



2735GN – 100M

100 Watts - 60 Volts, 300 μ s, 10%
2700 - 3500 MHz

GENERAL DESCRIPTION

The 2735GN-100 is an internally matched, COMMON SOURCE, class AB GaN on SiC transistor capable of providing 11dB gain, 100 Watts of pulsed RF output power at 300 μ s pulse width, 10% duty factor across the 2700 to 3500 MHz band. The transistor has internal pre-match for optimal performance. This hermetically sealed transistor is specifically designed for general purpose driver or S-Band Radar applications. It utilizes gold metallization and eutectic attach to provide highest reliability and superior ruggedness.

CASE OUTLINE

55-QP
Common Source

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 200 W

Maximum Voltage and Current

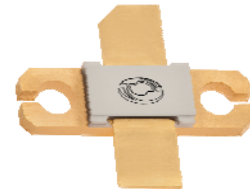
Drain-Source Voltage (V_{DSS}) 150 V

Gate-Source Voltage (V_{GS}) -8 to +0 V

Maximum Temperatures

Storage Temperature (T_{STG}) -55 to +125 °C

Operating Junction Temperature +200 °C



ELECTRICAL CHARACTERISTICS @ 25°C

Symbol	Characteristics	Test Conditions	Min	Typ	Max	Units
Pout	Output Power	Pin=8W, Freq=2.7, 3.1, 3.5 GHz	100	110		W
Gp	Power Gain	Pin=8W, Freq=2.7, 3.1, 3.5 GHz	11	11.4		dB
η_d	Drain Efficiency	Pin=8W, Freq=2.7, 3.1, 3.5 GHz	40	48		%
R/L	Input Return Loss	Pin=8W, Freq=2.7, 3.1, 3.5 GHz	-7			dB
VSWR-T	Load Mismatch Tolerance	Pout=100W, Freq=2.7 GHz			5:1	
Θ_{jc}	Thermal Resistance	Pulse Width=300 μ s, Duty=10%			1.1	°C/W

- **Bias Condition: $V_{DD}=+60V$, $I_{DQ}=250mA$ peak current ($V_{GS}=-2.0 \sim -4.5V$ typical)**

FUNCTIONAL CHARACTERISTICS @ 25°C

$I_{D(OM)}$	Drain leakage current	$V_{GS} = -8V$, $V_D = 60V$			2.5	mA
$I_{G(OM)}$	Gate leakage current	$V_{GS} = -8V$, $V_D = 0V$			2	mA
BV_{DSS}	Drain-source breakdown voltage	$V_{GS} = -8V$, $I_D = 3mA$	250			V

