



2729GN-270V

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

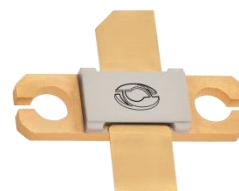
GENERAL DESCRIPTION

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 is 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_{DS}) 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	Pin=7.9W Freq=2700,2800,2900MHz	270	290		W
G _p	Power Gain	Pin=7.9W Freq=2700,2800,2900MHz	15.3	15.6		dB
η_D	Drain Efficiency	Pin=7.9W Freq=2700,2800,2900MHz	55	68		%
Dr	Droop	Pin=7.9W Freq=2700,2800,2900MHz		0.15	0.5	dB
VSWR-T	Load Mismatch Tolerance	Pin=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

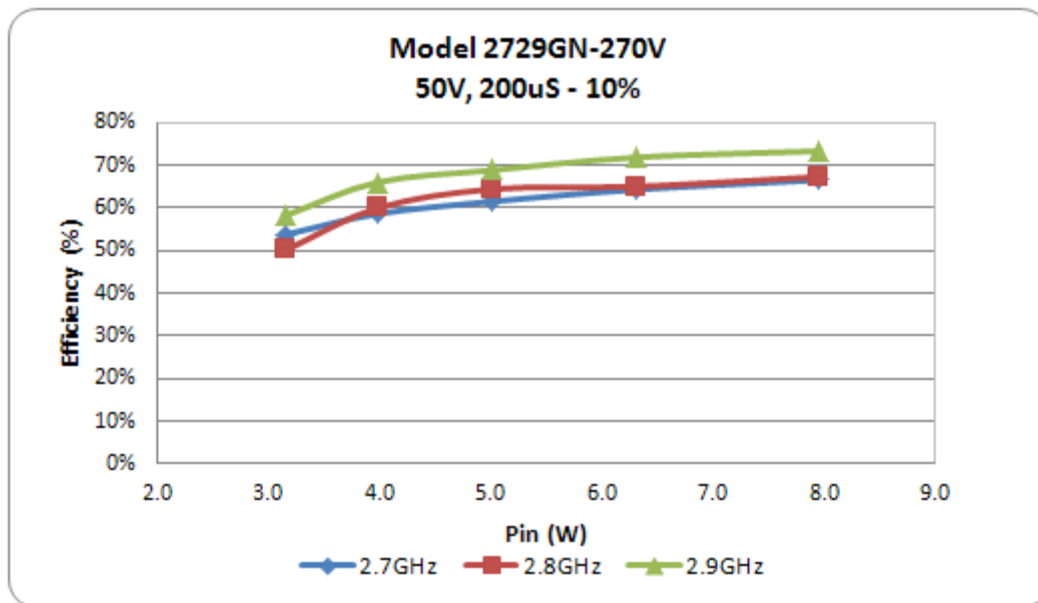
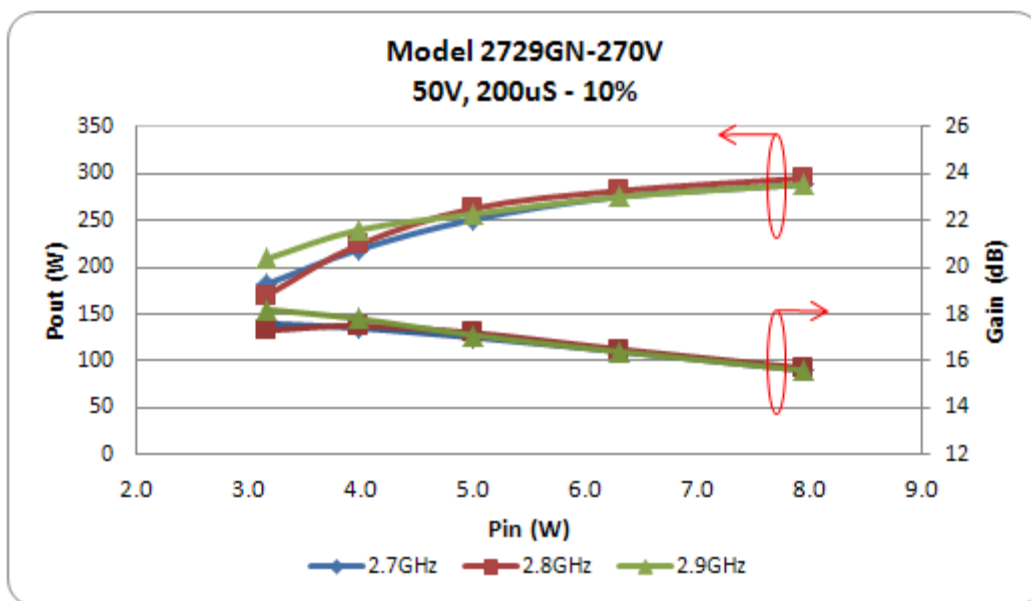


