



1011GN-30E/EL/EP

30 Watts • 50 Volts • 128 μ S, 10%

1030-1090MHz

E Class Earless Driver GaN Transistor – Key Features

- 1030-1090MHz • 30W Pulsed Output Power • 128 μ S-10% & 32 μ S-2% Pulsing
- Common Source • Class AB • 50V Bias Voltage
- >60% Efficiency Across the Frequency Band
- Extremely Compact Size
- 18.5 dB Typical Power Gain
- 0.3 dB Typical Excellent Gain Flatness
- IFF, Mode-S, TCAS Avionics Secondary Radars
- All gold metallization and eutectic die attach for highest reliability
- 50 Ω in/out lumped element very small footprint plug & play pallets available

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 55 W

Maximum Voltage and Current

Drain-Source Voltage (V_{DSS}) 150 V

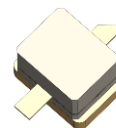
Gate-Source Voltage (V_{GS}) -8 to +0 V

Maximum Temperatures

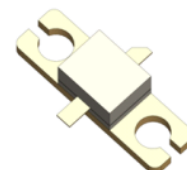
Storage Temperature (T_{STG}) -55 to +125° C

Operating Junction Temperature +200 °C

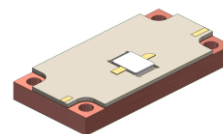
CASE OUTLINE 55-QQP/QQ/Pallet Common Source



1011GN-30EL, 55-QQP Case
(0.160"x0.230")



1011GN-30E, 55-QQ Case
(0.160"x0.550")



1011GN-30EP Pallet
(0.6"x1.2")

ELECTRICAL CHARACTERISTICS @ 25°C

Symbol	Characteristics	Test Conditions	Min	Typ	Max	Units
P _{OUT}	Output Power	P _{IN} =0.5W, Freq=1030-1090MHz	30	35		W
G _P	Power Gain	P _{IN} =0.5W, Freq=1030-1090MHz	17	18.5		dB
η_D	Drain Efficiency	P _{IN} =0.5W, Freq=1030-1090MHz	60	65		%
Dr	Droop	P _{IN} =0.5W, Freq=1030-1090MHz		0.3	0.5	dB
VSWR-T	Load Mismatch Tolerance	P _{OUT} =50W, Freq=1090MHz, 32 μ S-2%			5:1	

- Bias Condition: V_{DD}=+50V, I_{DQ}=40mA constant current (V_{GS}= -2.0 ~ -4.5V typical)

FUNCTIONAL CHARACTERISTICS @ 25°C

I _{D(OFF)}	Drain leakage current	V _{GS} = -8V, V _D = 150V			4	mA
I _{G(OFF)}	Gate leakage current	V _{GS} = -8V, V _D = 0V			0.5	mA

Export Classification: EAR-99

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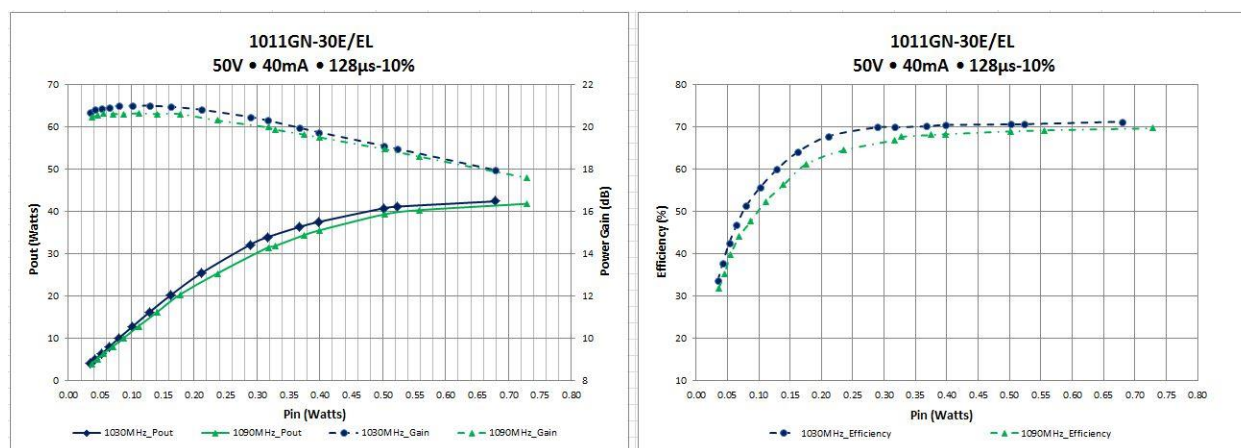
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TYPICAL PERFORMANCE DATA UNDER 128 μ S, 10% Duty Cycle

