

2731GN-280LV

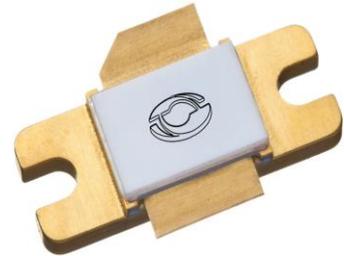
280 Watts • 50 Volts • 200 μ s, 20%
S-Band Radar 2700 - 3100 MHz

GENERAL DESCRIPTION

The 2731GN-280LV is an internally matched, COMMON SOURCE, class AB, GaN on SiC HEMT transistor capable of providing over 14.77 dB gain, 280 Watts of pulsed RF output power at 200 μ s pulse width, 20% duty factor across the 2700 to 3100 MHz band. This hermetically sealed transistor is designed for S-Band Radar applications. It utilizes gold metallization and eutectic attach to provide highest reliability and superior ruggedness.

Market Application – 2731GN-280LV is designed for S-Band Pulsed Radar

CASE OUTLINE 55-QP Common Source



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 660 W

Maximum Voltage and Current

Drain-Source Voltage (V_{DSS}) 125 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	Pin = 10W, Freq=2700,2900,3100 MHz	280	335		W
Gp	Power Gain	Pin = 10W, Freq=2700,2900,3100 MHz	14.77			dB
η_d	Drain Efficiency	Pin = 10W, Freq=2700,2900,3100 MHz	50	58		%
Dr	Droop	Pin = 10W, Freq=2700,2900,3100 MHz		.2	.5	dB
θ_{jc}	Thermal Resistance	Pulse Width=200 μ s, Duty=20%			.370	°C/W

- Bias Condition: Vdd=+50V, Idq=100mA constant current (V_{GS} = -2.0 ~ -4.5V typical)

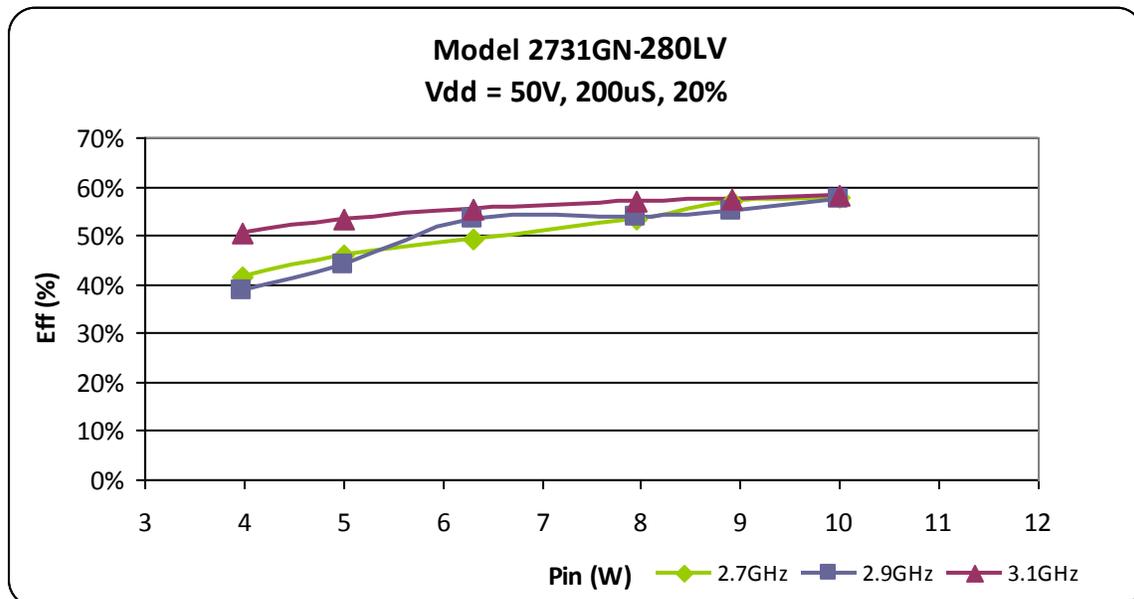
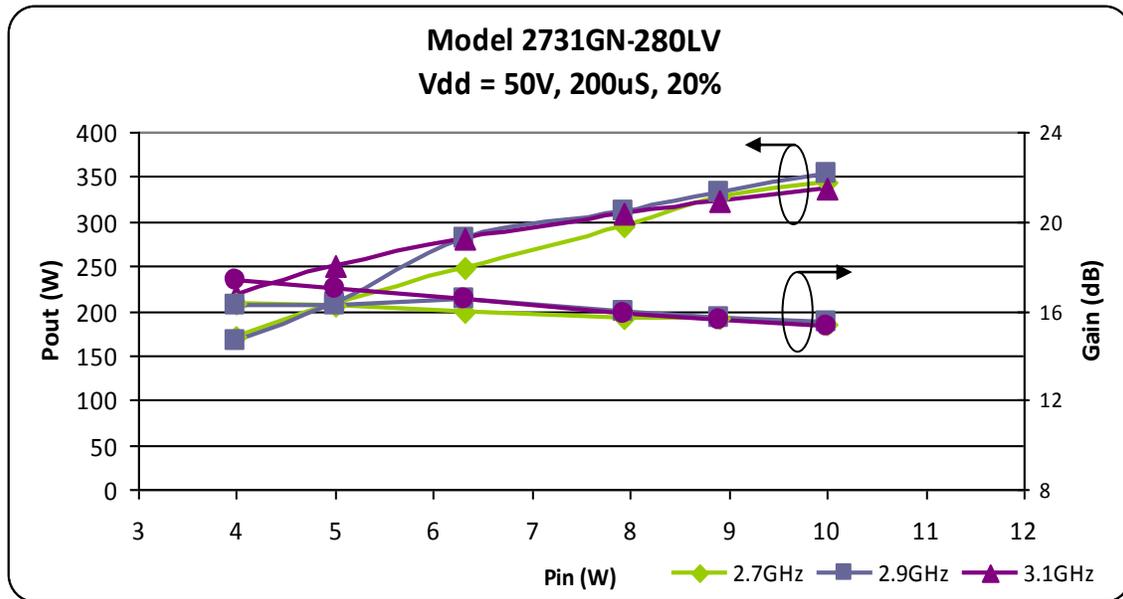
FUNCTIONAL CHARACTERISTICS @ 25°C

