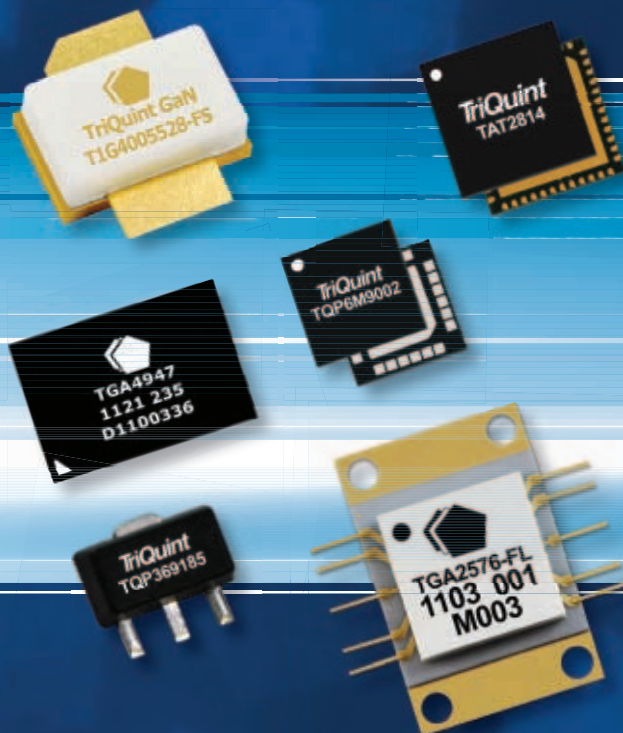


Product Selection Guide



Choose TriQuint's
Innovative RF Solutions



Connecting the Digital World
to the Global Network®

TriQuint 
SEMICONDUCTOR

Welcome to Our Product Selection Guide

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This guide contains a subset of the total selection of products available from TriQuint. If you are unable to locate the product you need, please contact your local sales representative or the factory for more information.

Welcome to TriQuint Semiconductor's 2012-13 Product Selection Guide. Our guide lists over 600 standard products and highlights 86 new releases, showcased for the first time in our New Products section.

Products are organized both by key market applications and product types. Included is a significantly expanded Defense & Aerospace market section with new product tables sorted by GaN, electronic warfare, radar, space and comms. We've also incorporated block diagrams with color coding to indicate where TriQuint product solutions exist.

We invite you to visit our website at www.triquint.com to obtain full product specifications and to utilize our interactive block diagrams which make it easy to drill down to specific products. TriQuint's Tech Connect page, www.triquint.com/techconnect, offers additional ways to simplify RF connectivity through a growing collection of technical resources for key applications. While visiting our website, click on 'subscribe' to receive TriQuint's quarterly e-newsletter and new product announcements.

TriQuint products are available through our worldwide sales, representative and distribution networks. Visit www.triquint.com/sales to connect with members of TriQuint's extended sales network serving your market.



About TriQuint Semiconductor

TriQuint's innovative, high-performance solutions are defining the future of RF technology.

Our integrated modules and assemblies reduce PCB areas and simplify manufacturing. TriQuint high-efficiency solutions extend battery life in mobile devices and can reduce electrical consumption in networks, defense and aerospace systems.

We design, develop and manufacture advanced RF solutions utilizing gallium arsenide (GaAs), gallium nitride (GaN), surface acoustic wave (SAW) and bulk acoustic wave (BAW) technologies. Our product portfolio of power, control and acoustic filter technologies serves global commercial and defense manufacturers.

TriQuint solutions, designed and crafted with the industry's largest RF technology portfolio, enable quicker design turns while lowering overall system costs. We are an award-winning provider of innovative RF products serving start-up firms as well as the world's largest, most innovative companies. We support custom solutions through the industry's widest selection of GaN and GaAs foundry processes backed by renowned and trusted service.

TriQuint was founded on RF innovation which continues today through our advanced technology programs that are setting new benchmarks in high-performance GaN solutions. Our acoustic filter technologies embrace the latest innovations including temperature compensation techniques and wafer level packaging. We are well positioned to serve the growing needs of wireless, fiber optic, telecom and defense / aerospace manufacturers around the world.

Key advantages of GaAs, GaN, SAW and BAW technologies:

- GaAs can operate efficiently at higher breakdown voltages compared to silicon-based semiconductor technologies while generating less noise in frequencies in excess of 250 MHz. GaAs offers high efficiency, linearity and good wideband performance.
- GaN offers greater power handling and density than GaAs across a wide frequency range. Intrinsic GaN technology advantages enable unprecedented performance, or at a given power level, a solution using fewer or smaller devices. GaN offers excellent efficiency, good linearity and noise figure, plus greater wideband capability.
- SAW filter technology offers excellent performance and economy through 2.5 GHz. Our temperature-compensated SAW products expand this versatile technology's capabilities to meet more demanding performance requirements for new and emerging applications.
- BAW filters offer superior low-loss and strong ESD performance as well as greater resistance to temperature effects from 2.5 to 6 GHz. BAW is ideal for challenging applications including co-existence filter requirements and aerospace needs.



New Products

Amplifiers

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (db) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
CATV Push Pull Infrastructure Amplifier MMIC	0.05 - 1	–	32	3 / –	24 / 270 (12v optional)	SOIC16W	TAT8858
CATV Power Doubler Line Amplifier MMIC	0.05 - 1	31 / 52	25	4 / –	24 / 350 (12v optional)	SOIC16W	TAT8857
29.5 dBm HBT Amplifier	0.05 - 1.5	29.6 / 48	20.7	4.4 / –	5 / 240	SOT89	TQP7M9105
33.8 dBm HBT Amplifier	0.05 - 1.5	32.8 / 50	20	4.8 / –	5 / 500	4x4 QFN	TQP7M9106
29.5 dBm HBT Amplifier	0.4 - 4	29.5 / 45.4	20.7	4.4 / –	5 / 235	SOT89	TQP7M9103
CATV 12v Power Doubler MMIC	0.5 - 1	30 / 51	11	4 / –	12 / 45	SOIC16W	TAT8801
CATV 12v Power Doubler MMIC	0.5 - 1	31.5 / 53	11	4 / –	12 / 550	SOIC16W	TAT2801
33.8 dBm HBT Amplifier	0.7 - 2.7	33.8 / 45	21	4.4 / –	5 / 435	4x4 QFN	TQP7M9104
10W GaN	2 - 18	41.5 / –	10	– / 23	35 / 1200	Carrier	TGA2573-TS
2.8W HPA	6 - 18	(34.5) / –	24	– / 20	7 - 9 / 800 - 1200	Carrier	TGA2501-TS
16W HPA	6.5 - 12.5	42 / –	27	– / 35	12 / 3000	Carrier	TGA2517-TS
HPA	10 - 12	33 (34.5) / 43	25	9 / –	6 / 1300	5x5 QFN	TGA2535-SM
HPA	12.5 - 15.5	30 (31.5) / 41	25	7.5 / –	6 / 650	5x5 QFN	TGA2527-SM
2W HPA	12.5 - 17	(34) / –	26	– / 25	7.5 / 650	Carrier	TGA2510-TS
20W HPA	13 - 15	43 / –	19	– / 25	25 / 1000	Flange	TGA2593-GSG
20W HPA	14 - 15.5	43 / –	23	– / 30	25 / 1000	Flange	TGA2579-FL
20W HPA	14 - 16	(43) / –	23	– / 30	20 / 2000	Carrier	TGA2572-TS
16W HPA	14 - 16	(42) / –	27	– / 30	25 / 2000	Die	TGA2572
16W HPA	14 - 16	(42) / –	23	– / 30	25 / 2000	Flange	TGA2572-FL
MPA	17 - 27	29 / –	22	–	7 / 760	5x5 QFN	TGA4525-SM
1W Linear PA	28 - 30	30 (30.5) / –	20	–	6 / 420	5x5 QFN	TGA4539-SM
2W HPA	30 - 40	31.5 (33) / –	18	–	6 / 1050	Carrier	TGA4516-TS

Variable Gain Amplifiers

Description	Frequency Range (GHz)	P1dB / OIP3 (dBm)	Gain (dB)	Gain Range (dB)	Voltage / Current (V / mA)	Package Style	Part Number
Return Path Variable Gain Amplifier	0.005 - 0.3	25 / 41	36	–	8 / 325	6x6 QFN	TAT3814
DOCSIS® 3.0 Edge QAM Variable Gain Attenuator	0.045 - 1.003	28 / –	30	18	5 - 8 / 705 - 770	7x7 QFN	TAT2814A
Digital Variable Gain Amplifier	0.05 - 4	20.5 / 36.5	18	31.5	5 / 88	5x5 QFN	TQM8M9075
Digital Variable Gain Amplifier	0.05 - 4	22 / 38.5	19.5	31.5	5 / 125	5x5 QFN	TQM8M9076
Digital Variable Gain Amplifier	0.05 - 4	21.5 / 38.5	13	31.5	5 / 88	5x5 QFN	TQM8M9077
Digital Variable Gain Amplifier	0.06 - 1	24.3 / 40	31.7	31.5	5 / 174	6x6 QFN	TQM829007
Fiber to the Home Integrated TIA + Attenuator + Amp	0.5 - 1	–	33	3.8	5 / 220	6x6 QFN	TAT6281
Digital Variable Gain Amplifier	1.5 - 2.7	27.3 / 47.5	41	31.5	5 / 285	6x6 QFN	TQM879008
Ka-Band VGA	27 - 31.5	21 at max gain / –	29 (max)	–	5 / 280	6x6 QFN	TGA4541-SM

Gain Block Amplifiers

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
General Purpose Gain Block	DC - 6	15.2 / 29.8	15.7	3.6	5 / 45	SOT89	TQP369180
General Purpose Gain Block	DC - 6	15.2 / 30	15.6	3.6	5 / 45	SOT363	TQP369181
General Purpose Gain Block	DC - 6	16.1 / 29.6	22.3	3.9	5 / 45	SOT89	TQP369182
General Purpose Gain Block	DC - 6	16.2 / 29.8	22	3.9	5 / 45	SOT363	TQP369184
General Purpose Gain Block	DC - 6	19.8 / 32.3	20.4	4.7	5 / 75	SOT89	TQP369185
E-pHEMT LNA Gain Block	0.05 - 4	21.5 / 40	15	2	5 / 85	3x3 QFN	TQP3M9038

New Products (cont.)

Low Noise Amplifiers

Description	Frequency Range (GHz)	P1dB / IIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
LNA, Single-Ended Matched Amp	0.4 - 1.5	20 / 16	19	0.45	5 / 60	2x2 DFN	TQP3M9036
LNA, Single-Ended Matched Amp	1.5 - 2.7	21 / 16	20	0.40	5 / 60	2x2 DFN	TQP3M9037

Discrete Transistors

Description	Frequency Range (GHz)	P1dB (Psat) (dBm)	Gain (dB)	PAE (%)	Voltage / Current (V / mA)	Package Style	Part Number
30W GaN HEMT	DC - 6	44.8	15	50	28 / 200	Ceramic Flat Lead	TIG6003028-FS

Frequency Converters & Mixers

Description	Frequency Range (GHz)	Gain (dB)	LO / RF Isolation (dB)	IIP3 (dBm)	Voltage / Current (V / mA)	Package Style	Part Number
Dual Branch Converter, LO, IF, SW, EN	0.68 - 0.92	9.3	33	25	5 / 310	6x6 QFN	TQP519021
Dual Branch Converter, LO, IF, SW, EN	1.7 - 2.2	9.3	35	25	5 / 310	6x6 QFN	TQP569022
Downconverter (LNA + VCO + Mixer)	17 - 21	8	-	-	5 / 305	5x6 QFN	TGC4408-SM
Upconverter (Lo Amp + Doubler)	21.5 - 32.5	-9	35	13	5 / 65	3x3 QFN	TGC4407-SM

NOTES: EN = Enable / Disable Mode Amplifier, IF = IF Amplifier, LO = LO Amplifier, SW = LO Switch

Signal Conditioning

Description	Frequency (GHz)	Insertion Loss (dB)	Control Range dB or (Deg.)	P1dB (dBm)	Supply Voltage (V)	Package Style	Part Number
7-Bit, Digital Attenuator, Serial Ctrl	DC - 4	1.3	31.75	30	5 / 0	4x4 QFN	TQP4M9083

Switches

Description	Frequency Range (GHz)	Insertion Loss (dB)	Isolation (dB)	P1dB (dBm)	Control Voltage (V)	Package Style	Part Number
SPST - High Isolation Absorptive	0.1 - 6	0.4	48	33	3 / 0	2x2 DFN	TQP4M0013
SPDT - Reflective	0.1 - 6	0.3	30	33	3 / 0	2x2 DFN	TQP4M008
SPDT - High Isolation Reflective	0.1 - 6	0.5	50	31	3 / 0	MSOP8	TQP4M009
SPDT - High Isolation Absorptive	0.1 - 6	0.5	45	32.5	3 / 0	4x4 QFN	TQP4M010
SP3T - Reflective	0.1 - 6	0.3	30	30	3 / 0	3x3 QFN	TQP4M011
SP4T - Reflective	0.1 - 6	0.6	40	33	3 / 0	3x3 QFN	TQP4M012

SAW Duplexers & Filters

Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
High Selectivity IF Filter	140	28.56	28.4	SE / SE	40 @ 44	13.3x6.5	857008
IF SAW Filter - Multi-Standard	192	60	14.5	SE / BAL	38 @ 44	7x5.5	856731
IF SAW Filter - Multi-Standard	358.4	39.6	11.5	SE / BAL	30 @ 30	7x5.5	856882
MICS Band RF Filter	403.5	3	3	BAL / SE	20 @ 398	3x3	856990
RF SAW Filter	457.5	15	2.2	SE / SE	70 @ 472	3.8x3.8	856930
RF SAW Filter - Band 13 / 14 Uplink	787.5	22	2.75	SE / SE	40 @ 843	3x3	856977
RF SAW Filter - Band 5 Uplink	835	30	3	SE / SE	20 @ 869	3x3	857019
RF Filter - Band 5 Uplink	836.5	25	2.3	SE / SE	50 @ 869	1.4x1.2	857038
RF SAW Filter - Band 3 Downlink	1842.5	75	4.2	SE / SE	20 @ 1785	3x3	856934
RF SAW Filter - Band 25 Uplink	1882.5	65	1.9	SE / SE	32 @ 2030	3x3	856992
ISM / WLAN Passband	2437	66	2.1	SE / SE	34 @ 2550	1.4x1.2	857005

New Products (cont.)

BAW Duplexers & Filters

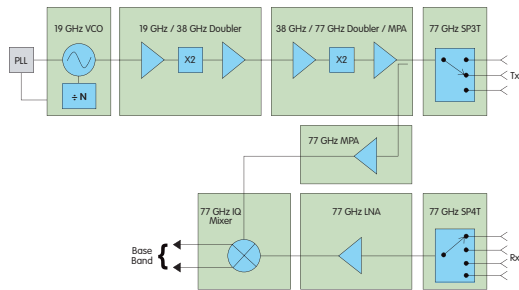
Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
Band 3 Duplexer	1747.5 / 1842.5	75 / 75	2.6 / 2.7	SE / SE	–	2.5x2	TQM956003
RF BAW Filter - Band 2 Uplink	1880	60	3.5	SE / SE	30 @ 1920	3x3	885025
PCS Duplexer	1880 / 1960	60 / 60	1.32 / 1.52	SE / SE	–	3.8x3.8	TQM969001
BC1 / B2 Duplexer	1880 / 1960	60 / 60	1.8 / 1.9	SE / SE	–	2.5x2	TQM966002
BC14 / B25 Duplexer	1882.5 / 1962.5	65 / 65	1.8 / 2.2	SE / SE	–	2.5x2	TQM963014
RF BAW Filter - Band 2 Downlink	1960	60	3.7	SE / SE	34 @ 1920	3x3	885024
B25 Diversity Rx Filter	1962.5	65	2.6	SE / SE	–	2.5x2	TQM966025
ISM Passband Filter for Coexistence	2436	72	1.8	SE / SE	20 @ 2495	1.4x1.2	885017
RF BAW Filter - Band 7 Uplink	2535	70	1.3	SE / SE	41 @ 2620	3x3	885009
Band 7 Duplexer	2535 / 2655	70 / 70	2.5 / 1.5	SE / SE	–	2.5x2	TQM976027

Integrated Products

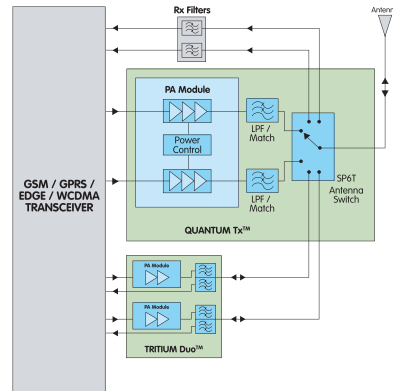
Description	Frequency Bands	Features	Package Size (mm)	Part Number
Quad-Band GSM / GPRS / EDGE-Linear PA Module	GSM900 / DCS & GSM850 / PCS	Input Power Controlled for GMSK & 8PSK	5x5x1	TQM7M5033
Quad-Band GSM / GPRS / EDGE-Linear PA Module	GSM900 / DCS & GSM850 / PCS	Input Power Controlled for GMSK & 8PSK	5x3.5x1	TQM7M5050
LTE PA Module, w/Coupler	Band 17	LTE 1-Bit (Hi / Lo Power Modes)	3x3x0.9	TQM700017
Integrated 2-in-1 PA-Duplexer Module	Bands 1 & 8	DC / DC, 1-Bit (Hi / Med Power Modes)	6x4.5x1	TQM6M6218
Integrated 2-in-1 PA-Duplexer Module	Bands 2 & 5	DC / DC, 1-Bit (Hi / Med Power Modes)	6x4.5x1	TQM6M6225
Integrated 2-in-1 PA-Duplexer Module	Bands 1 & 4	DC / DC, 1-Bit (Hi / Med Power Modes)	6x4.5x1	TQM6M6214
WCDMA / HSPA PA-Duplexer Module; SE Input w/Coupler, Detector	Band 2	DC / DC, 1-Bit (Hi / Med Power Modes)	4.5x3.5x1	TQM666052
GSM / GPRS / EDGE-Linear Tx Module: PA / LPF / SP8T WEDGE Switch w/ Quad-Band WCDMA / LTE Ports	GSM900 / DCS or GSM850 / PCS & 4 WCDMA / LTE Bands	Integrated QB GSM / GPRS / EDGE PA & Antenna Switch	5x6x1	TQM6M9085
Multi-Mode, Multi-Band Quad-Band GMSK / EDGE, Dual-Band WCDMA PA Module	GSM850 / 900, DCS / PCS & WCDMA B1 & B5 / 8	1-Bit (Hi / Med Power Modes)	5x7.5x1	TQM7M9053
2.4 GHz and 5 GHz WLAN High-Performance PA + Switch MMIC w/WLAN 2.4 GHz and 5 GHz LNA + Rx Baluns and Bluetooth® Path	802.11 a, b, g, n, ac	ETSLP-24 Package, Coupler / Detector	4x4x0.45	TQP6M9017
5 GHz WLAN PA + Low Noise Amplifier + SP2T Switch MMIC	802.11 a, n	ETSLP-16 Package, Coupler / Detector	2.5x2.5x0.4	TQP887016
2.4 GHz WLAN PA + Low Noise Amplifier + SP3T Switch MMIC for Bluetooth® Path	802.11 b, g, n	ETSLP-16 Package, Coupler / Detector	2.5x2.5x0.4	TQP879016

Optical Components – Drivers

Description	Frequency (GHz)	Power (Vpp or dBm)	Gain (dB)	Voltage / Current (V / mA)	Package Style	Part Number
100 Gb/s 8V pp Dual Channel Driver w/Bias-Ts inside	DC - 35	3 - 9Vpp	32	5 - 7 / 500	16x10.5 SL	TGA4947-SL
45 Gb/s 9Vpp Diff In / Out Driver MMIC	DC - 50	6 - 10Vpp Diff	27 Diff	5 - 6 / 500	Die	TGA4959



Example of a 77 GHz Radar Front-End



**Cellular & GPS
Transceiver for
Auto Telematics**

Amplifiers & Low Noise Amplifiers

Description	Frequency Range (GHz)	Psat (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
77 GHz LNA	72 - 80	5	20	5	3.5 / 54	Die	TGA4705-FC
77 GHz MPA	76 - 80	14	12	-	3.5 / 75	Die	TGA4706-FC

Switches

Description	Frequency Range (GHz)	Insertion Loss	Isolation (dB)	P1dB (dBm)	Control Voltage (V)	Package Style	Part Number
SP3T	60 - 90	2.3	20	>-13	-5 / 1.35	Die	TGS4305-FC
SP4T	70 - 90	3	20	>-8	-5 / 1.35	Die	TGS4306-FC

Frequency Converters & Mixers

Description	Frequency Range (GHz)	Conversion Gain (dB)	LO / RF Isolation (dB)	Psat (dBm)	Voltage / Current (V / mA)	Package Style	Part Number
19 GHz VCO w/8:1 Prescaler	18.5 - 19.5	-	-105+	7.0	5 / 158	Die	TGV2204-FC
19 / 38 GHz Converter / MPA	36 - 40	9	-	14.5	3.5 / 65	Die	TGC4703-FC
77 GHz Down Converting I/Q Mixer	75 - 82	-13.5	22	-	1.1 / 7	Die	TGC4702-FC
38 / 77 GHz Converter / MPA	76 - 77	6	-	15.0	4 / 230	Die	TGC4704-FC

NOTES: + = Phase Noise (dBc / Hz @ 1 MHz Offset)

Integrated Products

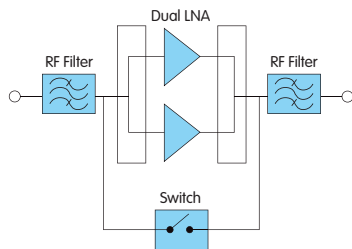
Description	Frequency Bands	Features	Package Size (mm)	Part Number
Quad-Band GSM / GPRS / EDGE-Polar PA Module	GSM900 / DCS & GSM850 / PCS	+3 to +8 dBm Pin Nominal	5x5x1	TQM7M5012H
WCDMA / HSUPA PA-Duplexer Module; SE Input w/Coupler, Detector	Band 1	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM676021
WCDMA / HSUPA PA-Duplexer Module; SE Input w/Coupler, Detector	Band 2	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM666022
WCDMA / HSUPA PA-Duplexer Module; SE Input w/Coupler, Detector	Bands 5 and 6	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM616025
WCDMA / HSUPA PA-Duplexer Module; SE Input w/Coupler, Detector	Band 8	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM626028L
GSM / GPRS / EDGE-Linear TRP Tx Module: PA / LPF / SP8T WEDGE Switch w/ Quad-Band WCDMA / LTE Ports	GSM850 / 900, DCS / PCS & WCDMA B1, B2, B5 / 6, B8	Integrated QB GSM / GPRS / EDGE PA & Antenna Switch Supporting WCDMA TRP	7x7.5x1.1	TQM6M9014

Filters & Duplexers

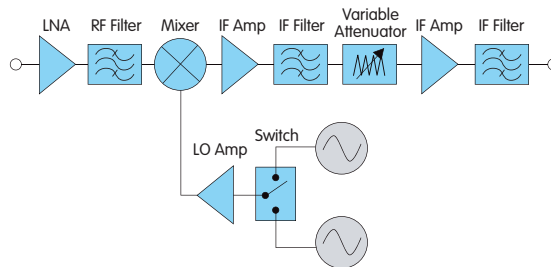
Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
RF Filter - Band 5 Uplink	836.5	25	2.3	SE / SE	50 @ 869	1.4x1.2	857038*
Duplexer, Cell Band	836.5 / 881.5	25 / 25	1.9 / 1.9	SE / SE	–	3.8x3.8	856356
CDMA 2-in-1 Rx Filter	881.5 / 1960	25 / 60	1.6 / 2.2	SE / BAL	–	2x1.5	856565
GPS RF Filter	1575.42	2	1.25	SE / SE	30 @ 1624	2x1.5	856584
GPS RF Filter	1575.42	2	0.75	SE / SE	35 @ 1635	1.4x1.2	856561
GPS RF Filter	1575.42	2	1.1	SE / BAL	20 @ 1635	1.4x1.2	856576
GPS RF Filter, Auto	1575.42	2	1.8	SE / SE	45 @ 1637	3x3	856039
GPS RF Filter, Auto	1575.42	2	1.3	SE / SE	45 @ 1640	3x3	856139
GPS / SDARS Diplexer	1575.42 / 2332.5	3 / 25	0.6 / 0.08	SE / SE	GPS Port: 40 @ 2332 SDARS Port: 31 @ 1572	3x3	TQM2M9016
SDARS Filter	2332.5	45	1.7	SE / BAL	35 @ 2100	1.4x1.2	856604

NOTES: * = New

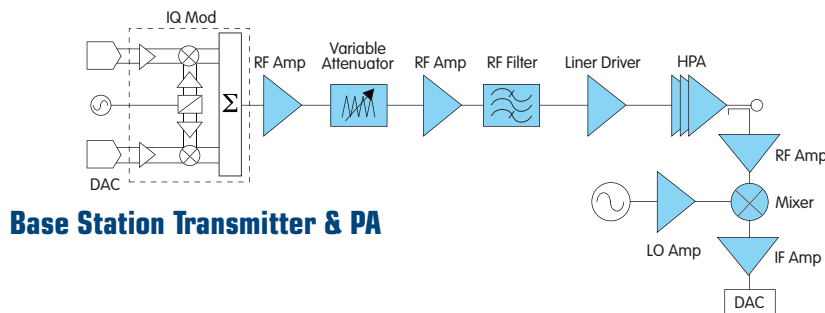
GUIDE BY MARKET | Base Station



Tower Mounted LNA



Base Station Receiver (Single Branch Shown)



Base Station Transmitter & PA

General Purpose Amplifiers

Description	Frequency Range (MHz)	P1dB / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
General Purpose Gain Block	DC - 3000	18.5 / 33	16.5	3.8	6 / 75	SOT89	AG603
General Purpose Gain Block	DC - 3500	18.5 / 33	13.6	4.4	6 / 75	SOT89	AG602
General Purpose Gain Block	DC - 6000	5.8 / 18.5	11	4.4	5 / 20	SOT86 / SOT363	AG201
General Purpose Gain Block	DC - 6000	7.5 / 19.5	17.7	3.1	5 / 20	SOT86 / SOT363	AG203
General Purpose Gain Block	DC - 6000	12 / 25	14.3	3.2	5 / 35	SOT86 / SOT363	AG302
General Purpose Gain Block	DC - 6000	12.5 / 25	18.4	3	5 / 35	SOT86 / SOT363	AG303
General Purpose Gain Block	DC - 6000	16 / 28.5	14.5	3.7	6 / 60	SOT86 / SOT89	AG402
General Purpose Gain Block	DC - 6000	16 / 28	18.9	3	6 / 60	SOT86 / SOT89	AG403
General Purpose Gain Block	DC - 6000	14.5 / 27.5	19.1	2.9	6 / 45	SOT86 / SOT89	AG503
General Purpose Gain Block	DC - 6000	19 / 33	18.2	3.5	6 / 75	SOT86 / SOT89	AG604

General Purpose Amplifiers (cont.)

