



0912GN-15E/EL/EP

15 Watts • 50 Volts • 128us, 10%

960-1215MHz

E Class Driver GaN Transistor – Key Features

- 960-1215MHz • 15W Pulsed Output Power • 128us, 10% Pulsing
- Common Source • Class AB • 50V_{DD} Bias Voltage
- >60% Efficiency
- 18.1 dB Typical Power Gain
- 0.2 dB Typical Excellent Gain Flatness
- Extremely Compact Size General Purpose Driver • 3 package options
- IFF, Mode-S, DME, TACAN, TCAS avionics applications
- All gold metallization and eutectic die attach for highest reliability
- 50Ω in/out lumped element very small footprint plug & play pallets available

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 37 W

Maximum Voltage and Current

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

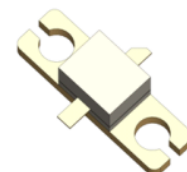
Gate-Source Voltage (V_{GS}) -8 to +0 V

Maximum Temperatures

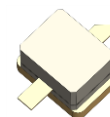
Storage Temperature (T_{STG}) -55 to +125 °C

Operating Junction Temperature +200 °C

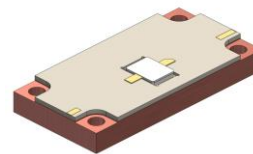
CASE OUTLINES



55-QQ
(0.160" x 0.550" - E)



55-QQP
(0.160" x 0.230" - EL)



55-78029
(0.600" x 1.200" - EP)

ELECTRICAL CHARACTERISTICS @ 25°C

Symbol	Characteristics	Test Conditions	Min	Typ	Max	Units
P _{OUT}	Output Power	P _{IN} =0.32W, Freq=960,1090,1215 MHz	15	19		W
G _P	Power Gain	P _{IN} =0.32W, Freq=960,1090,1215 MHz	17.5	18.1		dB
η _D	Drain Efficiency	P _{IN} =0.32W, Freq=960,1090,1215 MHz	60	65		%
Dr	Droop	P _{IN} =0.32W, Freq=960,1090,1215 MHz		0.1	0.5	dB
VSWR-T	Load Mismatch Tolerance	P _{IN} =0.32W, Freq=1090MHz			5:1	

- Bias Condition: V_{DD}=+50V, I_{dq}=10mA constant current (V_{GS}= -2.0 ~ -4.5V typical)

FUNCTIONAL CHARACTERISTICS @ 25°C

I _{D(Off)}	Drain leakage current	V _{GS} = -8V, V _D = 50V			1.0	mA
I _{G(Off)}	Gate leakage current	V _{GS} = -8V, V _D = 0V			0.2	mA

Export Classification: EAR-99



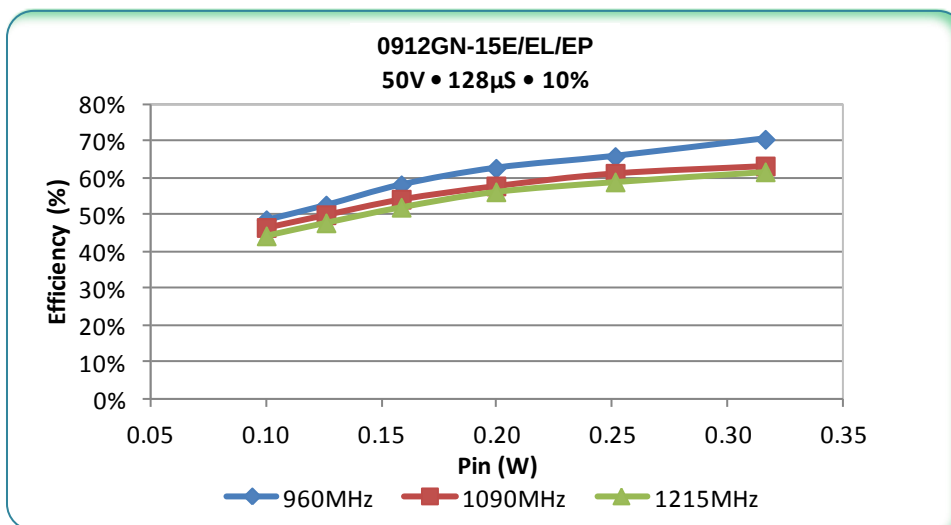
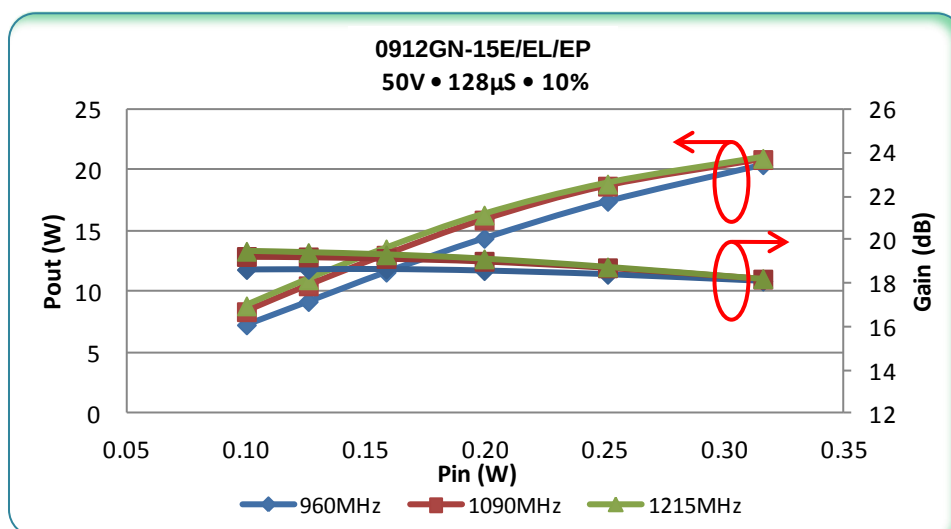
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TYPICAL BROAD BAND PERFORMANCE DATA – 128us, 10% PULSING

