



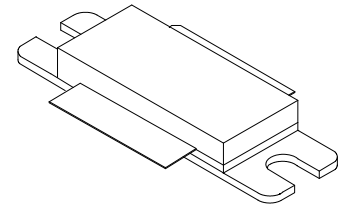
2731GN-400V

400 Watts - 50 Volts, 200 μ s, 10%
S-Band Radar 2700 - 3100 MHz

GENERAL DESCRIPTION

For S-band pulsed radar applications, with typically over 14dB gain, the 2731GN-400V is an internally matched, common source, class AB, GaN on SiC HEMT transistor capable of delivering more than 400 Watts of pulsed RF output power under 200 μ s, 10% pulsing across the 2700 to 3100 MHz band. Proprietary state of the art GaN on SiC semiconductor technology, internal pre-matching, hermetic seal, all gold metallization, and eutectic attachment result in a device that delivers the highest reliability and excellent ruggedness while making the 2731GN-400V the best choice to gain superior performance in the most demanding system designs.

CASE OUTLINE 55-Q03 Common Source



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 900 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	Pout=400W Freq=2700,2900,3100 MHz	400	425		W
Gp	Power Gain	Pout=400W Freq=2700,2900,3100 MHz	14	15		dB
η_d	Drain Efficiency	Pout=400W Freq=2700,2900,3100 MHz	50	58		%
Dr	Droop	Pout=400W Freq=2700,2900,3100 MHz			0.5	dB
VSWR-T	Load Mismatch Tolerance	Pout=400W, Freq= 2900MHz			3:1	
Θ_{jc}	Thermal Resistance	Pulse Width=200 μ s, Duty=10%			0.28	°C/W

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

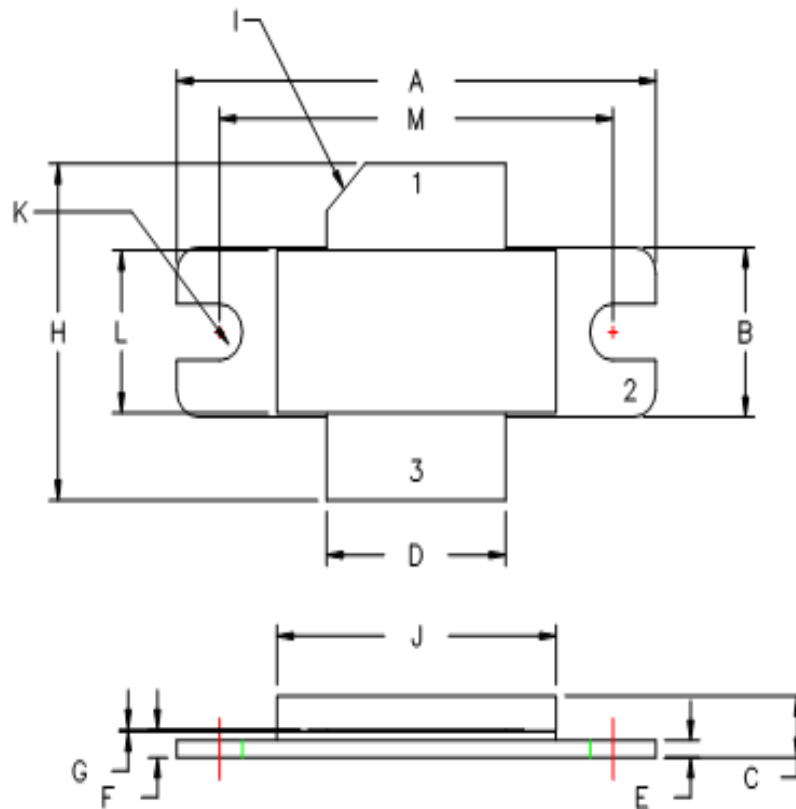
FUNCTIONAL CHARACTERISTICS @ 25°C

$I_{D(Off)}$	Drain leakage current	$V_{GS} = -8V, V_D = 125V$			64	mA
$I_{G(Off)}$	Gate leakage current	$V_{GS} = -8V, V_D = 0V$			20	mA
BV_{DSS}	Drain-source breakdown voltage	$V_{GS} = -8V, I_D = 64mA$	125			V

Export Classification: EAR-99

Standard product specifications are subject to change without notice. For most current data and information consult:
www.microsemi.com or contact RF Integrated Solutions at GaN@microsemi.com or call (408) 986-8031.

55-Q03 PACKAGE DIMENSION



DIM	MILLIMETER	TOL	INCHES	TOL
A	34.03	.25	1.340	.010
B	9.78	.25	.385	.010
C	3.55	.19	.140	.007
D	12.70	.13	.500	.005
E	1.02	.13	.040	.005
F	1.65	.13	.065	.005
G	0.13	.03	.005	.001
H	19.43	.76	.765	.030
I	45°	5°	45°	5°
J	19.81	.25	.780	.030
K	3.30 DIA	.13	.130 DIA	.005
L	9.40	.13	.370	.005
M	27.94	MAX	1.100	MAX

PIN 1 = DRAIN
PIN 2 = SOURCE
PIN 3 = GATE



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Revision History

Revision Level / Date	Details
04 / February 2014	Initial Preliminary Release

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