RF/Microwave GaN Power Transistors

General Purpose Surface Mount and Drivers

We offer an extensive portfolio of GaN on SiC RF power transistors to meet the complex needs of the avionics, communications and radar markets. Our microwave transistors can optimize your transmitter amplifier system performance in airborne, ground-based, shipborne, missile and space environments.

Features and Benefits

- High power output and excellent power efficiency
- Best power density and high-power gain supporting smallest-footprint amplifier designs
- Up to 225˚C junction temperature operation with MTTF >1 million hours
- High breakdown voltage allows higher power supply operation

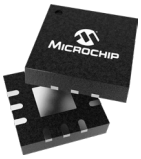
General-Purpose SMT to 3.5 GHz

Part Number	Frequency Band	P_{OUT} (Min.)	V_{DD}	Pulse Width/CW	Duty Cycle	Power Gain (Typ.)	Efficiency (Typ.)	Θ_{jc} (Max.)	Package	ECCN
DC35GN-15-Q4	300 MHz–500 MHz	15W	50V	CW	—	18.2 dB	65%	8.4 °C/W	24-lead QFN	EAR99
DC35GN-15-Q4	960 MHz–1215 MHz	15W	50V	1000 µs	0.1%	18.5 dB	70%	3.5 °C/W	24-lead QFN	EAR99
DC35GN-15-Q4	1.2 GHz–1.4 GHz	15W	50V	1000 µs	0.1%	18.2 dB	70%	3.5 °C/W	24-lead QFN	EAR99
DC35GN-15-Q4	2.7 GHz–3.1 GHz	15W	50V	1000 µs	0.1%	13 dB	60%	3.5 °C/W	24-lead QFN	EAR99
DC35GN-15-Q4	3.1 GHz–3.5 GHz	12W	50V	1000 µs	0.1%	10 dB	50%	3.5 °C/W	24-lead QFN	EAR99
DC35GN-15-D3	50 MHz–3.5 GHz	15W	50V	1000 µs	0.1%	10 dB–18 dB	50%–70%	3.5 °C/W	14-lead DFN	EAR99

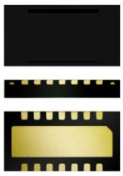
L-Band Avionics Discretes

Part Number	Frequency Band	P_{OUT} (Min.)	V_{DD}	Pulse Width/ CW	Duty Cycle	Power Gain (Typ.)	Efficiency (Typ.)	Θ_{jc} (Max.)	Package	ECCN
0912GN-15E	960 MHz–1215 MHz	15W	50V	128 µs	10%	17.8 dB	65%	8.4 °C/W	55-QQ	EAR99
0912GN-15EL	960 MHz–1215 MHz	15W	50V	128 µs	10%	17.8 dB	65%	8.4 °C/W	55-QQP	EAR99
0912GN-50LE	960 MHz–1215 MHz	50W	50V	32 µs/MIDS	2%/21%	15.6 dB	63%	3.6 °C/W	55-QQ	EAR99
0912GN-100LV	960 MHz–1215 MHz	100W	50V	3 ms	30%	17.5 dB	59%	1.44 °C/W	55-KR	EAR99
0912GN-250V	960 MHz–1215 MHz	250W	50V	128 µs	10%	18.5 dB	60%	0.23 °C/W	55-QP	EAR99
0912GN-300V	960 MHz–1215 MHz	300W	50V	128 µs	10%	17 dB	60%	0.62 °C/W	55-KR	EAR99
0912GN-500LV	960 MHz–1215 MHz	500W	50V	MIDS	35%	16.5 dB	63%	0.37 °C/W	55-KR	EAR99
0912GN-650V	960 MHz–1215 MHz	650W	50V	128 µs	10%	17 dB	60%	0.16 °C/W	55-KR	EAR99
1012GN-800V	1025 MHz–1150 MHz	800W	54V	20 µs	6%	19 dB	60%	0.21 °C/W	55-KR	EAR99
1011GN-30EL	1030 MHz/1090 MHz	30W	50V	32 µs/128 µs	2%/10%	18.5 dB	65%	6.2 °C/W	55-QQP	EAR99
1011GN-30EP	1030 MHz/1090 MHz	30W	50V	32 µs/128 µs	2%/10%	18.5 dB	65%	6.2 °C/W	0.600-inch × 1.200-inch pallet	EAR99
1011GN-125E	1030 MHz/1090 MHz	125W	50V	128 µs/4500 µs	10%	18 dB	72%	1.4 °C/W	55-QQ	EAR99
1011GN-125EL	1030 MHz/1090 MHz	125W	50V	128 µs/4500 µs	10%	18 dB	72%	1.4 °C/W	55-QQP	EAR99
1011GN-125EP	1030 MHz/1090 MHz	125W	50V	128 µs/4500 µs	10%	18 dB	72%	1.4 °C/W	55-QPP	EAR99
1011GN-250V	1030 MHz/1090 MHz	250W	50V	32 µs	2%	20.5 dB	75%	0.68 °C/W	55-QP	EAR99
MDSGN-750ELMV	1030 MHz/1090 MHz	750W	50V	ELM	6%	19 dB	70%	0.44 °C/W	55-KR	EAR99
1011GN-1200V	1030 MHz/1090 MHz	1200W	50V	32 µs	2%	18.5 dB	75%	0.25 °C/W	55-Q03	EAR99
1011GN-1200VEL	1030 MHz/1090 MHz	1200W	50V	32 µs	2%	18.5 dB	75%	0.25 °C/W	55-Q03P	EAR99
1011GN-1600VG	1030 MHz/1090 MHz	1600W	50V	32 µs	2%	18.7 dB	74%	0.12 °C/W	55-Q11A	EAR99
1011GN-2200VP	1030 MHz/1090 MHz	2200W	50V	32 µs	2%	19.4 dB	72%	0.095 °C/W	2.0-inch × 3.4-inch pallet	EAR99