Description	Frequency Range (MHz)	P1dB / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
General Purpose Gain Block	DC - 6000	15.2 / 29.8	15.7	3.6	5 / 45	SOT89	TQP369180*
General Purpose Gain Block	DC - 6000	15.2 / 30	15.6	3.6	5 / 45	SOT363	TQP369181*
General Purpose Gain Block	DC - 6000	16.1 / 29.6	22.3	3.9	5 / 45	SOT89	TQP369182*
General Purpose Gain Block	DC - 6000	16.2 / 29.8	22	3.9	5 / 45	SOT363	TQP369184*
General Purpose Gain Block	DC - 6000	19.8 / 32.3	20.4	4.7	5 / 75	SOT89	TQP369185*
+5V Active Bias IF Gain Block	50 - 1000	20.5 / 44	19.5	5	5 / 95	SOT89	WJA1500
+5V Active Bias IF Gain Block	50 - 1000	20 / 47	14.4	5.4	5 / 95	SOT89	WJA1510
E-pHEMT LNA Gain Block	50 - 4000	20 / 37.5	21.5	1.1	5 / 85	SOT89	TQP3M9008
E-pHEMT LNA Gain Block	50 - 4000	21.4 / 37.5	22	1.1	5 / 85	3x3 QFN	TQP3M9018
E-pHEMT LNA Gain Block	50 - 4000	22 / 40.5	24.7	0.9	5 / 125	SOT89	TQP3M9009
E-pHEMT LNA Gain Block	50 - 4000	22 / 40.5	24.7	0.9	5 / 125	3x3 QFN	TQP3M9019
E-pHEMT LNA Gain Block	50 - 4000	21.5 / 40	15	2	5 / 85	SOT89	TQP3M9028
E-pHEMT LNA Gain Block	50 - 4000	21.5 / 40	15	2	5 / 85	3x3 QFN	TQP3M9038*
E-pHEMT LNA Gain Block	100 - 4000	22 / 34	19.4	0.8	5 / 55	3x3 QFN	TQP3M9005
E-pHEMT LNA Gain Block	100 - 4000	22.5 / 38.5	18.7	1	5 / 90	3x3 QFN	TQP3M9006
E-pHEMT LNA Gain Block	100 - 4000	23.5 / 41	18	1.3	5 / 135	SOT89	TQP3M9007

NOTES: * = New

High-Linearity Driver Amplifiers

Description	Frequency Range (MHz)	P1dB / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
26.5 dBm MESFET Amplifier	50 - 1500	26.5 / 47	13.5	3.5	9 / 200	SOT89	AH101
29.5 dBm HBT Amplifier	50 - 1500	29.6 / 48	20.7	4.4	5 / 240	SOT89	TQP7M9105*
33.8 dBm HBT Amplifier	50 - 1500	32.8 / 50	20	4.8	5 / 500	4x4 QFN	TQP7M9106*
30 dBm MESFET Amplifier	50 - 2200	30 / 47	17	2.5	11 / 330	6x6 QFN	AH202
27 dBm MESFET Amplifier	60 - 2700	27 / 46	29	2.5	4.5; 9 / 275	SOIC-8	AH103A
27 dBm MESFET Amplifier	350 - 3000	27 / 46	14.5	3.1	9 / 200	SOT89	AH102A
35.5 dBm HBT Amplifier	400 - 2700	35.5 / 50	16	7	5 / 800	4x5 DFN	AH420
24.5 dBm HBT Amplifier	400 - 4000	24.3 / 39.5	20.4	4	5 / 87	SOT89	TQP7M9101
27.5 dBm HBT Amplifier	400 - 4000	27.5 / 44	21.9	4	5 / 137	SOT89	TQP7M9102
29.5 dBm HBT Amplifier	400 - 4000	29.5 / 45.4	20.7	4.4	5 / 235	SOT89	TQP7M9103*
33 dBm HBT Amplifier	700 - 2700	33 / 50	27.5	7	5 / 680	5x5 QFN	AH323
39 dBm HBT Amplifier	700 - 2900	39 / -	16.5	8	12 / 300	5x6 DFN	AP561
28 dBm HBT Amplifier	700 - 3800	28 / 42	28.5	2.9	5 / 225	4x4 QFN	TQP8M9013
33.8 dBm HBT Amplifier	700 - 4000	33.8 / 45	21	4.4	5 / 435	4x4 QFN	TQP7M9104*
30 dBm HBT Amplifier	1800 - 2700	30 / 46	24.6	5.5	5 / 400	SOIC-8	AH212

NOTES: * = New

Variable Gain Amplifiers

Description	Frequency Range (MHz)	P1dB / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
Variable Gain Amplifier	50 - 2200	22 / 42	15.5	20	5 / 150	4x4 QFN	VG025
Digital Variable Gain Amplifier	50 - 4000	20.5 / 36.5	18	31.5	5 / 88	5x5 QFN	TQM8M9075*
Digital Variable Gain Amplifier	50 - 4000	22 / 38.5	19.5	31.5	5 / 125	5x5 QFN	TQM8M9076*
Digital Variable Gain Amplifier	50 - 4000	21.5 / 38.5	13	31.5	5 / 88	5x5 QFN	TQM8M9077*
Digital Variable Gain Amplifier	600 - 1000	24.3 / 40	31.7	31.5	5 / 174	6x6 QFN	TQM829007*
Variable Gain Amplifier	700 - 1000	22 / 40	16	29	5 / 150	6x6 QFN	VG101
Variable Gain Amplifier	700 - 2800	27.5 / 43	29	30	5 / 240	5x5 QFN	TQM8M9074
Digital Variable Gain Amplifier	1400 - 2700	24.5 / 43	31.7	31.5	5 / 174	6x6 QFN	TQM879006
Digital Variable Gain Amplifier	1500 - 2700	27.3 / 47.5	41	31.5	5 / 285	6x6 QFN	TQM829008*

NOTES: * = New

Low Noise Amplifiers

Description	Frequency Range (GHz)	P1dB / IIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
LNA, Single-Ended Matched Amp	50 - 4000	21.8 / 15.8	24.7	0.9	5 / 125	SOT89	TQP3M9009
LNA, Single-Ended Matched Amp	50 - 4000	21.8 / 15.8	24.7	0.9	5 / 125	3x3 QFN	TQP3M9019
LNA, Single-Ended Matched Amp	100 - 4000	22.3 / 18.7	15.3	0.8	5 / 55	3x3 QFN	TQP3M9005
LNA, Single-Ended Matched Amp	100 - 4000	22.4 / 25	13.5	1	5 / 90	3x3 QFN	TQP3M9006
LNA, Single-Ended Matched Amp	400 - 1500	20 / 16	19	0.45	5 / 60	2x2 QFN	TQP3M9036*
LNA, Balanced FET Low Band	700 - 915	- / 13.5	20.5	0.55	4 / 70	4x4 QFN	TQP3M6004
LNA, Discrete Low Band High Linearity	700 - 915	26 / 23.5	16	0.8	5 / 150	SOT89	TGF2021-04-SD
LNA, Balanced FET	800 - 3000	21 / 11	22	0.4	4 / 100	2x2 QFN	TGA2602-SM
LNA, Single-Ended Matched Amp	1500 - 2700	21 / 16	20	0.40	5 / 60	2x2 QFN	TQP3M9037*
LNA, Balanced FET Mid Band	1700 - 2000	- / 14.4	18	0.55	3.5 / 50	4x4 QFN	TQP3M6005

NOTES: * = New

Control Products

Description	Frequency Range (MHz)	Insertion Loss (dB)	Isolation / Atten Range (dB)	P1dB (dBm)	Control Voltage (V)	Package Style	Part Number
SP3T Switch	DC - 2000	0.45	28 / -	>36.5	2.6 / 0	3x3 QFN	TQP4M3018
SP3T Switch	DC - 2000	0.6	22 / -	>34.5	2.6 / 0	2x2 QFN	TQP4M3019
6-Bit, Digital Attenuator, Parallel Ctrl	DC - 4000	1.3	- / 31.5	30	5 / 0	4x4 QFN	TQP4M9071
6-Bit, Digital Attenuator, Serial Ctrl	DC - 4000	1.3	- / 31.5	30	5 / 0	4x4 QFN	TQP4M9072
7-Bit, Digital Attenuator, Serial Ctrl	DC - 4000	1.3	- / 31.75	30	5 / 0	4x4 QFN	TQP4M9083*
Through Line	DC - 6000	0.1	-	-	-	3x3 QFN	TQM4M9073
SPDT Switch	1000 - 6000	0.6	28 / -	31.5	3 / 0	1.3x2 DFN	TQS5200
DPDT Switch	1000 - 6000	0.8	33 / -	33	3 / 0	3x3 QFN	TQS5202

NOTES: * = New

Frequency Converters & Mixers

Description	Frequency Range (MHz)	Conversion Gain (dB)	LO / RF Isolation (dB)	IIP3 (dBm)	Voltage Current (V / mA)	Package Style	Part Number
WB Mixer, LO	500 - 2500	-5.7	8	24	3 - 6 / 6	MW6	CMY210
WB Mixer, LO, IF, Low Current	500 - 2500	9.5	10	10	3 - 6 / 8	SCT598	CMY213
Dual Branch Converter, LO, IF, SW, EN	680 - 920	9.3	33	25	5 / 310	6x6 QFN	TQP519021*
Mixer, LO	700 - 1500	-9	17	36	5 / 50	MSOP-8	ML483
Single Branch Converter, RF, LO, IF	800 - 960	22	60	15	5 / 360	6x6 QFN	CV110-3A
Dual Branch Converter, LO, IF	800 - 960	10.5	14	18.5	5 / 390	6x6 QFN	CV210-3A
Mixer, LO	1500 - 3200	-8.5	2	35	5 / 45	MSOP-8	ML485
Dual Branch Converter, LO, IF, SW, EN	1700 - 2200	9.3	35	25	5 / 310	6x6 QFN	TQP569022*
Single Branch Converter, RF, LO, IF	1700 - 2000	21	45	17	5 / 360	6x6 QFN	CV111-1A

NOTES: * = New, EN = Enable / Disable Mode Amplifier, IF = IF Amplifier, LO = LO Amplifier, RF = RF Amplifier, SW = LO Switch

Discrete Transistors

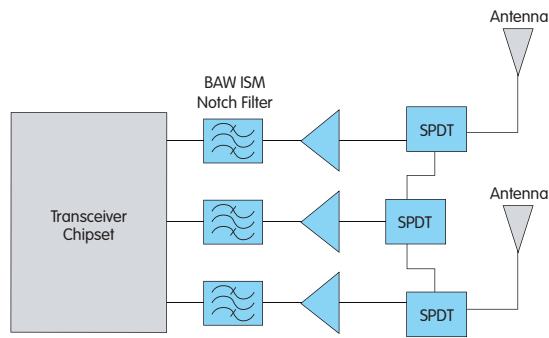
Description	Frequency Range (MHz)	P1dB / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage Current (V / mA)	Package Style	Part Number
0.5W HFET	DC - 6000	28 / 40	18	3.2	8 / 100	SOT89	TGF2960-SD
1W HFET	DC - 6000	31 / 43	16	4	8 / 200	SOT89	TGF2961-SD
MESFET	50 - 4000	21 / 42	19	2	5 / 140	SOT89	FH1
MESFET	50 - 4000	18 / 36	19	2	5 / 140	SOT89	FH101

RF Filters

Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
RF SAW Filter - Band 12 Uplink	707	18	1.5	SE / SE	9 @ 728	3x3	856884
RF SAW - Band 12 Downlink	737	18	1.8	SE / SE	37 @ 708	3x3	856883
RF SAW Filter - Band 13 Downlink	751.5	11	1.5	SE / SE	40 @ 776	3x3	856794
BWA IF Filter	756	20	0.9	SE / SE	30 @ 716	3.8x3.8	856866
RF SAW Filter - Band 13 Uplink	781.5	11	1.5	SE / SE	38 @ 757	3x3	856764
RF SAW Filter - Band 13 Uplink	782	10	1.52	SE / SE	15 @ 765	3x3	856844
RF SAW Filter - Band 13 / 14 Uplink	787.5	22	2.75	SE / SE	40 @ 843	3x3	856977*
RF SAW Filter - Band 5 Uplink	835	30	3	SE / SE	20 @ 869	3x3	857019*
RF SAW Filter - Band 5 Uplink	836.5	25	2.7	SE / SE	28 @ 869	3x3	855729
RF SAW Filter - Band 5 Uplink	836.5	25	2.7	SE / SE	28 @ 869	3x3	856503
RF SAW Filter - Band 5 Uplink	836.5	25	1.9	SE / SE	35 @ 869	3x3	855821
RF SAW Filter - Band 5 Uplink	836.5	25	2	SE / SE	10 @ 869	3x3	856704
RF SAW Filter - Band 20 Uplink	847	30	1.3	SE / SE	10 @ 882	3x3	856932
EU ISM 875 Band RF Filter	875	13	2.4	SE / SE	55 @ 849	2x1.5	856963
RF SAW Filter - Band 5 Downlink	881.5	25	2.7	SE / SE	40 @ 849	3x3	856504
RF SAW Filter - Band 5 Downlink	881.5	25	2.7	SE / SE	40 @ 849	3x3	855728
RF SAW Filter - Band 5 Downlink	881.5	25	1.8	SE / SE	35 @ 849	3x3	855782
Cell Band Delay Filter, 450 ns	881.5	25	25	SE / BAL	–	7x5.5	856716
RF SAW Filter - Band 8 Uplink	897.5	35	1.9	SE / SE	14 @ 930	3x3	856671
RF SAW Filter - Band 8 Uplink	897.5	35	1.5	SE / SE	15 @ 930	3x3	856657
RF SAW Filter - Band 8 Uplink	897.5	35	1.4	SE / SE	10 @ 984	3x3	856824
ISM 921.5 Band RF Filter	921.5	13	2.4	SE / SE	55 @ 825	2x1.5	856905
RF SAW Filter - Band 8 Downlink	942.5	35	2	SE / SE	5 @ 915	3x3	855820
RF SAW Filter - Band 8 Downlink	942.5	35	3.2	SE / SE	12 @ 915	3x3	855810
RF SAW Filter - Band 8 Downlink	942.5	35	2.5	SE / SE	25 @ 915	3x3	856528
RF SAW Filter - Band 11 Uplink	1445.4	35	1.25	SE / SE	20 @ 1495.9	3x3	856928
RF SAW Filter - Band 3 Uplink	1747.5	75	2	SE / SE	22 @ 1676	3x3	856654
RF SAW Filter - Band 3 Downlink	1842.5	75	1.9	SE / SE	10 @ 1785	3x3	855860
RF SAW Filter - Band 3 Downlink	1842.5	75	4.2	SE / SE	20 @ 1785	3x3	856934*
RF SAW Filter - Band 2 Uplink	1880	60	2.4	SE / SE	7 @ 1930	3x3	855849
RF SAW Filter - Band 2 Uplink	1880	60	2.8	SE / SE	30 @ 1930	3x3	856530
RF SAW Filter - Band 2 Uplink	1880	60	2.2	SE / SE	15 @ 1806	3x3	856705
RF SAW Filter - Band 2 Uplink	1880	60	2.3	SE / SE	10 @ 1790	3x3	856880
RF BAW Filter - Band 2 Uplink	1880	60	3.5	SE / SE	30 @ 1920	3x3	885025*
RF SAW Filter - Band 25 Uplink	1882.5	65	1.9	SE / SE	32 @ 2030	3x3	856992*
RF SAW Filter - Band 1 Uplink	1950	60	2.2	SE / SE	40 @ 2110	3x3	856532
RF SAW Filter - Band 1 Uplink	1950	60	1.8	SE / SE	20 @ 2100	3x3	856678
RF SAW Filter - Band 2 Downlink	1960	60	2.1	SE / SE	10.3 @ 1910	3x3	855817
RF SAW Filter - Band 2 Downlink	1960	60	2.25	SE / SE	14 @ 1910	3x3	856531
RF SAW Filter - Band 2 Downlink	1960	60	2.9	SE / SE	15 @ 1910	3x3	855859
Delay Filter, PCS 450 ns	1960	60	25	SE / BAL	–	7x5.5	856717
RF BAW Filter - Band 2 Downlink	1960	60	3.7	SE / SE	34 @ 1920	3x3	885024*
Delay Filter, UMTS 450 ns	2140	60	25	SE / BAL	–	7x5.5	856649
RF SAW Filter - Band 1 Downlink	2140	60	2.3	SE / SE	25 @ 1980	3x3	856738
RF BAW Filter - Band 7 Uplink	2535	70	1.3	SE / SE	41 @ 2620	3x3	885009*

NOTES: * = New

TriQuint Semiconductor offers a wide variety of **base station IF filters**. To view a selection of the most common filters, please go to the SAW filter section on pages 43 - 47.


Broadband Transceiver

Amplifiers

Description	Frequency Range (GHz)	P1dB / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
39 dBm HBT Amplifier	0.7 - 2.9	39 / –	16.5	8	12 / 300	5x5 QFN	AP561
WiMAX Driver Amp / PA, SB	3.4 - 3.8	30 / 42	24	–	6 / 770	5x5 QFN	TGA2703-SM

NOTES: SB = Self Biased

Discrete Transistors

Description	Frequency Range (GHz)	P1dB / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
0.5W HFET	DC - 6000	28 / 40	18	3.2	8 / 100	SOT89	TGF2960-SD
1W HFET	DC - 6000	31 / 43	16	4	8 / 200	SOT89	TGF2961-SD
MESFET	50 - 4000	21 / 42	19	2	5 / 140	SOT89	FH1
MESFET	50 - 4000	18 / 36	19	2	5 / 140	SOT89	FH101

Switches

Description	Frequency Range (GHz)	Insertion Loss (dB)	Isolation (dB)	P1dB (dBm)	Control Voltage (V)	Package Style	Part Number
SP2T 802.11 a, b, g	DC - 6	0.6	28	31.5	3 / 0	1.3x2 DFN	TQS5200

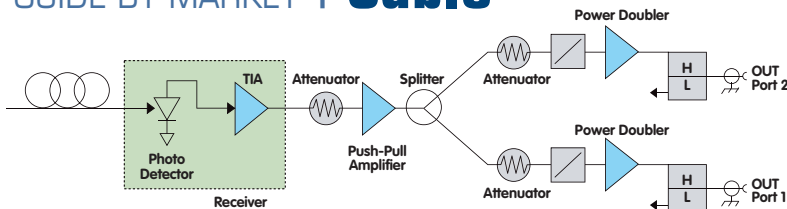
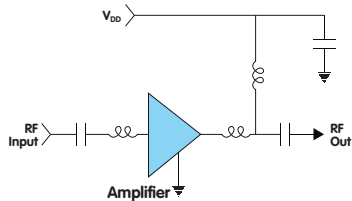
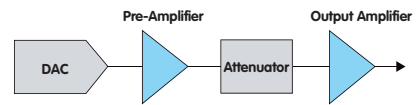
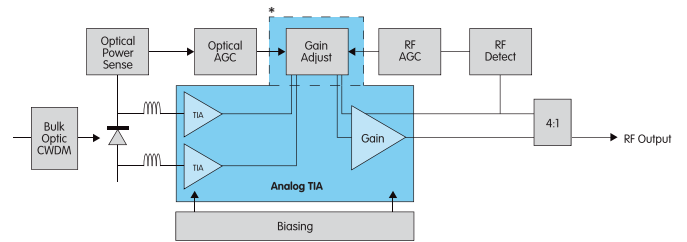
Filters For Coexistence

Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
ISM Passband Filter for Coexistence	2436	72	1.8	SE / SE	20 @ 2495	1.4x1.2	885017*
ISM Passband Filter for Coexistence	2436	72	2	SE / SE	20 @ 2495	1.7x1.3	885007
ISM Notch RF Filter for Coexistence	2440	72	1.5 (Out of Band IL)	SE / SE	25 @ 2440 (Notch Rej)	1.7x1.3	885008
ISM Notch RF Filter for Coexistence	2440	85	2 (Out of Band IL)	SE / SE	18 @ 2440 (Notch Rej)	1.7x1.3	885010

NOTES: * = New

IF Filters

TriQuint Semiconductor offers a wide variety of BWA / WiMAX IF filters. To view a selection of the most common filters, please go to the SAW filter section on pages 43 - 47.


CATV Infrastructure

Subscriber Home Amplifiers

Edge QAM DOCSIS® 3.0


* New TAT6281 includes additional gain adjust function.

FTTH / RFoG

Amplifiers

Description	Application	Frequency Range (MHz)	P1dB / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
CATV Gain Block, Flex Gain	Home Amplifier	DC - 2000	21 / 38	16 - 21	2	5 - 8 / 100	SOT89	TAT7457
Dual HBT Amplifier	General Purpose	DC - 2700	19 / 33	18	3.5	>6 / 75	SOT86 / SOT89	AG604
Return Path Variable Gain Amplifier	Infrastructure	5 - 300	25 / 41	36	5	8 / 325	6x6 QFN	TAT3814*
On-Chip Linearized Amplifier	DOCSIS 3.0 Output	40 - 1000	- / 43	17	4.7	5 / 380	SOIC-8	TAT7467H
CATV Gain Block	DOCSIS 3.0 Output	40 - 1000	27 / 46	20	1.5	8 / 350	4x4 QFN	TGA2803-SM
CATV Gain Block	DOCSIS 3.0 Output	40 - 1000	27 / 46	20	1.5	8 / 350	5x5 QFN	TGA2806-SM
CATV Gain Block	DOCSIS 3.0 Output	40 - 1000	28 / -	18.5	2.5	6 / 318	5x5 QFN	TGA2807-SM
DOCSIS 3.0 Edge QAM Variable Gain Amplifier	DOCSIS 3.0 Output	45 - 1003	28 / -	18	2.7	5 - 8 / 705 - 770	7x7 QFN	TAT2814A*
CATV Power Doubler Line Amplifier MMIC	Infrastructure	50 - 1000	31 / 52	25	4	24 / 350 (12v optional)	SOIC16W	TAT8857*
Fiber to the Home Integrated TIA + Attenuator + Amp	Fiber to the Home	50 - 1000	-	33	3.8	5 / 220	6x6 QFN	TAT6281*
CATV 12v Power Doubler MMIC	Infrastructure	50 - 1000	30 / 51	11	4	12 / 450	SOIC16W	TAT8801*
CATV 12v Power Doubler MMIC	Infrastructure	50 - 1000	31.5 / 53	11	4	12 / 550	SOIC16W	TAT2801*
CATV Push Pull Infrastructure Amplifier MMIC	Infrastructure	50 - 1000	-	32	3	24 / 270 (12v optional)	SOIC16W	TAT8858*
Dual pHEMT Amplifier, High Gain	Infrastructure GP	50 - 1000	- / 38	17.5	3.2	5 / 235	SOIC-8	TAT7469
Dual pHEMT Amplifier	Infrastructure GP	50 - 1000	- / 41	13	4	6 / 190	SOIC-8	TAT7466
Dual MESFET Amplifier	Infrastructure GP	50 - 1000	25.5 / 43	11.1	4.5	5 / 320	SOIC-8	AH22S
Fiber to the Home TIA + Output Amp	Fiber to the Home, RFoG, Low Input	50 - 1000	-60 dBc CTB / CSO	38	2.9 pA / rHz EIN	10 - 12 / 120	4x4 QFN	TAT6254B
CATV Gain Block, High Gain	Home Amplifier, MOCA Multi	50 - 1000	- / 41	22.5	2	8 / 190	SOT89	TAT7430B
CATV Gain Block, High Gain	Home Amplifier, MOCA	50 - 1000	- / 39	18	2	6 / 145	SOT89	TAT7427
CATV Gain Block	Home Amplifier	50 - 1000	- / 39	16	2.7	6 / 130	SOT89	TAT7461
MESFET Amplifier	General Purpose	50 - 1000	20 / 40	14.8	3.5	5 / 150	SOT89	AH2
Single-Ended Darlington	Return Path Amplifier	50 - 1000	20 / 37	13.5	4.5	>7 / 165	SOIC-8	AG606
Fiber to the Home TIA + Output Amp	Fiber to the Home, RFoG	50 - 1000	-62 dBc CTB / CSO	32	3.9 pA / rHz EIN	5, 12 / 200, 130	4x4 QFN	TAT6254D
Fiber to the Home TIA + Output Amp	Fiber to the Home, High Output	50 - 1000	-63 dBc CTB / CSO	33	3.9 pA / rHz EIN	5, 12 / 200, 130	4x4 QFN	TAT6254C
MESFET Amplifier	General Purpose	50 - 1500	30 / 50	10.4	5.3	9 / 400	SOT89	AH101
Dual pHEMT Amplifier, Wideband	CATV + SAT Wideband Amp / VONU	50 - 2600	-77 dBc CTB / -83 dBc CSO	13	4.4	5 / 160	SOIC-8	TAT7464
CATV Gain Block, Wideband	CATV + SAT Wideband Amp / VONU	50 - 2600	- / 36	16.5	2.5	5 / 100	SOT89	TAT7460

NOTES: * = New, GP = General Purpose

Filters							
Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection [dB @ BW or Freq (MHz)]	Package Size (mm)	Part Number
Cable IF Filter	36.15	8	19.7	SE / SE	38 @ 10.23	DIP	855748
Cable IF Filter	44	6	20.4	SE / SE	38 @ 7.6	DIP	855079
Cable IF Filter	202.75	1.2	6.6	SE / SE	40 @ 10	13.3x6.5	855068
Cable IF Filter	499.25	1	7	SE / SE	35 @ 6	9x7	855104
Tuner IF Filter	1086	10	4	BAL / BAL	40 @ 1046	3x3	855964
Tuner IF Filter	1086	10	4	BAL / BAL	40 @ 1046	3x3	856330
Tuner IF Filter	1090	10	5	BAL / BAL	50 @ 1050	3.8x3.8	856096
Tuner IF Filter	1216	8	3.75	BAL / BAL	12 @ 24	3x3	856365
Tuner IF Filter	1220	10	4.5	BAL / BAL	30 @ 60	3x3	856298
Tuner IF Filter	1220	50	3.9	BAL / BAL	33 @ 96	3.8x3.8	856598
Tuner IF Filter	1250	96	6	BAL / BAL	44 @ 1152	3x3	856653

Protector							
Description	Application	Leakage Current (nanoAmps)	Trigger Voltage (V)	Series Capacitance (pF)	Package Area (mm²)	Package Style	Part Number
CATV Protector	ESD & Secondary Protection	20 @ 1V, 500 @ 15V	18, 25, 41	0.29, 0.29, 0.22	1.8	T / SLP-3	TQP200002

GUIDE BY MARKET | Defense & Aerospace

Many listings in this product guide support both commercial and defense applications. The tables in this section are a partial listing of devices suitable for specific defense / aerospace applications. We have included product solutions based on RF GaN technology as a separate listing at the outset of this section. Although located here for easy reference, GaN products have wide-ranging applications across many commercial markets. Products listed throughout this guide may be specially screened to meet unique customer requirements including 100% electrical screening and visual inspection to either MILSTD-883 Class B or Class S. Please contact TriQuint with your requirements: info-defense@tqs.com.

GaN

Transistors								
Description	Frequency Range (GHz)	Psat (dBm)	Gain (dB)	PAE (%)	Bias (V / mA)	Package Style	ECCN	Part Number
55W HEMT	DC - 3.5	47.2	12	50	28 / 200	Ceramic Flat Lead	EAR99	TIG4005528-FS
9W HEMT	DC - 6	39.5	12.5	50	28 / 50	Ceramic Flat Lead	EAR99	TIG6000528-Q3
18W HEMT	DC - 6	42.5	12	50	28 / 50	Ceramic Flat Lead	EAR99	TIG6001528-Q3
30W HEMT	DC - 6	44.7	12	50	28 / 200	Ceramic Flat Lead	EAR99	TIG6003028-FS*
1.25mm HEMT	DC - 18	37.4	10.4	52	28 / 125	Die	EAR99	TGF2023-01
2.5mm HEMT	DC - 18	40.2	9.9	50	28 / 250	Die	EAR99	TGF2023-02
5.0mm HEMT	DC - 18	43	9.4	49	28 / 500	Die	3A001b.3b	TGF2023-05
10mm HEMT	DC - 18	45.8	8.9	47	28 / 1000	Die	3A001b.3b	TGF2023-10
20mm HEMT	DC - 18	48.6	8.4	46	28 / 2000	Die	3A001b.3b	TGF2023-20

NOTES: * = New

Amplifiers								
Description	Frequency Range (GHz)	Psat (dBm)	Gain (dB)	PAE (%)	Bias (V / mA)	Package Style	ECCN	Part Number
10W HPA	0.03 - 3	39.5	19.5	40	30 / 360	Flange	ITAR	TGA2540-FL
10W HPA	2 - 18	40	9	25	30 / 500	Die	ITAR	TGA2573
10W HPA	2 - 18	40	9	25	30 / 500	Carrier	ITAR	TGA2573-TS*
30W HPA	2.5 - 6	45	25	>30	30 / 1400	Flange	3A001b.2.a	TGA2576-FL
20W HPA	13 - 15	43	19	25	25 / 1000	Flange	3A001b.2.b	TGA2593-GSG*
20W HPA	14 - 15.5	43	23	30	25 / 1000	Flange	ITAR	TGA2579-FL*
20W HPA	14 - 16	43	23	>30	30 / 2000	Die	ITAR	TGA2572*
20W HPA	14 - 16	43	23	>30	30 / 2000	Carrier	ITAR	TGA2572-TS*
20W HPA	14 - 16	43	23	>30	30 / 2000	Flange	ITAR	TGA2572-FL*

NOTES: * = New

GaN (cont.)

Switches

Description	Frequency Range (GHz)	IL (dB)	ISO (dB)	P1dB (dBm)	Voltage (V)	Package Style	ECCN	Part Number
High Power SPDT Switch	DC - 6	0.8	-40	>45	0 / -40	Die	EAR99	TGS2351
High Power SPDT Switch	DC - 6	0.8	-40	>45	0 / -40	5x5 QFN	EAR99	TGS2351-SM
High Power SPDT Switch	DC - 12	<1	-35	>43	0 / -40	Die	EAR99	TGS2352
High Power SPDT Switch	DC - 18	1.5	-25	>40	0 / -40	Die	EAR99	TGS2353

ELECTRONIC WARFARE

Amplifiers

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
Wideband Driver	DC - 35	18 / -	12	-	5 / 135	Die	TGA4832
Ultra-Wideband Driver	DC - 78	3.5Vpp	8	5 / -	6 / 82	Die	TGA4803
10W Wideband HPA	0.03 - 3	39.5 / 43	19.5	- / 40	35 / 360	Flange	TGA2540-FL
Gain Block, Self Bias	2 - 10	17 / -	17	6 / -	5 / 90	Die	TGA8810-SCC
Wideband Gain Block	2 - 18	20 / -	7.5	5.5 / -	6 / 100	Die	TGA8300-SCC
14W Wideband HPA	2 - 18	41.5 / -	10	- / 23	35 / 1200	Die	TGA2573
10W Wideband GaN HPA	2 - 18	41.5 / -	10	- / 23	35 / 1200	Carrier	TGA2573-TS*
Wideband PA, AGC	2 - 20	26 / -	8	-	8 / 440	Die	TGA8334-SCC
Wideband Gain Block, AGC	2 - 20	20 / -	7.5	7 / -	6 / 150	Die	TGA8622-SCC
Wideband PA, AGC	2 - 20	(29) / -	15	-	12 / 1100	Flange	TGA2509-FL*
Wideband PA, AGC	2 - 22	28.5 (30) / 36	17	-	12 / 1100	Die	TGA2509
35W GaN HEMT	2.5 - 6	45.4	26	- / 35	30 / 1550	Flange	TGA2576-FL
2.8W Wideband PA	6 - 18	(34.5) / -	24	- / 20	7 - 9 / 800 - 1200	Die	TGA2501
2.8W Wideband PA on Carrier	6 - 18	(34.5) / -	24	- / 20	7 - 9 / 800 - 1200	Carrier	TGA2501-TS*
Wideband 0.5W PA	6 - 18	27 / -	11	8 / -	8 / 400	Die	TGA8014-SCC
Wideband Gain Block	6 - 18	12.5 / -	13	5 / -	5 / 80	Die	TGA8035-SCC
Wideband 2.8W PA	6 - 18	(34.5) / -	24	- / 20	8 / 1200	Die	TGA9092-SCC
8W HPA	6.5 - 11.5	37 (39) / -	19	- / 35	7 - 9 / 1200	Die	TGA9083-SCC
16W HPA	6.5 - 12.5	42 / -	27	- / 35	12 / 3000	Die	TGA2517
16W HPA on Carrier	6.5 - 12.5	42 / -	27	- / 35	12 / 3000	Carrier	TGA2517-TS*
Driver Amp	7 - 13	(30) / 37	25	- / 30	9 / 450	Die	TGA2700
Wideband Driver Amp	8 - 18	13 / -	17	5 / -	4.5 / 50	Die	TGA8399C
HPA	10 - 12	33 (34.5) / 43	25	9 / -	6 / 1300	5x5 QFN	TGA2535-SM*
Driver Amp, SB	11 - 17	17 / -	23	6 / -	6 / 75	4x4 QFN	TGA2507-SM
Driver Amp	12 - 16	26 (26.5) / 37	23	7 / -	5 / 300	3x3 QFN	TGA2524-SM
Driver Amp, SB	12 - 18	14 / -	17	-	6 / 40	Die	TGA2506
Driver Amp, SB	12 - 18	20 / -	28	6 / -	6 / 80	Die	TGA2507
Ku-Band 1W PA	12 - 19	30 / -	30	-	5 - 7 / 435	Die	TGA2508-SCC
Ku-Band PA	12 - 19	29 / -	25	-	5 - 7 / 435	4x4 QFN	TGA2508-SM
2W Ku-Band HPA	12.5 - 16	(32) / 37	32	-	6 - 7 / 680	4x4 QFN	TGA2503-SM
2W Ku-Band HPA	12.5 - 17	(34) / -	26	- / 25	7.5 / 650	Die	TGA2510
2W Ku-Band HPA	12.5 - 17	(33.5) / -	25	- / 25	7.5 / 650	6.4x9.4 SG	TGA2510-SG
2W Ku-Band HPA on Carrier	12.5 - 17	(34) / -	26	- / 25	7.5 / 650	Carrier	TGA2510-TS*
6.5W Ku-Band HPA	13 - 16	(38) / -	24	-	8 / 2600	11.4x17.3 FL	TGA2514-FL
6.5W Ku-Band HPA	13 - 18	(38) / 44	24	-	8 / 3600	Die	TGA2514
HPA, AGC, PD	17 - 24	(29) / 38	22	-	5 / 712	4x4 QFN	TGA2522-SM

NOTES: * = New, AGC = Automatic Gain Control, PD = Power Detector, SB = Self Biased