Frequency	P _{IN} (mW)	P _{OUT} (W)	I _D (mA)	IRL (dB)	η _D (%)	G _P (dB)	Droop (dB)
960 MHz	320	20.5	68	-9.3	71	18.1	0.2
1090 MHz	320	20.9	76	-9.2	63	18.2	0.2
1215 MHz	320	18.2	78	-13.5	62	18.2	0.3



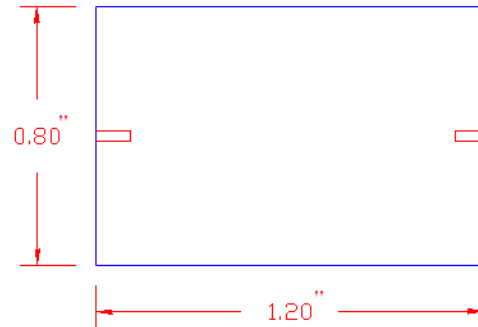


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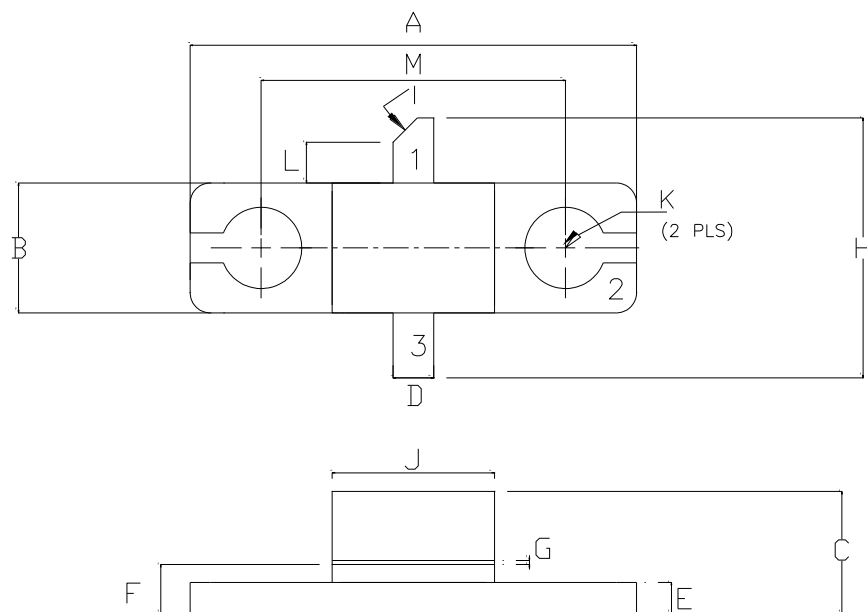
Transistor Test Fixture Overall Dimension



Dimensions in inches.

