

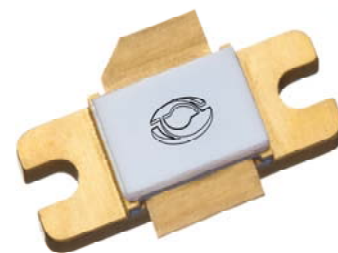
1214GN-550V

550 Watts - 50 Volts, 300 μ s, 10%
Broad Band 1200 - 1400 MHz

GENERAL DESCRIPTION

The 1214GN-550V is an internally matched, COMMON SOURCE, class AB GaN on SiC HEMT transistor capable of providing over 17dB gain, 550 Watts of pulsed RF output power at 300 μ s pulse width, 10% duty factor across the 1200 to 1400 MHz band. The transistor has internal pre-match for optimal performance. This hermetically sealed transistor is designed for L-Band Radar 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 1200 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	Pout=550W, Freq=1200, 1300, 1400 MHz	550			W
Gp	Power Gain	Pout=550W, Freq=1200, 1300, 1400 MHz	16	17		dB
η_d	Drain Efficiency	Pout=550W, Freq=1200, 1300, 1400 MHz	50	55		%
Dr	Droop	Pout=550W, Freq=1200, 1300, 1400 MHz			1.0	dB
VSWR-T	Load Mismatch Tolerance	Pout=550W, Freq=1400 MHz			3:1	
θ_{jc}	Thermal Resistance	Pulse Width=300uS, Duty=10%			0.21	°C/W

- Bias Condition: Vdd=+50V, Idq=100mA average current ($V_{GS} = -2.0 \sim -4.5V$) with Gate Bias Pulse Width 400us at T=3ms

