



1011GN-250V

250 Watts • 50 Volts • 32us, 2%
1030-1090MHz

GaN Transistor – Key Features

- 1030-1090MHz • 250W Pulsed Output Power • 32μS, 2% Pulsing
- Common Source • Class AB • 50VDD Bias Voltage
- >70% Efficiency Across the Frequency Band
- Compact Size
- 20.5 dB Typical Power Gain
- 0.1 dB Typical Excellent Gain Flatness
- IFF, Mode-S, DME, TACAN, TCAS, Avionics Secondary Radars
- All gold metallization and eutectic die attach for highest reliability

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 460 W

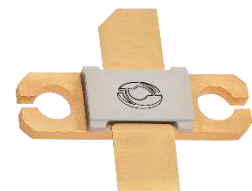
Maximum Voltage and Current

Drain-Source Voltage (VDSS) 125 V
Gate-Source Voltage (VGS) -8 to +0 V

Maximum Temperatures

Storage Temperature (TSTG) -55 to +125° C
Operating Junction Temperature +200° C

CASE OUTLINES 55-QP Common Source



0.230" x 0.800"

ELECTRICAL CHARACTERISTICS @ 25°C

Symbol	Characteristics	Test Conditions	Min	Typ	Max	Units
Pout	Output Power	Pin=2.5W, Freq=1030,1090MHz	250	280		W
Gp	Power Gain	Pin=2.5W, Freq=1030,1090MHz	20	20.5		dB
ηd	Drain Efficiency	Pin=2.5W, Freq=1030,1090MHz	60	75		%
Dr	Droop	Pin=2.5W, Freq=1030,1090MHz		0.14	0.5	dB
VSWR-T	Load Mismatch Tolerance	Po=250W, Freq=1030MHz,32μS-2%			5:1	
Θjc	Thermal Resistance	32us, 2% duty cycle			0.68	°C/W

- Bias Condition: Vdd=+50V, Idq=60mA constant current (Vgs= -2.0 ~ -4.5V typical)

FUNCTIONAL CHARACTERISTICS @ 25°C

Id(Off)	Drain leakage current	VGS = -8V, VD = 125V			12	mA
Ig(Off)	Gate leakage current	VGS = -8V, VD = 0V			4	mA

Export Classification: EAR-99

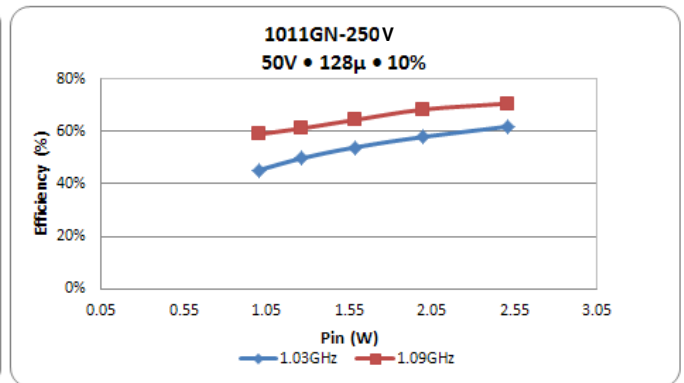
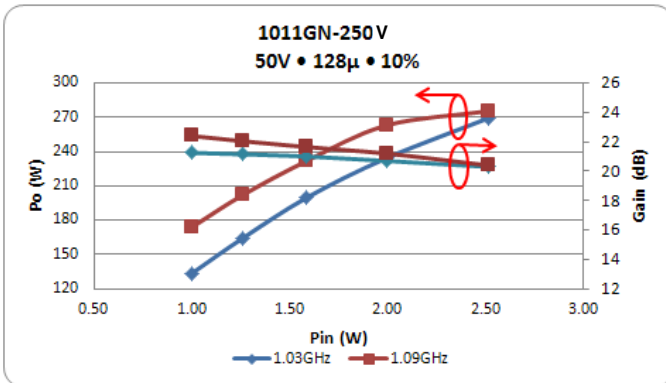
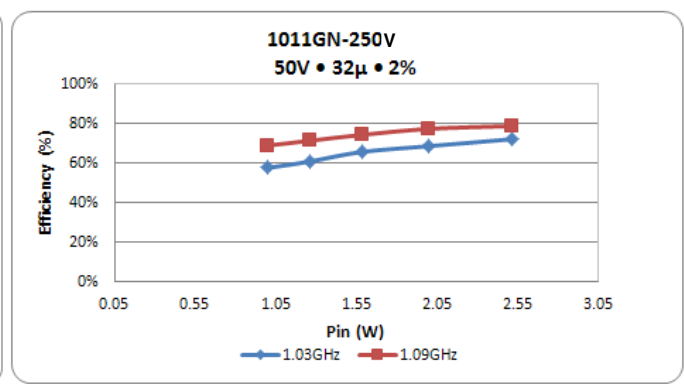
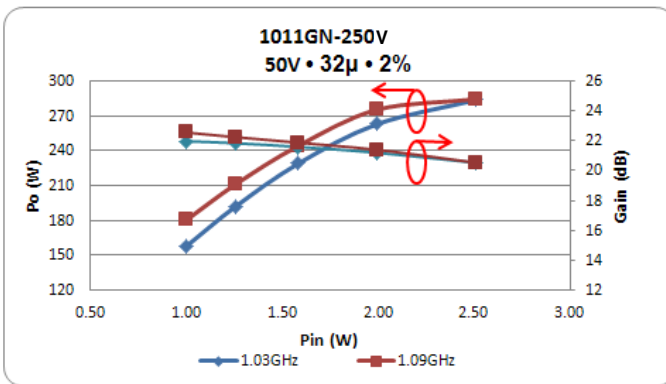