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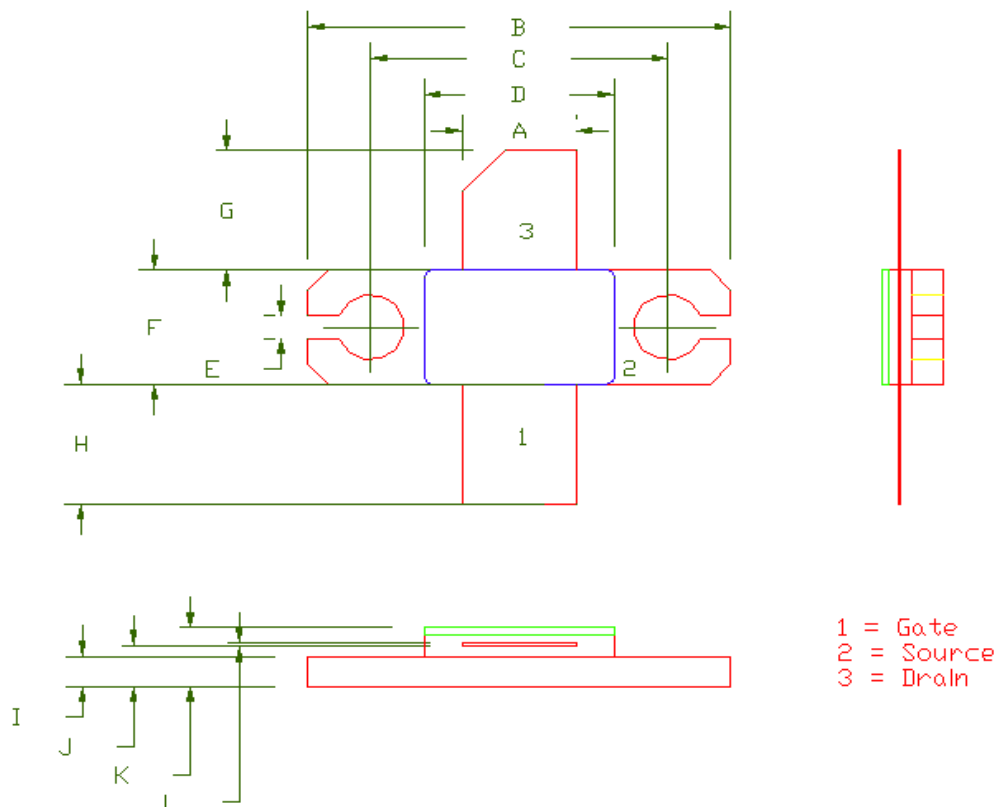
TYPICAL BROAD BAND PERFORMANCE DATA

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



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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



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Revision History

Revision	Date	Affected Section(s)	Description
1.0	10-02-14	-	Initial Preliminary Release

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