FUNCTIONAL CHARACTERISTICS @ 25°C

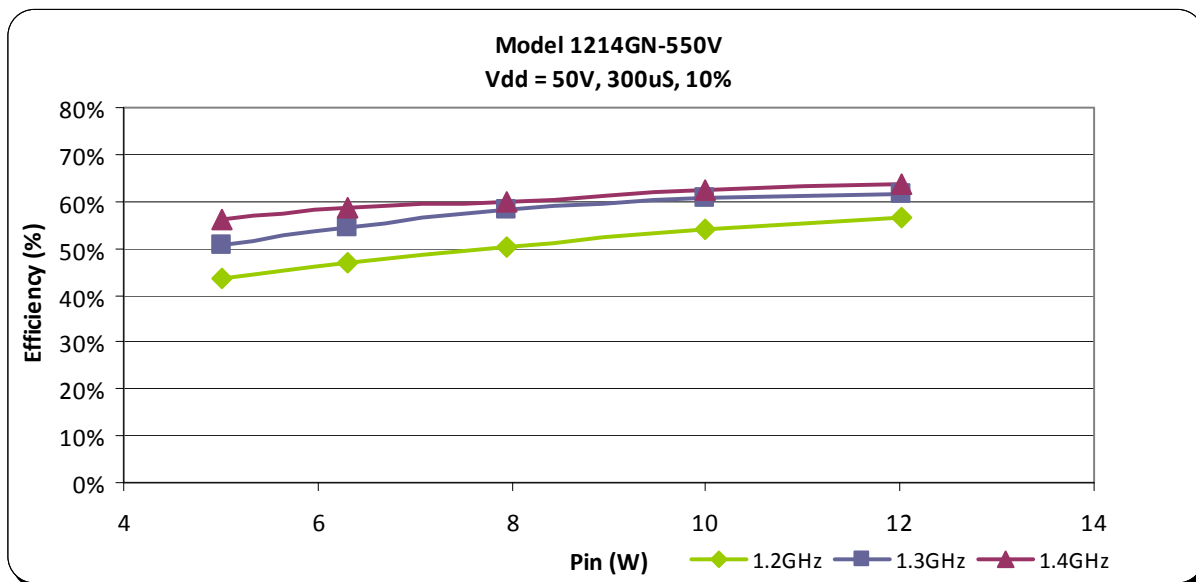
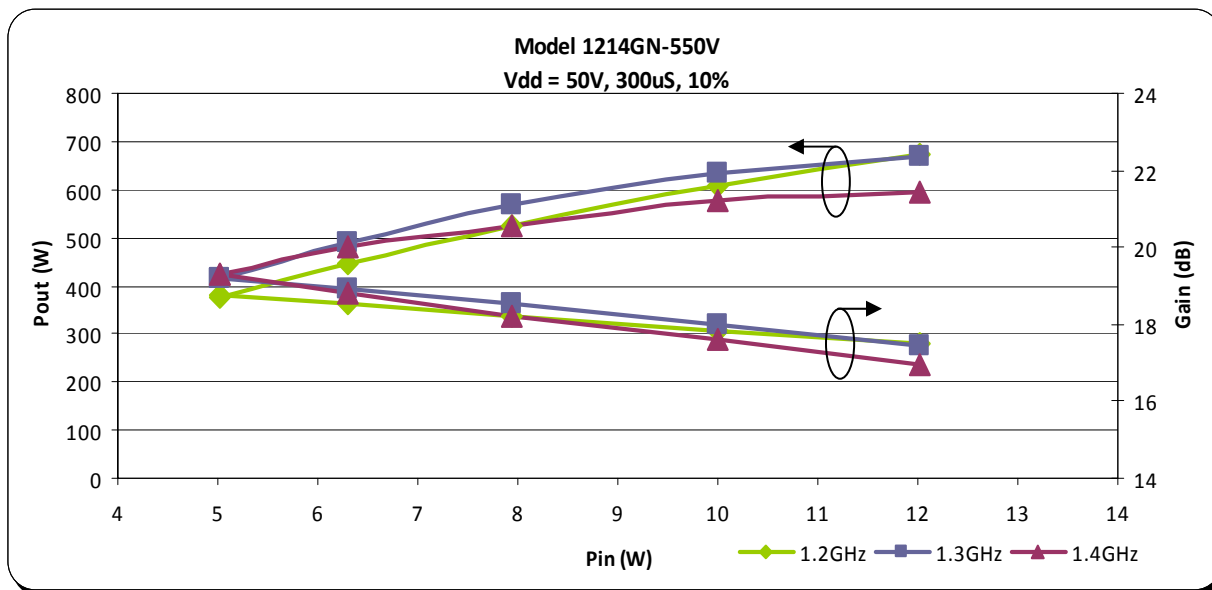
$I_{D(Off)}$	Drain leakage current	$V_{GS} = -8V, V_D = 150V$			64	mA
$I_{G(Off)}$	Gate leakage current	$V_{GS} = -8V, V_D = 0V$			20	mA
BV_{DSS}	Drain-source breakdown voltage	$V_{GS} = -8V, I_D = 64mA$	150			V

EXPORT CLASSIFICATION:EAR 99

Issue June 2013

Typical Performance Data

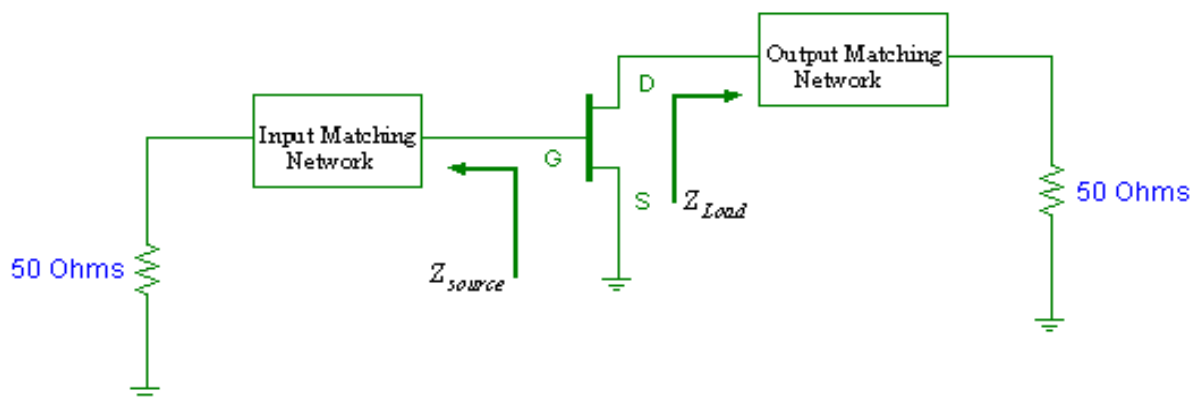
Freq(GH)	Pin (W)	Pout (W)	Id (A)	RL (dB)	Eff(%)	G (dB)	Droop (dB)
1.2	12	673	2.46	-14.5	57%	17.48	0.4
1.3	12	668	2.25	-9.0	61%	17.45	0.3
1.4	12	595	1.96	-12.5	63%	16.95	0.2



