheet Information are for illustrative purposes only. Customers are responsible for validating that a particular product described in the Data Sheet Information is suitable for use in a particular application.

© 2022 Qorvo US, Inc. All rights reserved. This document is subject to copyright laws in various jurisdictions worldwide and may not be reproduced or distributed, in whole or in part, without the prior written permission of Qorvo US, Inc.