

1214GN-400LV

400 Watts - 50 Volts, 4.5ms, 30%
Broad Band 1200 - 1400 MHz

GENERAL DESCRIPTION

The 1214GN-400LV is an internally matched, COMMON SOURCE, class AB GaN on SiC HEMT transistor capable of providing over 16dB gain, 400 Watts of pulsed RF output power at 4.5ms pulse width, 30% duty cycle across the 1200 to 1400 MHz band. The transistor has internal pre-match for optimal performance and is hermetically sealed transistor with all gold metallization to provide highest performance, reliability, and ruggedness making it ideal for heavy pulsing L-band surveillance radar transmitter output stages.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 800 W

Maximum Voltage and Current

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

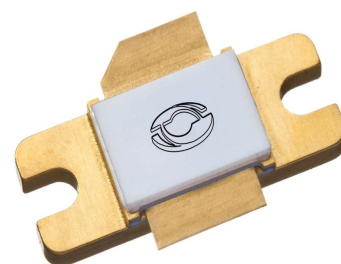
Gate-Source Voltage (V_{GS}) -8 to +0 V

Maximum Temperatures

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

Operating Junction Temperature +250 °C

CASE OUTLINE 55-KR Common Source



ELECTRICAL CHARACTERISTICS @ 25°C

Symbol	Characteristics	Test Conditions	Min	Typ	Max	Units
Pout	Output Power	Pout=400W, Freq=1200, 1300, 1400 MHz	400			W
Gp	Power Gain	Pout=400W, Freq=1200, 1300, 1400 MHz	16	16.8		dB
η_d	Drain Efficiency	Pout=400W, Freq=1200, 1300, 1400 MHz	60	68		%
Dr	Droop	Pout=400W, Freq=1200, 1300, 1400 MHz			0.6	dB
VSWR-T	Load Mismatch Tolerance	Pout=400W, Freq=1200 MHz			3:1	
Θ_{jc}	Thermal Resistance	Pulse Width=4.5mS, Duty=30%			0.3	°C/W

- Bias Condition: Vdd=+50V, Idq=200mA average current ($V_{GS} = -2.0 \sim -4.5V$) with constant gate Bias

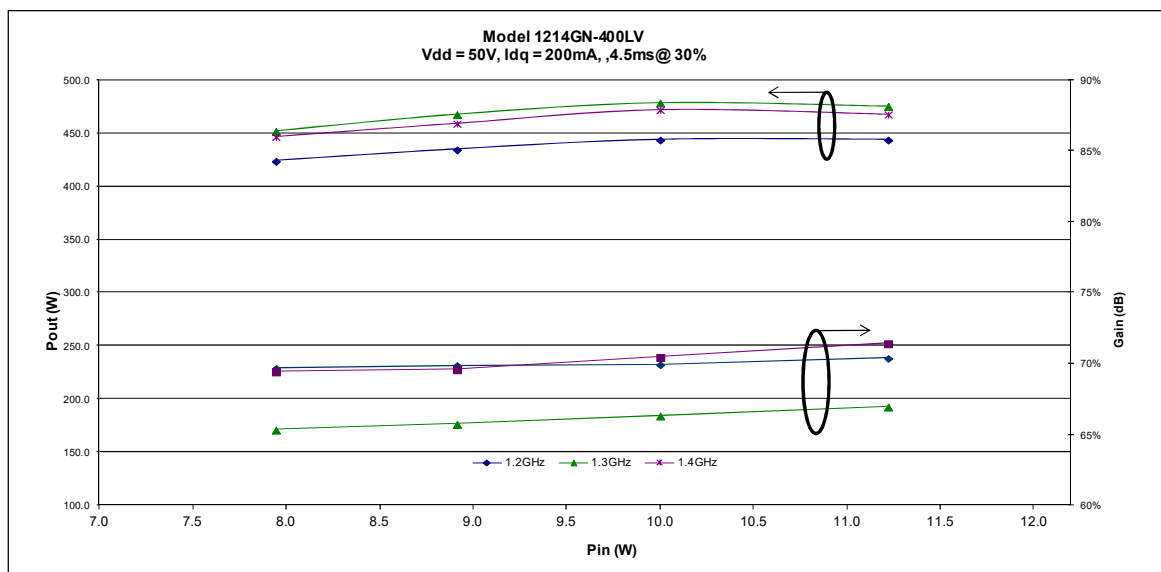
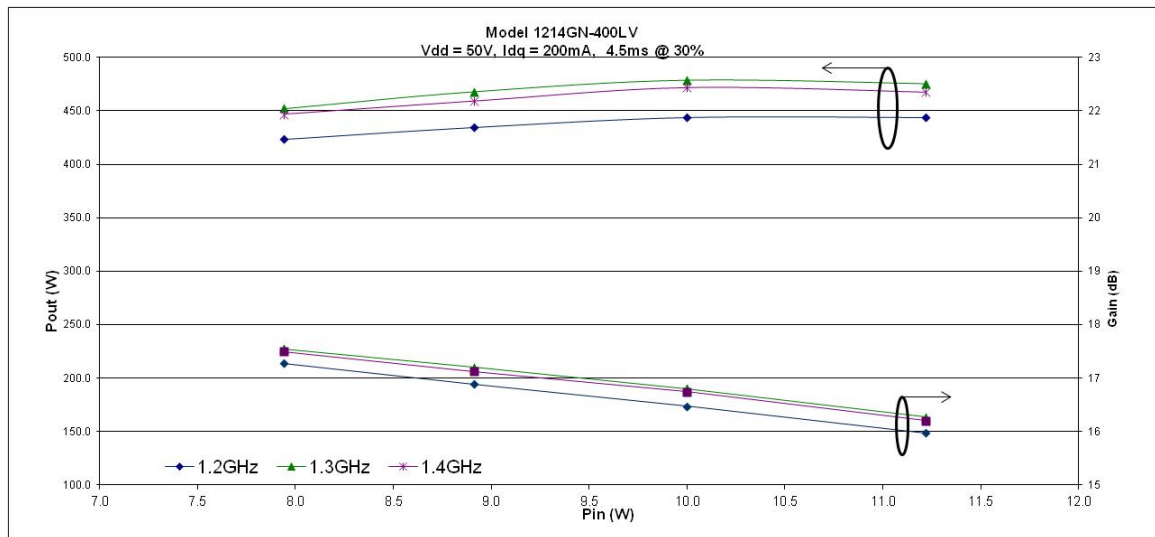
FUNCTIONAL CHARACTERISTICS @ 25°C