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Transistor Impedance Information



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

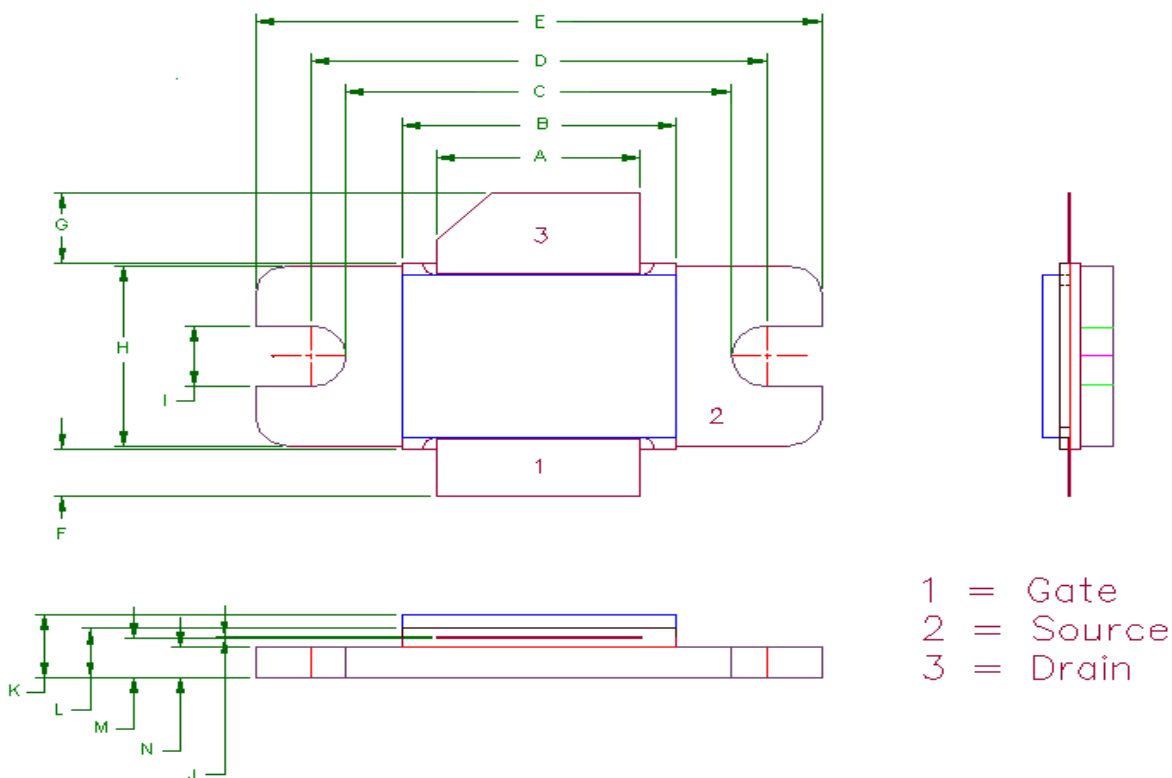
Impedance Data		
Freq (GHz)	Zs	ZI
1.2	0.956 - j1.866	1.702 - j1.943
1.3	0.931 - j1.218	1.720 - j1.663
1.4	0.933 - j0.589	1.659 - j1.437

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
03 / June 2013	-	Initial Preliminary Release

For the most current data, consult MICROSEMI's website: www.MICROSEMI.com
Specifications are subject to change, consult the RFIS factory at [\(408\) 986-8031](tel:4089868031) for the latest information