ELECTRONIC WARFARE (cont.)
Discrete Transistors

Description	Frequency Range (GHz)	P1dB (Psat) (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
55W GaN HEMT	DC - 3.5	47.2	15	- / 50	28 / 200	Ceramic Flat Lead	TIG4005528-FS
4mm Pwr pHEMT	DC - 4	26.5	16	0.6 / -	5 / 150	SOT89	TGF2021-04-SD*
24mm HFET	DC - 4	40	13	- / 51	8 / 2170	Die	TGF4124
7W GaN HEMT	DC - 6	(39.5)	15	- / 50	28 / 50	Ceramic Flat Lead	TIG6000528-Q3
18W GaN HEMT	DC - 6	(42.5)	15	- / 50	28 / 50	Ceramic Flat Lead	TIG6001528-Q3
30W GaN HEMT	DC - 6	(44.8)	15	- / 50	28 / 200	Ceramic Flat Lead	TIG6003028-FS*
4.8mm HFET	DC - 10.5	34	8.5	- / 53	8 / 200	Die	TGF4250-SCC
9.6mm HFET	DC - 10.5	37	9.5	- / 52	8.5 / 520	Die	TGF4260-SCC
1mm Pwr pHEMT	DC - 12	(31.5)	11	- / 55	12 / 900	Die	TGF2021-01
2mm Pwr pHEMT	DC - 12	(34.5)	11	- / 55	12 / 150	Die	TGF2021-02
4mm Pwr pHEMT	DC - 12	(37.5)	11	- / 55	12 / 300	Die	TGF2021-04
8mm Pwr pHEMT	DC - 12	(40.2)	11	- / 55	12 / 600	Die	TGF2021-08
12mm Pwr pHEMT	DC - 12	(42)	11	- / 52	12 / 900	Die	TGF2021-12
1.2mm HFET	DC - 12	28.5	10	- / 55	8 / 50	Die	TGF4230-SCC
2.4mm HFET	DC - 12	31.5	10	- / 56	8 / 100	Die	TGF4240-SCC
0.3mm MESFET	DC - 18	13	11	1.5 / -	3 / 15	Die	TGF1350-SCC
1.25mm GaN HEMT	DC - 18	(37.4)	13	- / 52	28 / 125	Die	TGF2023-01
2.5mm GaN HEMT	DC - 18	(40.2)	13	- / 50	28 / 250	Die	TGF2023-02
5.0mm GaN HEMT	DC - 18	(43)	13	- / 49	28 / 500	Die	TGF2023-05
10mm GaN HEMT	DC - 18	(45.8)	12	- / 47	28 / 1000	Die	TGF2023-10
20mm GaN HEMT	DC - 18	(48.6)	12	- / 46	28 / 2000	Die	TGF2023-20
0.6mm Pwr pHEMT	DC - 20	(29)	13	- / 56	12 / 45	Die	TGF2022-06
1.2mm Pwr pHEMT	DC - 20	(32)	13	- / 56	12 / 90	Die	TGF2022-12
2.4mm Pwr pHEMT	DC - 20	(35)	13	- / 58	12 / 180	Die	TGF2022-24
4.8mm Pwr pHEMT	DC - 20	(38)	13	- / 58	12 / 360	Die	TGF2022-48
6mm Pwr pHEMT	DC - 20	(39)	12.5	- / 53	12 / 448	Die	TGF2022-60
0.3mm pHEMT	DC - 22	16	13	0.8 / -	3 / 15	Die	TGF4350
30W LDMOS	0.5 - 2	45	10	- / 45	28 / 200	PowerBand™	TIL2003028-SP
10W pHEMT	0.5 - 3	40	10	- / 45	12 / 200	PowerBand™	TIP2701012-SP

NOTES: * = New

Switches

Description	Frequency Range (GHz)	Insertion Loss (dB)	Isolation (dB)	P1dB (dBm)	Control Voltage (V)	Package Style	Part Number
SPDT - High Power GaN	DC - 6	<1	40	45	-40 / 0	Die	TGS2351
SPDT - High Power GaN	DC - 6	<1	40	45	-40 / 0	4x4 QFN	TGS2351-SM
SPDT - High Power GaN	DC - 12	<1	35	43	-40 / 0	Die	TGS2352
SPDT - High Power GaN	DC - 18	<1	30	40	-40 / 0	Die	TGS2353
SPDT FET	DC - 18	1.5	36	27	-5	Die	TGS2306
SPDT FET	DC - 18	2	39	21	-7 / 0	Die	TGS8250-SCC
SP3T VPIN	1 - 20	0.5	35	23	10 mA	Die	TGS2303
SP4T VPIN	1 - 20	0.6	38	23	10 mA	Die	TGS2304-SCC
SP3T VPIN	4 - 18	1	35	20	+/- 2.7	Die	TGS2313
SPDT VPIN	4 - 20	0.9	35	>20	+/- 2.7	Die	TGS2302

ELECTRONIC WARFARE (cont.)
Control Products

Description	Frequency Range (GHz)	Insertion Loss (dB)	Control Range (dB)	P1dB (dBm)	Supply Voltage (V)	Package Style	Part Number
Through Line	DC - 6	0.1	–	–	–	3x3 QFN	TQM4M9073
Passive Wideband Limiter	2 - 12	<1	–	18	–	3x3 QFN	TGL2201-SM
Wideband Analog Attenuator	2 - 20	2	15	23	2.5	Die	TGL8784-SCC
Passive Wideband Limiter	3 - 25	<0.5	–	18	–	Die	TGL2201
5-Bit Phase Shifter	6 - 18	9	(348)	–	6	Die	TGP6336
Large Coupler	12 - 21	<0.25	–	–	–	Die	TGB2001

RADAR
Amplifiers

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
Wideband Driver	DC - 35	18 / –	12	–	5 / 135	Die	TGA4832
Wideband Gain Block, SB	2 - 10	17 / –	17	6 / –	5 / 90	Die	TGA8810-SCC
10W Wideband PA	2 - 18	41.5 / –	10	– / 23	35 / 1200	Carrier	TGA2573-TS*
Wideband Gain Block, AGC	2 - 20	20 / –	7.5	7 / –	6 / 150	Die	TGA8622-SCC
Wideband PA, AGC	2 - 22	28.5 (30) / 36	17	–	12 / 1100	Die	TGA2509
1W Wideband PA, AGC	2 - 22	(29) / –	15	–	12 / 1100	Flange	TGA2509-FL*
30W HPA	2.5 - 6	(45) / –	26	– / 35	30 / 1550	Flange	TGA2576-FL
Driver Amp / PA, SB	3.4 - 3.8	30 / 42	24	–	6 / 770	5x5 QFN	TGA2703-SM
2W HPA	5.5 - 8.5	32 (34) / 41	30	7 / –	6 / 1260	5x5 QFN	TGA2706-SM
2.5W HPA	5.9 - 8.5	34 (35) / 42	18	7.5 / 37	6 / 1000	6x6 QFN	TGA2701-SM
0.5W PA	6 - 18	27 / –	11	8 / –	8 / 400	Die	TGA8014-SCC
Gain Block	6 - 18	12.5 / –	13	5 / –	5 / 80	Die	TGA8035-SCC
2.8W Wideband HPA	6 - 18	(34.5) / –	24	– / 20	7 - 9 / 800 - 1200	Die	TGA2501
2.8W HPA	6 - 18	(34.5) / –	24	– / 20	8 / 1200	Die	TGA9092-SCC
8W HPA	6.5 - 11.5	37 (39) / –	19	– / 35	7 - 9 / 1200	Die	TGA9083-SCC
16W HPA	6.5 - 12.5	42 / –	27	– / 35	12 / 3000	Die	TGA2517
6.3W HPA	7 - 8.5	(38) / –	21	– / 42	7 / 2000	Die	TGA2701
Driver Amp	7 - 13	(30) / 37	25	– / 30	9 / 450	Die	TGA2700
16W HPA	7.5 - 11.5	42 / –	28	– / 35	9 - 12 / 2000	Carrier	TGA2517-TS*
Wideband Driver Amp	8 - 18	13 / –	17	5 / –	4.5 / 50	Die	TGA8399C
6.3W HPA	9 - 10.5	(38) / –	20	>38	4 - 9 / 2000	Die	TGA2704
2.8W HPA	10 - 12	33 (34.5) / 43	25	9 / –	6 / 1300	5x5 QFN	TGA2535-SM*
6.3W HPA	10.5 - 12	(38) / –	19	>39	4 - 9 / 2000	Die	TGA2710
2W HPA	12.5 - 16	(32) / 37	32	–	6 - 7 / 680	4x4 QFN	TGA2503-SM
2W HPA	12.7 - 15.4	34 (35) / 43	28	6 / –	6 / 1300	Die	TGA2533
6.5W HPA	13 - 16	(38) / –	24	–	8 / 2600	11.4x17.3 FL	TGA2514-FL
2W HPA	13 - 17	(34) / 40	32	–	6 - 7 / 680	Die	TGA2503
2W HPA	13 - 17	(34) / 40	33	–	5 - 8 / 680	6.4x9.4 SG	TGA8658-SG
2W HPA, PD	13 - 17	(34) / 38.5	26	– / 30	7.5 / 650	6.4x9.4 SG	TGA2902-1-SG
6.5W HPA	13 - 18	(38) / 44	24	–	8 / 3600	Die	TGA2514
2W HPA, PD	13.75 - 14.5	(34) / 38.5	26	– / 30	7.5 / 650	6.4x9.4 SG	TGA2902-2-SG
16W Ku-Band HPA	14 - 16	(42) / –	23	– / 30	25 / 2000	Flange	TGA2572-FL*
20W Ku-Band HPA	14 - 16	(43) / –	23	– / 30	20 / 2000	Carrier	TGA2572-TS*
1.25W HPA	17 - 24	31 (32) / 40	23	6 / –	7 / 720	Die	TGA4531

RADAR (cont.)
Amplifiers (cont.)

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
Driver Amp	17 - 24	22 / –	19	4 / –	5 / 270	4x4 QFN	TGA2521-SM
HPA, AGC, PD	17 - 24	(29) / 38	22	–	5 / 712	4x4 QFN	TGA2522-SM
MPA	17 - 27	29 / –	22	–	7 / 760	5x5 QFN	TGA4525-SM*
Gain Block & 2x / 3x Multiplier	17 - 37	18 (22) / 26	20	7 / –	5 / 140	3x3 QFN	TGA4030-SM
Gain Block & 2x / 3x Multiplier	17 - 40	18 (22) / 24	22	7 / –	5 / 140	3x3 QFN	TGA4031-SM
Gain Block, Multiplier	17 - 43	22 / –	25	–	5 / 225	Die	TGA4040
Gain Block	19 - 38	(22) / 30	20	–	5 / 160	Die	TGA4036
MPA	25 - 35	25 / –	18	–	6 / 220	4x4 QFN	TGA4902-SM
1W Linear PA	28 - 30	30 (30.5) / –	20	–	6 / 420	5x5 QFN	TGA4539-SM*
2W HPA	30 - 40	31.5 (33) / –	20	–	6 / 1050	Die	TGA4516
2W HPA	30 - 40	31.5 (33) / –	18	–	6 / 1050	Carrier	TGA4516-TS*
2W HPA	31 - 35	31.5 (33.5) / –	19	–	6 - 7 / 1150	Die	TGA4514
3.5W HPA	31 - 37	(35.5) / –	20	–	6 / 2000	Die	TGA4517
MPA	32 - 45	24 (25) / 33	16	–	6 / 175	Die	TGA4521
2W HPA	33 - 36	31 (33) / –	17	–	6 - 7 / 880	Die	TGA1141*
MPA	33 - 47	27 (27.5) / 36	18	–	6 / 400	Die	TGA4522
0.5W HPA	40 - 45	28 / –	9	–	7 / 500	Die	TGA4043
Driver Amp	41 - 45	18 / –	14	–	6 / 168	Die	TGA4042

NOTES: * = **New**, AGC = Automatic Gain Control, PD = Power Detector, SB = Self Biased

Low Noise Amplifiers

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
Ultra Wideband LNA / Gain Block	DC - 40	11.5 / 20	13	3.2	5 / 50	Die	TGA4830
Wideband LNA, AGC	2 - 18	18 / 29	17	2	5 / 75	Die	TGA2525
Wideband LNA, AGC	2 - 20	17.5 / –	9	3.5	5 - 8 / 60	Die	TGA1342-SCC
Wideband LNA, AGC	2 - 20	19 / –	17.5	2.5	5 / 100	Die	TGA2526
Wideband LNA, AGC	2 - 20	16 / –	17	2.5	5 / 75	4x4 QFN	TGA2513-SM
Wideband LNA, AGC	2 - 23	17 / 26	17	2	5 / 75	Die	TGA2513
LNA, SB, AGC	4 - 14	6 / 16	22	2.3	5 / 90	4x4 QFN	TGA2512-1-SM
LNA, AGC, GB	4 - 14	13 / 24	25	2.3	5 / 160	4x4 QFN	TGA2512-2-SM
LNA, SB, AGC	5 - 15	6 / 13	27	1.4	5 / 90	Die	TGA2512
LNA, SB	6 - 13	11 / –	26	1.5	5 / 65	Die	TGA8399B-SCC
LNA, SB, AGC	6 - 14	6 / 12	20	1.3	5 / 90	Die	TGA2511

NOTES: AGC = Automatic Gain Control, GB = Gate Biased, PD = Power Detector, SB = Self Biased

Discrete Transistors

Description	Frequency Range (GHz)	P1dB (Psat) (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
55W GaN HEMT	DC - 3.5	47.2	15	– / 50	28 / 200	Ceramic Flat Lead	TIG4005528-FS
4mm Pwr pHEMT	DC - 4	26.5	16	0.6 / –	5 / 150	SOT89	TGF2021-04-SD*
24mm HFET	DC - 4	40	13	– / 51	8 / 2170	Die	TGF4124
7W GaN HEMT	DC - 6	(39.5)	15	– / 50	28 / 50	Ceramic Flat Lead	TIG6000528-Q3
18W GaN HEMT	DC - 6	(42.5)	15	– / 50	28 / 50	Ceramic Flat Lead	TIG6001528-Q3
30W GaN HEMT	DC - 6	(44.8)	15	– / 50	28 / 200	Ceramic Flat Lead	TIG6003028-FS*
4.8mm HFET	DC - 10.5	34	8.5	– / 53	8 / 200	Die	TGF4250-SCC
9.6mm HFET	DC - 10.5	37	9.5	– / 52	8.5 / 520	Die	TGF4260-SCC

RADAR (cont.)**Discrete Transistors (cont.)**

Description	Frequency Range (GHz)	P1dB (Psat) (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
1.2mm HFET	DC - 12	28.5	10	- / 55	8 / 50	Die	TGF4230-SCC
2.4mm HFET	DC - 12	31.5	10	- / 56	8 / 100	Die	TGF4240-SCC
1mm Pwr pHEMT	DC - 12	(31.5)	11	- / 55	12 / 900	Die	TGF2021-01
2mm Pwr pHEMT	DC - 12	(34.5)	11	- / 55	12 / 150	Die	TGF2021-02
4mm Pwr pHEMT	DC - 12	(37.5)	11	- / 55	12 / 300	Die	TGF2021-04
8mm Pwr pHEMT	DC - 12	(40.2)	11	- / 55	12 / 600	Die	TGF2021-08
12mm Pwr pHEMT	DC - 12	(42)	11	- / 52	12 / 900	Die	TGF2021-12
0.3mm MESFET	DC - 18	13	11	1.5 / -	3 / 15	Die	TGF1350-SCC
1.25mm GaN HEMT	DC - 18	(37.4)	13	- / 52	28 / 125	Die	TGF2023-01
2.5mm GaN HEMT	DC - 18	(40.2)	13	- / 50	28 / 250	Die	TGF2023-02
5.0mm GaN HEMT	DC - 18	(43)	13	- / 49	28 / 500	Die	TGF2023-05
10mm GaN HEMT	DC - 18	(45.8)	12	- / 47	28 / 1000	Die	TGF2023-10
20mm GaN HEMT	DC - 18	(48.6)	12	- / 46	28 / 2000	Die	TGF2023-20
0.6mm Pwr pHEMT	DC - 20	(29)	13	- / 56	12 / 45	Die	TGF2022-06
1.2mm Pwr pHEMT	DC - 20	(32)	13	- / 56	12 / 90	Die	TGF2022-12
2.4mm Pwr pHEMT	DC - 20	(35)	13	- / 58	12 / 180	Die	TGF2022-24
4.8mm Pwr pHEMT	DC - 20	(38)	13	- / 58	12 / 360	Die	TGF2022-48
6mm Pwr pHEMT	DC - 20	(39)	12.5	- / 53	12 / 448	Die	TGF2022-60
0.3mm pHEMT	DC - 22	16	13	0.8 / -	3 / 15	Die	TGF4350

NOTES: * = New

Switches

Description	Frequency Range (GHz)	Insertion Loss (dB)	Isolation (dB)	P1dB (dBm)	Control Voltage (V)	Package Style	Part Number
High Power SPDT - GaN	DC - 6	<1	40	45	-40 / 0	Die	TGS2351
High Power SPDT - GaN	DC - 6	<1	40	45	-40 / 0	4x4 QFN	TGS2351-SM
High Power SPDT - GaN	DC - 12	<1	35	43	-40 / 0	Die	TGS2352
High Power, Wideband SPDT - GaN	DC - 18	<1	30	40	-40 / 0	Die	TGS2353
Wideband SPDT FET	DC - 18	2	39	21	-7 / 0	Die	TGS8250-SCC
Wideband SPDT FET	DC - 18	1.5	36	27	-5	Die	TGS2306
Wideband SP3T VPIN	1 - 20	0.5	35	23	10 mA	Die	TGS2303
Wideband SP4T VPIN	1 - 20	0.6	38	23	10 mA	Die	TGS2304-SCC
Wideband SP3T VPIN	4 - 18	1	35	20	+/- 2.7	Die	TGS2313
Wideband SPDT VPIN	4 - 20	0.9	35	>20	+/- 2.7	Die	TGS2302
SPDT VPIN	24 - 43	<2	36	27	+/- 5	Die	TGS4301
SPDT VPIN	27 - 46	0.9	30	>34	+/- 5 / 15	Die	TGS4302
SPDT VPIN Absorptive	32 - 40	1	36	>33	+/- 5 / 18	Die	TGS4304

Frequency Converter

Description	Frequency Range (GHz)	Conversion Gain (dB)	LO / RF Isolation (dB)	IP3 (dBm)	Voltage / Current (V / mA)	Package Style	Part Number
Doubler (Input 10 - 20 GHz)	20 - 40	-12	25	18	-	Die	TGC1430F

RADAR (cont.)
Control Products

Description	Frequency Range (GHz)	Insertion Loss (dB)	Control Range (dB)	P1dB (dBm)	Supply Voltage (V)	Package Style	Part Number
Analog Attenuator	DC - 30	2	17	–	0 to -2	3x3 QFN	TGL4203-SM
Analog Attenuator	DC - >50	2	17	–	0 to -2	Die	TGL4203
Discrete Thru (0 dB Attenuator)	DC - 65	0	0	–	–	Die	TGL4201-00
Discrete Attenuators	DC - 65	–	2, 3, 6, 10	–	–	Die	TGL4201-02, 03, 06, 10
Passive Wideband Limiter	2 - 12	<1	–	18	–	3x3 QFN	TGL2201-SM
Analog Attenuator	2 - 20	2	15	23	2.5	Die	TGL8784-SCC
Passive Wideband Limiter	3 - 25	<0.5	–	18	–	Die	TGL2201
5-Bit Phase Shifter	6 - 18	9	(348)	–	6	Die	TGP6336
6-Bit Phase Shifter	8.5 - 11	5	(354)	–	0 / -5	Die	TGP2103
Range Coupler	12 - 21	<0.25	–	–	–	Die	TGB2001
5-Bit Phase Shifter	18 - 20	5	(180)	–	-2.5	Die	TGP1439
Range Coupler	18 - 32	<0.25	–	–	–	Die	TGB4001
Range Coupler	27 - 45	<0.25	–	–	–	Die	TGB4002
5-Bit Phase Shifter	28 - 32	6	(348)	–	5	Die	TGP2100
5-Bit Phase Shifter	33 - 37	6	(348)	–	-5	Die	TGP2102
1-Bit Phase Shifter	34 - 36	4	180	–	0 / 5	Die	TGP2104

BAW Filters

Description	Frequency Range (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Style	Part Number
RF Filter	1030	15	2.5	SE / SE	40 @ 45	3.81x2.54	880367
RF Filter	1090	15	2.5	SE / SE	40 @ 45	3.81x2.54	880374
GPS RF Filter, L5	1176	28	2.75	SE / SE	40 @ 140	3.26x1.6	880364
GPS L2	1227.6	25	2.5	SE / SE	20 @ 1200	3.26x1.6	880060*
RF Filter	1280	20	3	SE / SE	40 @ 105	3.81x2.54	880368
GPS L1	1575.42	30	2.5	SE / SE	20 @ 1548	3.26x1.6	880094*
RF Filter, MMDS	2560	30	3	SE / SE	40 @ 150	3.81x2.54	880157

NOTES: * = New

SPACE
Qualified Amplifiers

TriQuint has a proud space / aerospace history, supplying highly-reliable active / acoustic devices for satellite and planetary missions. Space qualification includes high-level visual inspection, 100% element electrical results and wafer lot qualification testing. See tables for standard products already space qualified; most foundry and standard products throughout this brochure may be space qualified.

Amplifiers

Description	Frequency Range (GHz)	P1dB (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
Wideband Driver	DC - 18	24	16	3.5 / –	5 - 8 / 70 - 175	Die	TGA1328-SCC
Wideband Driver	DC - 35	18	12	–	5 / 135	Die	TGA4832
Wideband Gain Block, SB	2 - 10	17	17	6 / –	5 / 90	Die	TGA8810-SCC
Wideband Gain Block	2 - 18	20	7.5	5.5 / –	6 / 100	Die	TGA8300-SCC
Wideband Gain Block, AGC	2 - 20	20	7.5	7 / –	6 / 150	Die	TGA8622-SCC
Wideband PA, AGC	2 - 20	26	8	–	8 / 440	Die	TGA8334-SCC
0.5W PA	6 - 18	27	11	8 / –	8 / 400	Die	TGA8014-SCC
8W HPA	6.5 - 11.5	37 (39)	19	– / 35	7 - 9 / 1200	Die	TGA9083-SCC

SPACE (cont.)
Amplifiers (cont.)

Description	Frequency Range (GHz)	P1dB (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
Wideband Driver Amp	8 - 18	13	17	5 / -	4.5 / 50	Die	TGA8399C
6.3W HPA	9 - 10.5	38	20	- / >38	4 - 9 / 2000	Die	TGA2704
Driver Amp, SB	11 - 17	17	23	6 / -	6 / 75	4x4 QFN	TGA2507-SM
Driver Amp, SB	12 - 18	20	28	6 / -	6 / 80	Die	TGA2507
4W HPA, Balanced	13 - 17	36	25	- / 30	6 - 7 / 1300	Die	TGA2502
MPA	17 - 21	22	18.5	-	7 / 66	Die	TGA9088A-SCC
Gain Block, Multiplier	17 - 43	22	25	-	5 / 225	Die	TGA4040
Gain Block	19 - 38	22	20	-	5 / 160	Die	TGA4036
3.5W HPA	31 - 37	35.5	20	-	6 / 2000	Die	TGA4517
MPA	32 - 45	24 (25)	16	-	6 / 175	Die	TGA4521
HPA	36 - 40	30	14	-	6 - 7 / 500	Die	TGA1171-SCC
HPA	37 - 40	28	24	6 / -	5 / 600	Die	TGA4538

NOTES: AGC = Automatic Gain Control, SB = Self Biased

Low Noise Amplifiers

Description	Frequency Range (GHz)	P1dB (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
Wideband LNA, AGC	DC - 14	16	11	3.1	8 / 80	Die	TGA8349-SCC
Wideband LNA, AGC	2 - 18	16	19	4	5 / 120	Die	TGA8344-SCC
Wideband LNA, AGC	2 - 20	17.5	9	3.5	5 - 8 / 60	Die	TGA8310-SCC
Wideband LNA, AGC	2 - 20	17.5	9	3.5	5 - 8 / 60	Die	TGA1342-SCC
LNA, SB	6 - 13	11	26	1.5	5 / 65	Die	TGA8399B-SCC
LNA	20 - 27	12	21	2.2	3.5 / 60	Die	TGA4506
LNA	30 - 42	14	21	2.8	3 / 40	Die	TGA4508

NOTES: AGC = Automatic Gain Control, SB = Self Biased

Control Products

Description	Frequency (GHz)	Insertion Loss (dB)	Control Range (dB)	P1dB (dBm)	Supply Voltage (V)	Package Style	Part Number
Analog Attenuator	DC - 30	2	17	-	0 to -2	3x3 QFN	TGL4203-SM
Analog Attenuator	DC - >50	2	17	-	0 to -2	Die	TGL4203
Discrete Thru (0 dB Attenuator)	DC - 65	0	0	-	-	Die	TGL4201-00
Discrete Attenuators	DC - 65	-	2, 3, 6, 10	-	-	Die	TGL4201-02, 03, 06, 10
Analog Attenuator	2 - 20	2	15	23	2.5	Die	TGL8784-SCC

COMMS
Amplifiers

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
Wideband Driver	DC - 18	3 - 11	16	2.5 / -	8 / 285	Die	TGA4807
Wideband Driver	DC - 35	4 / -	12	-	5 / 135	Die	TGA4832
Wideband MPA, AGC	DC - 78	-	8	5 / -	6 / 82	Die	TGA4803
10W Wideband HPA	0.03 - 3	39.5 / 43	19.5	- / 40	35 / 360	Flange	TGA2540-FL
Wideband Gain Block	0.04 - 1	27 / 46	20	1.5 / -	8 / 350	4x4 QFN	TGA2803-SM
Wideband Gain Block	0.04 - 1	27 / 46	20	1.5 / -	8 / 350	5x5 QFN	TGA2806-SM
Wideband Gain Block, SB	2 - 10	17 / -	17	6 / -	5 / 90	Die	TGA8810-SCC

Amplifiers (cont.)

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (db) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
14W Wideband HPA	2 - 18	41.5 / -	10	- / 23	35 / 1200	Die	TGA2573
10W Wideband HPA on Carrier	2 - 18	41.5 / -	10	- / 23	35 / 1200	Carrier	TGA2573-TS*
Wideband Gain Block	2 - 18	20 / -	7.5	5.5 / -	6 / 100	Die	TGA8300-SCC
Wideband Gain Block, AGC	2 - 20	20 / -	7.5	7 / -	6 / 150	Die	TGA8622-SCC
Wideband PA, AGC	2 - 20	26 / -	8	-	8 / 440	Die	TGA8334-SCC
Wideband PA, AGC	2 - 22	28.5 (30) / 36	17	-	12 / 1100	Die	TGA2509
1W HPA, AGC	2 - 22	(29) / -	15	-	12 / 1100	Flange	TGA2509-FL*
30W HPA	2.5 - 6	(45) / -	26	- / 35	30 / 1550	Flange	TGA2576-FL
2W HPA	5.5 - 8.5	32 (34) / 41	30	7 / -	6 / 1260	5x5 QFN	TGA2706-SM
2.5W HPA	5.9 - 8.5	34 (35) / 42	18	7.5 / 37	6 / 1000	6x6 QFN	TGA2701-SM
2.8W HPA	6 - 18	(34.5) / -	24	- / 20	7 - 9 / 800 - 1200	Die	TGA2501
2.8W HPA on Carrier	6 - 18	(34.5) / -	24	- / 20	7 - 9 / 800 - 1200	Carrier	TGA2501-TS*
0.5W PA	6 - 18	27 / -	11	8 / -	8 / 400	Die	TGA8014-SCC
Gain Block	6 - 18	12.5 / -	13	5 / -	5 / 80	Die	TGA8035-SCC
2.8W HPA	6 - 18	(34.5) / -	24	- / 20	8 / 1200	Die	TGA9092-SCC
8W HPA	6.5 - 11.5	37 (39) / -	19	- / 35	7 - 9 / 1200	Die	TGA9083-SCC
6.8W HPA	7 - 8.5	(38) / -	21	- / 42	7 / 2000	Die	TGA2701
Wideband Driver Amp	8 - 18	13 / -	17	5 / -	4.5 / 50	Die	TGA8399C
6.8W HPA	9 - 10.5	(38) / -	20	>38	4 - 9 / 2000	Die	TGA2704
6.8W HPA	10.5 - 12	(38) / -	19	>39	4 - 9 / 2000	Die	TGA2710
Driver Amp, SB	11 - 17	17 / -	23	6 / -	6 / 75	4x4 QFN	TGA2507-SM
Driver Amp	12 - 16	26 (26.5) / 37	23	7 / -	5 / 300	3x3 QFN	TGA2524-SM
Driver Amp, SB	12 - 18	14 / -	17	-	6 / 40	Die	TGA2506
Driver Amp, SB	12 - 18	20 / -	28	6 / -	6 / 80	Die	TGA2507
1W HPA	12 - 19	30 / -	30	-	5 - 7 / 435	Die	TGA2508-SCC
HPA	12 - 19	29 / -	25	-	5 - 7 / 435	4x4 QFN	TGA2508-SM
2W HPA	12.3 - 15.7	(31) / -	33	7 / -	6 / 850	Die	TGA2520
2W HPA	12.5 - 16	(32) / 37	32	-	6 - 7 / 680	4x4 QFN	TGA2503-SM
2W HPA	12.5 - 17	(34) / -	26	- / 25	7.5 / 650	Die	TGA2510
2W HPA	12.5 - 17	(33.5) / -	25	- / 25	7.5 / 650	6.4x9.4 SG	TGA2510-SG
2W HPA	12.5 - 17	(34) / -	26	- / 25	7.5 / 650	Carrier	TGA2510-TS
2W HPA	12.7 - 15.4	34 (35) / 43	28	6 / -	6 / 1300	Die	TGA2533
2W HPA	12.7 - 15.4	33 (34.5) / 43	27	6 / -	6 / 1300	5x5 QFN	TGA2533-SM
4W HPA	13 - 15	(36) / 41	25	-	7 / 1300	17.8x8.4 FL	TGA8659-FL
6.5W HPA	13 - 16	(38) / -	24	-	8 / 2600	11.4x17.3 FL	TGA2514-FL
2W HPA, PD	13 - 17	(34) / 38.5	26	- / 30	7.5 / 650	6.4x9.4 SG	TGA2902-1-SG
2W HPA	13 - 17	(34) / 40	33	-	5 - 8 / 680	6.4x9.4 SG	TGA8658-SG
2W HPA	13 - 17	(34) / 40	32	-	6 - 7 / 680	Die	TGA2503
6.5W HPA	13 - 18	(38) / 44	24	-	8 / 3600	Die	TGA2514
2W HPA, PD	13.75 - 14.5	(34) / 38.5	26	- / 30	7.5 / 650	6.4x9.4 SG	TGA2902-2-SG
16W Ku-Band HPA	14 - 16	(42) / -	27	- / 30	25 / 2000	Die	TGA2572*
16W Ku-Band HPA	14 - 16	(42) / -	23	- / 30	25 / 2000	Flange	TGA2572-FL*
16W Ku-Band HPA on Carrier	14 - 16	(42) / -	27	- / 30	25 / 2000	Carrier	TGA2572-TS*
1.1W HPA	17 - 20	30.5 / 41	23	-	6 / 900	Die	TGA4532
1.8W HPA	17 - 20	31 (32.5) / 41	23	7 / -	6 / 900	4x4 QFN	TGA4532-SM
Driver Amp	17 - 24	22 / -	19	4 / -	5 / 270	4x4 QFN	TGA2521-SM
HPA, AGC, PD	17 - 24	(29) / 38	22	-	5 / 712	4x4 QFN	TGA2522-SM
1.6W HPA	17 - 24	31 (32) / 40	23	6 / -	7 / 720	Die	TGA4531
MPA	17 - 27	29 / -	22	-	7 / 760	5x5 QFN	TGA4525-SM*
1.25W HPA	17 - 27	29 (31) / 37	22	-	7 / 760	Die	TGA4502-SCC
Gain Block & 2x / 3x Multiplier	17 - 37	18 (22) / 26	20	7 / -	5 / 140	3x3 QFN	TGA4030-SM
Gain Block & 2x / 3x Multiplier	17 - 40	18 (22) / 24	22	7 / -	5 / 140	3x3 QFN	TGA4031-SM
Gain Block, Multiplier	17 - 43	22 / -	25	-	5 / 225	Die	TGA4040

Amplifiers (cont.)