$I_{D(Off)}$	Drain leakage current	$V_{GS} = -8V, V_D = 125V$			48	mA
$I_{G(Off)}$	Gate leakage current	$V_{GS} = -8V, V_D = 0V$			8	mA

Export Classification: EAR-99

TYPICAL BROAD BAND PERFORMANCE DATA

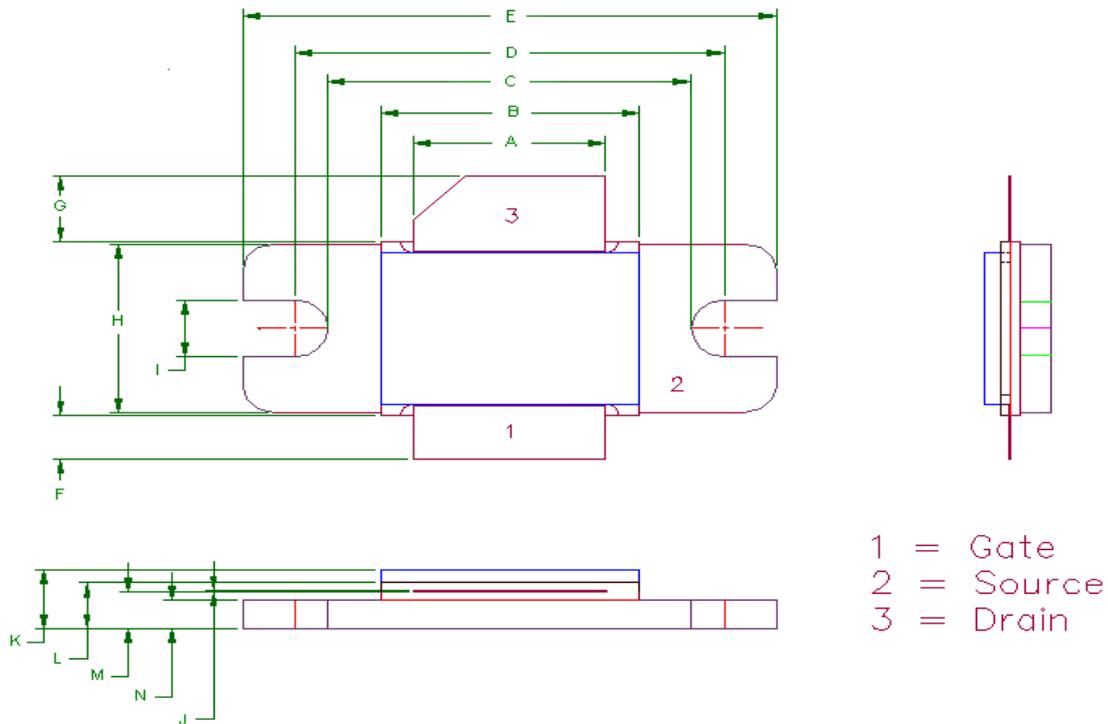
Frequency	Pin (W)	Pout (W)	Id (A)	RL (dB)	Nd (%)	G (dB)	Drop (dB)
2700 MHz	10	342	2.41	-11.6	58	15.4	.15
2900 MHz	10	352	2.50	-18.0	57	15.5	0.2
3100 MHz	10	335	2.35	-9.3	58	15.3	0.2



2731GN-280LV

280 Watts • 50 Volts • 200 μ s, 20%
S-Band Radar 2700 - 3100 MHz

55-QP 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



2731GN-300LV

280 Watts • 50 Volts • 200 μ s, 20%
S-Band Radar 2700 - 3100 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
0.1 / 6 January 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](tel:408-986-8031) for the latest information