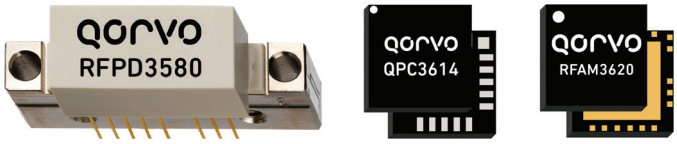
Broadband DOCSIS® 3.1 Solutions

Broadband Transmission • Optical Nodes • Line Amplifiers • SMATV
Edge QAM • MDU • Head Ends • Digital Video Broadcast • FTTH • RFoG • CPE



all around you

Broadband DOCSIS 3.1 Solutions

Qorvo™ offers a broad family of products tailored for the next-generation of cable networking, DOCSIS 3.1. Qorvo's DOCSIS 3.1 family includes 1.2 GHz power amplifiers as both hybrids and multi-chip modules (MCMs) that use state-of-the-art GaN HEMT process technology and offer optimal linearity and output power while providing robust reliability.

Qorvo's forward path amplifiers operate from 45 MHz to 1.218 GHz with extremely low distortion levels and excellent input and output return loss (-20 dB typical). The reverse path amplifiers work up to 300 MHz with high gain and highly integrated functions. Qorvo's MMIC solutions operate from 5 V to 24 V and include various gain amplifiers, low EINC optical front end, xPON video receiver and control products such as VCA, DSA, high isolation switches and variable equalizers.

Hybrid and MCM Power Doubler Amplifiers (12-34 V)

Min Freq (MHz)	Max Range (MHz)	Power Gain at Max Freq (dB)	Pout at Max Freq (dBmV)	CTB (dBc)	CSO (dBc)	Vcc (V)	Current (mA)	Package (mm x mm)	Part Number
50	1218	20.6	57	-79	-78	12	525	QFN 5 x 7	QPB8808
45	1218	23	63	-80	-80	24-34	530	SOT-115J	RFPD3580
45	1218	22.8	62	-78	-80	24	470	SOT-115J	RFPD3210
45	1218	22.8	62	-80	-80	24	370-470	SOT-115J	QPA3230
45	1218	23	61	-80	-80	24	470	MCM 9 x 8	RFCM3327
45	1218	24.8	62	-80	-80	24	370-470	SOT-115J	QPA3240
45	1218	25.5	61	-80	-80	24	370-470	MCM 9 x 8	RFCM3328
45	1218	24.8	62	-78	-80	24	470	SOT-115J	RFPD3220
45	1218	28	59	-80	-80	24	420	SOT-115J	RFPD3540

Hybrid and MCM Push Pull Amplifiers (12-24 V)

Min Freq (MHz)	Max Range (MHz)	Power Gain at Max Freq (dB)	Pout at Max Freq (dBmV)	CTB (dBc)	CSO (dBc)	Vcc (V)	Current (mA)	Package (mm x mm)	Part Number
45	1200	23.5	44	-64	-70	24	230	SOT-115J	RFPP2590
45	1218	28.5	45	-72	-76	24	260	SOT-115J	RFPP3870
45	1218	VAR-37	48	-73	-75	12	510	MCM 11 x 11	RFAM3620
45	1218	VAR-28.5	45	-67	-70	12	410	MCM 11 x 11	RFAM3790
45	1218	28	45	-72	-76	24	250	MCM 11 x 8.5	RFCM4363
45	1218	35	45	-69	-72	24	240	SOT-115J	RFPP3180

Hybrid and MCM Reverse Amplifiers

Min Freq (MHz)	Max Range (MHz)	Power Gain at Max Freq (dB)	NF (dB)	CTB (dBc)	CSO (dBc)	Vcc (V)	Current (mA)	Package (mm x mm)	Part Number
5	220	39	3.2	-63	-60	12	205	MCM 11 x 11	RFCM5304
5	300	25	5.6	-62	-70	24	138	SOT-115J	R3005250L
5	300	30	5.3	-60	-62	24	148	SOT-115J	R3005300L
5	300	35.8	5.1	-62	-70	24	158	SOT-115J	RFRP3120
5	300	37	4.8	–	–	8	320	MCM 6 x 6	TAT3814
5	300	35.6	3.9	-62	-65	12	195	MCM 11 x 8.5	QPA5368
5	210	15.5	3.8	–	–	8	235	SOIC-8	QPB2318
5	210	17.5	3.5	–	–	8	235	SOIC-8	QPB2328
5	210	15.2	3.8	–	–	8	172	SOIC-8	QPB3311
5	210	17.5	3.4	–	–	8	170	SOIC-8	QPB3321

** Devices in development*

MMIC Broadband Amplifiers: Push Pull (5-8 V)

Min Freq (MHz)	Max Range (MHz)	Power Gain at Max Freq (dB)	NF (dB)	CTB (dBc)	CSO (dBc)	Vcc (V)	Current (mA)	Package (mm x mm)	Part Number
45	2600	12	4.0	-75	-83	5	240	SOIC-8	QPB7464
45	1218	15	3.0	-73	-77	5-6	325	SOIC-8	TAT7472A1F
45	1218	16	2.5	-83	-83	6	340	SOIC-8	RFCA8828
45	1218	17	4.5	-70	-70	5	380	SOIC-8	TAT7467E1F
45	1218	17.5	3.2	-69	-75	5	250	SOIC-8	TAT7469
45	1218	19	1.7	-70	-77	5	260	SOIC-8	RFCA8830

