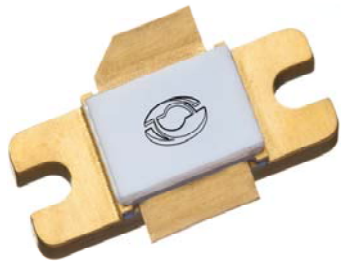
0912GN-650V

650 Watts - 50 Volts, 128 µs, 10%
Broad Band Data Link 960 - 1215 MHz

GENERAL DESCRIPTION

The 0912GN-650V is an internally matched, COMMON SOURCE, class AB GaN on SiC HEMT transistor capable of providing over 17dB gain, 650 Watts of pulsed RF output power at 128µs pulse width, 10% duty factor across the 960 to 1215 MHz band. The transistor has internal pre-match for optimal performance. This hermetically sealed transistor can be used for Broadband Avionics Data Link applications. It utilizes gold metallization and eutectic attach to provide highest reliability and superior ruggedness.

CASE OUTLINE
55-KR
Common Source



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 1400 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 +250 °C

ELECTRICAL CHARACTERISTICS @ 25°C

Symbol	Characteristics	Test Conditions	Min	Typ	Max	Units
Pout	Output Power	Freq=960, 1090, 1215 MHz	650			W
Gp	Power Gain	Pout=650W, Freq=960, 1090, 1215 MHz	17	18		dB
ηd	Drain Efficiency	Pout=650W, Freq=960, 1090, 1215 MHz	48	53		%
Dr	Droop	Pout=650W, Freq=960, 1090, 1215 MHz			0.8	dB
VSWR-T	Load Mismatch Tolerance	Pout=650W, Freq= 1215MHz			3:1	
Θjc	Thermal Resistance	Pulse Width=128uS, Duty=10%			0.155	°C/W

- **Bias Condition: Vdd=+50V, Idq=100mA average current (Vgs= -2.0 ~ -4.5V) with constant gate bias**

FUNCTIONAL CHARACTERISTICS @ 25°C

$I_{D(Off)}$	Drain leakage current	V_{gS} = -8V, V_D = 150V			64	mA
$I_{G(Off)}$	Gate leakage current	V_{gS} = -8V, V_D = 0V			22	mA
BV_{DSS}	Drain-source breakdown voltage	V_{gs} =-8V, I_D = 64mA	150			V

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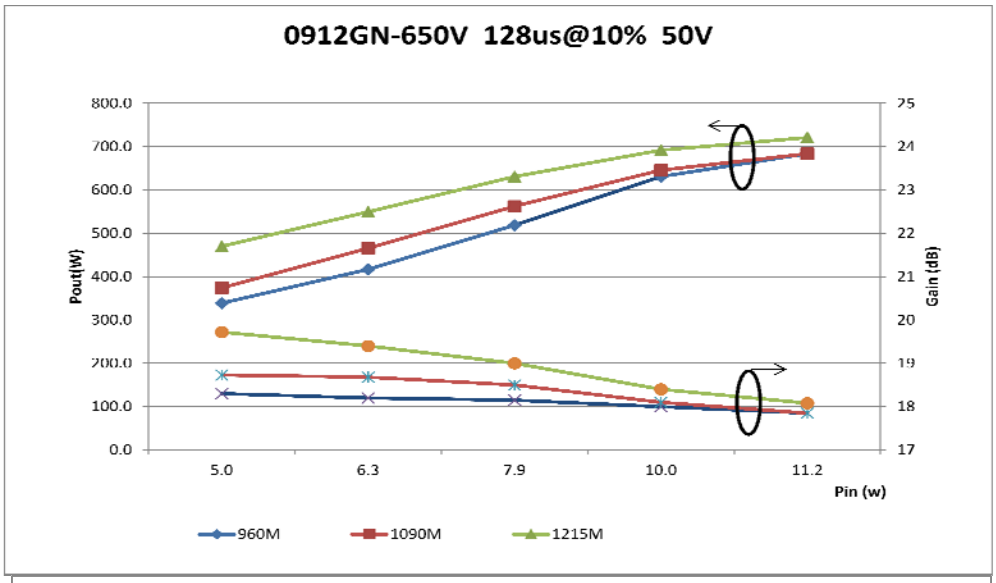
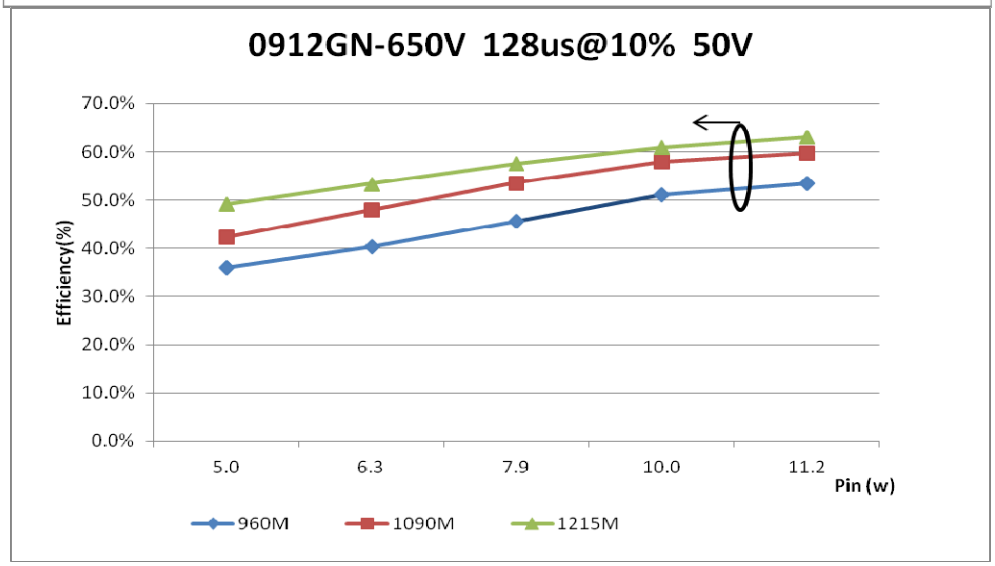
TYPICAL BROAD BAND PERFORMACE DATA

