



2729GN-150V

150 Watts • 50 Volts • 100 μ s, 10%
S-Band Radar 2700 - 2900 MHz

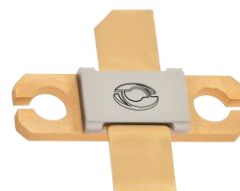
GENERAL DESCRIPTION

The 2729GN-150V is an internally matched, COMMON SOURCE, class AB, GaN on SiC HEMT transistor capable of providing over 15.7dB gain, 150 Watts of pulsed RF output power across the 2700MHz to 2900MHz band under 100 μ s pulse width and 10% duty cycle pulsing. This hermetically sealed transistor utilizes gold metallization and eutectic attach to provide highest reliability and superior ruggedness.

Market Application – High Power S-Band Pulsed Radar

CASE OUTLINE

55-QP
Common Source



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 287 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	P _{in} =4W, Freq = 2700, 2800, 2900MHz	150	168		W
G _p	Power Gain	P _{in} =4W, Freq = 2700, 2800, 2900MHz	15.7	16.2		dB
η_D	Drain Efficiency	P _{in} =4W, Freq = 2700, 2800, 2900MHz	55	69		%
Dr	Droop	P _{in} =4W, Freq = 2700, 2800, 2900MHz		0.15	0.5	dB
V _{SWR-T}	Load Mismatch Tolerance	P _{in} =4W, Freq = 2700 MHz			5:1	
Θ_{jc}	Thermal Resistance	Pulse Width = 100 μ s, Duty = 10%			.91	°C/W

¹ Bias Condition: V_{dd}=+50V, I_{dq}=30mA 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			12	mA
I _{G(Off)}	Gate leakage current	V _{GS} = -8V, V _D = 0V			4	mA
BV _{DSS}	Drain-Source breakdown voltage	V _{GS} = -8V, I _D = 12mA	125			V

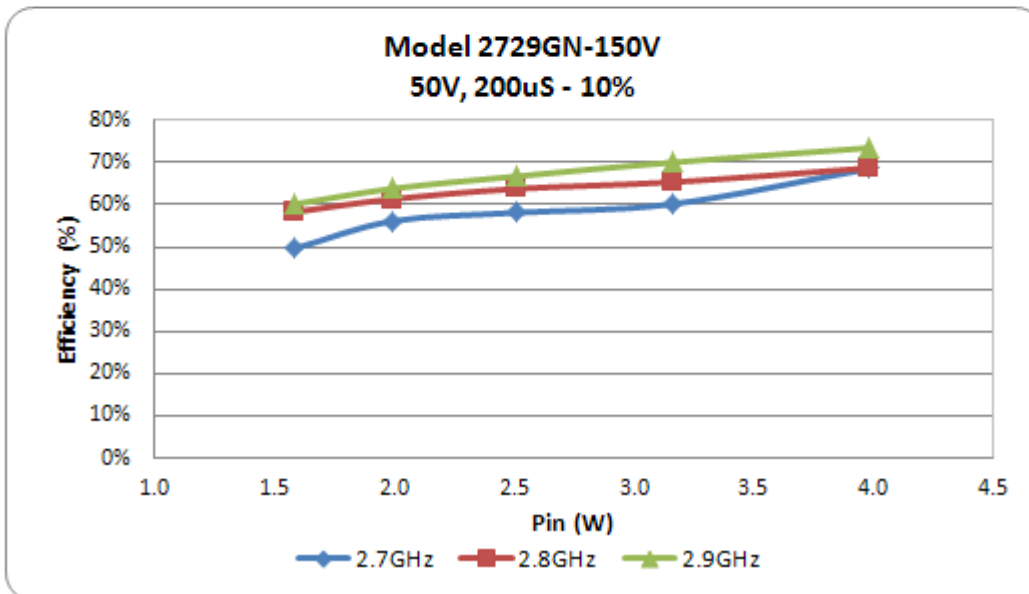
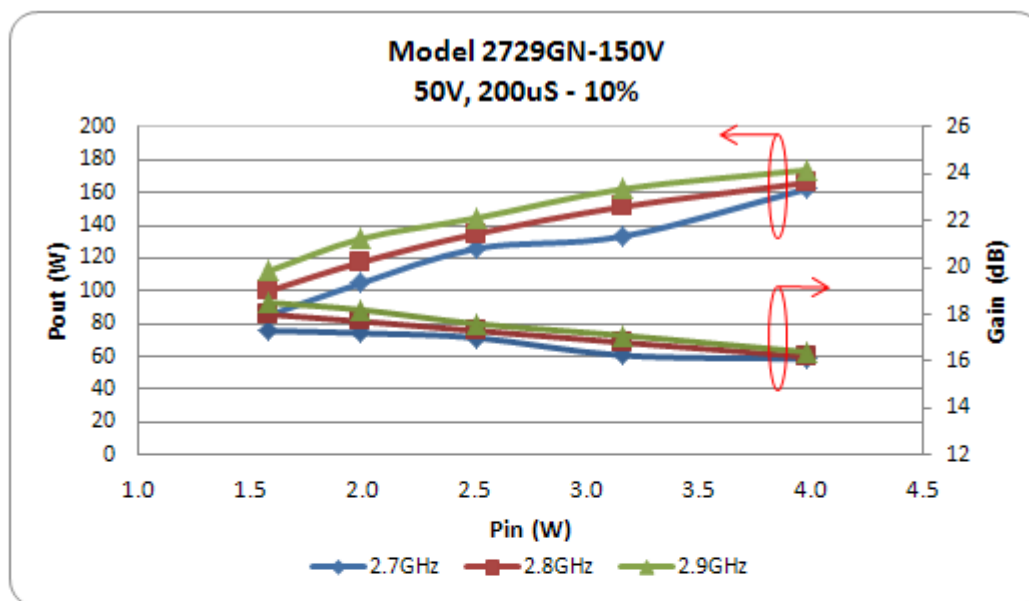