Description	Frequency Range (GHz)	PldB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (db) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
2W HPA	18 - 23	32 (33) / 39	26	–	7 / 840	Die	TGA4022
0.8W HPA	18 - 27	29 / 37	14	–	6 / 480	Die	TGA1135B-SCC
MPA	19 - 27	25 / 32	22	–	5 - 7 / 220	Die	TGA1073G-SCC
Gain Block	19 - 38	(22) / 30	20	–	5 / 160	Die	TGA4036
HPA	21 - 24	31 (32) / 41	22	6 / –	6 / 880	4x4 QFN	TGA4533-SM
MPA	25 - 35	25 / –	18	–	6 / 220	4x4 QFN	TGA4902-SM
MPA	26 - 35	25 (32) / –	19	–	5 - 7 / 220	Die	TGA1073A-SCC
MPA	27 - 32	24 / –	15	–	5 / 170	4x4 QFN	TGA4903-SM
HPA	27 - 32	28.5 / –	25	–	6 - 8 / 420	Die	TGA1073B-SCC
1W Linear PA	28 - 30	30 (30.5) / –	20	–	6 / 420	5x5 QFN	TGA4539-SM*
Driver Amp	29 - 37	16 / –	16	–	6 / 60	Die	TGA4510
3.5W HPA	30 - 38	(35) / –	18	– / 20	6 / 2100	Die	TGA2575
2W HPA	30 - 40	31.5 (33) / –	20	–	6 / 1050	Die	TGA4516
2W HPA	30 - 40	31.5 (33) / –	18	–	6 / 1050	Carrier	TGA4516-TS*
2W HPA	31 - 35	31.5 (33.5) / –	19	–	6 - 7 / 1150	Die	TGA4514
3.5W HPA	31 - 37	(35.5) / –	20	–	6 / 2000	Die	TGA4517
MPA	32 - 45	24 (25) / 33	16	–	6 / 175	Die	TGA4521
2W HPA	33 - 36	31 (33) / –	17	–	6 - 7 / 880	Die	TGA1141*
MPA	33 - 47	27 (27.5) / 36	18	–	6 / 400	Die	TGA4522
HPA	36 - 40	26 / –	15	–	5 - 7 / 240	Die	TGA1073C-SCC
1W HPA	36 - 40	30 / –	14	–	6 - 7 / 500	Die	TGA1171-SCC
0.6W HPA	37 - 40	28 / 38	24	6 / –	5 / 600	Die	TGA4538
0.5W HPA	40 - 45	28 / –	9	–	7 / 500	Die	TGA4043
Driver Amp	41 - 45	18 / –	14	–	6 / 168	Die	TGA4042
2W HPA	41 - 47	(33) / –	16	–	6 / 2000	Die	TGA4046

NOTES: * = **New**, AGC = Automatic Gain Control, PD = Power Detector, SB = Self Biased

Low Noise Amplifiers

Description	Frequency Range (GHz)	PldB (Psat) / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
Wideband LNA, AGC	DC - 14	16 / –	11	3.1	8 / 80	Die	TGA8349-SCC*
Wideband LNA / Gain Block	DC - 40	11.5 / 20	13	3.2	5 / 50	Die	TGA4830
Wideband LNA, AGC	2 - 18	18 / 29	17	2	5 / 75	Die	TGA2525
Wideband LNA, AGC	2 - 18	16 / –	19	4	5 / 120	Die	TGA8344-SCC
Wideband LNA, AGC	2 - 20	17.5 / –	9	3.5	5 - 8 / 60	Die	TGA1342-SCC
Wideband LNA, AGC	2 - 20	17.5 / –	9	3.5	5 - 8 / 60	Die	TGA8310-SCC
Wideband LNA, AGC	2 - 20	16 / –	17	2.5	5 / 75	4x4 QFN	TGA2513-SM
Wideband LNA, AGC	2 - 20	19 / –	17.5	2.5	5 / 100	Die	TGA2526
Wideband LNA, AGC	2 - 23	17 / 26	17	2	5 / 75	Die	TGA2513
LNA, SB, AGC	4 - 14	6 / 16	22	2.3	5 / 90	4x4 QFN	TGA2512-1-SM
LNA, AGC, GB	4 - 14	13 / 24	25	2.3	5 / 160	4x4 QFN	TGA2512-2-SM
LNA, SB, AGC	5 - 15	6 / 13	27	1.4	5 / 90	Die	TGA2512
LNA, SB	6 - 13	11 / –	26	1.5	5 / 65	Die	TGA8399B-SCC
LNA, SB, AGC	6 - 14	6 / 12	20	1.3	5 / 90	Die	TGA2511
LNA	20 - 27	12 / –	21	2.2	3.5 / 60	Die	TGA4506
LNA	28 - 36	12 / 21	22	2.3	3 / 60	Die	TGA4507
LNA	30 - 42	14 / –	21	2.8	3 / 40	Die	TGA4508
LNA	57 - 69	–	13	4	3 / 41	Die	TGA4600

NOTES: * = **New**, AGC = Automatic Gain Control, GB = Gate Biased, SB = Self Biased

Discrete Transistors

Description	Frequency Range (GHz)	PldB (Psat) (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
55W GaN HEMT	DC - 3.5	47.2	15	- / 50	28 / 200	Ceramic Flat Lead	TIG4005528-FS
4mm Pwr pHEMT	DC - 4	26.5	16	0.6 / -	5 / 150	SOT89	TGF2021-04-SD*
24mm HFET	DC - 4	40	13	- / 51	8 / 2170	Die	TGF4124
7W GaN HEMT	DC - 6	(39.5)	15	- / 50	28 / 50	Ceramic Flat Lead	TIG6000528-Q3
18W GaN HEMT	DC - 6	(42.5)	15	- / 50	28 / 50	Ceramic Flat Lead	TIG6001528-Q3
30W GaN HEMT	DC - 6	(44.8)	15	- / 50	28 / 200	Ceramic Flat Lead	TIG6003028-FS*
4.8mm HFET	DC - 10.5	34	8.5	- / 53	8 / 200	Die	TGF4250-SCC
9.6mm HFET	DC - 10.5	37	9.5	- / 52	8.5 / 520	Die	TGF4260-SCC
1mm Pwr pHEMT	DC - 12	(31.5)	11	- / 55	12 / 900	Die	TGF2021-01
2mm Pwr pHEMT	DC - 12	(34.5)	11	- / 55	12 / 150	Die	TGF2021-02
4mm Pwr pHEMT	DC - 12	(37.5)	11	- / 55	12 / 300	Die	TGF2021-04
8mm Pwr pHEMT	DC - 12	(40.2)	11	- / 55	12 / 600	Die	TGF2021-08
12mm Pwr pHEMT	DC - 12	(42)	11	- / 52	12 / 900	Die	TGF2021-12
1.2mm HFET	DC - 12	28.5	10	- / 55	8 / 50	Die	TGF4230-SCC
2.4mm HFET	DC - 12	31.5	10	- / 56	8 / 100	Die	TGF4240-SCC
0.3mm MESFET	DC - 18	13	11	1.5 / -	3 / 15	Die	TGF1350-SCC
1.25mm GaN HEMT	DC - 18	(37.4)	13	- / 52	28 / 125	Die	TGF2023-01
2.5mm GaN HEMT	DC - 18	(40.2)	13	- / 50	28 / 250	Die	TGF2023-02
5.0mm GaN HEMT	DC - 18	(43)	13	- / 49	28 / 500	Die	TGF2023-05
10mm GaN HEMT	DC - 18	(45.8)	12	- / 47	28 / 1000	Die	TGF2023-10
20mm GaN HEMT	DC - 18	(48.6)	12	- / 46	28 / 2000	Die	TGF2023-20
0.6mm Pwr pHEMT	DC - 20	(29)	13	- / 56	12 / 45	Die	TGF2022-06
1.2mm Pwr pHEMT	DC - 20	(32)	13	- / 56	12 / 90	Die	TGF2022-12
2.4mm Pwr pHEMT	DC - 20	(35)	13	- / 58	12 / 180	Die	TGF2022-24
4.8mm Pwr pHEMT	DC - 20	(38)	13	- / 58	12 / 360	Die	TGF2022-48
6mm Pwr pHEMT	DC - 20	(39)	12.5	- / 53	12 / 448	Die	TGF2022-60
0.3mm pHEMT	DC - 22	16	13	0.8 / -	3 / 15	Die	TGF4350
30W LDMOS	0.5 - 2	45	10	- / 45	28 / 200	PowerBand™	T1L2003028-SP
10W pHEMT	0.5 - 3	40	10	- / 45	12 / 200	PowerBand™	T1P2701012-SP

NOTES: * = New

Switches

Description	Frequency Range (GHz)	Insertion Loss (dB)	Isolation (dB)	PldB (dBm)	Control Voltage (V)	Package Style	Part Number
High Power SPDT - GaN	DC - 6	<1	40	45	-40 / 0	Die	TGS2351
High Power SPDT - GaN	DC - 6	<1	40	45	-40 / 0	4x4 QFN	TGS2351-SM
High Power SPDT - GaN	DC - 12	<1	35	43	-40 / 0	Die	TGS2352
High Power SPDT - GaN	DC - 18	<1	30	40	-40 / 0	Die	TGS2353
Wideband SPDT FET	DC - 18	1.5	36	27	-5	Die	TGS2306
Wideband SPDT FET	DC - 18	2	39	21	-7 / 0	Die	TGS8250-SCC
Wideband SP3T VPIN	1 - 20	0.5	35	23	10 mA	Die	TGS2303
Wideband SP4T VPIN	1 - 20	0.6	38	23	10 mA	Die	TGS2304-SCC
Wideband SP3T VPIN	4 - 18	1	35	20	+/- 2.7	Die	TGS2313
Wideband SPDT VPIN	4 - 20	0.9	35	>20	+/- 2.7	Die	TGS2302
SPDT VPIN	24 - 43	<2	36	27	+/- 5	Die	TGS4301
SPDT VPIN	27 - 46	0.9	30	>34	+/- 5 / 15	Die	TGS4302
SPDT VPIN Absorptive	32 - 40	1	36	>33	+/- 5 / 18	Die	TGS4304

Frequency Converters & Mixers

Description	Frequency Range (GHz)	Conversion Gain (dB)	LO / RF Isolation (dB)	IP3 (dBm)	Voltage / Current (V / mA)	Package Style	Part Number
Doubler w/Amplifier	16 - 30	18	30	22	5 / 150	Die	TGC4403
Doubler w/Amplifier	16 - 30	18	30	19	5 / 150	4x4 QFN	TGC4403-SM
Upconverting Mixer	17 - 26	-9	40	-	-0.9 / 0	4x4 QFN	TGC4402-SM
Upconverting Mixer	17 - 27	-9	35	18	-0.9 / 0	Die	TGC4402
Upconverter	17 - 27	13	30	-	5 / 425	4x4 QFN	TGC4405-SM
Doubler (Input 10 - 20 GHz)	20 - 40	-12	25	18	-	Die	TGC1430F
Upconverter (Lo Amp + Doubler)	21.5 - 32.5	-9	35	13	5 / 65	3x3 QFN	TGC4407-SM**
Doubler w/Amplifier	28 - 34	15	25	20	5 / 150	4x4 QFN	TGC4406-SM

NOTES: ** = Coming Soon

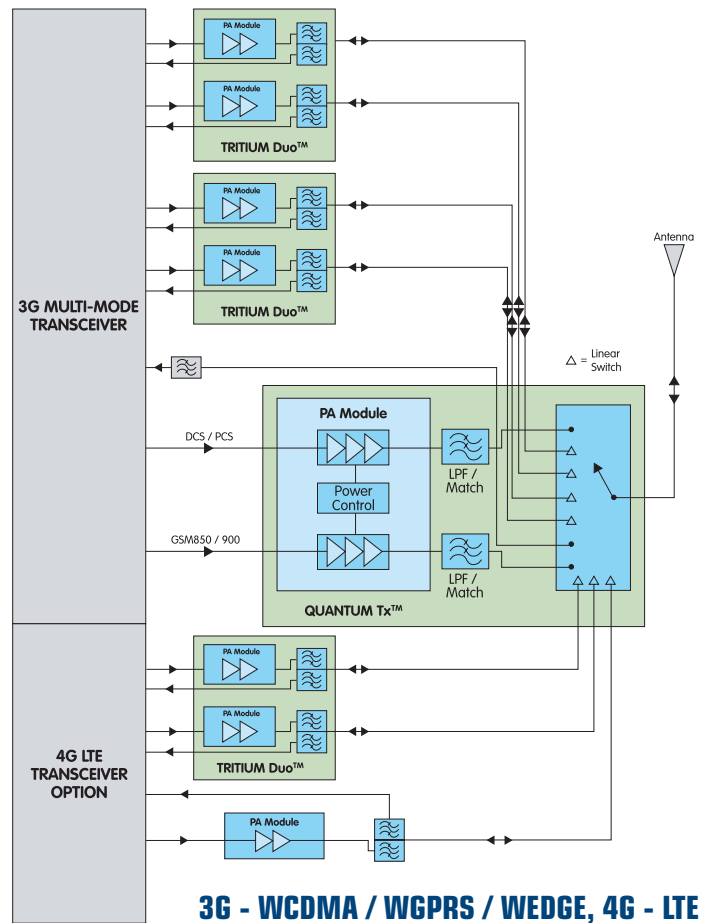
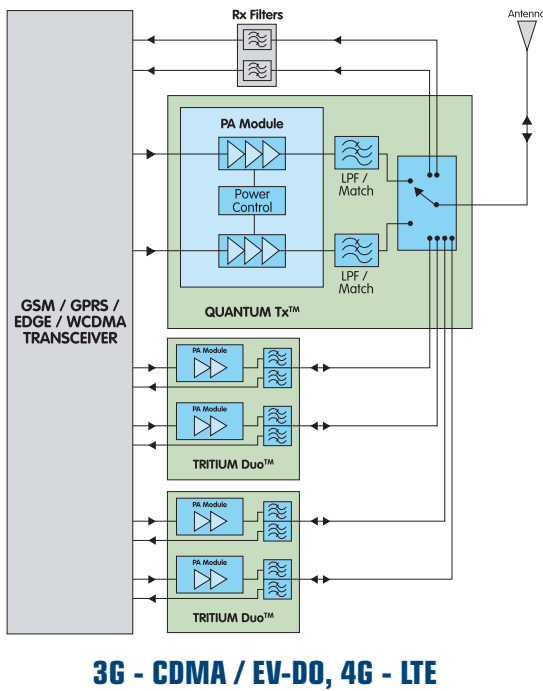
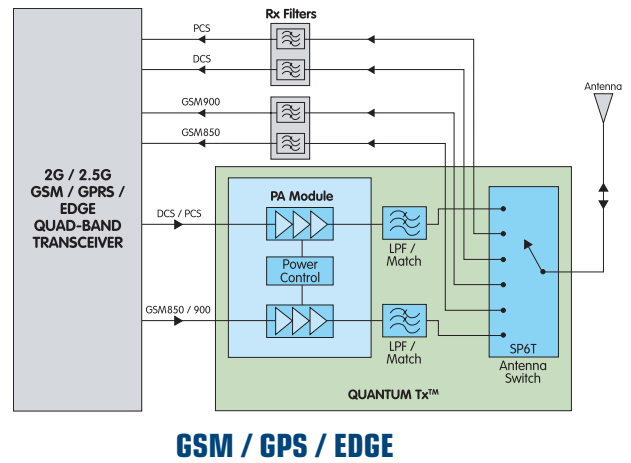
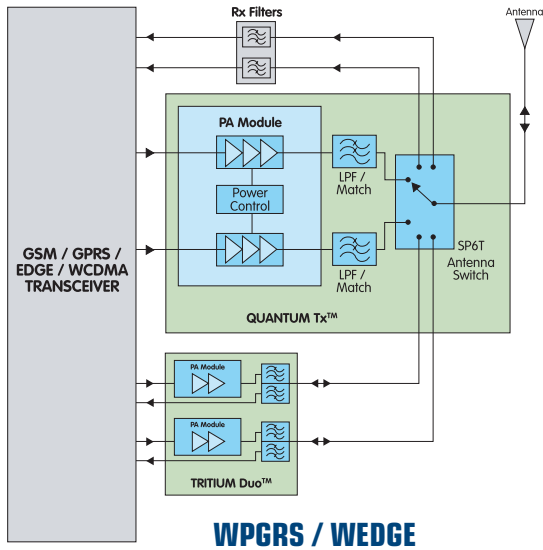
Control Products

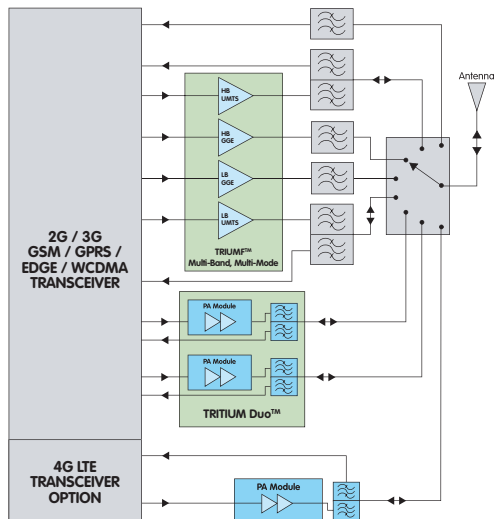
Description	Frequency (GHz)	Insertion Loss (dB)	Control Range (dB)	P1dB (dBm)	Supply Voltage (V)	Package Style	Part Number
Through Line	DC - 6	0.1	-	-	-	3x3 QFN	TQM4M9073
Wideband Analog Attenuator	DC - 30	2	17	-	0 to -2	3x3 QFN	TGL4203-SM
Wideband Analog Attenuator	DC - >50	2	17	-	0 to -2	Die	TGL4203
Discrete Thru (0 dB Attenuator)	DC - 65	0	0	-	-	Die	TGL4201-00
Wideband Discrete Attenuators	DC - 65	-	2, 3, 6, 10	-	-	Die	TGL4201-02, 03, 06, 10
Passive Wideband Limiter	2 - 12	<1	-	18	-	3x3 QFN	TGL2201-SM
Wideband Analog Attenuator	2 - 20	2	15	23	2.5	Die	TGL8784-SCC
Passive Wideband Limiter	3 - 25	<0.5	-	18	-	Die	TGL2201
5-Bit Phase Shifter	6 - 18	9	(348)	-	6	Die	TGP6336
6-Bit Phase Shifter	8.5 - 11	5	(354)	-	0 / -5	Die	TGP2103
Lange Coupler	12 - 21	<0.25	-	-	-	Die	TGB2001
5-Bit Phase Shifter	18 - 20	5	(180)	-	-2.5	Die	TGP1439
Lange Coupler	18 - 32	<0.25	-	-	-	Die	TGB4001
Lange Coupler	27 - 45	<0.25	-	-	-	Die	TGB4002
5-Bit Phase Shifter	28 - 32	6	(348)	-	5	Die	TGP2100
5-Bit Phase Shifter	33 - 37	6	(348)	-	-5	Die	TGP2102
1-Bit Phase Shifter	34 - 36	4	180	-	0 / 5	Die	TGP2104

BAW Filters

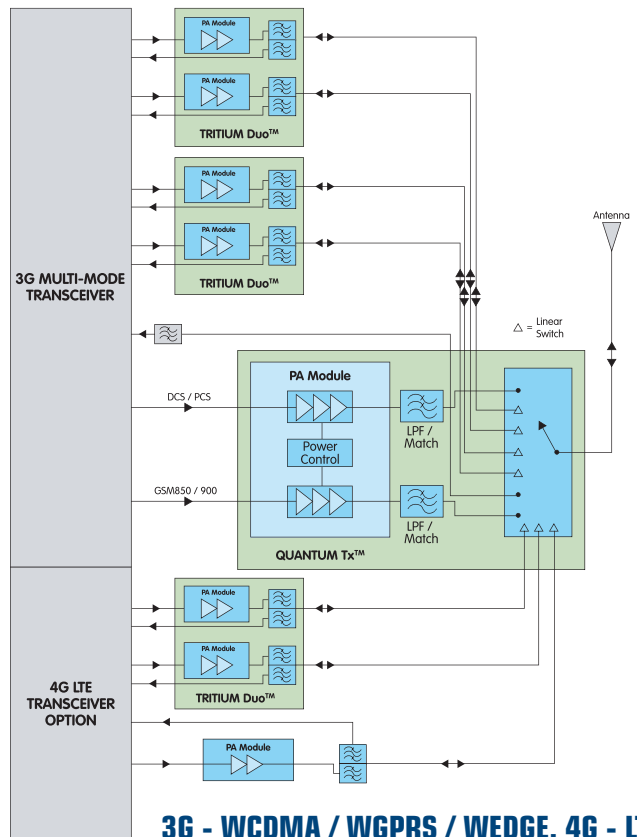
Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Style	Part Number
RF Filter	1030	15	2.5	SE / SE	40 @ 45	3.81x2.54	880367
RF Filter	1090	15	2.5	SE / SE	40 @ 45	3.81x2.54	880374
RF Filter	1280	20	3	SE / SE	40 @ 105	3.81x2.54	880368
GPS L2	1227.6	25	2.5	SE / SE	20 @ 1200	3.26x1.6	880060*
GPS L1	1575.42	30	2.5	SE / SE	20 @ 1548	3.26x1.6	880094*
RF Filter, MMDS	2560	30	3	SE / SE	40 @ 150	3.81x2.54	880157
GPS RF Filter, L5	1176	28	2.75	SE / SE	40 @ 140	3.26x1.6	880364
RF Filter	2106	35	4	SE / SE	-	3.26x1.6	880126*
RF Filter	2324	38	3	SE / SE	40 @ 150	3.81x2.54	880148

NOTES: * = New





3G - WGPRS / WEDGE, 4G - LTE



3G - WCDMA / WGPRS / WEDGE, 4G - LTE

QUANTUM Tx™ – GSM / GPRS

Description	Bands	Features	Package Size (mm)	Part Number
Dual-Band GSM / GPRS Tx Module; PA / LPF / SP4T Switch; Quad-Band Tx & Dual-Band Rx	GSM900 / DCS or GSM850 / PCS	High Efficiency Broadband Tx, 2 Rx Ports	5x6x1	TQM6M4068

QUANTUM Tx™ Family – WGPRS / WEDGE

Description	Bands	Features	Package Size (mm)	Part Number
GSM / GPRS / EDGE-Linear TRP Tx Module: PA / LPF / SP8T WEDGE Switch w/ Quad-Band WCDMA / LTE Ports	GSM850 / 900, DCS / PCS & WCDMA B1, B2, B5 / 6, B8	Integrated QB GSM / GPRS / EDGE PA & Antenna Switch Supporting WCDMA TRP	7x7.5x1.1	TQM6M9014
GSM / GPRS Tx Module: PA / LPF / SP6T WGPRS Switch w/ Dual-Band WCDMA Antenna Ports	GSM900 / DCS or GSM850 / PCS & 2 WCDMA / LTE Bands	Integrated DB GSM / GPRS & 2 WCDMA Antenna Switch Ports	5x6x1	TQM6M9069
GSM / GPRS / EDGE-Linear Tx Module: PA / LPF / SP8T WEDGE Switch w/ Quad-Band WCDMA / LTE Ports	GSM900 / DCS or GSM850 / PCS & 4 WCDMA / LTE Bands	Integrated QB GSM / GPRS / EDGE PA & Antenna Switch	5x6x1	TQM6M9085*

NOTES: * = New

TRITIUM Duo™ Family – CDMA / WCDMA / HSUPA / LTE

Description	Bands	Features	Package Size (mm)	Part Number
Integrated 2-in-1 PA-Duplexer Module	Bands 1 & 8	DC / DC, 1-Bit (Hi / Med Power Modes)	6x4.5x1	TQM6M6218*
Integrated 2-in-1 PA-Duplexer Module	Bands 2 & 5	DC / DC, 1-Bit (Hi / Med Power Modes)	6x4.5x1	TQM6M6225*
Integrated 2-in-1 PA-Duplexer Module	Bands 1 & 4	DC / DC, 1-Bit (Hi / Med Power Modes)	6x4.5x1	TQM6M6214*

NOTES: * = New

PA Modules – GSM / GPRS / EDGE

Description	Bands	Features	Package Size (mm)	Part Number
Quad-Band GSM / GPRS / EDGE-Linear PA Module	GSM900 / DCS & GSM850 / PCS	Low Band I _{batt} < 1.5A @ P _{cal} w/PAE 55%	5x5x1	TQM7M5005H
Quad-Band GSM / GPRS / EDGE-Polar PA Module	GSM900 / DCS & GSM850 / PCS	+3 to +8 dBm Pin Nominal	5x5x1	TQM7M5012H
Quad-Band GSM / GPRS / EDGE-Linear PA Module	GSM900 / DCS & GSM850 / PCS	Input Power Controlled for GMSK & 8PSK	5x5x1	TQM7M5013
Quad-Band GSM / GPRS / EDGE-Polar PA Module	GSM900 / DCS & GSM850 / PCS	+3 to +8 dBm Pin Nominal	5x5x1	TQM7M5022
Quad-Band GSM / GPRS / EDGE-Linear PA Module	GSM900 / DCS & GSM850 / PCS	Input Power Controlled for GMSK & 8PSK	5x5x1	TQM7M5033*
Quad-Band GSM / GPRS / EDGE-Linear PA Module	GSM900 / DCS & GSM850 / PCS	Input Power Controlled for GMSK & 8PSK	5x3.5x1	TQM7M5050*

NOTES: * = New

PA Modules – CDMA / WCDMA / HSUPA / LTE

Description	Bands	Features	Package Size (mm)	Part Number
WCDMA / HSUPA PA Module, w/Coupler	Band 1	2-Bit (Hi / Med / Lo Power Modes)	3x3x0.9	TQM776011
CDMA & WCDMA / HSUPA PA Module, w/Coupler	PCS / Band 2	2-Bit (Hi / Med / Lo Power Modes)	3x3x0.9	TQM766012
CDMA & WCDMA / HSUPA PA Module, w/Coupler	AWS / Band 4	2-Bit (Hi / Med / Lo Power Modes)	3x3x0.9	TQM756014
CDMA & WCDMA / HSUPA PA Module, w/Coupler	Cellular / Band 5	2-Bit (Hi / Med / Lo Power Modes)	3x3x0.9	TQM716015
WCDMA / HSUPA PA Module, w/Coupler	Band 8	2-Bit (Hi / Med / Lo Power Modes)	3x3x0.9	TQM726018
LTE PA Module, w/Coupler	Band 13	LTE 1-Bit (Hi / Lo Power Modes)	3x3x0.9	TQM700013
LTE PA Module, w/Coupler	Band 17	LTE 1-Bit (Hi / Lo Power Modes)	3x3x0.9	TQM700017*

NOTES: * = New

TRITIUM™ Family – WCDMA / HSUPA

Description	Bands	Features	Package Size (mm)	Part Number
WCDMA / HSUPA PA-Duplexer Module; SE Input w/Coupler, Detector	Band 1	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM676021
WCDMA / HSUPA PA-Duplexer Module; SE Input w/Coupler, Detector	Band 2	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM666022
WCDMA / HSUPA PA-Duplexer Module; SE Input w/Coupler, Detector	Bands 5 & 6	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM616025
WCDMA / HSUPA PA-Duplexer Module; SE Input w/Coupler, Detector	Band 8	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM626028L
WCDMA / HSUPA PA-Duplexer Module; SE Input w/Coupler, Detector	Band 2	DC / DC, 1-Bit (Hi / Med Power Modes)	4.5x3.5x1	TQM666052*

NOTES: * = New

TRIUMF™ Family – Multi-Mode, Multi-Band PA Modules

Description	Bands	Features	Package Size (mm)	Part Number
Multi-Mode, Multi-Band Quad-Band GSMK / EDGE, Dual-Band WCDMA PA Module	GSM850 / 900, DCS / PCS & WCDMA B1 & B5 / 8	2-Bit (Hi / Med / Lo Power Modes)	5x7.5x1	TQM7M9023
Multi-Mode, Multi-Band Quad-Band GSMK / EDGE, Dual-Band WCDMA PA Module	GSM850 / 900, DCS / PCS & WCDMA B1 & B5 / 8	1-Bit (Hi / Med Power Modes)	5x7.5x1	TQM7M9053*

NOTES: * = New

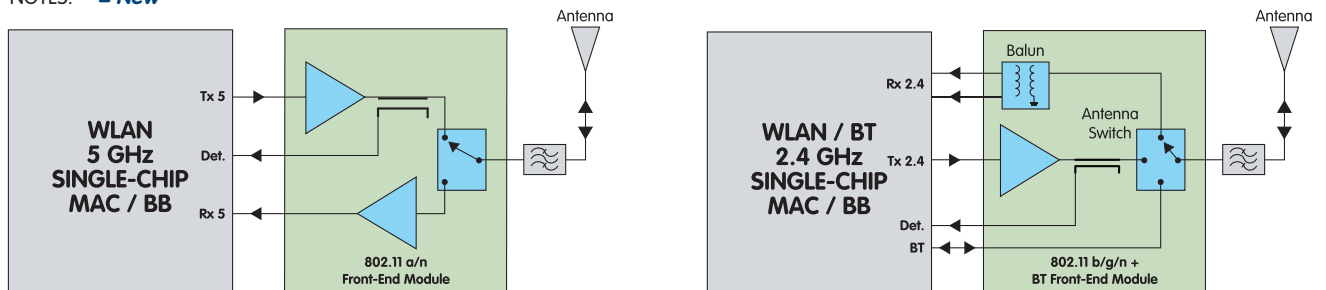
CDMA Switch

Description	Bands	Features	Package Size (mm)	Part Number
CDMA SP3T Switch	Cellular / PCS / AWS	Antenna Routing	2x2x0.6	TQP4M3019

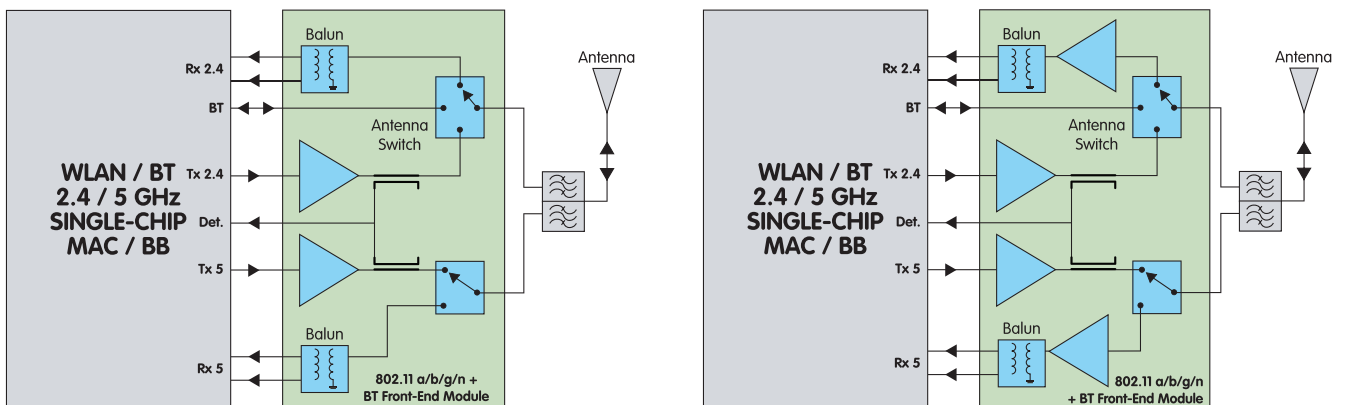
3G / 4G LTE Duplexers & Filters

Description	Bands	Features	Package Size (mm)	Part Number
LTE SE / BAL SAW Duplexer	Band 13	1.5 dB (Tx) / 1.6 dB (Rx) Insertion Loss	2.5x2x0.6	856879
LTE SE / BAL SAW Duplexer	Band 17	1.8 dB (Tx) / 2 dB (Rx) Insertion Loss	2.5x2x0.6	856931
LTE SE / BAL SAW Duplexer	Band 20	High-Performance Temp. Compensated SAW	2.5x2x0.6	856979
BC10 SE / BAL SAW Duplexer	BC10 (PCS)	Excellent Triple Beat Performance	2.5x2x0.6	856999
WCDMA / LTE SE / SE BAW Duplexer	Band 3	2.6 dB (Tx) / 2.7 dB (Rx) LTE Insertion Loss	2.5x2x0.9	TQM956003*
BC14 SE / SE BAW Duplexer	BC14 (Cellular)	Excellent Triple Beat Performance	2.5x2x0.9	TQM963014*
PCS SE / SE BAW Duplexer	Band 2 (PCS)	Excellent Triple Beat Performance	2.5x2x0.9	TQM966002*
LTE Diversity Receive Filter	Band 25	2.6 dB Insertion Loss and 40 dB Tx Attenuation	2.5x2x0.8	TQM966025*
LTE SE / SE BAW Duplexer	Band 7	Low Insertion Loss and Wi-Fi Co-Existence	2.5x2x0.9	TQM976027*