MMIC Broadband Amplifiers: Single Ended (5-8 V)

Min Freq (MHz)	Max Range (MHz)	Power Gain at Max Freq (dB)	NF (dB)	CTB (dBc)	CSO (dBc)	Vcc (V)	Current (mA)	Package (mm x mm)	Part Number
45	1218	19	2.3	-80	-65	5	100	SOT-89	TAT7457
45	1218	10.5	3.5	-80	-70	5	110	SOT-89	QPB7400
45	1218	22	1.5	-82	-68	5	170	SOT-89	RFCA3828
45	2600	16.5	2.5	-73	-60	5	90	SOT-89	TAT7460B1A

Optical Receivers: Hybrid and MMIC

Min Freq (MHz)	Max Range (MHz)	Power Gain at Max Freq (dB)	EINC pA/√Hz	CTB (dBc)	CSO (dBc)	Vcc (V)	Current (mA)	Package (mm x mm)	Description	Part Number
45	1200	31	4.2	-78	-66	24	245	SOT-115J	Optical Receiver	RFOS6012 FC/APC
45	1200	31	4.2	-78	-66	24	245	SOT-115J	Optical Receiver	RFOS6013 SC/APC
45	1218	33	3.9	-63	-63	5 or 12	200/120	QFN 4 x 4	xPON Video Receiver	TAT6254C
45	1218	33	3.8	-64	-64	5	220	QFN 6 x 6	xPON Video Receiver	TAT6281
45	1218	36	2.9	-62	-62	5 or 12	200/120	QFN 4 x 4	xPON Video Receiver	TAT6254B
45	1218	37.5	3.5	-66	-65	12	135	QFN 4 x 4	xPON Video Receiver	QPB8888
45	1218	37	3.5	-66	-65	12	135	MCM 11 x 11	xPON Video Receiver	QPB9010*
45	1218	37	3.5	-66	-65	5	315	MCM 11 x 11	xPON Video Receiver	QPB9015*

Protector

Description	Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	Trigger Voltage (V)	CTB (dBc)	CSO (dBc)	Leakage Current (nA)	Capacitance (fF)	Package	Part Number
ESD Protection Circuit	50	1200	0.3	41	-52	-63	I = 15 @ 1V, 500 @ 15V	290 @ 1V, 10 MHz	T/SLP-3	TQP200002

** Devices in development*

Digital Step Attenuators, Voltage Controlled Attenuators, Voltage Controlled Equalizer

Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	P_{IN} (dBm)	CTB (dBc)	CSO (dBc)	Vcc (V)	Attenuation Range (dB)	Package (mm x mm)	Description	Part Number
5	3000	1.5	**38**	-75	-80	5	30	QFN 3 x 3	VCA	RFSA3043
30	3000	2.5	**39**	-65	-70	5	30	QFN 3 x 3	VCA	RFSA3013
30	3000	2.7	**39**	-65	-70	3.3	30	QFN 3 x 3	VCA	RFSA3023
45	2000	1.3	**30**	-90	-80	5	31.5	QFN 4 x 4	DSA, 0.5 dB Step Serial / Parallel	QPC3624
5	1500	1.2	**30**	-90	-80	5	31.5	QFN 4.2 x 4.2	DSA, 0.5 dB Step Serial / Parallel	QPC3614*
5	1218	-	-	-	-	5	22 dB TILT	MCM 6 x 6	Variable EQ	QPC7336*

Switches

Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	Isolation (dB)	IP3 (dBm)	IP2 (dBm)	Vcc (V)	Package (mm x mm)	Description	Part Number
5	6000	0.3	50	75	>100	3	QFN 2 x 2	SPDT Reflective	RFSW1012
5	3000	0.5	66	61	>100	3 to 5	QFN 4 x 4	SPDT Absorptive	QPC3024
5	6000	.25	46	73	>100	5	LGA 1.1 x 1.5	SPDT Reflective	QPC1022
5	6000	.4	30	71	>100	5	QFN 2 X 2 1.8 X 1.8	SP4T Reflective	QPC6742*
5	6000	.4	30	71	>100	5	QFN 2 X 2	SP6T Reflective	QPC6762*
5	1218	<.3	54	-	-	3	QFN 3 x 3	SPDT Reflective	QPC3022*

Transformers

Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	Amplitude Balance (dB)	Phase Balance (deg)	Impedance Ratio	Package	Description	Part Number
45	1218	2.2	0.4	13.0	1:2.78	SP6	1:2.78 SMT Transformer	RFXF0008
45	1218	0.6	1.3	5.0	1:1	SP5	1:1 SMT Transformer	RFXF0009
45	1218	0.7	1.4	7.0	1:1	SP5	1:1 SMT Transformer	RFXF0007
45	1218	1.1	0.2	3.4	1:1	SP5	1:1 SMT Transformer	RFXF0010
45	1218	1.3	0.4	4.0	1:1	SP5	1:1 SMT Transformer	RFXF0006

** Devices in development*

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