Package Type



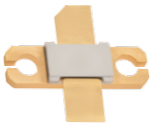
QFN 24L
4 × 4 mm



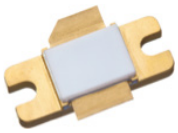
DFN 14L
3 × 6 mm

55-QQP
0.160″ × 0.230″

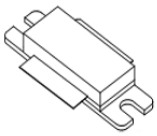
55-QQ
0.160″ × 0.550″



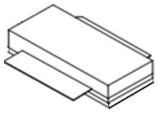
55-QP
0.230″ × 0.800″



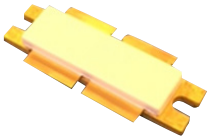
55-KR
0.385″ × 1.030″



55-Q03
0.385″ × 1.340″



55-QQP
0.160″ × 0.230″



55-Q11A
0.400″ × 1.610″

L-Band Radar

Part Number	Frequency Band	P_{OUT} (Min.)	V_{DD}	Pulse Width/CW	Duty Cycle	Power Gain (Typ.)	Efficiency (Typ.)	Θ_{jc} (Max.)	Package	ECCN
1214GN-15E	1.2 GHz–1.4 GHz	15W	50V	300 µs/ 4.5 µs	10%/ 35%	17.8 dB	68%	8 °C/W	55-QQ	EAR99
1214GN-50E	1.2 GHz–1.4 GHz	15W	50V	300 µs	10%	15.9 dB	63%	3.2 °C/W	55-QQ	EAR99
1214GN-50EP	1.2 GHz–1.4 GHz	15W	50V	300 µs	10%	15.9 dB	63%	3.2 °C/W	0.8-inch × 1.2-inch pallet	EAR99
1214GN-50EQP-TS	1.2 GHz–1.4 GHz	Dual 25W	50V	300 µs	10%	15.0 dB	60%	3.2 °C/W	1.2-inch × 2.0-inch pallet	EAR99
1214GN-120E	1.2 GHz–1.4 GHz	120W	50V	300 µs	10%	17.5 dB	65%	1.4 °C/W	55-QQ	EAR99
1214GN-400LV	1.2 GHz–1.4 GHz	400W	50V	4000 µs	30%	16.0 dB	65%	0.3 °C/W	55KR	EAR99
1214GN-600VHE	1.2 GHz–1.4 GHz	600W	50V	300 µs	10%	17.0 dB	65%	0.23 °C/W	55-KR	EAR99
1214GN-700V	1.2 GHz–1.4 GHz	700W	50V	300 µs	10%	16.5 dB	63%	0.22 °C/W	55-Q03	EAR99
1214GN-180LV	1.2 GHz–1.4 GHz	180W	50V	3000 µs	30%	17.0 dB	60%	0.73 °C/W	55-KR	EAR99
1214GN-1200VG	1.2 GHz–1.4 GHz	1200W	50V	300 µs	10%	17.0 dB	60%	0.07 °C/W	55-Q11A	EAR99

S-Band Radar

Part Number	Frequency Band	P_{OUT} (Min.)	V_{DD}	Pulse Width/CW	Duty Cycle	Power Gain (Typ.)	Efficiency (Typ.)	Θ_{jc} (Max.)	Package	ECCN
2731GN-120V	2.7 GHz–3.1 GHz	120W	50V	200 µs	10%	16.5 dB	64%	1.13 °C/W	55-QP	EAR99
2729GN-250V	2.7 GHz–2.9 GHz	250W	50V	200 µs	11%	15.6 dB	68%	0.5 °C/W	55-QP	EAR99
2729GN-250VP	2.7 GHz–2.9 GHz	250W	50V	100 µs	11%	15.6 dB	58%	0.5 °C/W	1.3-inch × 2.2-inch pallet	EAR99
2729GN-300V	2.7 GHz–2.9 GHz	300W	50V	100 µs	11%	15.3 dB	58%	0.37 °C/W	55-QP	EAR99
2729GN-300VP	2.7 GHz–2.9 GHz	300W	50V	100 µs	11%	15.3 dB	58%	0.37 °C/W	1.3-inch × 2.2-inch pallet	EAR99

Broadband GaN on SiC discrete HEMT

Part number	Frequency Band	Output Power CW	Linear Gain @ 10 GHz	PAE @ 10 GHz	Drain Bias (V)	Die Size (mm)
ICPB1001	DC- 14 GHz	6 Watts	10 dB	60%	12 - 28	0.82 × 0.53
ICPB1002	DC- 14 GHz	12 Watts	10 dB	60%	12 - 28	0.82 × 0.92
ICPB1005	DC- 14 GHz	25 Watts	9 dB	54%	12 - 28	0.82 × 1.44
ICPB1010	DC- 14 GHz	50 Watts	9 dB	54%	12 - 28	0.82 × 2.48
ICPB1020	DC- 14 GHz	100 Watts	9 dB	54%	12 - 28	0.82 × 0.57