NOTES: * = New



Single-Band WLAN Modules



Dual-Band WLAN Modules

WLAN / Bluetooth® RF Front-End Modules

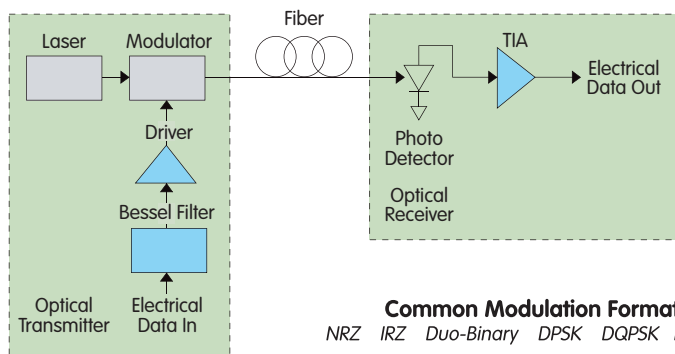
Description	Bands	Features	Package Size (mm)	Part Number
802.11 5 GHz WLAN PA MMIC	802.11 a, n	ETSLP-16 Package, Detector, Hi / Lo Linearity Mode	3x3x0.45	TQP787011
2.4 GHz WLAN LNA + SP3T Switch w/WLAN Tx & Bluetooth® Path	802.11 b, g, n	LNA Bypass, ETSLP-12 Package	1.5x1.5x0.55	TQP879001A
2.4 GHz WLAN PA + Switch MMIC w/WLAN Rx Balun & Bluetooth® Path	802.11 b, g, n	ETSLP-16 Package, Coupler / Detector	3x3x0.45	TQM679002A
2.4 GHz & 5 GHz WLAN PA + Switch MMIC w/WLAN Rx Baluns & Bluetooth® Path	802.11 a, b, g, n	ETSLP-24 Package, Coupler / Detector	4x4x0.45	TQP6M9002
2.4 GHz and 5 GHz WLAN High-Performance PA + Switch MMIC w/WLAN 2.4 GHz and 5 GHz LNA + Rx Baluns and Bluetooth® Path	802.11 a, b, g, n, ac	ETSLP-24 Package, Coupler / Detector	4x4x0.45	TQP6M9017*
5 GHz WLAN PA + Low Noise Amplifier + SP2T Switch MMIC	802.11 a, n	ETSLP-16 Package, Coupler / Detector	2.5x2.5x0.4	TQP887016*
2.4 GHz WLAN PA + Low Noise Amplifier + SP3T Switch MMIC for Bluetooth® Path	802.11 b, g, n	ETSLP-16 Package, Coupler / Detector	2.5x2.5x0.4	TQP879016*

NOTES: * = New

GPS RF Front-End Module & Filters

Description	Bands	Features	Package Size (mm)	Part Number
GPS Filter-LNA-Filter Module	1575 MHz, GPS L1	Low Noise (1.56 dB) and High Gain (16 dB)	3x3x1	TQM640002
GPS SAW Filter, SE / SE	1575 MHz, GPS L1	0.75 dB Insertion Loss (Hermetic CSP)	1.4x1.2x0.46	856561
GPS SAW Filter, SE / BAL	1575 MHz, GPS L1	1.1 dB Insertion Loss (Hermetic CSP)	1.4x1.2x0.46	856576
GPS SAW Filter, SE / SE	1575 MHz, GPS L1	0.6 dB Insertion Loss (Hermetic CSP)	1.4x1.2x0.46	856793

GUIDE BY MARKET | Optical



Optical Systems
(10, 40 & 100 Gb/s)

Common Modulation Formats

NRZ IRZ Duo-Binary DPSK DQPSK DP-QPSK

Drivers

Description	Frequency Range (GHz)	Power	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
9.9 - 12.5 Gb/s 3V - 7V Driver	DC - 13	3 - 7Vpp	32	—	3.3 - 5 / 115	8x8 QFN	TGA4956-SM
9.9 - 12.5 Gb/s Mod. Driver	DC - 16	3 - 10Vpp	35	2.5	5.5 - 8 / 210	11.4x8.9 SL	TGA4953-SL
9.9 - 12.5 Gb/s Mod. Driver	DC - 16	3 - 9Vpp	35	2.5	5.5 - 8 / 210	11.4x8.9 SL	TGA4954-SL
12.5 Gb/s NRZ Driver	DC - 18	3 - 11Vpp	16	2.5	8 / 285	Die	TGA4807
12.5 Gb/s NRZ Driver	DC - 18	6 - 8Vpp	16	3.5	5 - 8 / 70 - 175	Die	TGA1328-SCC
12.5 Gb/s NRZ Driver	DC - 18	4 - 8Vpp	16	3.5	8 / 175	8.9x8.9 SL	TGA8652-SL
15 Gb/s 10V Linear Mod. Driver	DC - 20	3 - 10Vpp	22	—	7 / 280	6x6 QFN	TGA4826-SM

Drivers (cont.)

Description	Frequency Range (GHz)	Power	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
40 & 100 Gb/s 8 Vpp SE Driver	DC - 30	3 - 9Vpp	32	–	6 - 7 / 270	14.4x7 SL	TGA4943-SL
100 Gb/s 8V pp Dual Channel Driver / Out Driver	DC - 35	3 - 9Vpp	32	–	5 - 7 / 500	16x10.5 SL	TGA4947-SL**
Wideband Driver (40 Gb/s)	DC - 35	4Vpp	12	–	5 / 135	Die	TGA4832
32 Gb/s 9V pp Diff In / Out Driver MMIC	DC - 35	6 - 9Vpp Diff	25 Diff	–	5 - 6 / 500	10x7 SL	TGA4959-SL
45 Gb/s 8V pp SE Driver w/ Bias-T Inside	DC - 37	5 - 9Vpp	30	–	6 - 7 / 300	16x8 SL	TGA4942-SL**
45 Gb/s 9V pp Diff In / Out Driver MMIC	DC - 50	6 - 10Vpp Diff	27 Diff	–	5 - 6 / 500	Die	TGA4959**
Ultra-Wideband Driver (50 Gb/s)	DC - 78	3.5Vpp	8	5	6 / 82	Die	TGA4803
10.7 - 12.5 Gb/s Linear Mod. Driver	0.03 - 8	12.5Vpp	20	–	8 / 310	8x8 QFN	TGA4823-2-SM

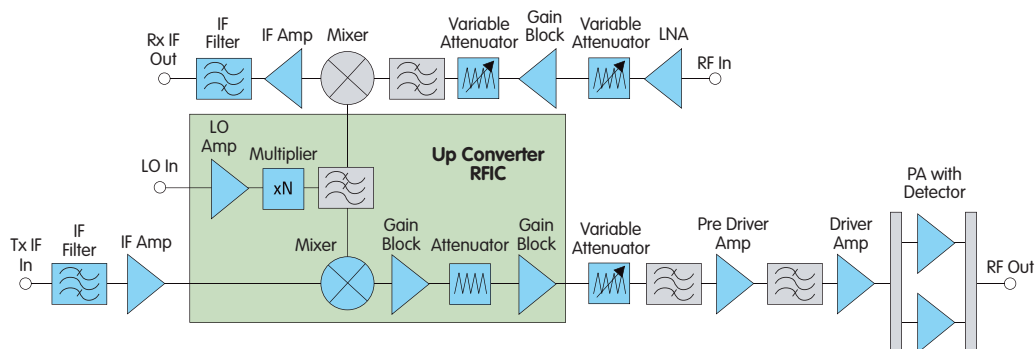
NOTES: ** = **Coming Soon**, SE = Single-Ended

Amplifiers

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
LNA / Gain Block (40 Gb/s)	DC - 40	11.5 / 20	13	3.2	5 / 50	Die	TGA4830
CATV TFA / Gain Block	0.04 - 1	27 / 46	20	1.5	8 / 350	4x4 QFN	TGA2803-SM

Control Products

Description	Frequency Range (GHz)	Insertion Loss (dB)	Control Range (dB)	P1dB (dBm)	Supply Voltage (V)	Package Style	Part Number
Analog Attenuator	DC - 30	2	17	–	0 to -2	3x3 QFN	TGL4203-SM
Analog Attenuator	DC - >50	2	17	–	0 to -2	Die	TGL4203
Discrete Thru (0 dB Attenuator)	DC - 65	0	0	–	–	Die	TGL4201-00
Discrete Attenuators	DC - 65	–	2, 3, 6, 10	–	–	Die	TGL4201-02, 03, 06, 10
Bessel Filter	–	6, 7, 8, 9, 10 & 11 Cut-Off Freq	–	–	–	Die	TGB2010-00, -09 etc.
Bessel Filter	–	5, 6, 6.5, 7.5, 8 & 9 Cut-Off Freq	–	–	–	2x2 QFN	TGB2010-00, -09-SM etc.



Point-to-Point Radio

Amplifiers

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
2W HPA	5.5 - 8.5	32 (34) / 41	30	7 / -	6 / 1260	5x5 QFN	TGA2706-SM
2.5W HPA	5.9 - 8.5	34 / 42	18	7.5 / 37	6 / 1000	6x6 QFN	TGA2701-SM
HPA	6 - 18	(34.5) / -	24	- / 20	8 / 1200	Die	TGA9092-SCC
Gain Block	6 - 18	12.5 / -	13	5 / -	5 / 80	Die	TGA8035-SCC
2.8W HPA	6 - 18	(34.5) / -	24	- / 20	7 - 9 / 800 - 1200	Die	TGA2501
HPA	7 - 8.5	(38) / -	21	- / 42	7 / 2000	Die	TGA2701
Driver Amp	7 - 13	(30) / 37	25	- / 30	9 / 450	Die	TGA2700
Wideband Driver Amp	8 - 18	13 / -	17	5 / -	4.5 / 50	Die	TGA8399C
HPA	9 - 10.5	(38) / -	20	- / >38	4 - 9 / 2000	Die	TGA2704
HPA	10 - 12	33 (34.5) / 43	25	9 / -	6 / 1300	5x5 QFN	TGA2535-SM*
HPA	10.5 - 12	(38) / -	19	- / >39	4 - 9 / 2000	Die	TGA2710
Driver Amp, SB	11 - 17	17 / -	23	6 / -	6 / 75	4x4 QFN	TGA2507-SM
Driver Amp	12 - 16	26 (26.5) / 37	23	7 / -	5 / 300	3x3 QFN	TGA2524-SM
Driver Amp, SB	12 - 18	14 / -	17	-	6 / 40	Die	TGA2506
Driver Amp, SB	12 - 18	20 / -	28	6 / -	6 / 80	Die	TGA2507
1W HPA	12 - 19	30 / -	30	-	5 - 7 / 435	Die	TGA2508
HPA	12 - 19	29 / -	25	-	5 - 7 / 435	4x4 QFN	TGA2508-SM
2W HPA	12.3 - 15.7	(31) / -	33	7.0 / -	6 / 850	Die	TGA2520
HPA	12.5 - 15.5	30 (31.5) / 41	25	7.5 / -	6 / 650	5x5 QFN	TGA2527-SM*
2W HPA	12.5 - 16	(32) / 37	32	-	6 - 7 / 680	4x4 QFN	TGA2503-SM
2W HPA	12.5 - 17	(34) / -	26	- / 25	7.5 / 650	Die	TGA2510
2W HPA	12.5 - 17	(33.5) / -	25	- / 25	7.5 / 650	6.4x9.4 SG	TGA2510-SG
2W HPA	12.7 - 15.4	34 (35) / 43	28	6 / -	6 / 1300	Die	TGA2533
2W HPA	12.7 - 15.4	33 (34.5) / 43	27	6 / -	6 / 1300	5x5 QFN	TGA2533-SM
2W HPA	13 - 17	(34) / 40	32	-	6 - 7 / 680	Die	TGA2503
2W HPA	13 - 17	(34) / -	25	-	6 - 7 / 640	Die	TGA2505
2W HPA	13 - 17	(34) / -	33	-	5 - 8 / 680	17.8x8.4 FL	TGA2904-FL
2W HPA, PD	13 - 17	(34) / 38.5	26	- / 30	7.5 / 650	6.4x9.4 SG	TGA2902-1-SCC-SG
2W HPA	13 - 17	(34) / 40	33	-	5 - 8 / 680	6.4x9.4 SG	TGA8658-SG
4W HPA, Balanced	13 - 17	(36) / 44	25	- / 30	6 - 7 / 1300	Die	TGA2502
2W HPA, PD	13.75 - 14.5	(34) / 38.5	26	- / 30	7.5 / 650	6.4x9.4 SG	TGA2902-2-SCC-SG
1W HPA, PD	17 - 20	30 (32) / 42	20	-	5 - 7 / 825	Die	TGA4530
HPA	17 - 20	31 (32.5) / 41	23	7 / -	6 / 900	4x4 QFN	TGA4532-SM
HPA	17 - 20	30.5 / 41	23	-	6 / 900	Die	TGA4532
Driver Amp	17 - 24	22 / -	19	4 / -	5 / 270	4x4 QFN	TGA2521-SM
HPA	17 - 24	31 (32) / 40	23	6 / -	7 / 720	Die	TGA4531
HPA, AGC, PD	17 - 24	(29) / 38	22	-	5 / 712	4x4 QFN	TGA2522-SM
HPA	17 - 27	29 (31) / 37	22	-	7 / 760	Die	TGA4502-SCC
Gain Block & 2x / 3x Multiplier	17 - 37	18 (22) / 26	20	7 / -	5 / 140	3x3 QFN	TGA4030-SM
Gain Block & 2x / 3x Multiplier	17 - 40	18 (22) / 24	22	7 / -	5 / 140	3x3 QFN	TGA4031-SM
Gain Block, Multiplier	17 - 43	22 / -	25	-	5 / 225	Die	TGA4040
2W HPA	18 - 23	32 (33) / 39	26	-	7 / 840	Die	TGA4022
HPA	18 - 27	29 / 37	14	-	6 / 480	Die	TGA1135-SCC
MPA	19 - 27	25 / 32	22	-	5 - 7 / 220	Die	TGA1073G-SCC
Gain Block	19 - 38	(22) / 30	20	-	5 / 160	Die	TGA4036
HPA	21 - 24	31 (32) / 41	22	6 / -	6 / 880	4x4 QFN	TGA4533-SM
MPA	25 - 35	25 / -	18	-	6 / 220	4x4 QFN	TGA4902-SM
MPA	26 - 35	25 (32) / -	19	-	5 - 7 / 220	Die	TGA1073A-SCC
1W HPA	27 - 31	30 / -	22	- / 25	4 - 6 / 420	Die	TGA4509
2W HPA	27 - 31	32.5 (33) / 36.5	20	-	6 / 840	Die	TGA4513
HPA	27 - 32	28.5 / -	25	-	6 - 8 / 420	Die	TGA1073B-SCC
1W HPA	28 - 31	30 / -	19	- / 25	6 / 420	4x4 QFN	TGA4509-SM
Driver Amp	29 - 37	16 / -	16	-	6 / 60	Die	TGA4510

Amplifiers (cont.)

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
2W HPA	30 - 40	31.5 (33) / –	20	–	6 / 1050	Die	TGA4516
MPA	32 - 45	24 (25) / 33	16	–	6 / 175	Die	TGA4521
MPA	33 - 47	27 (27.5) / 36	18	–	6 / 400	Die	TGA4522
HPA	36 - 40	26 / –	15	–	5 - 7 / 240	Die	TGA1073C-SCC
HPA	36 - 40	30 / –	14	–	6 - 7 / 500	Die	TGA1171-SCC
HPA	37 - 40	28 / 38	24	–	5 / 600	Die	TGA4538

NOTES: * = New, AGC = Automatic Gain Control, PD = Power Detector, SB = Self Biased

Low Noise Amplifiers

Description	Frequency Range (GHz)	P1dB / IIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
LNA, AGC	2 - 18	18 / 29	17	2	5 / 75	Die	TGA2525
LNA, AGC	2 - 20	19 / –	17.5	2.5	5 / 100	Die	TGA2526
LNA, AGC	2 - 20	17.5 / –	9	3.5	5 - 8 / 60	Die	TGA1342-SCC
LNA, AGC	2 - 20	16 / –	17	2.5	5 / 75	4x4 QFN	TGA2513-SM
LNA, AGC	2 - 23	17 / 26	17	2	5 / 75	Die	TGA2513
LNA, SB, AGC	4 - 14	6 / 16	22	2.3	5 / 90	4x4 QFN	TGA2512-1-SM
LNA, AGC, GB	4 - 14	13 / 24	25	2.3	5 / 160	4x4 QFN	TGA2512-2-SM
LNA, SB, AGC	5 - 15	6 / 13	27	1.4	5 / 90	Die	TGA2512
LNA, SB	6 - 13	11 / –	26	1.5	5 / 65	Die	TGA8399B-SCC
LNA, SB, AGC	6 - 14	6 / 12	20	1.3	5 / 90	Die	TGA2511
LNA	20 - 27	12 / –	21	2.2	3.5 / 60	Die	TGA4506
LNA	28 - 36	12 / 21	22	2.3	3 / 60	Die	TGA4507
LNA	30 - 42	14 / –	21	2.8	3 / 40	Die	TGA4508
LNA	57 - 69	–	13	4	3 / 41	Die	TGA4600

NOTES: AGC = Automatic Gain Control, GB = Gate Bias, SB = Self Biased

Discrete Transistors

Description	Frequency Range (GHz)	P1dB (Psat) (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
24mm HFET	DC - 4	40	13	– / 51	8 / 2170	Die	TGF4124
18mm HFET	DC - 6	38.5	13.5	– / 53	8 / 1690	Die	TGF4118
12mm HFET	DC - 8	37	14	– / 55	8 / 750	Die	TGF4112
4.8mm HFET	DC - 10.5	34	8.5	– / 53	8 / 200	Die	TGF4250-SCC
9.6mm HFET	DC - 10.5	37	9.5	– / 52	8.5 / 520	Die	TGF4260-SCC
1.2mm HFET	DC - 12	28.5	10	– / 55	8 / 50	Die	TGF4230-SCC
2.4mm HFET	DC - 12	31.5	10	– / 56	8 / 100	Die	TGF4240-SCC
1mm Pwr pHEMT	DC - 12	(31.5)	11	– / 55	12 / 900	Die	TGF2021-01
2mm Pwr pHEMT	DC - 12	(34.5)	11	– / 55	12 / 150	Die	TGF2021-02
4mm Pwr pHEMT	DC - 12	(37.5)	11	– / 55	12 / 300	Die	TGF2021-04
8mm Pwr pHEMT	DC - 12	(40.2)	11	– / 55	12 / 600	Die	TGF2021-08
12mm Pwr pHEMT	DC - 12	(42)	11	– / 52	12 / 900	Die	TGF2021-12
0.3mm MESFET	DC - 18	13	11	1.5 / –	3 / 15	Die	TGF1350-SCC
0.6mm Pwr pHEMT	DC - 20	(29)	13	– / 56	12 / 45	Die	TGF2022-06
1.2mm Pwr pHEMT	DC - 20	(32)	13	– / 56	12 / 90	Die	TGF2022-12
2.4mm Pwr pHEMT	DC - 20	(35)	13	– / 58	12 / 180	Die	TGF2022-24
4.8mm Pwr pHEMT	DC - 20	(38)	13	– / 58	12 / 360	Die	TGF2022-48
6mm Pwr pHEMT	DC - 20	(39)	12.5	– / 53	12 / 448	Die	TGF2022-60
0.3mm pHEMT	DC - 22	16	13	0.8 / –	3 / 15	Die	TGF4350

Switches

Description	Frequency Range (GHz)	Insertion Loss (dB)	Isolation (dB)	P1dB (dBm)	Control Voltage (V)	Package Style	Part Number
SP2T 802.11 a, b, g	DC - 6	0.6	28	31.5	3 / 0	1.3x2 DFN	TQS5200
SPDT FET	DC - 18	1.5	36	27	-5	Die	TGS2306
SPDT FET	DC - 18	2	39	21	-7 / 0	Die	TGS8250-SCC
SP3T VPIN	1 - 20	0.5	35	23	10 mA	Die	TGS2303
SP4T VPIN	1 - 20	0.6	38	23	10 mA	Die	TGS2304-SCC
SP3T VPIN	4 - 18	1	35	20	+/- 2.7	Die	TGS2313
SPDT VPIN	4 - 20	0.9	35	>20	+/- 2.7	Die	TGS2302
SPDT VPIN	24 - 43	<2	36	27	+/- 5	Die	TGS4301
SPDT VPIN	27 - 46	0.9	30	>34	+/- 5 / 15	Die	TGS4302
SPDT VPIN Absorptive	32 - 40	1	36	>33	+/- 5 / 18	Die	TGS4304

Frequency Converters & Mixers

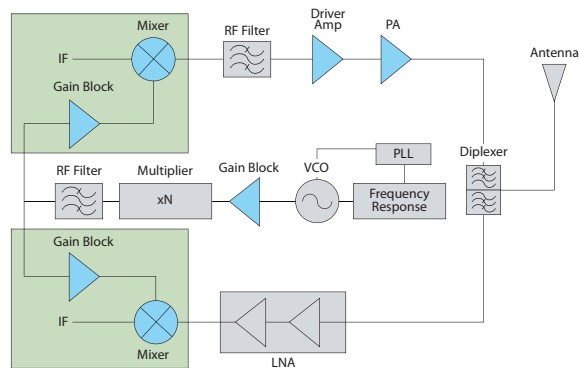
Description	Frequency Range (GHz)	Conversion Gain (dB)	LO / RF Isolation (dB)	IIP3 (dBm)	Voltage / Current (V / mA)	Package Style	Part Number
Doubler w/Amplifier	16 - 30	18	30	-	5 / 150	Die	TGC4403
Doubler w/Amplifier	16 - 30	18	30	-	5 / 150	4x4 QFN	TGC4403-SM
Upconverting Mixer	17 - 26	-9	40	-	-0.9 / 0	4x4 QFN	TGC4402-SM
Upconverting Mixer	17 - 27	-9	35	18	-0.9 / 0	Die	TGC4402
Upconverter	17 - 27	13	30	-	5 / 425	Die	TGC4405
Upconverter	17 - 27	13	30	-	5 / 425	4x4 QFN	TGC4405-SM
Gain Block & 2x / 3x Multiplier	17 - 37	9	-	6	5 / 140	3x3 QFN	TGA4030-SM
Gain Block & 2x / 3x Multiplier	17 - 40	9	-	2	5 / 140	3x3 QFN	TGA4031-SM
Doubler (Input 10 - 20 GHz)	20 - 40	-12	25	18	-	Die	TGC1430F

Control Products

Description	Frequency Range (GHz)	Insertion Loss (dB)	Control Range (dB)	P1dB (dBm)	Supply Voltage (V)	Package Style	Part Number
Analog Attenuator	DC - 30	2	17	-	0 to -2	3x3 QFN	TGL4203-SM
Analog Attenuator	DC - >50	2	17	-	0 to -2	Die	TGL4203
Discrete Thru (0 dB Attenuator)	DC - 65	0	0	-	-	Die	TGL4201-00
Discrete Attenuators	DC - 65	-	2, 3, 6, 10	-	-	Die	TGL4201-02, 03, 06, 10
Analog Attenuator	2 - 20	2	15	23	2.5	Die	TGL8784-SCC
Passive Wideband Limiter	3 - 25	<0.5	-	18	-	Die	TGL2201
Lange Coupler	12 - 21	<0.25	-	-	-	Die	TGB2001
Lange Coupler	18 - 32	<0.25	-	-	-	Die	TGB4001
Lange Coupler	27 - 45	<0.25	-	-	-	Die	TGB4002

Filters

Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
High Selectivity IF Filter	140	1.5	12.1	SE and BAL	48 @ 143	9.1x4.8	856691
High Selectivity IF Filter	140	3	13.6	SE and BAL	46 @ 144	9.1x4.8	856692
High Selectivity IF Filter	140	6	11	BAL / BAL	39 @ 147	9.1x4.8	856693
High Selectivity IF Filter	140	7	13.6	SE and BAL	43 @ 147	9.1x4.8	856694
High Selectivity IF Filter	140	10	10	BAL / BAL	41 @ 152.5	9.1x4.8	856695
High Selectivity IF Filter	140	14	8.5	SE and BAL	43 @ 155	9.1x4.8	856696
High Selectivity IF Filter	140	20	9.8	BAL / BAL	40 @ 158.5	9.1x4.8	856697
High Selectivity IF Filter	140	28	18	SE and BAL	42 @ 168	9.1x4.8	856698


VSAT RF Subsystem

Amplifiers

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
Ku-Band 50mW Gain Block, SB	11 - 17	17 / -	23	6 / -	6 / 75	4x4 QFN	TGA2507-SM
Ku-Band 25mW Gain Block, SB	12 - 18	14 / -	17	-	6 / 40	Die	TGA2506
Ku-Band 50mW Gain Block, SB	12 - 18	20 / -	28	6 / -	6 / 80	Die	TGA2507
Ku-Band 0.8W PA	12 - 19	29 / -	25	-	5 - 7 / 435	4x4 QFN	TGA2508-SM
Ku-Band 1W PA	12 - 19	30 / -	30	-	5 - 7 / 435	Die	TGA2508
Ku-Band 1.3W PA	12.3 - 15.7	(31) / -	33	7 / -	6 / 850	Die	TGA2520
Ku-Band 1.6W PA	12.5 - 16	(32) / 37	32	-	6 - 7 / 680	4x4 QFN	TGA2503-SM
Ku-Band 2W PA	12.5 - 17	(33.5) / -	25	- / 25	7.5 / 650	9.4x6.4 SG	TGA2510-SG
Ku-Band 2W PA	12.5 - 17	(34) / -	26	- / 25	7.5 / 650	Die	TGA2510
Ku-Band 4W PA	13 - 15	(36) / 41	25	-	7 / 1300	8.4x17.8 FL	TGA8659-FL
Ku-Band 6.5W PA	13 - 16	(38) / -	24	-	8 / 2600	11.4x17.3 FL	TGA2514-FL
Ku-Band 1.6W PA	13 - 17	(34) / 40	32	-	6 - 7 / 680	Die	TGA2503
Ku-Band 2.5W PA	13 - 17	(34) / -	25	-	6 - 7 / 640	Die	TGA2505
Ku-Band 2W PA	13 - 17	(34) / -	33	-	5 - 8 / 680	8.4x17.8 FL	TGA2904-FL
Ku-Band 2W PA	13 - 17	(34) / 40	33	-	5 - 8 / 680	9.4x6.4 SG	TGA8658-SG
Ku-Band 2W PA, PD	13 - 17	(34) / 38.5	26	- / 30	7.5 / 650	9.4x6.4 SG	TGA2902-1-SG
Ku-Band 4W PA	13 - 17	(36) / 44	25	- / 30	6 - 7 / 1300	Die	TGA2502
Ku-Band 6.5W PA	13 - 18	(38) / 44	24	-	8 / 3600	Die	TGA2514
Ku-Band 2W PA, PD	13.75 - 14.5	(34) / 38.5	26	- / 30	7.5 / 650	9.4x6.4 SG	TGA2902-2-SG
Ka-Band 0.32W MPA	25 - 35	25 / -	18	-	6 / 220	4x4 QFN	TGA4902-SM
Ka-Band 1W PA	27 - 31	30 / -	22	- / 25	4 - 6 / 420	Die	TGA4509
Ka-Band 2W PA	27 - 31	32.5 (33) / 36.5	20	- / 25	6 / 840	Die	TGA4513
Ka-Band VGA	27 - 31.5	21 at max gain / -	29 (max)	-	5 / 280	6x6 QFN	TGA4541-SM**
Ka-Band 0.25W MPA	27 - 32	24 / -	15	-	5 / 170	4x4 QFN	TGA4903-SM
Ka-Band 1W Linear PA	28 - 30	30 (30.5) / -	20	-	6 / 420	5x5 QFN	TGA4539-SM*
Ka-Band 1W PA	28 - 31	30 / -	19	- / 25	6 / 420	4x4 QFN	TGA4509-SM
Ka-Band 4W PA	28 - 31	36 (36.5) / -	22	- / 22	6 / 1600	5x5 QFN	TGA4906-SM
Ka-Band 4W PA	28 - 31	36 (36.5) / -	22	- / 22	6 / 1600	Die	TGA4906
Ka-Band 7W PA	28 - 31	(38.5) / -	22	- / 20	6 / 3200	Die	TGA4916
Ka-Band 50mW Gain Block	29 - 37	16 / -	16	-	6 / 60	Die	TGA4510

NOTES: ** = **Coming Soon**, PD = Power Detector, SB = Self Biased

Frequency Converters & Mixers

Description	Frequency Range (GHz)	Conversion Gain (dB)	LO / RF Isolation (dB)	IIP3 (dBm)	Voltage / Current (V / mA)	Package Style	Part Number
Doubler w/Amplifier	16 - 30	18	30	-	5 / 150	Die	TGC4403
Ka-Band Doubler + Driver Amp	16 - 30	15	25	-	5 / 150	4x4 QFN	TGC4406-SM
Ka-Band Downconverter (LNA + VCO + Mixer)	17 - 21	8	-	-	5 / 305	5x6 QFN	TGC4408-SM**
Ka-Band Upconverter (Lo Amp + Doubler)	21.5 - 32.5	-9	35	13	5 / 65	3x3 QFN	TGC4407-SM**

NOTES: ** = **Coming Soon**

Up to 1W

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage Current (V / mA)	Package Style	Part Number
CATV Gain Block, Flex Gain	DC - 2	21 / 38	16 - 21	2 / -	5 - 8 / 100	SOT89	TAT7457
12.5 Gb/s NRZ Driver	DC - 18	24 / -	16	3.5 / -	5 - 8 / 70 - 175	Die	TGA1328-SCC
12.5 Gb/s NRZ Driver	DC - 18	25 / -	16	3.5 / -	8 / 175	8.9x8.9 SL	TGA8652-SL
Wideband Driver (40 Gb/s)	DC - 35	18 / -	12	-	5 / 135	Die	TGA4832
CATV TIA / Gain Block, SB	0.04 - 1	27 / 46	20	1.5 / -	8 / 350	5x5 QFN	TGA2806-SM
CATV Gain Block	0.04 - 1	28 / -	18.5	2.5 / -	6 / 318	5x5 QFN	TGA2807-SM
On-Chip Linearized Amplifier	0.04 - 1	- / 43	17	4.7 / -	5 / 380	SOIC-8	TAT7467H
CATV 12v Power Doubler MMIC	0.05 - 1	30 / 51	11	4 / -	12 / 450	SOIC16W	TAT8801*
CATV Power Doubler Line Amplifier MMIC	0.05 - 1	31 / 52	25	4 / -	24 / 350 (12v optional)	SOIC16W	TAT8857*
CATV Push Pull Infrastructure Amplifier MMIC	0.05 - 1	-	32	3 / -	24 / 270 (12v optional)	SOIC16W	TAT8858*
Dual HBT Amplifier	0.05 - 1	20 / 37	13.5	4.5 / -	>7 / 165	SOIC-8	AG606
MESFET Amplifier	0.05 - 1	20 / 40	14.8	3.5 / -	5 / 150	SOT89	AH2
Dual MESFET Amplifier	0.05 - 1	25.5 / 43	11.1	4.5 / -	5 / 320	SOIC-8	AH22S
Fiber to the Home TIA + Output Amp	0.05 - 1	-60 dBc CTB / CSO	38	2.9 pA / rHz EIN	10 - 12 / 120	4x4 QFN	TAT6254B
Fiber to the Home TIA + Output Amp (RfOG)	0.05 - 1	-62 dBc CTB / CSO	32	3.9 pA / rHz EIN	5, 12 / 200, 130	4x4 QFN	TAT6254D
Fiber to the Home TIA + Output Amp (Hi Out)	0.05 - 1	-63 dBc CTB / CSO	33	3.9 pA / rHz EIN	5, 12 / 200, 130	4x4 QFN	TAT6254C
Dual pHEMT Amplifier, High Gain	0.05 - 1	- / 38	17.5	3.2 / -	5 / 235	SOIC-8	TAT7469
CATV Gain Block, High Gain, MOCA Multi	0.05 - 1	- / 41	22.5	2 / -	8 / 190	SOT89	TAT7430B
CATV Gain Block, High Gain, MOCA	0.05 - 1	- / 39	18	2 / -	6 / 145	SOT89	TAT7427
CATV Gain Block	0.05 - 1	- / 39	16	2.7 / -	6 / 130	SOT89	TAT7461
29.5 dBm HBT Amplifier	0.05 - 1.5	29.6 / 48	20.7	4.4 / -	5 / 240	SOT89	TQP7M9105*
MESFET Amplifier	0.05 - 1.5	26.5 / 47	13.5	3.5 / -	9 / 200	SOT89	AH101
Dual pHEMT Amplifier	0.05 - 2	- / 41	13	4 / -	6 / 190	SOIC-8	TAT7466
30 dBm MESFET Amplifier	0.05 - 2.2	30 / 47	17	2.5 / -	11 / 330	6x6 QFN	AH202
Dual pHEMT Amplifier, Wideband	0.05 - 2.6	-77 dBc CTB / -83 dBc CSO	13	4.4 / -	5 / 160	SOIC-8	TAT7464
CATV Gain Block, Wideband	0.05 - 2.6	- / 36	16.5	2.5 / -	5 / 100	SOT89	TAT7460
MESFET Amplifier, 2-Stage	0.06 - 2.7	27 / 46	29	2.5 / -	4.5; 9 / 275	SOIC-8	AH103A
MESFET Amplifier	0.35 - 3	27 / 46	14.5	3.1 / -	9 / 200	SOT89	AH102A
24.5 dBm HBT Amplifier	0.4 - 4	24.3 / 39.5	20.4	4 / -	5 / 87	SOT89	TQP7M9101
27.5 dBm HBT Amplifier	0.4 - 4	27.5 / 44	21.9	4 / -	5 / 137	SOT89	TQP7M9102
29.5 dBm HBT Amplifier	0.4 - 4	29.5 / 45.4	20.7	4.4 / -	5 / 235	SOT89	TQP7M9103*
28 dBm HBT Amplifier	0.7 - 3.8	28 / 42	28.5	2.9 / -	5 / 225	4x4 QFN	TQP8M9013
10W GaN	2 - 18	41.5 / -	10	- / 23	35 / 1200	Carrier	TGA2573-TS*
Wideband PA, AGC	2 - 20	26 / -	8	-	8 / 440	Die	TGA8334-SCC
Wideband PA, AGC	2 - 20	(29) / -	15	-	12 / 1100	Flange	TGA2509-FL*
Wideband PA, AGC	2 - 22	28.5 (30) / 36	17	-	12 / 1100	Die	TGA2509
WiMAX Driver Amp / PA, SB	3.4 - 3.8	30 / 42	24	-	6 / 770	5x5 QFN	TGA2703-SM
0.5W PA	6 - 18	27 / -	11	8 / -	8 / 400	Die	TGA8014-SCC
2.8W HPA	6 - 18	(34.5) / -	24	- / 20	7 - 9 / 800 - 1200	Carrier	TGA2501-TS*
16W HPA	6.5 - 12.5	42 / -	27	- / 35	12 / 3000	Carrier	TGA2517-TS*
Driver Amp	7 - 13	(30) / 37	25	- / 30	9 / 450	Die	TGA2700
Wideband Driver Amp	8 - 18	13 / -	17	5 / -	4.5 / 50	Die	TGA8399C
Driver Amp	12 - 16	26 (26.5) / 37	23	7 / -	5 / 300	3x3 QFN	TGA2524-SM
1W HPA	12 - 19	30 / -	30	-	5 - 7 / 435	Die	TGA2508
HPA	12 - 19	29 / -	25	-	5 - 7 / 435	4x4 QFN	TGA2508-SM
HPA	12.5 - 15.5	30 (31.5) / 41	25	7.5 / -	6 / 650	5x5 QFN	TGA2527-SM*
2W HPA	12.5 - 17	(34) / -	26	- / 25	7.5 / 650	Carrier	TGA2510-TS*
20W HPA	14 - 16	(43) / -	23	- / 30	20 / 2000	Carrier	TGA2572-TS*
1W HPA, PD	17 - 20	30 (32) / 42	20	-	5 - 7 / 825	Die	TGA4530

Up to 1W (cont.)