Frequency	P _{IN} (W)	P _{OUT} (W)	I _D (A)	η_D (%)	Gain (dB)	IRL (dB)	Power Droop (dB)
1030 MHz	0.5	40.7	0.151	70	19.1	-10.2	0.3
1090 MHz	0.5	39.0	0.150	68	18.9	-11.0	0.2



TYPICAL PERFORMANCE DATA UNDER 32 μ S, 2% Duty Cycle

Frequency	P _{IN} (W)	P _{OUT} (W)	I _D (A)	η_D (%)	Gain (dB)	IRL (dB)	Power Droop (dB)
1030 MHz	0.5	41.5	.032	68	19.0	-10.0	0.2
1090 MHz	0.5	39.5	.032	65	18.9	-10.2	0.2

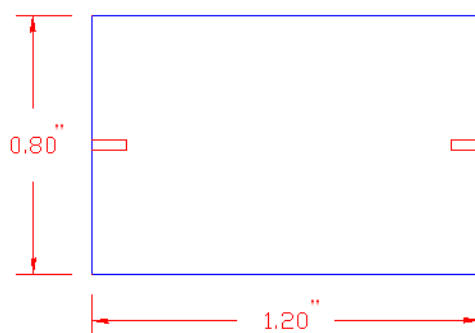


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1030-1090MHz

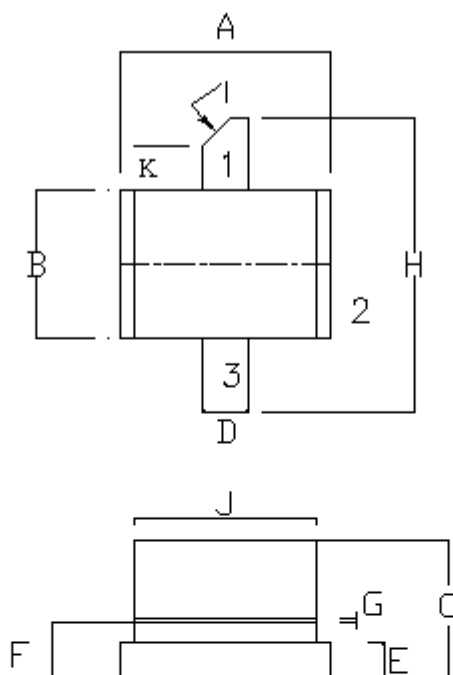
Test Fixture Overall Dimension



(Dimensions shown are in inches)

