

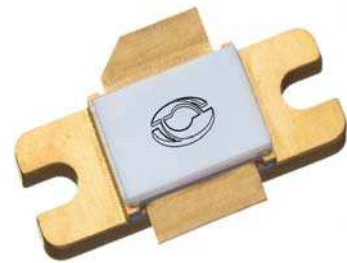
# 0912GN-300V

300 Watts - 50 Volts, 128uS, 10%  
Broad Band 960 - 1215 MHz

## GENERAL DESCRIPTION

The 0912GN-300V is an internally matched, COMMON SOURCE, class AB GaN on SiC HEMT transistor capable of providing over 19dB gain, 300 Watts of pulsed RF output power at 128us 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 is designed for avionic 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 650 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
<b>P<sub>out</sub></b>	Output Power	P <sub>out</sub> =300W, Freq=960, 1090, 1215 MHz	300			W
<b>G<sub>p</sub></b>	Power Gain	P <sub>out</sub> =300W, Freq=960, 1090, 1215 MHz	18			dB
<b>η<sub>d</sub></b>	Drain Efficiency	P <sub>out</sub> =300W, Freq=960, 1090, 1215 MHz	52	60		%
<b>Dr</b>	Droop	P <sub>out</sub> =300W, Freq=960, 1090, 1215 MHz			.8	dB
<b>VSWR-T</b>	Load Mismatch Tolerance	P <sub>out</sub> =300W, Freq=1215 MHz			3:1	
<b>θ<sub>jc</sub></b>	Thermal Resistance	Pulse Width=128uS, Duty=10%			.28	°C/W

- Bias Condition: V<sub>dd</sub>=+50V, I<sub>dq</sub>=60mA average current (V<sub>gs</sub>= -2.0 ~ -4.5V ) with constant gate Bias

## FUNCTIONAL CHARACTERISTICS @ 25°C

I <sub>D(Off)</sub>	Drain leakage current	V <sub>gs</sub> = -8V, V <sub>D</sub> = 150V			14	mA
I <sub>G(Off)</sub>	Gate leakage current	V <sub>gs</sub> = -8V, V <sub>D</sub> = 0V			6	mA
BV <sub>DSS</sub>	Drain-source breakdown voltage	V <sub>gs</sub> = -8V, I <sub>D</sub> = 14mA	150			V