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
MPA	17 - 21	22 / -	18.5	-	7 / 66	Die	TGA9088A-SCC
Driver Amp	17 - 24	22 / -	19	4 / -	5 / 270	4x4 QFN	TGA2521-SM
HPA, AGC, PD	17 - 24	(29) / 38	22	-	5 / 712	4x4 QFN	TGA2522-SM
MPA	17 - 27	29 / -	22	-	7 / 760	5x5 QFN	TGA4525-SM*
HPA	17 - 27	29 (31) / 37	22	-	7 / 760	Die	TGA4502-SCC
HPA	18 - 27	29 / 37	14	-	6 / 480	Die	TGA1135-SCC
MPA	19 - 27	25 / 32	22	-	5 - 7 / 220	Die	TGA1073G-SCC
MPA	25 - 35	25 / -	18	-	6 / 220	4x4 QFN	TGA4902-SM
MPA	26 - 35	25 (32) / -	19	-	5 - 7 / 220	Die	TGA1073A-SCC
1W HPA	27 - 31	30 / -	22	- / 25	4 - 6 / 420	Die	TGA4509
MPA	27 - 32	24 / -	15	-	5 / 170	4x4 QFN	TGA4903-SM
HPA	27 - 32	28.5 / -	25	-	6 - 8 / 420	Die	TGA1073B-SCC
1W HPA	28 - 31	30 / -	19	- / 25	6 / 420	4x4 QFN	TGA4509-SM
Driver Amp	29 - 37	16 / -	16	-	6 / 60	Die	TGA4510
MPA	32 - 45	24 (25) / 33	16	-	6 / 175	Die	TGA4521
MPA	33 - 47	27 (27.5) / 36	18	-	6 / 400	Die	TGA4522
HPA	36 - 40	26 / -	15	-	5 - 7 / 240	Die	TGA1073C-SCC
HPA	36 - 40	30 / -	14	-	6 - 7 / 500	Die	TGA1171-SCC
HPA	37 - 40	28 / 38	24	6 / -	5 / 600	Die	TGA4538
0.5W HPA	40 - 45	28 / -	9	-	7 / 500	Die	TGA4043
Driver Amp	41 - 45	18 / -	14	-	6 / 168	Die	TGA4042

NOTES: * = **New**, AGC = Automatic Gain Control, PD = Power Detector, SB = Self Biased

1W to 4W

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
CATV 12v Power Doubler MMIC	0.05 - 1	31.5 / 53	11	4 / -	12 / 550	SOIC16W	TAT2801*
33.8 dBm HBT Amplifier	0.05 - 1.5	32.8 / 50	20	4.8 / -	5 / 500	4x4 QFN	TQP7M9106*
35.5 dBm HBT Amplifier	0.4 - 2.7	35.5 / 50	16	7 / -	5 / 800	4x5 DFN	AH420
33 dBm HBT Amplifier	0.7 - 2.7	33 / 50	27.5	7 / -	5 / 680	5x5 QFN	AH323
33.8 dBm HBT Amplifier	0.7 - 2.7	33.8 / 45	21	4.4 / -	5 / 435	4x4 QFN	TQP7M9104*
30 dBm HBT Amplifier	1.8 - 2.7	30.5 / 46.5	27	5.5 / -	5 / 400	SOIC-8	AH212
2W HPA	5.5 - 8.5	32 (34) / 41	30	7 / -	6 / 1260	5x5 QFN	TGA2706-SM
2.5W HPA	5.9 - 8.5	34 (35) / 42	18	7.5 / 37	6 / 1000	6x6 QFN	TGA2701-SM
2.8W HPA	6 - 18	(34.5) / -	24	- / 20	7 - 9 / 800 - 1200	Die	TGA2501
HPA	6 - 18	(34.5) / -	24	- / 20	8 / 1200	Die	TGA9092-SCC
HPA	10 - 12	33 (34.5) / 43	25	9 / -	6 / 1300	5x5 QFN	TGA2535-SM*
2W HPA	12.3 - 15.7	(31) / -	33	7 / -	6 / 850	Die	TGA2520
2W HPA	12.5 - 16	(32) / 37	32	-	6 - 7 / 680	4x4 QFN	TGA2503-SM
2W HPA	12.5 - 17	(34) / -	26	- / 25	7.5 / 650	Die	TGA2510
2W HPA	12.5 - 17	(33.5) / -	25	- / 25	7.5 / 650	6.4x9.4 SG	TGA2510-SG
2W HPA	12.7 - 15.4	34 (35) / 43	28	6 / -	6 / 1300	Die	TGA2533
2W HPA	12.7 - 15.4	33 (34.5) / 43	27	6 / -	6 / 1300	5x5 QFN	TGA2533-SM
4W HPA	13 - 15	(36) / 41	25	-	7 / 1300	17.8x8.4 FL	TGA8659-FL
2W HPA	13 - 17	(34) / 40	32	-	6 - 7 / 680	Die	TGA2503
2W HPA	13 - 17	(34) / -	25	-	6 - 7 / 640	Die	TGA2505
2W HPA, PD	13 - 17	(34) / 38.5	26	- / 30	7.5 / 650	6.4x9.4 SG	TGA2902-1-SG
2W HPA	13 - 17	(34) / -	33	-	5 - 8 / 680	17.8x8.4 FL	TGA2904-FL
2W HPA	13 - 17	(34) / 40	33	-	5 - 8 / 680	6.4x9.4 SG	TGA8658-SG
2W HPA, PD	13.75 - 14.5	(34) / 38.5	26	- / 30	7.5 / 650	6.4x9.4 SG	TGA2902-2-SG
20W HPA	14 - 16	(43) / -	23	- / 30	20 / 2000	Carrier	TGA2572-TS*
HPA	17 - 20	30.5 / 41	23	- / -	6 / 900	Die	TGA4532
HPA	17 - 20	31 (32.5) / 41	23	7 / -	6 / 900	4x4 QFN	TGA4532-SM
HPA	17 - 24	31 (32) / 40	23	6 / -	7 / 720	Die	TGA4531
2W HPA	18 - 23	32 (33) / 39	26	-	7 / 840	Die	TGA4022
HPA	21 - 24	31 (32) / 41	22	6 / -	6 / 880	4x4 QFN	TGA4533-SM

1W to 4W (cont.)

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
2W HPA	27 - 31	32.5 (33) / 36.5	20	- / 25	6 / 840	Die	TGA4513
1W Linear PA	28 - 30	30 (30.5) / -	20	-	6 / 420	5x5 QFN	TGA4539-SM*
3.5W HPA	30 - 38	(35) / -	18	- / 20	6 / 2100	Die	TGA2575
2W HPA	30 - 40	31.5 (33) / -	20	-	6 / 1050	Die	TGA4516
2W HPA	30 - 40	31.5 (33) / -	18	-	6 / 1050	Carrier	TGA4516-TS*
2W HPA	31 - 35	31.5 (33.5) / -	19	-	6 - 7 / 1150	Die	TGA4514
3.5W HPA	31 - 37	(35.5) / -	20	-	6 / 2000	Die	TGA4517
2W HPA	33 - 36	31 (33) / -	17	-	6 - 7 / 880	Die	TGA1141*
2W HPA	41 - 47	(33) / -	16	-	6 / 2000	Die	TGA4046
77 GHz MPA	76 - 80	14 / -	12	-	3.5 / 75	Die	TGA4706-FC

NOTES: * = New, PD = Power Detector

More Than 4W

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	PAE (%)	Voltage / Current (V / mA)	Package Style	Part Number
10W HPA	0.03 - 3	39.5 / 43	19.5	40	35 / 360	Flange	TGA2540-FL
39 dBm HBT Amplifier	0.7 - 2.9	39 / -	16.5	8	12 / 300	5x6 DFN	AP561
14W HPA	2 - 18	41.5 / -	10	23	35 / 1200	Die	TGA2573
30W HPA	2.5 - 6	(45) / -	26	35	30 / 1550	Flange	TGA2576-FL
HPA	6.5 - 11.5	37 (39) / -	19	35	7 - 9 / 1200	Die	TGA9083-SCC
16W HPA	6.5 - 12.5	42 / -	27	35	12 / 3000	Die	TGA2517
HPA	7 - 8.5	(38) / -	21	42	7 / 2000	Die	TGA2701
HPA	9 - 10.5	(38) / -	20	>38	4 - 9 / 2000	Die	TGA2704
HPA	10.5 - 12	(38) / -	19	>39	4 - 9 / 2000	Die	TGA2710
20W HPA	13 - 15	43	19	- / 25	25 / 1000	Flange	TGA2593-GSG*
6.5W HPA	13 - 16	(38) / -	24	-	8 / 2600	11.4x17.3 FL	TGA2514-FL
4W HPA, Balanced	13 - 17	(36) / 44	25	30	6 - 7 / 1300	Die	TGA2502
6.5W HPA	13 - 18	(38) / 44	24	-	8 / 3600	Die	TGA2514
20W HPA	14 - 15.5	43 / -	23	30	25 / 1000	Flange	TGA2579-FL*
16W HPA	14 - 16	(42) / -	27	30	25 / 2000	Die	TGA2572*
16W HPA	14 - 16	(42) / -	23	30	25 / 2000	Flange	TGA2572-FL*
4W HPA	28 - 31	36 (36.5) / -	22	22	6 / 1600	Die	TGA4906
4W HPA	28 - 31	36 (36.5) / -	22	22	6 / 1600	5x5 QFN	TGA4906-SM
7W HPA	28 - 31	(38.5) / -	22	20	6 / 3200	Die	TGA4916

NOTES: * = New

Variable Gain Amplifiers

Description	Frequency Range (GHz)	P1dB / OIP3 (dB)	Gain (dB)	Gain Range (dB)	Voltage / Current (V / mA)	Package Style	Part Number
Return Path Variable Gain Amplifier	0.005 - 0.3	25 / 41	36	-	8 / 325	6x6 QFN	TAT3814*
DOCSIS 3.0 Edge QAM Variable Gain Attenuator	0.045 - 1.003	28 / -	30	18	5 - 8 / 705 - 770	7x7 QFN	TAT2814A*
Fiber to the Home Integrated TIA + Attenuator + Amp	0.05 - 1	-	33	3.8	5 / 220	6x6 QFN	TAT6281*
Variable Gain Amplifier	0.05 - 2.2	22 / 42	15.5	20	5 / 150	4x4 QFN	VG025
Digital Variable Gain Amplifier	0.05 - 4	20.5 / 36.5	18	31.5	5 / 88	5x5 QFN	TQM8M9075*
Digital Variable Gain Amplifier	0.05 - 4	22 / 38.5	19.5	31.5	5 / 125	5x5 QFN	TQM8M9076*
Digital Variable Gain Amplifier	0.05 - 4	21.5 / 38.5	13	31.5	5 / 88	5x5 QFN	TQM8M9077*
Digital Variable Gain Amplifier	0.06 - 1	24.3 / 40	31.7	31.5	5 / 174	6x6 QFN	TQM829007*
Variable Gain Amplifier	0.7 - 1	22 / 40	16	29	5 / 150	6x6 QFN	VG101
Variable Gain Amplifier	0.7 - 2.8	27.5 / 43	29	30	5 / 240	5x5 QFN	TQM8M9074
Digital Variable Gain Amplifier	1.4 - 2.7	24.5 / 43	31.7	31.5	5 / 174	6x6 QFN	TQM879006
Digital Variable Gain Amplifier	1.5 - 2.7	27.3 / 47.5	41	31.5	5 / 285	6x6 QFN	TQM879008*
Ka-Band VGA	27 - 31.5	21 (max) / -	29 (max)	-	5 / 280	6x6 QFN	TGA4541-SM**

NOTES: * = New, ** = Coming Soon

Gain Block

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
General Purpose Gain Block	DC - 3	18.5 / 33	16.5	3.8	6 / 75	SOT89	AG603
General Purpose Gain Block	DC - 3.5	18.5 / 33	13.6	4.4	6 / 75	SOT89	AG602
General Purpose Gain Block	DC - 6	5.8 / 18.5	11	4.4	5 / 20	SOT86 / SOT363	AG201
General Purpose Gain Block	DC - 6	7.5 / 19.5	17.7	3.1	5 / 20	SOT86 / SOT363	AG203
General Purpose Gain Block	DC - 6	12 / 25	14.3	3.2	5 / 35	SOT86 / SOT363	AG302
General Purpose Gain Block	DC - 6	12.5 / 25	18.4	3	5 / 35	SOT86 / SOT363	AG303
General Purpose Gain Block	DC - 6	16 / 28.5	14.5	3.7	6 / 60	SOT86 / SOT89	AG402
General Purpose Gain Block	DC - 6	16 / 28	18.9	3	6 / 60	SOT86 / SOT89	AG403
General Purpose Gain Block	DC - 6	14.5 / 27.5	19.1	2.9	6 / 45	SOT86 / SOT89	AG503
General Purpose Gain Block	DC - 6	19 / 33	18.2	3.5	6 / 75	SOT86 / SOT89	AG604
General Purpose Gain Block	DC - 6	15.2 / 29.8	15.7	3.6	5 / 45	SOT89	TQP369180*
General Purpose Gain Block	DC - 7	15.2 / 30	15.6	3.6	5 / 45	SOT363	TQP369181*
General Purpose Gain Block	DC - 8	16.1 / 29.6	22.3	3.9	5 / 45	SOT89	TQP369182*
General Purpose Gain Block	DC - 9	16.2 / 29.8	22	3.9	5 / 45	SOT363	TQP369184*
General Purpose Gain Block	DC - 10	19.8 / 32.3	20.4	4.7	5 / 75	SOT89	TQP369185*
LNA / Gain Block (40 Gb/s)	DC - 40	11.5 / 20	13	3.2	5 / 50	Die	TGA4830
CATV TIA / Gain Block, SB	0.04 - 1	27 / 46	20	1.5	8 / 350	4x4 QFN	TGA2803-SM
+5V Active Bias IF Gain Block	0.05 - 1	20.5 / 33	17.5	5	5 / 95	SOT89	WJA1500
+5V Active Bias IF Gain Block	0.05 - 1	20 / 36	14	5.4	5 / 95	SOT89	WJA1510
E-pHEMT LNA Gain Block	0.05 - 4	21 / 36	20	1.3	5 / 85	SOT89	TQP3M9008
E-pHEMT LNA Gain Block	0.05 - 4	21.4 / 37.5	22	1.1	5 / 85	3x3 QFN	TQP3M9018
E-pHEMT LNA Gain Block	0.05 - 4	22 / 40	21.5	1.3	5 / 125	SOT89	TQP3M9009
E-pHEMT LNA Gain Block	0.05 - 4	22 / 40.5	24.7	0.9	5 / 125	3x3 QFN	TQP3M9019
E-pHEMT LNA Gain Block	0.05 - 4	21.5 / 40	15	2	5 / 85	SOT89	TQP3M9028
E-pHEMT LNA Gain Block	0.05 - 4	21.5 / 40	15	2	5 / 85	3x3 QFN	TQP3M9038*
E-pHEMT LNA Gain Block	0.1 - 4	22 / 34	19.4	0.8	5 / 55	3x3 QFN	TQP3M9005
E-pHEMT LNA Gain Block	0.1 - 4	22.5 / 38.5	18.7	1	5 / 90	3x3 QFN	TQP3M9006
E-pHEMT LNA Gain Block	0.1 - 4	23.5 / 41	18	1.3	5 / 135	SOT89	TQP3M9007
Gain Block, SB	2 - 10	17 / -	17	6	5 / 90	Die	TGA8810-SCC
Gain Block	2 - 18	20 / -	7.5	5.5	6 / 100	Die	TGA8300-SCC
Wideband Gain Block, AGC	2 - 20	20 / -	7.5	7	6 / 150	Die	TGA8622-SCC
Gain Block	6 - 18	12.5 / -	13	5	5 / 80	Die	TGA8035-SCC
Driver Amp, SB	11 - 17	17 / -	23	6	6 / 75	4x4 QFN	TGA2507-SM
Driver Amp, SB	12 - 18	14 / -	17	-	6 / 40	Die	TGA2506
Driver Amp, SB	12 - 18	20 / -	28	6	6 / 80	Die	TGA2507
Gain Block & 2x / 3x Multiplier	17 - 37	18 (22) / 26	20	7	5 / 140	3x3 QFN	TGA4030-SM
Gain Block & 2x / 3x Multiplier	17 - 40	18 (22) / 24	22	7	5 / 140	3x3 QFN	TGA4031-SM
Gain Block, Multiplier	17 - 43	22 / -	25	-	5 / 225	Die	TGA4040
Gain Block	19 - 38	(22) / 30	20	-	5 / 160	Die	TGA4036

NOTES: * = **New**, AGC = Automatic Gain Control, SB = Self Biased

Low Noise

Description	Frequency Range (GHz)	P1dB / IIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
Wideband LNA, AGC	DC - 14	16 / -	11	3.1	8 / 80	Die	TGA8349-SCC*
LNA / Gain Block (40 Gb/s)	DC - 40	11.5 / 20	13	3.2	5 / 50	Die	TGA4830
LNA, Single-Ended Matched Amp	0.01 - 4	22.3 / 18.7	15.3	0.8	5 / 55	3x3 QFN	TQP3M9005
LNA, Single-Ended Matched Amp	0.01 - 4	22.4 / 25	13.5	1	5 / 90	3x3 QFN	TQP3M9006
LNA, Single-Ended Matched Amp	0.05 - 4	21 / 36	20	1.3	5 / 85	SOT89	TQP3M9008
LNA, Single-Ended Matched Amp	0.05 - 4	21.4 / 37.5	22	1.1	5 / 85	3x3 QFN	TQP3M9018
LNA, Single-Ended Matched Amp	0.05 - 4	21.8 / 15.8	24.7	0.9	5 / 125	SOT89	TQP3M9009
LNA, Single-Ended Matched Amp	0.05 - 4	21.8 / 15.8	24.7	0.9	5 / 125	3x3 QFN	TQP3M9019
LNA, Single-Ended Matched Amp	0.05 - 4	21.5 / 40	15	2	5 / 85	SOT89	TQP3M9028

Low Noise (cont.)

Description	Frequency Range (GHz)	P1dB / IIP3 (dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
LNA, Single-Ended Matched Amp	0.4 - 1.5	20 / 16	19	0.45	5 / 60	2x2 DFN	TQP3M9036*
LNA, Single-Ended Matched Amp	0.5 - 4	23.5 / 42	18	1.3	5 / 135	SOT89	TQP3M9007
LNA, Balanced FET Low Band	0.7 - 0.92	- / 13.5	20.5	0.55	4 / 70	4x4 QFN	TQP3M6004
LNA, Discrete Low Band	0.7 - 0.92	26 / 23.5	16	0.8	5 / 150	SOT89	TGF2021-04-SD
LNA, Balanced FET	0.8 - 3	21 / 11	22	0.7	4 / 100	2x2 QFN	TGA2602-SM
LNA, Single-Ended Matched Amp	1.5 - 2.7	21 / 16	20	0.40	5 / 60	2x2 DFN	TQP3M9037*
LNA, Balanced FET Mid Band	1.7 - 2	- / 14.4	18	0.55	3.5 / 50	4x4 QFN	TQP3M6005
LNA, AGC	2 - 18	18 / 29	17	2	5 / 75	Die	TGA2525
LNA, AGC	2 - 18	16 / -	19	4	5 / 120	Die	TGA8344-SCC
LNA, AGC	2 - 20	17.5 / -	9	3.5	5 - 8 / 60	Die	TGA1342-SCC
LNA, AGC	2 - 20	19 / -	17.5	2.5	5 / 100	Die	TGA2526
LNA, AGC	2 - 20	17.5 / -	9	3.5	5 - 8 / 60	Die	TGA8310-SCC
LNA, AGC	2 - 20	16 / -	17	2.5	5 / 75	4x4 QFN	TGA2513-SM
LNA, AGC	2 - 23	17 / 26	17	2	5 / 75	Die	TGA2513
LNA, SB, AGC	4 - 14	6 / 16	22	2.3	5 / 90	4x4 QFN	TGA2512-1-SM
LNA, AGC, GB	4 - 14	13 / 24	25	2.3	5 / 160	4x4 QFN	TGA2512-2-SM
LNA, SB, AGC	5 - 15	6 / 13	27	1.4	5 / 90	Die	TGA2512
LNA, SB	6 - 13	11 / -	26	1.5	5 / 65	Die	TGA8399B-SCC
LNA, SB, AGC	6 - 14	6 / 12	20	1.3	5 / 90	Die	TGA2511
LNA	20 - 27	12 / -	21	2.2	3.5 / 60	Die	TGA4506
LNA	28 - 36	12 / 21	22	2.3	3 / 60	Die	TGA4507
LNA	30 - 42	14 / -	21	2.8	3 / 40	Die	TGA4508
LNA	57 - 69	-	13	4	3 / 41	Die	TGA4600
77 GHz LNA	72 - 80	-	20	5	3.5 / 54	Die	TGA4705-FC

NOTES: * = New, AGC = Automatic Gain Control, GB = Gate Bias, SB = Self Biased

Discrete Transistors

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
55W GaN HEMT	DC - 3.5	47.2 / -	15	- / 50	28 / 200	Ceramic Flat Lead	TIG4005528-FS
Pwr pHEMT	DC - 4	26.5 / -	16	0.6 / -	5 / 150	SOT89	TGF4124
0.5W HFET	DC - 6	28 / 40	18	3.2 / -	8 / 100	SOT89	TGF2960-SD
1W HFET	DC - 6	31 / 43	16	4 / -	8 / 200	SOT89	TGF2961-SD
18mm HFET	DC - 6	38.5 / -	13.5	- / 53	8 / 1690	Die	TGF4118
7W GaN HEMT	DC - 6	(39.5) / -	15	- / 50	28 / 50	Ceramic Flat Lead	TIG6000528-Q3
18W GaN HEMT	DC - 6	(42.5) / -	15	- / 50	28 / 50	Ceramic Flat Lead	TIG6001528-Q3
30W GaN HEMT	DC - 6	(44.8) / -	15	- / 50	28 / 200	Ceramic Flat Lead	TIG6003028-FS*
12mm HFET	DC - 8	37 / -	14	- / 55	8 / 750	Die	TGF4112
4.8mm HFET	DC - 10.5	34 / -	8.5	- / 53	8 / 200	Die	TGF4250-SCC
9.6mm HFET	DC - 10.5	37 / -	9.5	- / 52	8.5 / 520	Die	TGF4260-SCC
1.2mm HFET	DC - 12	28.5 / -	10	- / 55	8 / 50	Die	TGF4230-SCC
2.4mm HFET	DC - 12	31.5 / -	10	- / 56	8 / 100	Die	TGF4240-SCC
1mm Pwr pHEMT	DC - 12	(31.5) / -	11	- / 55	12 / 900	Die	TGF2021-01
2mm Pwr pHEMT	DC - 12	(34.5) / -	11	- / 55	12 / 150	Die	TGF2021-02
4mm Pwr pHEMT	DC - 12	(37.5) / -	11	- / 55	12 / 300	Die	TGF2021-04
8mm Pwr pHEMT	DC - 12	(40.2) / -	11	- / 55	12 / 600	Die	TGF2021-08
12mm Pwr pHEMT	DC - 12	(42) / -	11	- / 52	12 / 900	Die	TGF2021-12
0.3mm MESFET	DC - 18	13 / -	11	1.5 / -	3 / 15	Die	TGF1350-SCC
1.25mm GaN HEMT	DC - 18	(37.4) / -	13	- / 52	28 / 125	Die	TGF2023-01
2.5mm GaN HEMT	DC - 18	(40.2) / -	13	- / 50	28 / 250	Die	TGF2023-02
5.0mm GaN HEMT	DC - 18	(43) / -	13	- / 49	28 / 500	Die	TGF2023-05
10mm GaN HEMT	DC - 18	(45.8) / -	12	- / 47	28 / 1000	Die	TGF2023-10
20mm GaN HEMT	DC - 18	(48.6) / -	12	- / 46	28 / 2000	Die	TGF2023-20

Discrete Transistors (cont.)

Description	Frequency Range (GHz)	P1dB (Psat) / OIP3 (dBm)	Gain (dB)	NF / PAE (dB) / (%)	Voltage / Current (V / mA)	Package Style	Part Number
0.6mm Pwr pHEMT	DC - 20	(29) / -	13	- / 56	12 / 45	Die	TGF2022-06
1.2mm Pwr pHEMT	DC - 20	(32) / -	13	- / 56	12 / 90	Die	TGF2022-12
2.4mm Pwr pHEMT	DC - 20	(35) / -	13	- / 58	12 / 180	Die	TGF2022-24
4.8mm Pwr pHEMT	DC - 20	(38) / -	13	- / 58	12 / 360	Die	TGF2022-48
6mm Pwr pHEMT	DC - 20	(39) / -	12.5	- / 53	12 / 448	Die	TGF2022-60
0.3mm pHEMT	DC - 22	16 / -	13	0.8 / -	3 / 15	Die	TGF4350
MESFET	0.05 - 4	18 / 36	19	2 / -	5 / 140	SOT89	FH101
MESFET	0.05 - 4	21 / 42	19	2 / -	5 / 140	SOT89	FH1
30W LDMOS	0.5 - 2	45 / -	10	- / 45	28 / 200	PowerBand™	TIL2003028-SP
10W pHEMT	0.5 - 3	40 / -	10	- / 45	12 / 200	PowerBand™	TIP2701012-SP
10W GaN	2 - 18	41.5 / -	10	- / 23	35 / 1200	Carrier	TGF2021-04-SD*

NOTES: * = New

Frequency Converters & Mixers

Description	Frequency Range (GHz)	Conversion Gain (dB)	LO / RF Isolation (dB)	IIP3 (dBm)	Voltage / Current (V / mA)	Package Style	Part Number
WB Mixer, LO	0.5 - 2.5	-5.7	8	24	3 - 6 / 6	MW6	CMY210
WB Mixer, LO, IF	0.5 - 2.5	10	8	9	3 - 6 / 12	SCT598	CMY212
WB Mixer, LO, IF, Low Current	0.5 - 2.5	9.5	10	10	3 - 6 / 8	SCT598	CMY213
Dual Branch Converter, LO, IF, SW, EN	0.68 - 0.92	9.3	33	25	5 / 310	6x6 QFN	TQP519021*
Mixer, LO	0.7 - 1	-9	17	36	5 / 50	MSOP-8	ML483
Single Branch Converter, RF, LO, IF	0.8 - 0.96	22	60	15	5 / 360	6x6 QFN	CV110-3A
Dual Branch Converter, LO, IF	0.8 - 0.96	10.5	14	18.5	5 / 390	6x6 QFN	CV210-3A
Mixer, LO	1.5 - 3.2	-8.5	2	35	5 / 40	MSOP-8	ML485
Single Branch Converter, RF, LO, IF	1.7 - 2	21	45	17	5 / 360	6x6 QFN	CV111-1A
Dual Branch Converter, LO, IF, SW, EN	1.7 - 2.2	9.3	35	25	5 / 310	6x6 QFN	TQP569022*
Doubler w/Amplifier	16 - 30	18	30	22	5 / 150	Die	TGC4403
Doubler w/Amplifier	16 - 30	18	30	19	5 / 150	4x4 QFN	TGC4403-SM
Downconverter (LNA + VCO + Mixer)	17 - 21	8	-	-	5 / 305	5x6 QFN	TGC4408-SM**
Upconverting Mixer	17 - 26	-9	40	-	-0.9 / 0	4x4 QFN	TGC4402-SM
Upconverting Mixer	17 - 27	-9	35	18	-0.9 / 0	Die	TGC4402
Upconverter	17 - 27	13	30	-	5 / 425	Die	TGC4405
Upconverter	17 - 27	13	30	-	5 / 425	4x4 QFN	TGC4405-SM
Gain Block & 2x / 3x Multiplier	17 - 37	9	-	6	5 / 140	3x3 QFN	TGA4030-SM
Gain Block & 2x / 3x Multiplier	17 - 40	9	-	2	5 / 140	3x3 QFN	TGA4031-SM
19 GHz VCO w/8:1 Prescaler	18.5 - 19.5	-	-105+	7	5 / 158	Die	TGV2204-FC
Doubler (Input 10 - 20 GHz)	20 - 40	-12	25	18	-	Die	TGC1430F
Upconverter (Lo Amp + Doubler)	21.5 - 32.5	-9	35	13	5 / 65	3x3 QFN	TGC4407-SM**
Doubler w / Amplifier	28 - 34	15	25	20	5 / 150	4x4 QFN	TGC4406-SM
19 / 38 GHz Converter / MPA	36 - 40	9	-	14.5	3.5 / 65	Die	TGC4703-FC
Down Converting I/Q Mixer	75 - 82	-13.5	22	-	1.1 / 7	Die	TGC4702-FC
38 / 77 GHz Converter / MPA	76 - 77	6	-	15	4 / 230	Die	TGC4704-FC

NOTES: * = New, ** = Coming Soon, + = Phase Noise (dBc / Hz @ 1 mHz Offset), EN = Enable / Disable Mode, IF = IF Amplifier, LO = LO Amplifier, SW = LO Switch

Signal Conditioning

Description	Frequency Range (GHz)	Insertion Loss (dB)	Control Range dB or (Deg.)	P1dB (dBm)	Supply Voltage (V)	Package Style	Part Number
6-Bit, Digital Attenuator, Parallel Ctrl	DC - 4	1.3	31.5	30	5 / 0	4x4 QFN	TQP4M9071
6-Bit, Digital Attenuator, Serial Ctrl	DC - 4	1.3	31.5	30	5 / 0	4x4 QFN	TQP4M9072
7-Bit, Digital Attenuator, Serial Ctrl	DC - 4	1.3	- / 31.75	30	5 / 0	4x4 QFN	TQP4M9083*
Through Line	DC - 6	0.1	-	-	-	3x3 QFN	TQM4M9073
Analog Attenuator	DC - 30	2	17	-	0 to -2	3x3 QFN	TGL4203-SM
Analog Attenuator	DC - >50	2	17	-	0 to -2	Die	TGL4203

Signal Conditioning (cont.)