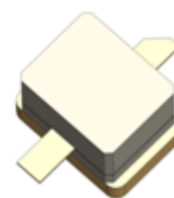
Test Fixture available upon request

55-QQP PACKAGE DIMENSION

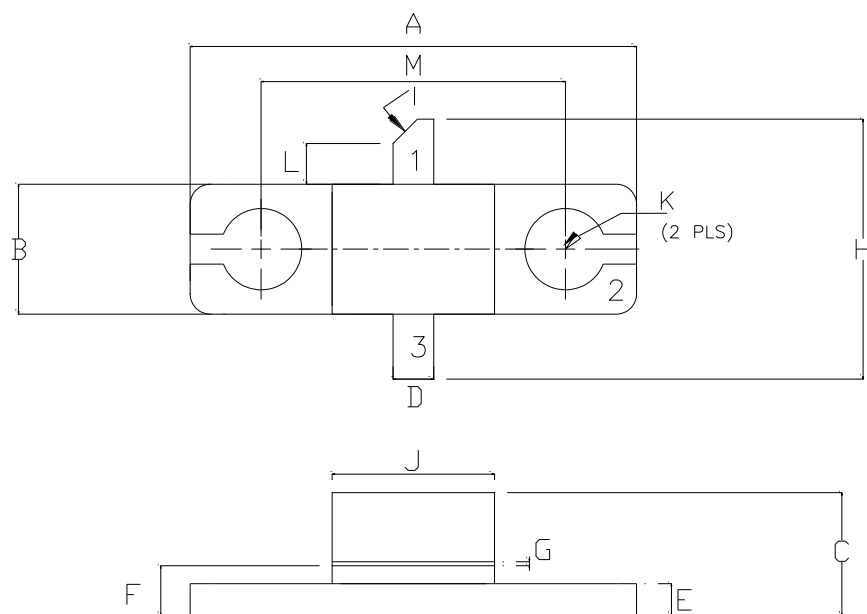


Dim	Millimeter	Tol	Inches	Tol
A	5.84	.25	.230	.010
B	4.06	.25	.160	.010
C	3.17	.05	.125	.002
D	1.27	.13	.050	.005
E	1.02	.13	.040	.005
F	1.57	.13	.062	.005
G	.130	.02	.005	.001
H	8.12	.25	.320	.010
I	45°	5°	45°	5°
J	5.08	.25	.200	.010
K	1.40	.13	.055	.005

PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE

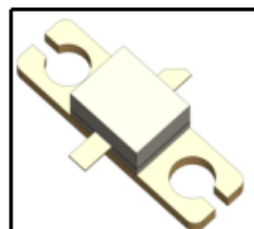


55-QQ PACKAGE DIMENSION



Dim	Millimeter	Tol	Inches	Tol
A	13.970	0.250	0.550	0.010
B	4.570	0.250	0.160	0.010
C	3.860	0.330	0.152	0.013
D	1.270	0.130	0.050	0.005
E	1.020	0.130	0.040	0.005
F	1.700	0.130	0.067	0.005
G	0.130	0.025	0.005	0.001
H	8.130	0.250	0.320	0.010
I	45°	5°	45°	5°
J	5.080	0.250	0.200	0.010
K	2.54 DIA	0.130	.100 DIA	0.005
L	1.270	0.130	0.050	0.005
M	9.530	0.130	0.375	0.005

PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE



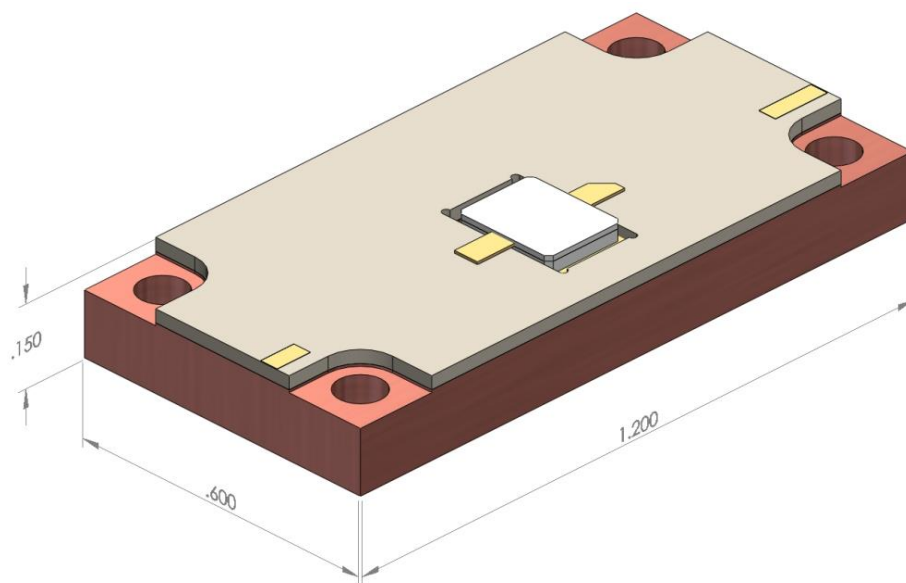


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1011GN-30EP OVERALL PALLET DIMENSION



Dimensions: Length=1.2" X Width=0.6"x Height=0.150"



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Revision History

Revision Level / Date	Para. Affected	Description
0.1 / 21 February 2017	-	Initial Preliminary Release

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