Export Classification: EAR 99

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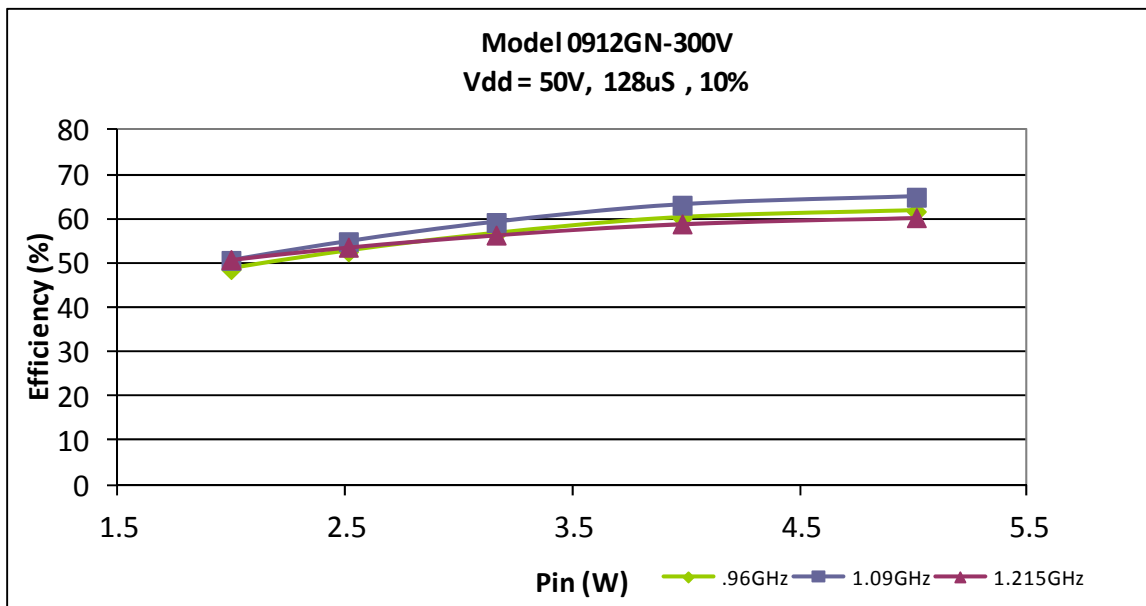
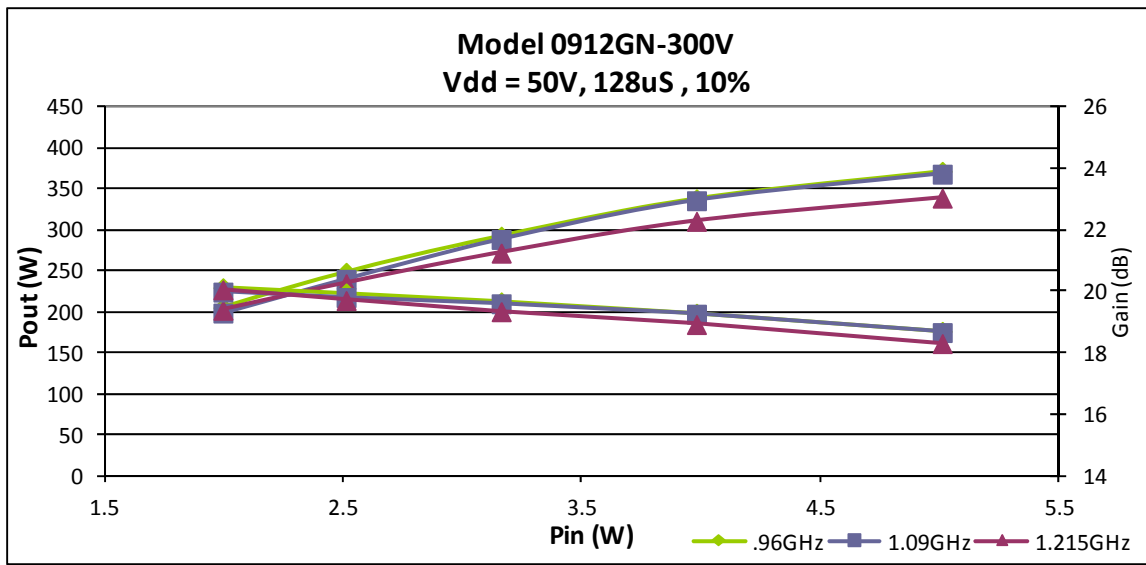
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Specifications are subject to change, consult the RFIS factory at (408) 986-8031 for the latest information

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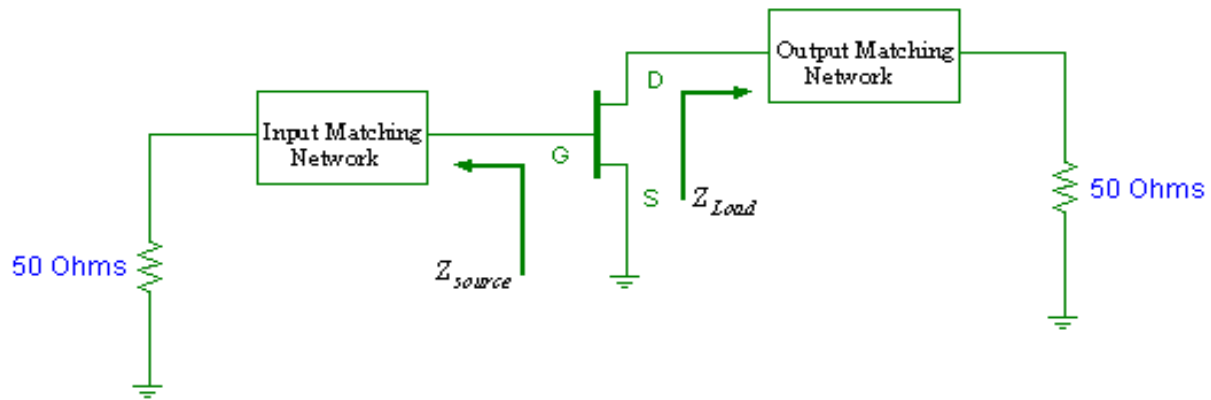
## Typical Performance Data