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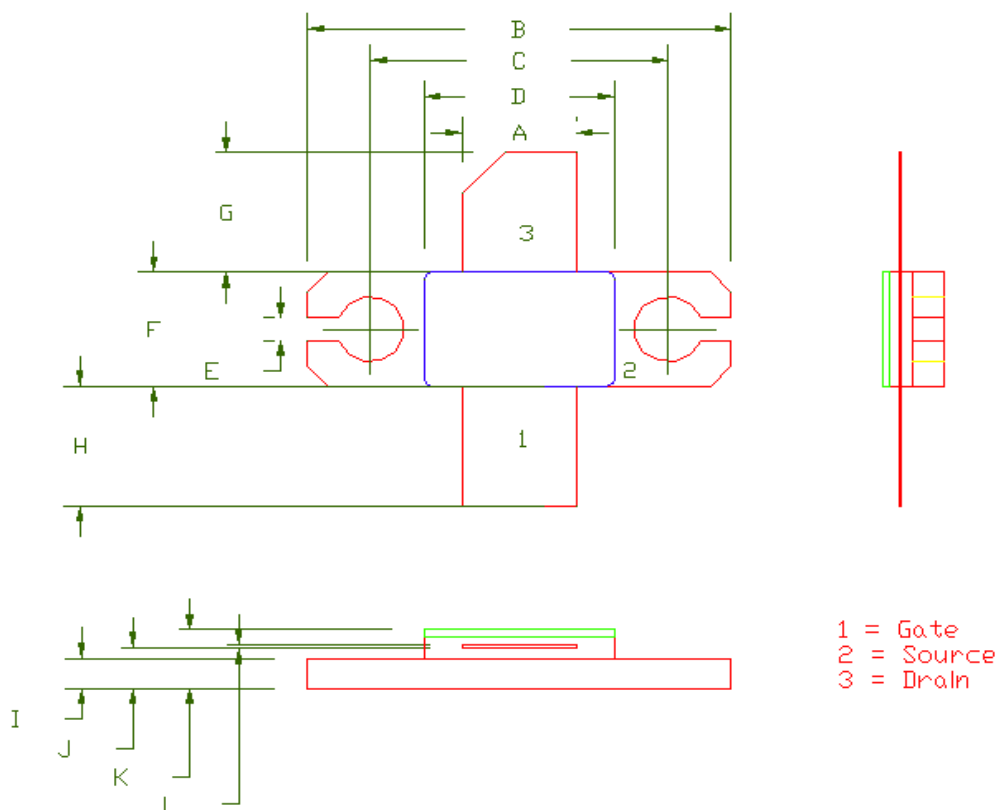
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TYPICAL BROAD BAND PERFORMANCE DATA

Frequency	Pin (W)	Pout (W)	Id (A)	RL (dB)	η_D (%)	Gain (dB)	Droop (dB)
2700 MHz	4	162	.50	-8.0	69	16.1	0.15
2800 MHz	4	166	.51	-9.5	69	16.2	0.15
2900 MHz	4	174	.50	-11	71	16.4	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



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Revision History

Revision	Date	Affected Section(s)	Description
2.1	5-22-14	-	Initial Preliminary Release