Description	Frequency Range (GHz)	Insertion Loss (dB)	Control Range dB or (Deg.)	P1dB (dBm)	Supply Voltage (V)	Package Style	Part Number
Discrete Thru (0 dB Attenuator)	DC - 65	0	0	—	—	Die	TGL4201-00
Discrete Attenuators	DC - 65	—	2, 3, 6, 10	—	—	Die	TGL4201-02, 03, 06, 10
Passive Wideband Limiter	2 - 12	<1	—	18	—	3x3 QFN	TGL2201-SM
Analog Attenuator	2 - 20	2	15	23	2.5	Die	TGL8784-SCC
Passive Wideband Limiter	3 - 25	<0.5	—	18	—	Die	TGL2201
5-Bit Phase Shifter	6 - 18	9	(348)	—	6	Die	TGP6336
Bessel Filter	—	6, 7, 8, 9, 10 & 11 Cut-Off Freq	—	—	—	Die	TGB2010-00, -09 etc.
Bessel Filter	—	5, 6, 6.5, 7.5, 8 & 9 Cut-Off Freq	—	—	—	2x2 QFN	TGB2010-00, -09-SM etc.
6-Bit Phase Shifter	8.5 - 11	5	(354)	—	0 / -5	Die	TGP2103
Lange Coupler	12 - 21	<0.25	—	—	—	Die	TGB2001
5-Bit Phase Shifter	18 - 20	5	(180)	—	-2.5	Die	TGP1439
Lange Coupler	18 - 32	<0.25	—	—	—	Die	TGB4001
Lange Coupler	27 - 45	<0.25	—	—	—	Die	TGB4002
5-Bit Phase Shifter	28 - 32	6	(348)	—	5	Die	TGP2100
5-Bit Phase Shifter	33 - 37	6	(348)	—	-5	Die	TGP2102
1-Bit Phase Shifter	34 - 36	4	180	—	0 / 5	Die	TGP2104

NOTES: * = New

Switches

Description	Frequency Range (GHz)	Insertion Loss (dB)	Isolation (dB)	P1dB (dBm)	Control Voltage (V)	Package Style	Part Number
SP3T High Power CDMA	DC - 2	0.6	22	34.5	2.6 / 0	2x2 QFN	TQP4M3019
SP2T 802.11 a, b, g	DC - 6	0.6	28	31.5	3 / 0	1.3x2 DFN	TQS5200
Diversity Switch 802.11 a, b, g	DC - 6	0.8	33	33	3 / 0	3x3 QFN	TQS5202
SPDT - GaN	DC - 6	<1	40	45	-40 / 0	Die	TGS2351
SPDT - GaN	DC - 6	<1	40	45	-40 / 0	4x4 QFN	TGS2351-SM
SPDT - GaN	DC - 12	<1	35	43	-40 / 0	Die	TGS2352
SPDT - GaN	DC - 18	<1	30	40	-40 / 0	Die	TGS2353
SPDT FET	DC - 18	1.5	36	27	-5	Die	TGS2306
SPDT FET	DC - 18	2	39	21	-7 / 0	Die	TGS8250-SCC
SPST - High Isolation Absorptive	0.1 - 6	0.4	48	33	3 / 0	2x2 DFN	TQP4M0013*
SPDT - Reflective	0.1 - 6	0.3	30	33	3 / 0	2x2 DFN	TQP4M0008*
SPDT - High Isolation Reflective	0.1 - 6	0.5	50	31	3 / 0	MSOP8	TQP4M0009*
SPDT - High Isolation Absorptive	0.1 - 6	0.5	45	32.5	3 / 0	4x4 QFN	TQP4M0010*
SP3T - Reflective	0.1 - 6	0.3	30	30	3 / 0	3x3 QFN	TQP4M0011*
SP4T - Reflective	0.1 - 6	0.6	40	33	3 / 0	3x3 QFN	TQP4M0012*
SP3T VPIN	1 - 20	0.5	35	23	10 mA	Die	TGS2303
SP4T VPIN	1 - 20	0.6	38	23	10 mA	Die	TGS2304-SCC
SP3T VPIN	4 - 18	1	35	20	+/- 2.7	Die	TGS2313
SPDT VPIN	4 - 20	0.9	35	>20	+/- 2.7	Die	TGS2302
SPDT VPIN	24 - 43	<2	36	27	+/- 5	Die	TGS4301
SPDT VPIN	27 - 46	0.9	30	>34	+/- 5 / 15	Die	TGS4302
SPDT VPIN Absorptive	32 - 40	1	36	>33	+/- 5 / 18	Die	TGS4304
SP3T	60 - 90	2.3	20	>-13	-5 / 1.35	Die	TGS4305-FC
SP4T	70 - 90	3	20	>-8	-5 / 1.35	Die	TGS4306-FC

NOTES: * = New

Protector

Description	Application	Leakage Current (nanoAmps)	Trigger Voltage (V)	Series Capacitance (pF)	Package Area (mm ²)	Package Style	Part Number
CATV Protector	ESD & Secondary Protection	20 @ 1V, 500 @ 15V	18, 25, 41	0.29, 0.29, 0.22	1.8	T / SLP-3	TQP200002

SAW

Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
Cable IF Filter	36.15	8	19.7	SE / SE	38 @ 10.23	DIP	855748
Cable IF Filter	44	6	20.4	SE / SE	38 @ 7.6	DIP	855079
BWA / WiMAX IF Filter	70	8	12.95	SE / SE	35 @ 3.2	13.3x6.5	855677
Low Loss IF Filter	70	0.5	7.6	SE / SE	35 @ 1.28	19x6.5	854651
Low Loss IF Filter	70	1	7.3	SE / SE	40 @ 2.8	19x6.5	854652
Low Loss IF Filter	70	1.5	7.5	SE / SE	40 @ 3.2	19x6.5	854653
Low Loss IF Filter	70	2	7.85	SE / SE	40 @ 4.25	19x6.5	854654
Low Loss IF Filter	70	2.5	8.75	SE / SE	40 @ 4.6	19x6.5	854655
Low Loss IF Filter	70	3	6.95	SE / SE	35 @ 6.9	13.3x6.5	854656
Low Loss IF Filter	70	3.5	7.25	SE / SE	35 @ 7.2	13.3x6.5	854657
Low Loss IF Filter	70	4	6.8	SE / SE	40 @ 8.25	13.3x6.5	854658
Low Loss IF Filter	70	4.5	6.8	SE / SE	35 @ 8.5	13.3x6.5	854659
Low Loss IF Filter	70	5	7.25	SE / SE	40 @ 9.35	13.3x6.5	854660
Low Loss IF Filter	70	6	7.5	SE / SE	40 @ 10.2	13.3x6.5	854661
Low Loss IF Filter	70	7	8.5	SE / SE	40 @ 11.55	13.3x6.5	854662
Low Loss IF Filter	70	8	9	SE / SE	40 @ 13.25	13.3x6.5	854663
Low Loss IF Filter	70	9	9.75	SE / SE	40 @ 13.9	13.3x6.5	854664
Low Loss IF Filter	70	10	10	SE / SE	40 @ 15	13.3x6.5	854665
Low Loss IF Filter	70	12	11.5	SE / SE	40 @ 17.35	13.3x6.5	854666
Low Loss IF Filter	70	14	12.5	SE / SE	40 @ 19.5	13.3x6.5	854667
Low Loss IF Filter	70	16	12.5	SE / SE	40 @ 21.4	13.3x6.5	854668
Low Loss IF Filter	70	18	13.5	SE / SE	40 @ 23.4	13.3x6.5	854669
Low Loss IF Filter	70	20	14.5	SE / SE	40 @ 25.4	13.3x6.5	854670
Low Loss IF Filter	70	22	15	SE / SE	40 @ 27.25	13.3x6.5	854671
Low Loss IF Filter	70	24	16.25	SE / SE	40 @ 29.65	13.3x6.5	854672
Low Loss IF Filter	70	26	17	SE / SE	40 @ 32	13.3x6.5	854673
Low Loss IF Filter	70	28	17.6	SE / SE	40 @ 33.75	13.3x6.5	854674
Low Loss IF Filter	70	30	17.5	SE / SE	40 @ 37	13.3x6.5	854675
Low Loss IF Filter	70	36	20.2	SE / SE	40 @ 43.3	13.3x6.5	854678
Low Loss IF Filter	70	40	21.5	SE / SE	40 @ 47.25	13.3x6.5	854680
High Selectivity IF Filter	70	0.3	16.36	SE / SE	40 @ 0.9	24.6x9	855735
High Selectivity IF Filter	70	0.5	21.3	SE / SE	40 @ 1.63	24.6x9	855736
High Selectivity IF Filter	70	1	22.2	SE / SE	40 @ 2.11	24.6x9	855737
High Selectivity IF Filter	70	1.5	21.6	SE / SE	40 @ 2.52	24.6x9	855738
High Selectivity IF Filter	70	2	23	SE / SE	40 @ 3.4	24.6x9	855739
High Selectivity IF Filter	70	2.5	20.25	SE / SE	40 @ 4.3	24.6x9	855740
High Selectivity IF Filter	70	3	23	SE / SE	40 @ 4.46	24.6x9	855741
High Selectivity IF Filter	70	3.5	19	SE / SE	40 @ 6	15.3x6.5	855742
High Selectivity IF Filter	70	4	23	SE / SE	40 @ 6	19x6.5	855743
High Selectivity IF Filter	70	4.5	23.7	SE / SE	40 @ 6.64	19x6.5	855744
High Selectivity IF Filter	70	5.5	22.2	SE / SE	40 @ 7.84	19x6.5	855745
Medical IF Filter	73	0.3	6	SE / SE	45 @ 69.9	24.6x9	856152
BWA / WiMAX IF Filter	80	8	11.7	SE / SE	35 @ 14.25	13.3x6.5	855679
GSM IF Filter	86.6	0.4	5.3	SE / BAL	28 @ 1.58	19x6.5	854823
GSM IF Filter	125	0.4	5.9	SE / SE	20 @ 2.4	9.1x4.8	856444
Low Loss Filter	140	1.7	11	SE / SE	40 @ 3.5	19x6.5	855579
Low Loss IF Filter	140	4	10.85	SE / SE	40 @ 9.1	13.3x6.5	854909
Low Loss IF Filter	140	7	5.5	SE / SE	40 @ 11.1	13.3x6.5	854913
Low Loss IF Filter	140	10	8.3	SE / SE	35 @ 15	13.3x6.5	854916
Low Loss IF Filter	140	10	11	SE / SE	35 @ 15	13.3x6.5	856656
Low Loss IF Filter	140	12	8.87	SE / SE	35 @ 21.3	13.3x6.5	854917
Low Loss IF Filter	140	15	11	SE / SE	35 @ 22	13.3x6.5	856684

SAW (cont.)

Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
Low Loss IF Filter	140	16	8.4	SE / SE	35 @ 22	13.3x6.5	854919
Low Loss IF Filter	140	18	9.1	SE / SE	40 @ 48	13.3x6.5	854920
Low Loss IF Filter	140	18.4	9.1	SE / SE	36 @ 26.4	7x5.5	856929
Low Loss IF Filter	140	20	11	SE / SE	35 @ 24	13.3x6.5	856592
Low Loss IF Filter	140	24	11.3	SE / SE	35 @ 33.5	13.3x6.5	854923
Low Loss IF Filter	140	32	11.5	SE / SE	35 @ 44	13.3x6.5	854927
High Selectivity IF Filter	140	0.8	20.8	SE / SE	40 @ 1.93	19x6.5	856062
High Selectivity IF Filter	140	1.5	21.9	SE / SE	40 @ 3.5	19x6.5	856063
High Selectivity IF Filter	140	2	21.5	SE / SE	40 @ 3.45	19x6.5	856064
High Selectivity IF Filter	140	3	22.4	SE / SE	40 @ 4.86	19x6.5	856065
High Selectivity IF Filter	140	6	23	SE / SE	40 @ 8.34	13.3x6.5	856066
High Selectivity IF Filter	140	7	24.5	SE / SE	40 @ 9.15	13.3x6.5	856067
High Selectivity IF Filter	140	8	23.4	SE / SE	40 @ 11.28	13.3x6.5	856068
High Selectivity IF Filter	140	10	20.87	SE / SE	40 @ 13.17	13.3x6.5	856069
High Selectivity IF Filter	140	14	23.3	SE / SE	40 @ 18.26	13.3x6.5	856070
High Selectivity IF Filter	140	16	21.7	SE / SE	40 @ 20.69	13.3x6.5	856071
High Selectivity IF Filter	140	28	20	SE / SE	40 @ 37	9x7	856019
High Selectivity IF Filter	140	28.56	27.7	SE / SE	40 @ 44	13.3x6.5	856817
High Selectivity IF Filter	140	28.56	28.4	SE / SE	40 @ 44	13.3x6.5	857008*
High Selectivity IF Filter	140	32	21.7	SE / SE	40 @ 40.7	9x7	856072
High Selectivity IF Filter	140	44	21.75	SE / SE	40 @ 54.1	9x7	856073
High Selectivity IF Filter	140	56	18.65	SE / SE	40 @ 75.6	9x7	856074
High Selectivity IF Filter	140	60	22.4	BAL / BAL	40 @ 74.7	9.1x4.8	856774
High Selectivity IF Filter	140	64	17.8	SE / SE	40 @ 84	9x7	856020
High Selectivity IF Filter	140	72	21	SE / SE	40 @ 102	9x7	856314
High Selectivity IF Filter	140	1.5	12.1	SE and BAL	48 @ 143	9.1x4.8	856691
High Selectivity IF Filter	140	3	13.6	SE and BAL	46 @ 144	9.1x4.8	856692
High Selectivity IF Filter	140	6	11	BAL / BAL	39 @ 147	9.1x4.8	856693
High Selectivity IF Filter	140	7	13.6	SE and BAL	43 @ 147	9.1x4.8	856694
High Selectivity IF Filter	140	10	10	BAL / BAL	41 @ 152.5	9.1x4.8	856695
High Selectivity IF Filter	140	14	8.5	SE and BAL	43 @ 155	9.1x4.8	856696
High Selectivity IF Filter	140	20	9.8	BAL / BAL	40 @ 158.5	9.1x4.8	856697
High Selectivity IF Filter	140	28	18	SE and BAL	42 @ 168	9.1x4.8	856698
CDMA IF Filter	141	1.18	11.7	SE / SE	42.5 @ 2.5	19x6.5	855395
High Selectivity IF Filter	144	75	21.2	SE / SE	40 @ 91.81	9x7	856727
CDMA IF Filter	150	1.18	18.6	SE / BAL	30 @ 4.5	19x6.5	854833-1
CDMA IF Filter	150	8	12.1	SE / SE	35 @ 14.25	13.3x6.5	855678
TDSCDMA / WCDMA IF Filter	153.6	15	10	SE / SE	40 @ 25	13.3x6.5	856748
Repeater IF Filter	161.5	25	22	SE / SE	50 @ 131	9x7	855886
WCDMA IF Filter	167	5	8	SE / SE	20 @ 11.8	9.1x4.8	856683
WCDMA IF Filter	168.5	20	8	SE / BAL	33 @ 190	5x5	856512
WCDMA IF Filter	172.8	8.84	12.5	SE / BAL	32 @ 16	7x5.5	856620
WCDMA IF Filter	172.8	20	8	SE / BAL	30 @ 194.3	5x5	856802
WCDMA IF Filter	172.8	21	8.2	BAL / BAL	50 @ 200	7x5.5	856893
WCDMA IF Filter	190	5.5	9.8	SE / BAL	30 @ 7.6	13.3x6.5	855529
WCDMA IF Filter	190	5	8	SE / SE	25 @ 9	5x5	855770
GSM IF Filter	190	0.2	4.2	BAL / BAL	30 @ 12	7x5.5	855625
IF SAW Filter - Multi-Standard	192	60	14.5	SE / BAL	38 @ 44	7x5.5	856731*
GSM IF Filter	201	0.22	6.1	BAL / BAL	27 @ 0.8	13.3x6.5	856541
Cable IF Filter	202.75	1.2	6.6	SE / SE	40 @ 10	13.3x6.5	855068
GSM IF Filter	208	0.4	5.9	SE / SE	20 @ 2.4	9.1x4.8	856445
WCDMA IF Filter	208	3.84	11.5	BAL / BAL	17 @ 5.03	9.1x4.8	856496

SAW (cont.)

Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
GSM IF Filter	211	0.2	5.2	SE / SE	25 @ 0.8	13.3x6.5	856378
WCDMA IF Filter	219	20	9.6	BAL / BAL	35 @ 36	9x7	856795
WCDMA IF Filter	230	4	16.2	SE / SE	40 @ 10	13.3x6.5	855832
CDMA IF Filter	240	3.6	14.3	SE / SE	12 @ 5	13.3x6.5	855992
CDMA IF Filter	240	1.1	13	SE / SE	10 @ 1.8	19x6.5	856151
CDMA IF Filter	249.6	3.84	16.11	SE / SE	40 @ 11	7x5.5	855915
CDMA IF Filter	326.4	15	12.61	SE / SE	40 @ 25	7x5.5	855914
BWA / WiMAX IF Filter	330	5.45	18.26	SE / SE	50 @ 13.6	15.3x6.5	855730
WCDMA / LTE IF Filter	344	65	9.5	BAL / BAL	45 @ 66.6	5x5	857004
BWA / WiMAX IF Filter	350	1.7	13.7	SE / BAL	45 @ 6	13.3x6.5	855399
BWA / WiMAX IF Filter	350	1	8.2	SE / BAL	45 @ 15	7x5.5	855377
WCDMA IF Filter	358.4	19.2	10.1	BAL / BAL	25 @ 375.4	7x5.5	856771
WCDMA IF Filter	358.4	24.8	9	BAL / BAL	30 @ 335.8	7x5.5	856966
IF SAW Filter - Multi-Standard	358.4	39.6	11.5	SE / BAL	30 @ 30	7x5.5	856882*
WLAN IF Filter	374	17	8.5	SE / BAL	10 @ 33	7x5.5	855653
WLAN IF Filter	374	17	8.5	SE / BAL	35 @ 33	5x5	855898
WLAN IF Filter	374	17	9	SE / BAL	30 @ 33	3.8x3.8	856278
BWA / WiMAX IF Filter	374	10	9	BAL / BAL	10 @ 25	3.8x3.8	856466
WCDMA IF Filter	380	5.4	15.4	SE / BAL	30 @ 8.3	13.3x6.5	855530
BWA / WiMAX IF Filter	380	7	10	BAL / BAL	40 @ 20	7x5.5	856490
BWA / WiMAX IF Filter	380	10	8.7	BAL / BAL	40 @ 36	7x5.5	856631
WCDMA IF Filter	398	4.3	9.9	SE / SE	50 @ 36	9.1x4.8	855561
WCDMA / WiMAX IF Filter	398	15	7.5	SE / SE	30 @ 60	9.1x4.8	855559
BWA / WiMAX IF Filter	398	10	11.2	BAL / BAL	35 @ 388.5	5x5	856652
MICS Band RF Filter	403.5	3	3	BAL / SE	20 @ 398	3x3	856990*
BWA / WiMAX IF Filter	426	5.16	18.02	SE / SE	50 @ 14	13.3x6.5	855731
WiBRO IF Filter	456	8.75	7.9	BAL / BAL	36 @ 443.25	5x5	856549
BWA / WiMAX IF Filter	456	10	8.3	BAL / BAL	37 @ 440	7x5.5	856672
BWA / WiMAX IF Filter	456	10	8.3	BAL / BAL	37 @ 440	5x5	856638
WCDMA IF Filter	456	19	10	BAL / BAL	25 @ 439	7x5.5	856687
RF SAW Filter	457.5	15	2.2	SE / SE	70 @ 472	3.8x3.8	856930*
General Purpose IF Filter	460	3.75	11.1	SE / SE	35 @ 8	7x5.5	856282
BWA / WiMAX IF Filter	464	3.5	10.6	BAL / BAL	53 @ 417	7x5.5	856623
FRS RF or GPS IF Filter	465	6	1.43	SE / SE	40 @ 445	3x3	856288
WiMAX IF Filter	467	10	3	SE / SE	40 @ 438	3.8x3.8	856586
BWA / WiMAX IF Filter	479.75	9	19.5	SE / SE	35 @ 22	7x5.5	855271
BWA / WiMAX IF Filter	479.75	23	9.8	BAL / BAL	35 @ 36	7x5.5	855272
Cable IF Filter	499.25	1	7	SE / SE	35 @ 6	9x7	855104
BWA / WiMAX IF Filter	520	6	10.8	SE / SE	30 @ 514	5x5	856680
BWA / WiMAX IF Filter	520	11	9.5	SE / SE	35 @ 506	5x5	856625
WLAN IF Filter	549.5	1	11.6	SE / SE	40 @ 547.4	9x7	855985
WLAN IF Filter	549.5	10	11.8	SE / SE	40 @ 536.5	7x5.5	855959
BWA / WiMAX IF Filter	580	10	10.7	BAL / BAL	40 @ 36	5x5	856665
RF Filter - Band 12 Uplink	707	18	1.5	SE / SE	9 @ 728	3x3	856884
Duplexer, Band 17	710 / 740	12 / 12	1.2 / 1.8	SE / BAL	–	2.5x2	856931
RF Filter - Band 12 Downlink	737	18	1.8	SE / SE	37 @ 708	3x3	856883
RF Filter - Band 13 Downlink	751.5	11	1.5	SE / SE	40 @ 776	3x3	856794
Duplexer, Band 13	751 / 782	9 / 9	2.3 / 1.8	SE / BAL	–	2.5x2	856879
WiMAX IF Filter	756	10	1.9	SE / SE	30 @ 727	3.8x3.8	856690
BWA IF Filter	756	20	0.9	SE / SE	30 @ 716	3.8x3.8	856866
RF Filter - Band 13 Uplink	781.5	11	1.5	SE / SE	38 @ 757	3x3	856764
RF Filter - Band 13 Uplink	782	10	1.52	SE / SE	15 @ 765	3x3	856844
RF SAW Filter - Band 13 / 14 Uplink	787.5	22	2.75	SE / SE	40 @ 843	3x3	856977*

SAW (cont.)

Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
BWA / WiMAX IF Filter	810	10	3.5	SE / SE	10 @ 31	3x3	856526
Duplexer, Band 20	806 / 847	30 / 30	2.5 / 3	SE / BAL	–	2.5x2	856979
Duplexer, BC10	833 / 878	32 / 32	2.5 / 2.5	SE / BAL	–	2.5x2	856999
RF SAW Filter - Band 5 Uplink	835	30	3	SE / SE	20 @ 869	3x3	857019*
RF Filter - Band 5 Uplink	836.5	25	2.7	SE / SE	28 @ 869	3x3	856503
RF Filter - Band 5 Uplink	836.5	25	2.7	SE / SE	28 @ 869	3x3	855729
RF Filter - Band 5 Uplink	836.5	25	2	SE / SE	10 @ 869	3x3	856704
RF Filter - Band 5 Uplink	836.5	25	1.9	SE / SE	35 @ 869	3x3	855821
RF Filter - Band 5 Uplink	836.5	25	2.3	SE / SE	50 @ 869	1.4x1.2	857038*
Duplexer, Cell Band	836.5 / 881.5	25 / 25	1.9 / 1.9	SE / SE	–	3.8x3.8	856356
RF Filter - Band 20 Uplink	847	30	1.3	SE / SE	10 @ 882	3x3	856932
EU ISM 875 Band RF Filter	875	13	2.4	SE / SE	55 @ 849	2x1.5	856963
RF Filter - Band 5 Downlink	881.5	25	2.7	SE / SE	40 @ 849	3x3	855728
RF Filter - Band 5 Downlink	881.5	25	1.8	SE / SE	35 @ 849	3x3	855782
RF Filter - Band 5 Downlink	881.5	25	2.7	SE / SE	40 @ 849	3x3	856504
Cell Band Delay Filter 450 NS	881.5	25	2.5	SE / BAL	–	7x5.5	856716
RF Filter - Band 8 Uplink	897.5	35	1.4	SE / SE	10 @ 984	3x3	856824
RF Filter - Band 8 Uplink	897.5	35	1.5	SE / SE	15 @ 930	3x3	856657
RF Filter - Band 8 Uplink	897.5	35	1.9	SE / SE	14 @ 930	3x3	856671
ISM 915 Band RF Filter	915	26	2.3	SE / SE	35 @ 882.5	2x1.5	856327
ISM 915 Band RF Filter	915	4.4	2.4	SE / SE	55 @ 849	3x3	856686
ISM 921.5 Band RF Filter	921.5	13	2.4	SE / SE	55 @ 825	2x1.5	856905
RF Filter - Band 8 Downlink	942.5	35	2	SE / SE	5 @ 915	3x3	855820
RF Filter - Band 8 Downlink	942.5	35	3.2	SE / SE	12 @ 915	3x3	855810
RF Filter - Band 8 Downlink	942.5	35	2.5	SE / SE	25 @ 915	3x3	856528
WLAN IF Filter	970	9	24	SE / SE	35 @ 945	9.1x4.8	856338
WLAN IF Filter	970	18	24.7	SE / SE	35 @ 945	7x5.5	856339
Tuner IF Filter	1086	10	4	BAL / BAL	40 @ 1046	3x3	855964
Tuner IF Filter	1086	10	4	BAL / BAL	40 @ 1046	3x3	856330
Tuner IF Filter	1090	10	5	BAL / BAL	50 @ 1050	3.8x3.8	856096
WLAN IF Filter	1150	16	4.4	BAL / BAL	20 @ 1170	3x3	856256
GPS L5 RF Filter	1176	20	2.4	SE / SE	20 @ 1226	2x1.5	856440
Tuner IF Filter	1216	8	3.75	BAL / BAL	12 @ 24	3x3	856365
Tuner IF Filter	1220	10	4.5	BAL / BAL	30 @ 60	3x3	856298
Tuner IF Filter	1220	50	3.9	BAL / BAL	33 @ 96	3.8x3.8	856598
GPS L2 RF Filter	1227.6	20	1.1	SE / SE	27 @ 1152	2x1.5	856700
Tuner IF Filter	1250	96	6	BAL / BAL	44 @ 1152	3x3	856653
RF Filter - Band 11 Uplink	1445.4	35	1.25	SE / SE	20 @ 1495.9	3x3	856928
GPS RF Filter	1575.42	2	1.3	SE / SE	30 @ 1625	3x3	855969
GPS RF Filter	1575.42	2	0.75	SE / SE	35 @ 1635	1.4x1.2	856561
GPS RF Filter	1575.42	2	1.1	SE / BAL	20 @ 1635	1.4x1.2	856576
GPS RF Filter	1575.42	2	0.6	SE / SE	21 @ Cell Bands	1.4x1.2	856793
GPS RF Filter, Auto	1575.42	2	1.8	SE / SE	45 @ 1637	3x3	856039
GPS RF Filter, Auto	1575.42	2	1.3	SE / SE	45 @ 1640	3x3	856139
GPS / SDARS Diplexer	1575.42 / 2332.5	3 / 25	0.6 / 0.8	SE / SE	GPS Port: 40 @ 2332 SDARS Port: 36 @ 1572	3x3	TQM2M9016
RF Filter - Band 3 Uplink	1747.5	75	2	SE / SE	22 @ 1676	3x3	856654
RF Filter - Band 3 Downlink	1842.5	75	1.9	SE / SE	10 @ 1785	3x3	855860
RF SAW Filter - Band 3 Downlink	1842.5	75	4.2	SE / SE	20 @ 1785	3x3	856934*
RF Filter - Band 2 Uplink	1880	60	2.2	SE / SE	15 @ 1806	3x3	856705
RF Filter - Band 2 Uplink	1880	60	2.3	SE / SE	10 @ 1790	3x3	856880
RF Filter - Band 2 Uplink	1880	60	2.4	SE / SE	7 @ 1930	3x3	855849
RF Filter - Band 2 Uplink	1880	60	2.8	SE / SE	30 @ 1930	3x3	856530

SAW (cont.)

Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
RF SAW Filter - Band 2 Uplink	1880	60	4	SE / SE	7 @ 1930	3x3	855849*
RF SAW Filter - Band 25 Uplink	1882.5	65	1.9	SE / SE	32 @ 2030	3x3	856992*
Tuner IF Filter	1892	8	4.2	BAL / BAL	23 @ 1932	2.5x2	856236
RF Filter - Band 1 Uplink	1950	60	1.8	SE / SE	20 @ 2100	3x3	856678
RF Filter - Band 1 Uplink	1950	60	2.2	SE / SE	40 @ 2110	3x3	856532
RF Filter - Band 2 Downlink	1960	60	2.1	SE / SE	10.3 @ 1910	3x3	855817
RF Filter - Band 2 Downlink	1960	60	2.9	SE / SE	15 @ 1910	3x3	855859
RF Filter - Band 2 Downlink	1960	60	2.25	SE / SE	14 @ 1910	3x3	856531
Delay Filter, PCS 450 ns	1960	60	25	SE / BAL	–	7x5.5	856717
Delay Filter, UMTS 450 ns	2140	60	25	SE / BAL	–	7x5.5	856649
RF Filter - Band 1 Downlink	2140	60	2.3	SE / SE	25 @ 1980	3x3	856738
SDARS Filter	2332.5	45	1.7	SE / BAL	35 @ 2100	1.4x1.2	856604
ISM / WLAN Passband	2437	66	2.1	SE / SE	34 @ 2550	1.4x1.2	857005*
Bluetooth® RF Filter	2441	83.5	2.8	SE / SE	26 @ 2200	3x3	855916
Bluetooth® RF Filter	2441	83.5	2	SE / SE	28 @ 2300	1.4x1.2	856539

NOTES: * = New

BAW

Description	Frequency (MHz)	Bandwidth (MHz)	Typical IL (dB)	I / O Configuration	Rejection {dB @ BW or Freq (MHz)}	Package Size (mm)	Part Number
RF Filter	710	20	2	SE / SE	50 @ 140	3.81x2.54	880370
RF Filter, ISM	915	15	3.5	SE / SE	40 @ 35	6.35x4.57	880371
RF Filter	1030	15	2.5	SE / SE	40 @ 45	3.81x2.54	880367
RF Filter	1090	15	2.5	SE / SE	40 @ 45	3.81x2.54	880374
GPS RF Filter, L5	1176	28	2.75	SE / SE	40 @ 140	3.26x1.6	880364
GPS RF Filter, L2	1227	30	2.75	SE / SE	40 @ 140	3.26x1.6	880272
GPS RF Filter, L2	1227	15	1.5	SE / SE	40 @ 250	3.26x1.6	880366
GPS RF Filter, L2	1227	15	3	SE / SE	40 @ 45	3.81x2.54	880372
GPS L2	1227.6	25	2.5	SE / SE	20 @ 1200	3.26x1.6	880060*
RF Filter	1280	20	3	SE / SE	40 @ 105	3.81x2.54	880368
GPS RF Filter, L3 / L4	1380	30	3	SE / SE	40 @ 160	3.26x1.6	880365
GPS RF Filter, L1	1575	30	3	SE / SE	40 @ 160	3.26x1.6	880273
GPS RF Filter, L1	1575	18	1.5	SE / SE	40 @ 350	3.26x1.6	880085
GPS RF Filter, L1	1575	25	3	SE / SE	40 @ 60	3.81x2.54	880373
GPS L1	1575.42	30	2.5	SE / SE	20 @ 1548	3.26x1.6	880094*
Band 3 Duplexer	1747.5 / 1842.5	75 / 75	2.6 / 2.7	SE / SE	–	2.5x2	TQM956003*
RF BAW Filter - Band 2 Uplink	1880	60	3.5	SE / SE	30 @ 1920	3x3	885025*
PCS Duplexer	1880 / 1960	60 / 60	1.32 / 1.52	SE / SE	–	3.8x3.8	TQM969001*
BC1 / B2 Duplexer	1880 / 1960	60 / 60	1.8 / 1.9	SE / SE	–	2.5x2	TQM966002*
BC14 / B25 Duplexer	1882.5 / 1962.5	65 / 65	1.8 / 2.2	SE / SE	–	2.5x2	TQM963014*
RF BAW Filter - Band 2 Downlink	1960	60	3.7	SE / SE	34 @ 1920	3x3	885024*
B25 Diversity Rx Filter	1962.5	65	2.6	SE / SE	–	2.5x2	TQM966025*
RF Filter	2106	35	4	SE / SE	–	3.26x1.6	880126*
RF Filter	2324	38	3	SE / SE	40 @ 150	3.81x2.54	880148
SDARS	2332.5	45	1.7	SE / BAL	35 @ 2100	1.4x1.2	856604
ISM Passband Filter for Coexistence	2436	72	2	SE / SE	20 @ 2495	1.7x1.3	885007
ISM Passband Filter for Coexistence	2436	72	1.8	SE / SE	20 @ 2495	1.4x1.2	885017*
ISM Notch RF Filter for Coexistence	2440	72	1.5 (Out of Band IL)	SE / SE	25 @ 2440 (Notch Rej)	1.7x1.3	885008
ISM Notch RF Filter for Coexistence	2440	85	2 (Out of Band IL)	SE / SE	18 @ 2440 (Notch Rej)	1.7x1.3	885010
RF BAW Filter - Band 7 Uplink	2535	70	1.3	SE / SE	41 @ 2620	3x3	885009*
Band 7 Duplexer	2535 / 2655	70 / 70	2.5 / 1.5	SE / SE	–	2.5x2	TQM976027*
RF Filter, MMDS	2560	30	3	SE / SE	40 @ 150	3.81x2.54	880157
RF Filter, ISM	5775	100	4.5	SE / SE	20 @ 350	3.26x1.6	880369

NOTES: * = New

GPS

Description	Frequency Bands	Features	Package Size (mm)	Part Number
GPS Filter-LNA-Filter Module	1575 MHz, GPS L1	Low Noise (1.56 dB) and High Gain (16 dB)	3x3x1	TQM640002

GSM / GPRS / EDGE

Description	Frequency Bands	Features	Package Size (mm)	Part Number
Quad-Band GSM / GPRS / EDGE-Linear PA Module	GSM850 / 900, DCS / PCS	Low Band I _{batt} < 1.5A @ P _{cal} w/PAE 55%	5x5x1	TQM7M5005H
Dual-Band GSM / GPRS Tx Module; PA / LPF / SP4T Switch; Quad-Band Tx & Dual-Band Rx	GSM900 / DCS or GSM850 / PCS	High Efficiency Broadband Tx, 2 Rx Ports	5x6x1	TQM6M4068
Quad-Band GSM / GPRS / EDGE-Linear PA Module	GSM900 / DCS & GSM850 / PCS	Input Power Controlled for GMSK & 8PSK	5x5.x1	TQM7M5033*
Quad-Band GSM / GPRS / EDGE-Linear PA Module	GSM900 / DCS & GSM850 / PCS	Input Power Controlled for GMSK & 8PSK	5x3.5x1	TQM7M5050*

NOTES: * = New

3G - CDMA / EV-DO, 4G - LTE

Description	Bands	Features	Package Size (mm)	Part Number
LTE PA Module, w/Coupler	Band 13	LTE, 2-Bit (Hi / Med / Lo Power Modes)	3x3x0.9	TQM700013
CDMA PA Module, w/Coupler	PCS	2-Bit (Hi / Med / Lo Power Modes)	3x3x0.9	TQM766012
CDMA PA Module, w/Coupler	AWS	2-Bit (Hi / Med / Lo Power Modes)	3x3x0.9	TQM756014
CDMA PA Module, w/Coupler	Cellular	2-Bit (Hi / Med / Lo Power Modes)	3x3x0.9	TQM716015
LTE PA Module, w/Coupler	Band 17	LTE 1-Bit (Hi / Lo Power Modes)	3x3x0.9	TQM700017*

NOTES: * = New

3G - CDMA / WCDMA / HSPA / LTE

Description	Bands	Features	Package Size (mm)	Part Number
Integrated 2-in-1 PA-Duplexer Module	Bands 1 & 8	DC / DC, 1-Bit (Hi / Med Power Modes)	6x4.5x1	TQM6M6218*
Integrated 2-in-1 PA-Duplexer Module	Bands 2 & 5	DC / DC, 1-Bit (Hi / Med Power Modes)	6x4.5x1	TQM6M6225*
Integrated 2-in-1 PA-Duplexer Module	Bands 1 & 4	DC / DC, 1-Bit (Hi / Med Power Modes)	6x4.5x1	TQM6M6214*

NOTES: * = New

3G - WCDMA / WGPRES / WEDGE, 4G - LTE

Description	Bands	Features	Package Size (mm)	Part Number
QB GSM / GPRS / EDGE-Polar PA Module	GSM850 / 900, DCS / PCS	-90 dBm Typ Rx Noise, +3 to +8 dBm Pin Nom	5x5x1	TQM7M5012H
QB GSM / GPRS / EDGE-Linear PA Module	GSM850 / 900, DCS / PCS	Input Power Controlled for GMSK & 8PSK	5x5x1	TQM7M5013
QB GSM / GPRS / EDGE-Polar PA Module	GSM850 / 900, DCS / PCS	+3 to +8 dBm Pin Nominal, Current Limiter	5x5x1	TQM7M5022
WCDMA / HSPA PA Module, w/Coupler	Band 1	2-Bit (Hi / Med / Lo Power Modes)	3x3x0.9	TQM776011
WCDMA / HSPA PA Module, w/Coupler	Band 8	2-Bit (Hi / Med / Lo Power Modes)	3x3x0.9	TQM726018
WCDMA / HSPA TRITIUM III PA-Duplexer Module™; SE Input w/Coupler, Detector	Band 1	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM676021
WCDMA / HSPA TRITIUM III PA-Duplexer Module™; SE Input w/Coupler, Detector	Band 2	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM666022

3G - WCDMA / WGPRES / WEDGE, 4G - LTE (cont.)

Description	Bands	Features	Package Size (mm)	Part Number
WCDMA / HSUPA TRITIUM III PA-Duplexer Module™; SE Input w/Coupler, Detector	Bands 5 and 6	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM616025
WCDMA / HSUPA PA-Duplexer Module; SE Input w/Coupler, Detector	Band 8	1-Bit (Hi / Lo Power Modes)	7x4x1.1	TQM626028L
WCDMA / HSUPA PA-Duplexer Module; SE Input w/Coupler, Detector	Band 2	DC / DC, 1-Bit (Hi / Med Power Modes)	4.5x3.5x1	TQM666052*
DB GSM / GPRS Tx Module: PA / LPF / SP6T WGPRES Switch w/Dual-Band WCDMA Antenna Pass-Through	GSM900 / DCS or GSM850 / PCS & 2 WCDMA Bands	Integrated DB GSM / GPRS & 2 WCDMA Antenna Switch Ports	5x6x1	TQM6M9069
QB GSM / GPRS / EDGE-Linear TRP QUANTUM II Tx Module™: PA / LPF / SP8T WEDGE Switch w/ Quad-Band WCDMA Antenna Pass-Through	GSM850 / 900, DCS / PCS & WCDMA B1, B2, B5 / 6, B8	Integrated QB GSM / GPRS / EDGE PA & Antenna Switch Supporting WCDMA	7x7.5x1.1	TQM6M9014
GSM / GPRS / EDGE-Linear Tx Module: PA / LPF / SP8T WEDGE Switch w/ Quad-Band WCDMA / LTE Ports	GSM900 / DCS or GSM850 / PCS & 4 WCDMA / LTE Bands & B8	Integrated QB GSM / GPRS / EDGE PA & Antenna Switch	5x6x1	TQM6M9085*
Multi-Mode Quad-Band GMSK / EDGE / WCDMA TRIUMF PA Module	GSM850 / 900, DCS / PCS & WCDMA B1 & B8	2-Bit (Hi / Med / Lo Power Modes)	5x7.5x1	TQM7M9023
Multi-Mode, Multi-Band Quad-Band GMSK / EDGE, Dual-Band WCDMA PA Module	GSM850 / 900, DCS / PCS & WCDMA B1 & B5 / 8	1-Bit (Hi / Med Power Modes)	5x7.5x1	TQM7M9053*

NOTES: * = New

WLAN / Bluetooth® RF Front-End Modules

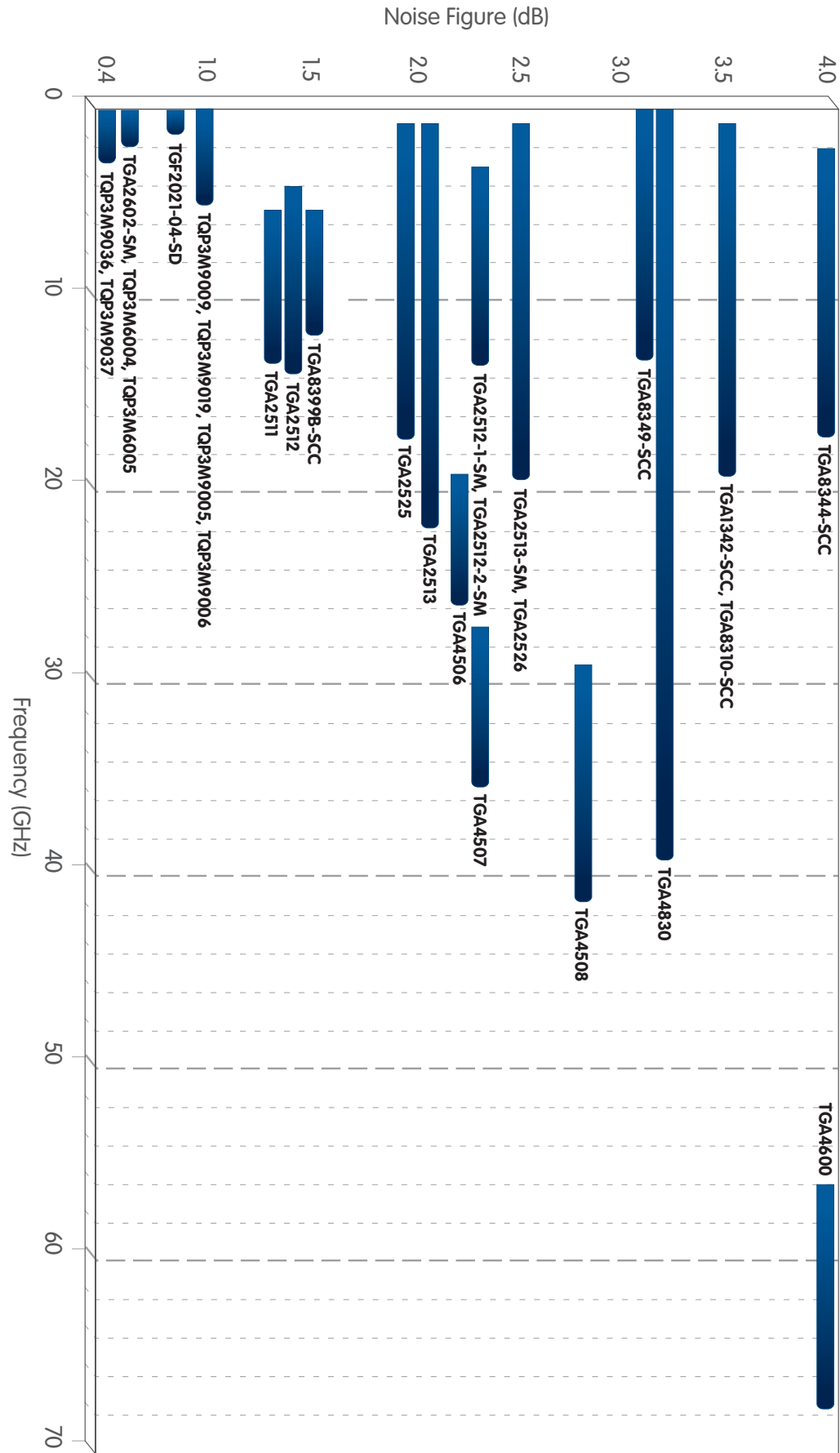
Description	Bands	Features	Package Size (mm)	Part Number
802.11 5 GHz WLAN PA MMIC	802.11 a, n	ETSLP-16 Package, Detector, Hi / Lo Linearity Mode	3x3x0.45	TQP787011
2.4 GHz WLAN LNA + SP3T Switch w/WLAN Tx & Bluetooth® Path	802.11 b, g, n	LNA Bypass, ETSLP-12 Package	1.5x1.5x0.55	TQP879001A
2.4 GHz WLAN PA + Switch MMIC w/WLAN Rx Balun & Bluetooth® Path	802.11 b, g, n	ETSLP-16 Package, Coupler / Detector	3x3x0.45	TQM679002A
2.4 GHz & 5 GHz WLAN PA + Switch MMIC w/WLAN Rx Baluns & Bluetooth® Path	802.11 a, b, g, n	ETSLP-24 Package, Coupler / Detector	4x4x0.45	TQP6M9002
2.4 GHz and 5 GHz WLAN High-Performance PA + Switch MMIC w/WLAN 2.4 GHz and 5 GHz LNA + Rx Baluns and Bluetooth® Path	802.11 a, b, g, n, ac	ETSLP-24 Package, Coupler / Detector	4x4x0.45	TQP6M9017*
5 GHz WLAN PA + Low Noise Amplifier + SP2T Switch MMIC	802.11 a, n	ETSLP-16 Package, Coupler / Detector	2.5x2.5x0.4	TQP887016*
2.4 GHz WLAN PA + Low Noise Amplifier + SP3T Switch MMIC for Bluetooth® Path	802.11 b, g, n	ETSLP-16 Package, Coupler / Detector	2.5x2.5x0.4	TQP879016*

NOTES: * = New

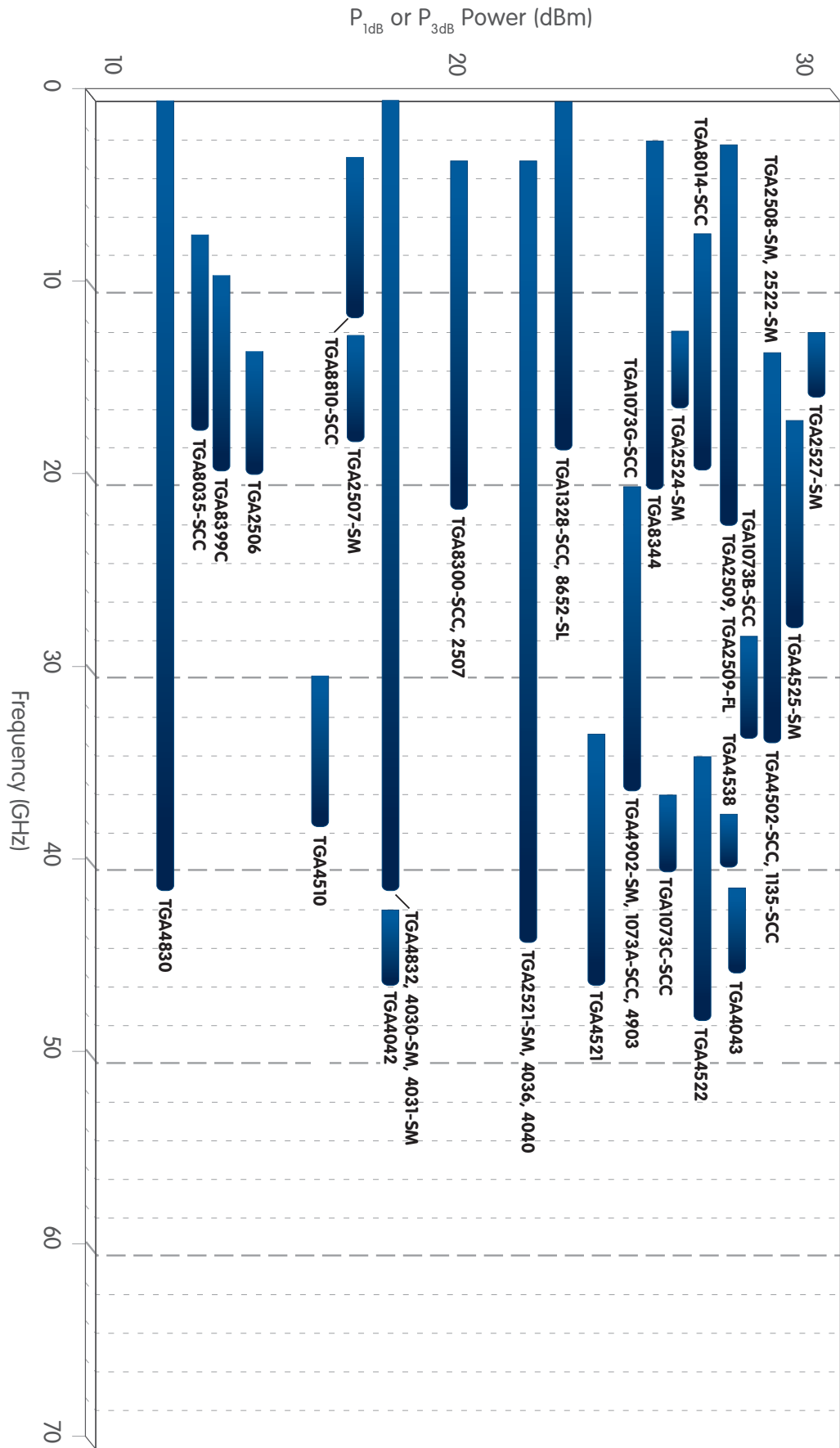
Drivers

Description	Frequency (GHz)	Power (Vpp or dBm)	Gain (dB)	NF (dB)	Voltage / Current (V / mA)	Package Style	Part Number
9.9 - 12.5Gb/s 3V - 7V Driver	DC - 13	3 - 7Vpp	32	–	3.3 - 5 / 115	8x8 QFN	TGA4956-SM
9.9 - 12.5 Gb/s Modulator Driver	DC - 16	3 - 9Vpp	35	2.5	5.5 - 8 / 210	11.4x8.9 SL	TGA4954-SL
9.9 - 12.5 Gb/s Modulator Driver	DC - 16	3 - 10Vpp	35	2.5	5.5 - 8 / 210	11.4x8.9 SL	TGA4953-SL
12.5 Gb/s NRZ Driver	DC - 18	3 - 11Vpp	16	2.5	8 / 285	Die	TGA4807
12.5 Gb/s NRZ Driver	DC - 18	4 - 8Vpp	16	3.5	8 / 175	8.9x8.9 SL	TGA8652-SL
12.5 Gb/s NRZ Driver	DC - 18	6 - 8Vpp	16	3.5	5 - 8 / 70 - 175	Die	TGA1328-SCC
15 Gb/s 10V Linear Modulator Driver	DC - 20	3 - 10Vpp	22	–	7 / 280	6x6 QFN	TGA4826-SM
40 & 100 Gb/s 8Vpp SE Driver	DC - 30	3 - 9Vpp	32	–	6 - 7 / 270	14.4x7 SL	TGA4943-SL
100 Gb/s 8V pp Dual Channel Driver w/Bias-Ts Inside	DC - 35	3 - 9Vpp	32	–	5 - 7 / 500	16x10.5 SL	TGA4947-SL**
Wideband Driver (40 Gb/s)	DC - 35	4Vpp	12	–	5 / 135	Die	TGA4832
32 Gb/s 9Vpp Diff In / Out Driver	DC - 35	6 - 9Vpp Diff	25 Diff	–	5 - 6 / 500	SL	TGA4959-SL
45 Gb/s 8V pp SE Driver w/Bias-T Inside	DC - 37	5 - 9Vpp	30	–	6 - 7 / 300	14.4x7 SL	TGA4942-SL**
LNA / Gain Block (40 Gb/s)	DC - 40	11.5	13	3.2	5 / 50	Die	TGA4830
45 Gb/s 9Vpp Diff In / Out Driver MMIC	DC - 50	6 - 10Vpp Diff	27 Diff	–	5 - 6 / 500	Die	TGA4959**
Ultra-Wideband Driver (50 Gb/s)	DC - 78	3.5Vpp	8	5	6 / 82	Die	TGA4803
10.7 - 12.5 Gb/s Linear Modulator Driver	30 kHz - 8	12.5Vpp	20	–	8 / 310	8x8 QFN	TGA4823-2-SM

NOTES: ** = **Coming Soon**, SE = Single-Ended

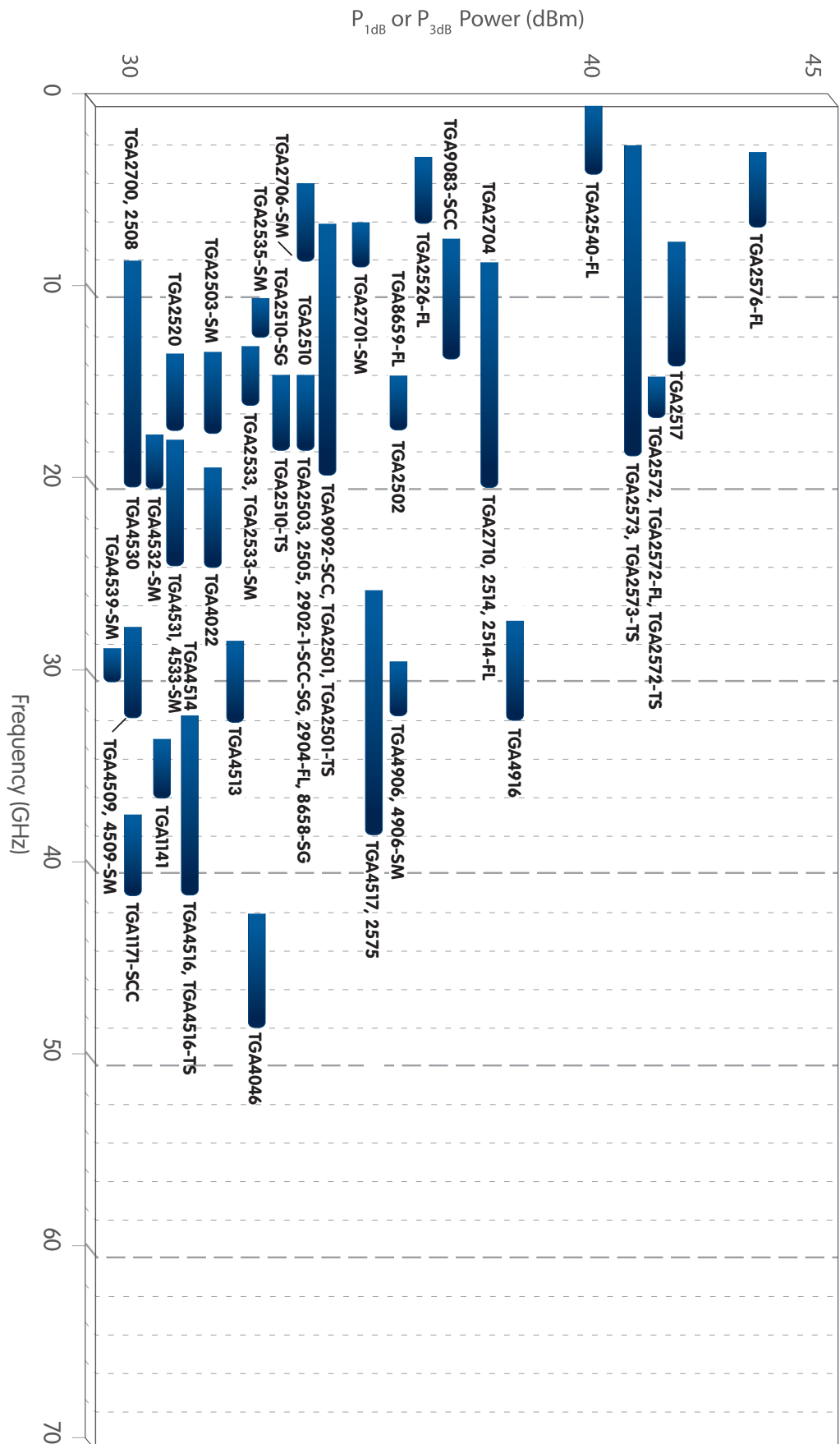


Selected Low Noise Amplifiers, LNA Noise Figure vs. Frequency
For a complete list of low noise amplifiers, please refer to page 39 and 40.



Selected Less Than 1W Higher Frequency Amplifiers, Power vs. Frequency

For a complete list of less than 1W amplifiers, please refer to pages 36 and 37.



Selected More Than 1W Higher Frequency Amplifiers, Power vs. Frequency

For a complete list of more than 1W amplifiers, please refer to pages 37 and 38.

Customer Support

PACKAGING

For detailed information on TriQuint product packaging, please visit our website at www.triquint.com/prodserv.

ORDERING

TriQuint products can be purchased through:

- **TriQuint Field Sales Offices:**

We have regional sales offices across the globe to work closely with you on your next TriQuint product purchase. To identify the closest regional sales office, please go to our website at www.triquint.com/sales.

- **Local Sales Representatives:**

Local sales representatives are skilled at examining application needs from a variety of angles to aid the design process. Their insight and specialized experience, paired with your goals, can find the combination of products that best meet overall objectives. Since these representatives work with a variety of customers in many different design environments, their experience can be valuable in determining the right 'fit' for your particular application. To locate a sales representative, please visit our website at www.triquint.com/sales.

- **Distributors - Buy / Resale Reps:**

TriQuint products can be purchased from any one of the distributors or buy / resale reps listed on our website at www.triquint.com/sales.

TERMS & CONDITIONS

For a complete listing of TriQuint terms and conditions of sale, please visit our website at www.triquint.com/sales.

EXPORT COMPLIANCE

Virtually all products TriQuint offers for sale as detailed in the Product Selection Guide are available for export subject to US government regulations. Please contact your TriQuint salesperson for details.

PRODUCT SUPPORT

- **Product Data Sheets and Literature:**

Detailed information on our products including datasheets and other literature can be found on the TriQuint website at www.triquint.com/prodserv.

- **Applications Support:**

Detailed product support information can be found on the TriQuint website at www.triquint.com/prodserv.

RELIABILITY PROGRAMS

Our programs are in line with JEDEC and other industry standards.

ENVIRONMENTAL, HEALTH & SAFETY POLICY

TriQuint is committed to provide employees with a safe and healthy working environment, role model sound environmental stewardship, prevent pollution, meet or exceed all applicable federal, state and local requirements and drive continuous improvement.

ENVIRONMENTAL SYSTEMS

- ISO-14001:2004 (Select Sites)

Customer Support (cont.)

QUALITY POLICY

Each of us at TriQuint Semiconductor is committed to zero defects, continuous improvement, quality and reliability to meet or exceed customer requirements.

QUALITY SYSTEMS

- ISO-9001:2008 Certified (Select Sites)
- ISO / TS 16949:2009 Certified (Select Sites)
- ISO / AS9100B Certified (Select Sites)

QUALITY TOOLS UTILIZED

- Design Failure Mode & Effects Analysis (DFMEA)
- Process Failure Mode & Effects Analysis (PFMEA)
- Process Control Plan (PCP)
- Production Part Approval Process (PPAP)
- Eight Discipline Problem Solving (8-D)
- Real Time Statistical Process Control (SPC)
- Measurement System Analysis (MSA)
- Advanced Product Quality Planning (APQP)

For further details on TriQuint quality and reliability information, please visit our website at www.triquint.com/company/quality.

PRODUCT COMPLIANCE POLICIES

TriQuint is committed to meeting all global product environmental regulations that affect its products. These regulations include:

- Directive 2002 / 95 / EC (RoHS Directive) and its recast Directive 2011 / 65 / EU
- Management Methods for Control of Pollution Caused by Electronic Information Products (China RoHS)
- Directive 94 / 62 / EC (Packaging Directive)
- Directive 2006 / 122 / EC (PFOS Directive)
- Regulation (EC) No 1907 / 2006 (REACH Regulation)
- Commission Decision 2009 / 251 / EC (Dimethylfumarate Ban)

All active TriQuint commercial standard products are compliant with these directives. Contact TriQuint for the RoHS compliance status of custom products, military products and products manufactured prior to June 2006. All new product designs are halogen-free since late 2008. TriQuint does not use any REACH Substances of Very High Concern (SVHCs) in its products or packaging materials above a concentration of 0.1% (as of May 2011). Also, TriQuint is committed to complying with Section 1502 (Conflict Minerals) of the Dodd-Frank Wall Street Regulation and Consumer Protection Act. We are actively surveying our supply chain to ensure that our products are "Conflict Free", and as of April 2012 have not identified any Conflict Mineral derivatives from the Conflict Region in our products.

In addition to being compliant with the above product compliance laws and regulations, TriQuint participates in the following customer programs:

- Sony Green Partner
- Samsung Eco-Partner

Please contact TriQuint at rohs_info@tqs.com for any product compliance information requests. For further details on TriQuint environmental, health & safety information, please visit our website at www.triquint.com/company/ehs.

NOTICE

The data provided in this selection guide is subject to change without notice. TriQuint reserves the right to make changes to specifications and other information at any time.

Connecting the Digital World
to the Global Network®

TriQuint 
SEMICONDUCTOR

Below is a List of our Authorized Channel Partners:



Global



a tti company

Global



Americas & EMEA



India



Asia



Taiwan

MARUBUN CORPORATION

Japan



China

For more information, visit www.triquint.com/sales.

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Visit www.triquint.com/subscribe and register
for TriQuint product and process updates.