Freq(GHz)	Pin (W)	Pout (W)	Id (A)	RL (dB)	Eff (%)	Gp (dB)	Droop (dB)
.960	4	338	1.15	-7.5	60	19.3	.4
1.090	4	335	1.09	-8.2	63	19.2	.3
1.215	4	310	1.08	-17.5	58	18.9	.3



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## Transistor Impedance Information



Note:  $Z_{Source}$  is looking into the input circuit;  
 $Z_{Load}$  is looking into the output circuit.

Impedance Data		
Freq (GHz)	Zs	ZI
.960	2.15 – j0.85	2.40 + j0.75
1.090	2.10 + j0.55	2.35 + j1.40
1.215	2.15 + j0.17	1.95 + j2.20

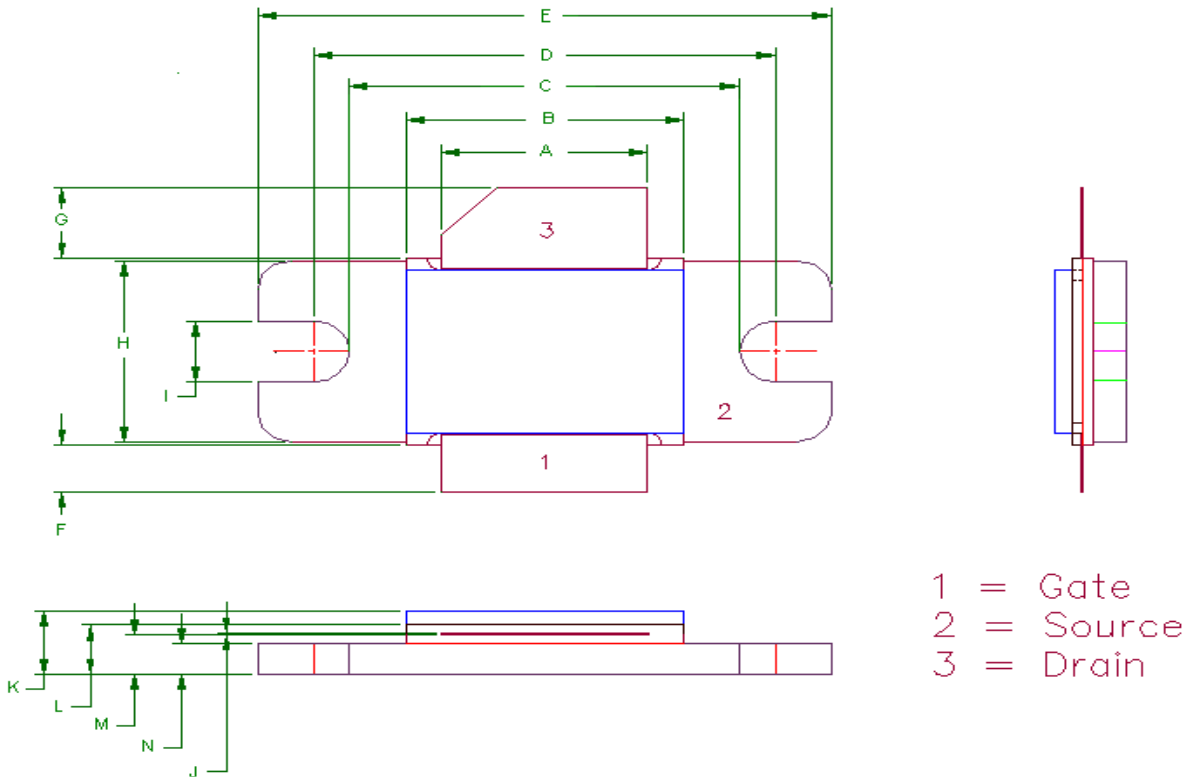
**Please contact our representative for the RF test circuit**

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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
0.1 / 20 June 2013	-	Initial Preliminary Release

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