



2729GN-270V

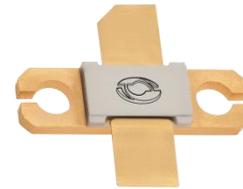
270 Watts • 50 Volts • 200 μ s, 10%
S-Band Radar 2700 - 2900 MHz

GENERAL DESCRIPTION

The 2729GN-270V is an internally matched, COMMON SOURCE, class AB, GaN on SiC HEMT transistor capable of providing over 15.3 dB gain, 270 Watts of pulsed RF output power at 200 μ s pulse width, 10% duty factor across the 2700 to 2900 MHz band. This hermetically sealed transistor utilizes gold metallization and eutectic attach to provide highest reliability and superior ruggedness.

Market Application – High Power S-Band Pulsed AESA Radar

CASE OUTLINE 55-QP Common Source



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 517 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 ¹	Min	Typ	Max	Units
P _{out}	Output Power	P _{in} =7.9W Freq=2700,2800,2900MHz	270	290		W
G _p	Power Gain	P _{in} =7.9W Freq=2700,2800,2900MHz	15.3	15.6		dB
η_D	Drain Efficiency	P _{in} =7.9W Freq=2700,2800,2900MHz	55	68		%
D _r	Droop	P _{in} =7.9W Freq=2700,2800,2900MHz		0.15	0.5	dB
V _{SWR-T}	Load Mismatch Tolerance	P _{in} =7.9W Freq=2700 MHz			3:1	
Θ_{jc}	Thermal Resistance	Pulse Width=200 μ s, Duty=10%			.50	°C/W

¹ Bias Condition: V_{dd}=+50V, I_{dq}=60mA constant current (V_{gs}= -2.0 ~ -4.5V typical)

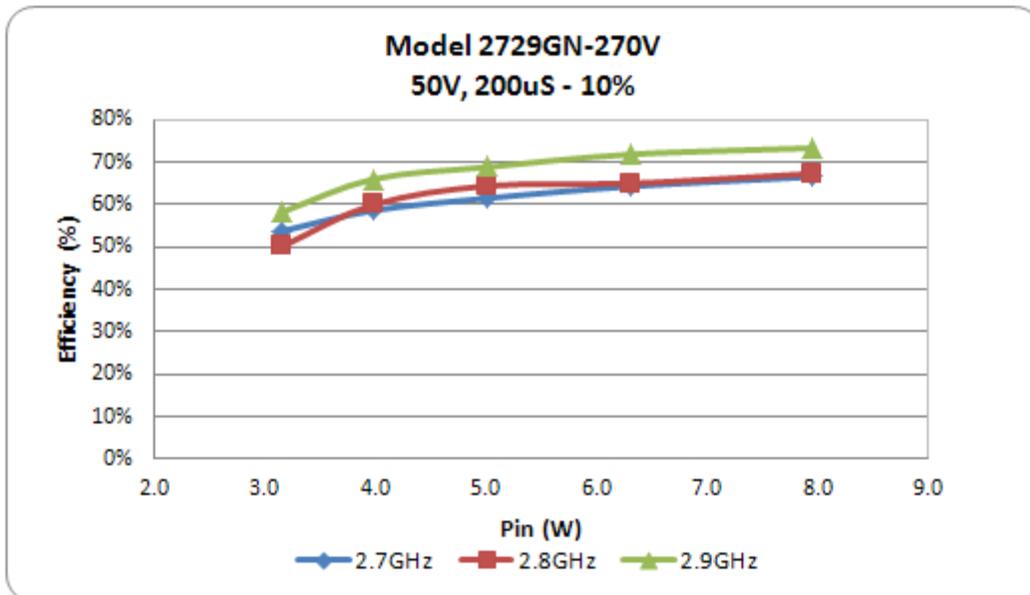
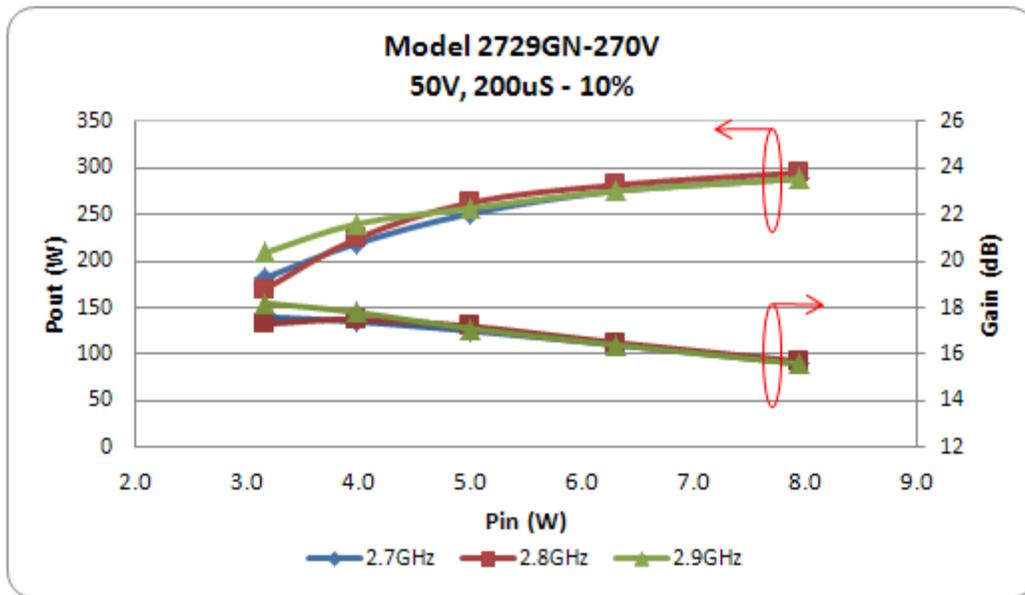
FUNCTIONAL CHARACTERISTICS @ 25°C