Frequency	Pin (W)	Pout (W)	Id (A)	RL (dB)	Eff (%)	G (dB)	Droop (dB)
960 MHz	11.2	684	2.56	-7	53	17.9	0.3
1090 MHz	11.2	684	2.29	-7	60	17.9	0.3
1215 MHz	11.2	721	2.29	-14	63	18.1	0.4





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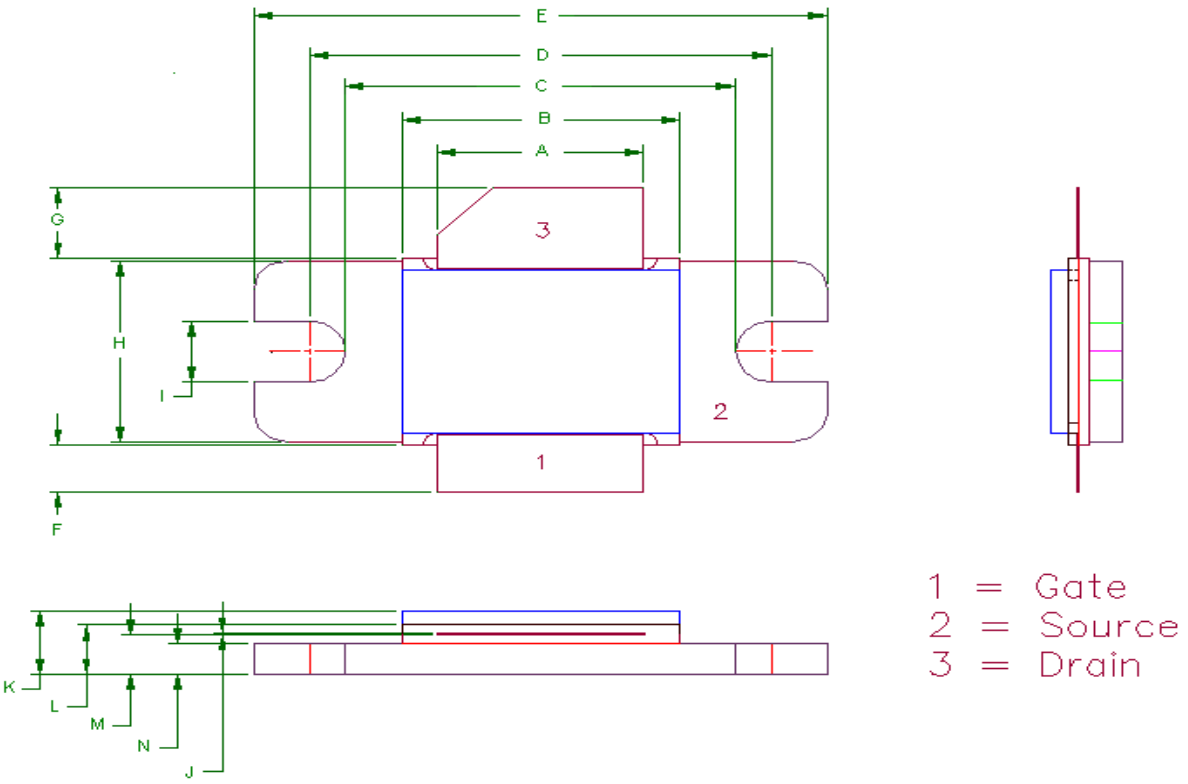
55-KR PACKAGE DIMENSION



Dimension	Min (mil)	Min (mm)	Max (mil)	Max (mm)
A	370	9.40	372	9.44
B	498	12.65	500	12.7
C	700	17.78	702	17.83
D	830	21.08	832	21.13
E	1030	26.16	1032	26.21
F	101	2.56	102	2.59
G	151	3.84	152	3.86
H	385	9.78	387	9.83
I	130	3.30	132	3.35
J	003	.076	004	0.10
K	135	3.43	137	3.48
L	105	2.67	107	2.72
M	085	2.16	86	2.18
N	065	1.65	66	1.68

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Revision History

Revision Level / Date	Para. Affected	Description
01 / June 2013	-	Initial Preliminary Release