$I_{D(Off)}$	Drain leakage current	$V_{GS} = -8V, V_D = 50V$			16.8	mA
$I_{G(Off)}$	Gate leakage current	$V_{GS} = -8V, V_D = 0V$			2	mA
BV_{DSS}	Drain-source breakdown voltage	$V_{GS} = -8V, I_D = 28mA$	150			V

Export Classification: EAR -99

Typical Performance Data

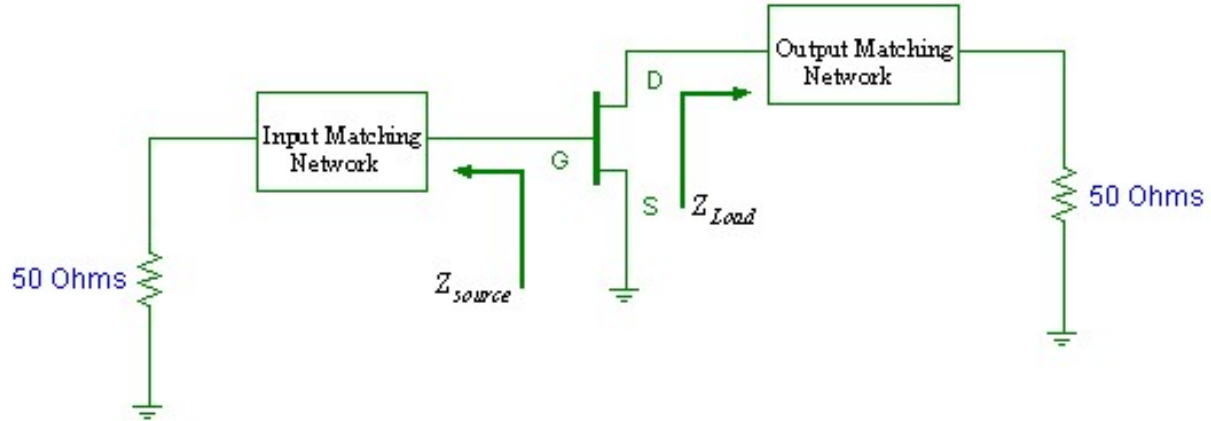
Freq(GH)	Pin (W)	Pout (W)	Id (A)	RL (dB)	Eff(%)	G (dB)	Droop (dB)
1.2	8.9	443	3.67	-8.1	72%	16.97	0.11
1.3	8.9	461	4.05	-19	68%	17.12	0.24
1.4	8.9	444	3.82	-7.8	68%	16.98	0.21