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TYPICAL BROAD BAND PERFORMANCE DATA (32μ-2%)

Frequency	Pin (W)	Pout (W)	Id (mA)	RL (dB)	Nd (%)	G (dB)	Droop (dB)
1030 MHz	2.5	284	.20	-8.0	72	20.5	0.12
1090 MHz	2.5	283	.18	-12.0	78	20.5	0.12



Critical Performance @ Pin = 2.5W (34dBm)

Freq (GHz)	Test Condition	Po (W)	Gain (dB)	Eff (%)	Droop (dB)
1.030	32μS – 2%	283	20.5	72	.12
1.030	128μS – 10%	269	20.3	62	.30
1.090	32μS – 2%	284	20.5	78	.12
1.090	128μS – 10%	275	20.7	71	.30

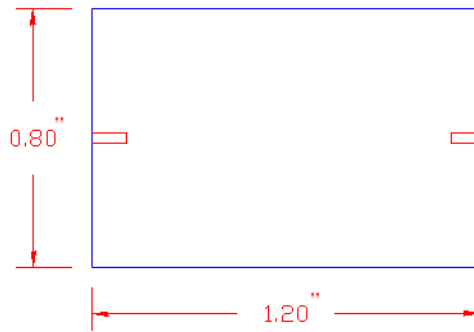


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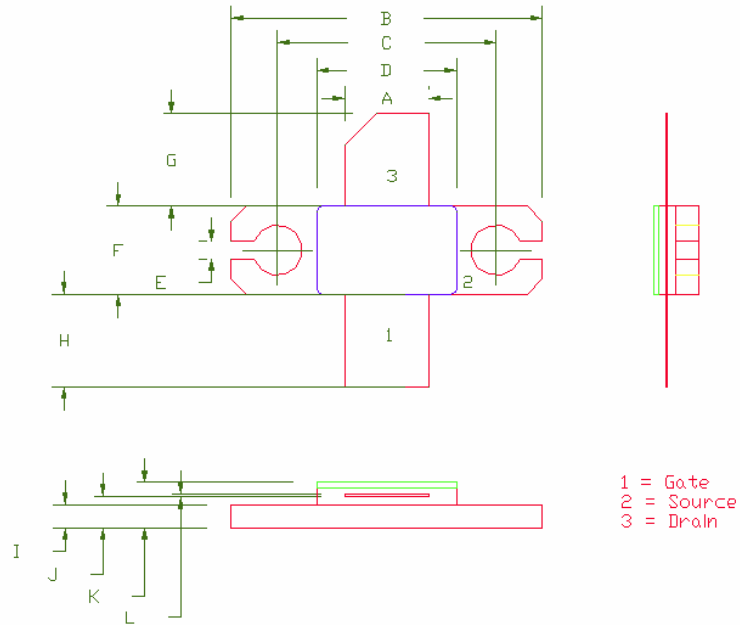
Test Fixture Overall Dimension



(Dimensions shown are in inches)

Test Fixture available upon request

55-QP PACKAGE DIMENSION



Dimension	Min (mil)	Min (mm)	Max (mil)	Max (mm)
A	210	5.33	220	5.59
B	795	20.19	805	20.45
C	557	14.15	567	14.40
D	255	6.48	365	9.27
E	40	1.02	45	1.14
F	225	5.72	235	5.97
G	252	6.40	278	7.06
H	252	6.40	278	7.06
I	60	1.52	65	1.65
J	74	1.88	90	2.29
K	113	2.87	144	3.66
L	3	0.08	6	0.15



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Revision History

Revision Level / Date	Para. Affected	Description
0.1 / 18 Dec. 2018	-	Initial Preliminary Release
2.0	All Pages	Packaging Change to 55-QP