I _{D(off)}	Drain leakage current	V _{gs} = -8V, V _D = 50V			24	mA
I _{G(off)}	Gate leakage current	V _{gs} = -8V, V _D = 0V			8	mA
BV _{DSS}	Drain-Source breakdown voltage	V _{gs} = -8V, I _D = 24mA	125			V

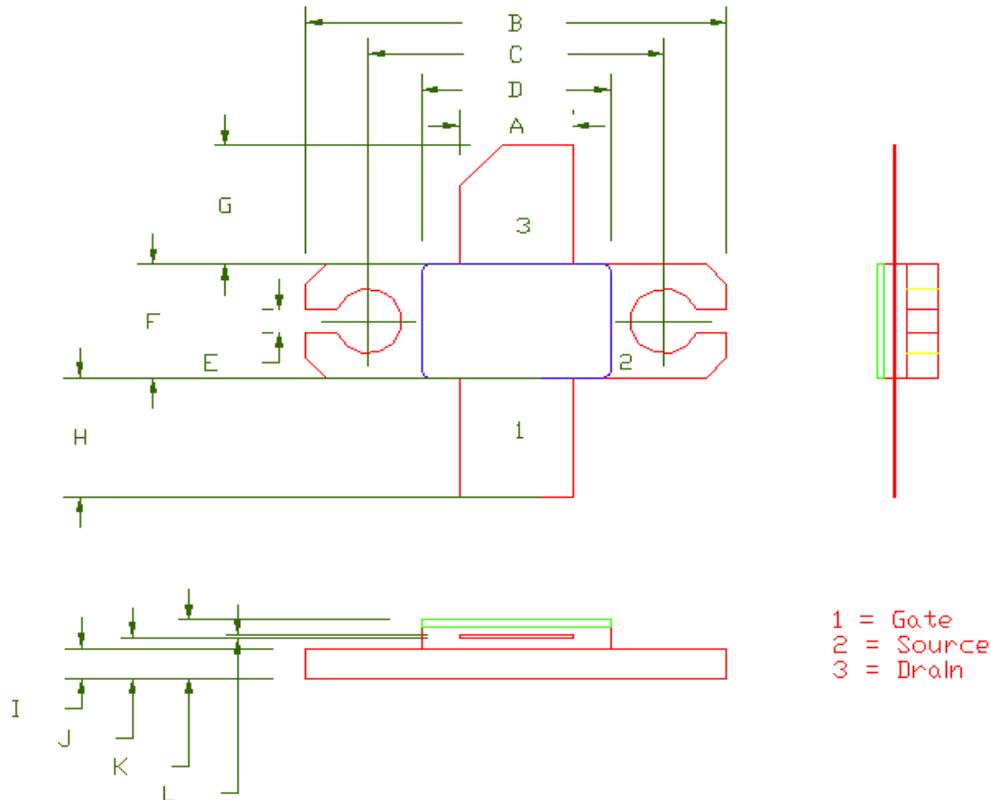
For the most current data, consult MICROSEMI's website: www.MICROSEMI.com
Specifications are subject to change, consult the RFIS factory at (408) 986-8031 for the latest information

TYPICAL BROAD BAND PERFORMANCE DATA

Frequency	Pin (W)	Pout (W)	Id (mA)	RL (dB)	η_D (%)	Gain (dB)	Droop (dB)
2700 MHz	7.9	288	920	-7.5	67	15.6	0.15
2800 MHz	7.9	295	930	-10.4	67	15.7	0.15
2900 MHz	7.9	288	840	-7.4	72	15.6	0.15



55-QP PACKAGE DIMENSION



Dimension	Min (mil)	Min (mm)	Max (mil)	Max (mm)
A	213	5.41	217	5.51
B	798	20.26	802	20.37
C	560	14.22	564	14.32
D	258	6.55	362	9.19
E	43	1.09	47	1.19
F	226	5.74	230	5.84
G	235	5.96	239	6.07
H	235	5.96	239	6.07
I	60	1.52	62	1.57
J	81	2.06	82	2.08
K	116	2.94	118	2.99
L	4	0.102	6	0.152



2729GN-270V

270 Watts • 50 Volts • 200 μ s, 10%
S-Band Radar 2700 - 2900 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	Date	Affected Section(s)	Description
1.0	10-02-14	-	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