1214GN-400LV

400 Watts - 50 Volts, 4.5ms, 30%
Broad Band 1200 - 1400 MHz

Transistor Impedance Information

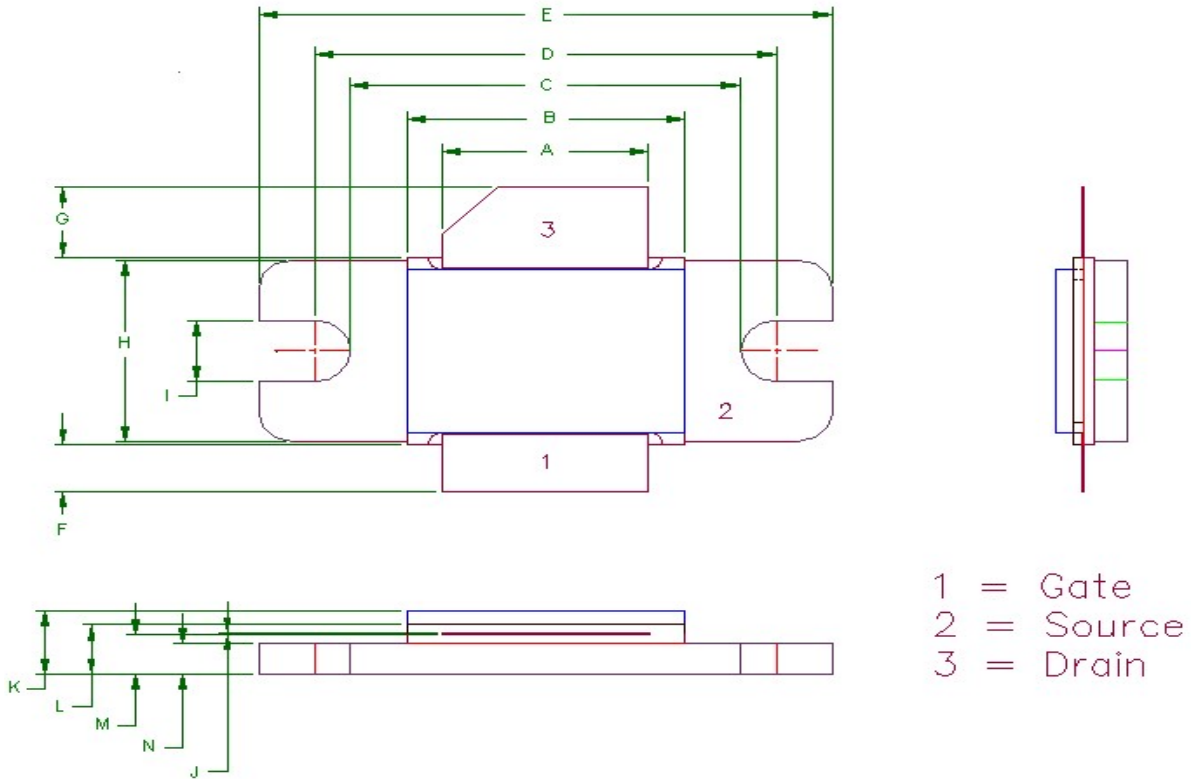


Note: Z_{in} is looking into the input circuit;
 Z_{Load} is looking into the output circuit.

Impedance Data		
Freq (GHz)	Zs	ZI
1.2	2.25-j1.89	0.36 - j0.19
1.3	2.15-j1.25	0.24 + j0.36
1.4	2.04-j0.61	0.18 + j0.9

Please call the representative for detailed circuit configuration.

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	86	2.18	116	2.946
G	136	3.45	166	4.22
H	385	9.78	387	9.83
I	130	3.30	132	3.35
J	003	.076	004	0.10
K	120	3.04	144	3.66
L	100	2.54	114	2.90
M	080	2.03	90	2.29
N	065	1.65	66	1.68



1214GN-350LV

350 Watts - 50 Volts, 3ms, 30%
Broad Band 1200 - 1400 MHz

The information contained in the document is PROPRIETARY AND CONFIDENTIAL information of Microsemi and cannot be copied, published, uploaded, posted, transmitted, distributed or disclosed or used without the express duly signed written consent of Microsemi. If the recipient of this document has entered into a disclosure agreement with Microsemi, then the terms of such Agreement will also apply. This document and the information contained herein may not be modified, by any person other than authorized personnel of Microsemi. No license under any patent, copyright, trade secret or other intellectual property right is granted to or conferred upon you by disclosure or delivery of the information, either expressly, by implication, inducement, estoppels or otherwise. Any license under such intellectual property rights must be approved by Microsemi in writing signed by an officer of Microsemi.

Microsemi reserves the right to change the configuration, functionality and performance of its products at anytime without any notice. This product has been subject to limited testing and should not be used in conjunction with life-support or other mission-critical equipment or applications. Microsemi assumes no liability whatsoever, and Microsemi disclaims any express or implied warranty, relating to sale and/or use of Microsemi products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. The product is subject to other terms and conditions which can be located on the Web at <http://www.microsemi.com/legal/tnc.asp>.

Revision History

Revision Level / Date	Para. Affected	Description
0.2/ April 9, 2014	-	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 for the latest information