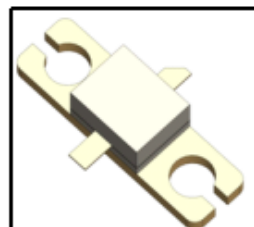
Test Fixture available upon request

55-QQ PACKAGE DIMENSION

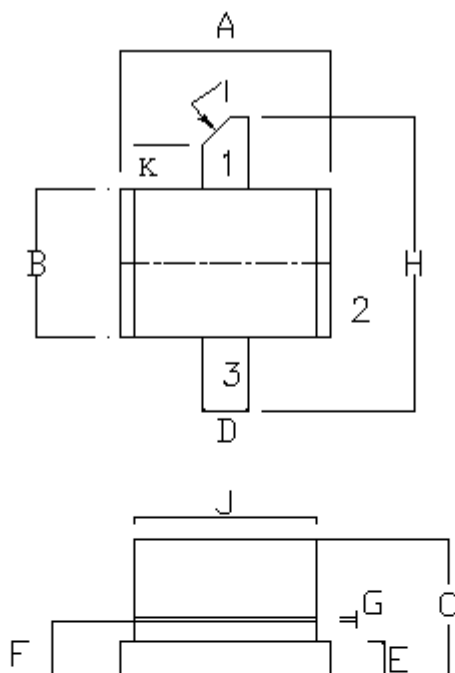


Dim	Millimeter	Tol	Inches	Tol
A	13.970	0.250	0.550	0.010
B	4.570	0.250	0.160	0.010
C	3.860	0.330	0.152	0.013
D	1.270	0.130	0.050	0.005
E	1.020	0.130	0.040	0.005
F	1.700	0.130	0.067	0.005
G	0.130	0.025	0.005	0.001
H	8.130	0.250	0.320	0.010
I	45°	5°	45°	5°
J	5.080	0.250	0.200	0.010
K	2.54 DIA	0.130	.100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



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



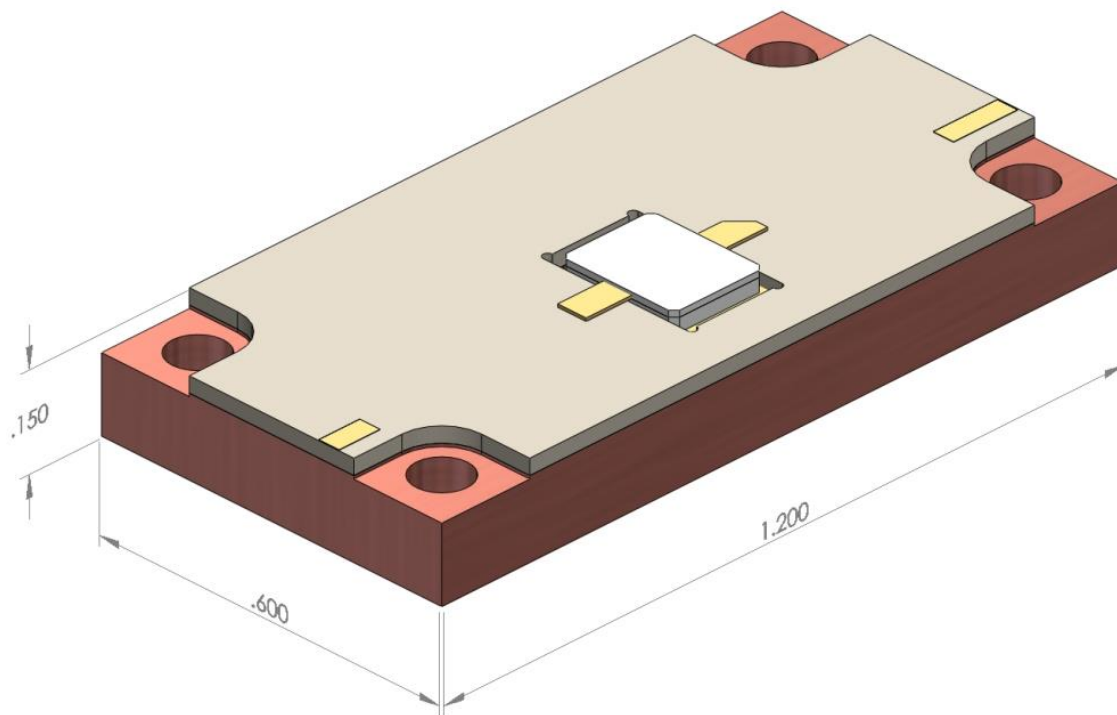


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55-78029 CASE OUTLINE OVERALL PALLET DIMENSION



Dimensions: Length=1.200" x Width=0.600" x Height=0.150"



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Revision History

Revision Level / Date	Para. Affected	Description
Rev 1 / 12 Dec 2014	Initial	First release

Specifications are subject to change. Consult www.microsemi.com for local sales and technical support contacts.