



# Automotive Solutions Product Portfolio

PA, LNA, High-Linearity FEMs, Switches & Filters  
For Wi-Fi, V2X and SDARS Applications



**qorvo**  
all around you

# Qorvo's Expanding Portfolio of World-Class Automotive Related Products for Automotive RF Applications

Qorvo's RF product portfolio for automotive applications includes power amplifiers, low noise amplifiers (LNAs), high-linearity front-end modules (FEMs), temperature-compensated BAW filters, and low-loss switches. These devices meet Tier 1 needs to fully implement RF data stream support for Wi-Fi, SDARS satellite radio, and vehicle to vehicle, to infrastructure, or to pedestrian (V2X) applications.

Our products are tested to every aspect of AEC-Q100 or AEC-Q200 (for passive devices). Each device follows a safe-launch plan as part of our zero-defect initiative, and are designed to operate over automotive temperature ranging from -40°C to +105°C as needed. Qorvo facilities and our subcontractors are TS16949 certified to ensure the highest quality components.

Qorvo power amplifiers meet critical parameters of efficiency, linearity, and power out-to-antenna for cellular, V2X, or Wi-Fi applications. These products are defined in unison with customers worldwide, while adhering to specifications set by governing standards bodies, and specified for use by all reference design radio providers.

The high gain LNAs with switching functionality operate with integrated power amp (IPA) modems and are found on all Wi-Fi reference designs. These devices are designed to reduce the development time of Wi-Fi systems by making it easier to implement an automotive PCB design, and fully support IEEE 802.11b/g/n/ac systems in an AEC-Q100, grade 3 qualified package.

Qorvo's automotive switches operate from 5 MHz to 6 GHz and support a variety of general purpose, targeted applications and switching needs. The switches are designed in the silicon-on-insulator (SOI) process insuring an ESD value that complies with AEC-Q100 requirements.

Qorvo offers TC-BAW (zero drift BAW) filters to support SiriusXM® SDARS antennas and BAW filters for Wi-Fi/LTE coexistence. The filters offer minimum drift, steep skirts and very low insertion loss, in an industry-leading small footprint. In some devices, the filter is fully integrated in duplexers, multiplexers or with amplifier and switch components.

Qorvo's rapidly expanding portfolio of automotive RF solutions focus on market-leading linearity, dynamic bias performance and high efficiency. We are committed to simplifying and reducing BOM cost and PCB footprint, while improving our customers' reliability and time-to-market.

## Wi-Fi Front-End Modules (FEMs)

### New for 2019 – 802.11ax FEMs AEC-Q100 Grade 2

Freq Range (GHz)	Description	Gain (dB)	Linear P <sub>OUT</sub> (dBm)	EVM (dBm)	V <sub>CC</sub> (V)	Package Style	Part Number
5.15 to 5.925	2xPA+2xSPDT+ 2xLNA	28	14.5	-47	3.85	-	QPF4539Q
5.15 to 5.925	PA+SPDT+LNA	30	15	-43	3.7	2.0x1.7 SMT	QPF4585Q
2.402 to 2.481.5	2xPA+2xSP4T+ 2xLNA	30	14.5	-47	3.85	-	QPF4239Q
2.412 to 2.472	PA+SP3T+LNA+SPDT	28	15	-43	3.7	2.0x2.0 SMT	QPF4285Q

## Front-End Modules

### AEC-Q100 Grade 3

Freq Range (GHz)	Description	Gain (dB)	Linear P <sub>OUT</sub> (dBm)	EVM (%)	V <sub>CC</sub> (V)	Current at Po (mA)	Package Style	Part Number
5.15 to 5.825	PA+SPDT+LNA	30	16	2.5	3.3	230	3.0x3.0 Laminate	RFFM8500Q
5.18 to 5.825	SPDT+LNA	12	-	-	3.6	12	1.5x1.5 DFN	RFFM8550Q
2.4 to 2.5	PA+SP3T+LNA	30	19	3.3	3.3	250	3.0x3.0 QFN	RFFM5765Q
2.4 to 2.5	PA+SP3T	33	16	3.3	3.6	160	3.0x3.0 QFN	RFFM3482Q
2.412 to 2.484	PA+SP3T+LNA	26	16	2.5	3.3	200	3.0x3.0 Laminate	RFFM8200Q
2.412 to 2.484	SP3T+LNA	13	-	-	3.6	10	1.75x1.75 QFN	RFFM8250Q

## Switches

### AEC-Q100 Grade 2

Freq Range (GHz)	Configuration	Switch P0.1dB (dBm)	Isolation (dB)	Supply Voltage (V)	Part Number
100 to 4000	SP3T	27	28	2.7 to 4.8	RFSW8006Q
100 to 6000	SP2T	27	27	2.7 to 4.8	RFSW8007Q

## Co-existence Filters

### AEC-Q200 Grade 3 (unless noted otherwise)

Description	Application	Type	Package Style (mm)	Part Number
WLAN/LTE Coexistence	Wi-Fi, LTE	BAW	1.4x1.2	885062-A
WLAN/LTE Coexistence	Wi-Fi, LTE	BAW	1.4x1.2	885071-A
SDARS Filter (AEC-Q200 Grade 2)	SDARS	TC-BAW	1.7x1.3	885216

## V2X (802.11p and C-V2X)

### AEC-Q100 Grade 2

Freq Range (GHz)	Description	Gain (dB)	Linear P <sub>OUT</sub> (dBm)	EVM (dBm)	V <sub>CC</sub> (V)	Current at Po (mA)	Package Style	Part Number
5.15 to 5.925	802.11 PA	32	26	-31	5.0	640	4.0x4.0 QFN	QPA5525Q
5.18 to 5.925	802.11 SPDT+LNA	13	-	-	5.0	16	2.3x2.3 QFN	QPF4554Q
5.855 to 5.925	802.11P PA+SP2T+LNA	33	23.5	-28	5.0	330	5.0x3.0 QFN	QPF5420Q
5.770 to 5.925	CV2X PA+2X SP3T+LNA	33	28	-	5.0	500	5.0x4.0 Laminate	QPF1002Q

## SDARS LNAs

### AEC-Q100 Grade 2

Freq Range (GHz)	Description	Gain (dB)	Output P1dB (dB)	NF (dB)	V <sub>CC</sub> (V)	Current at Po (mA)	Package Style	Part Number
2.32 to 2.345	SDARS LNA	12.5	20	0.45	3.7	52	2.0x2.0 DFN	QPL9036Q
2.32 to 2.345	SDARS LNA	19	20	0.55	5.0	70	2.0x2.0 DFN	QPL9037Q
2.32 to 2.345	SDARS LNA	18.5	21.5	0.45	4.5	60	2.0x2.0 DFN	QPL6207Q
2.32 to 2.345	SDARS LNA	15.1	22.5	0.45	4.5	60	2.0x2.0 DFN	QPL6216Q
2.32 to 2.345	SDARS LNA	21.8	19.9	0.52	4.5	55	2.0x2.0 DFN	QPL6202Q