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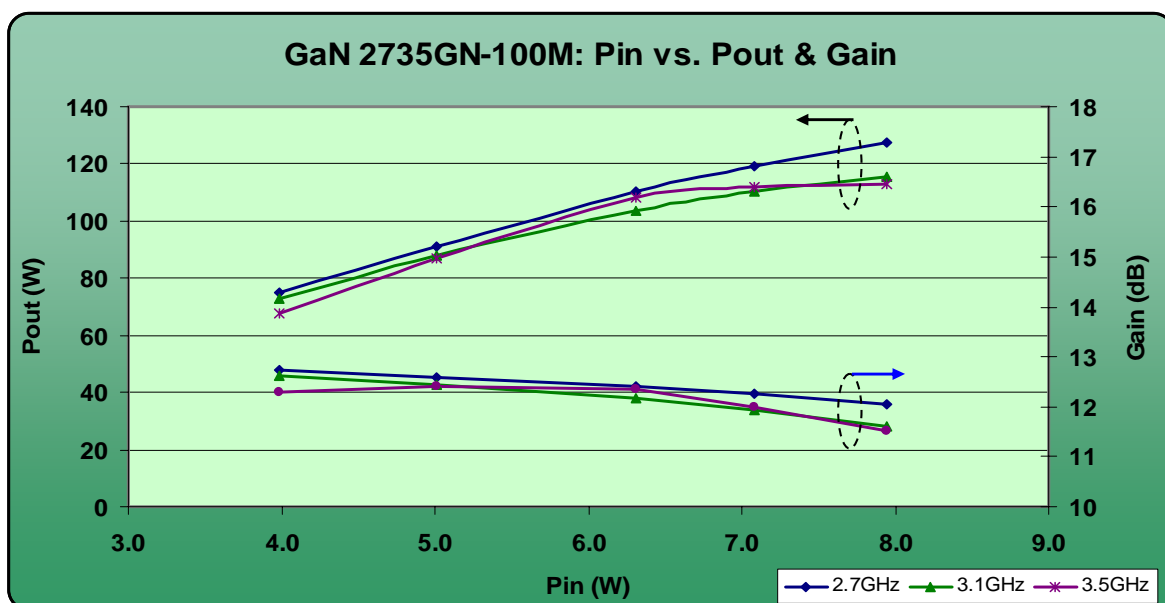
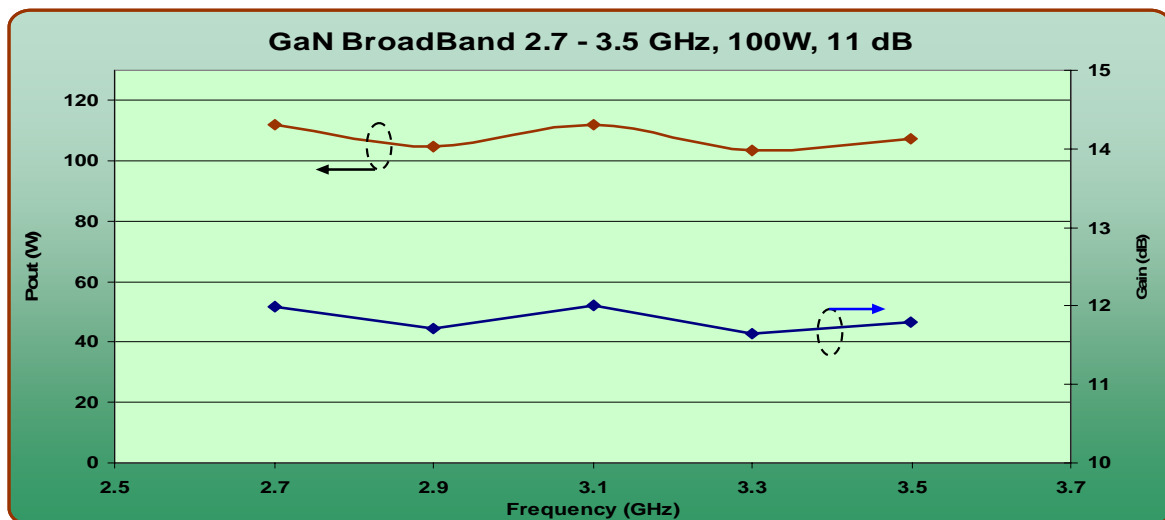


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Typical Performance Data:

Frequency	Pin (W)	Pout (W)	Id (A)	RL (dB)	Nd (%)	G (dB)
2700 MHz	8	124	0.43	-7	48	12.0
2900 MHz	8	115	0.43	-7	45	11.6
3100 MHz	8	115	0.40	-8	48	11.6
3300 MHz	8	121	0.40	-12	51	11.8
3500 MHz	8	123	0.40	-13	47	11.5



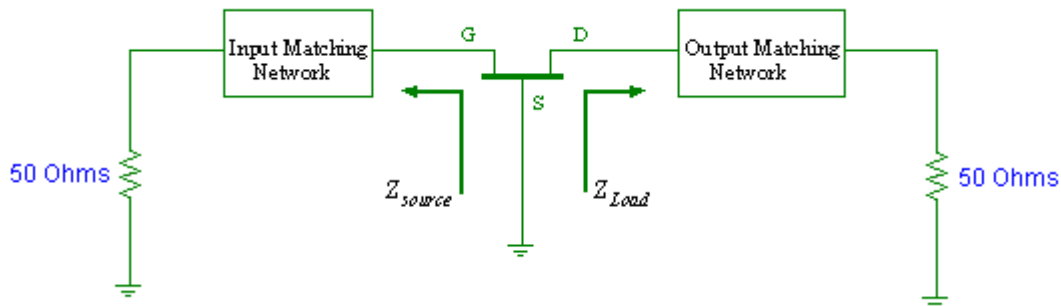


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Transistor Impedance Information

Impedance Data		
Freq (GHz)	Zs	ZI
2.7	6.75 – j7.95	8.49 – j4.21
2.9	6.46 – j7.34	8.40 – j5.68
3.1	6.20 – j6.78	7.20 – j6.89
3.3	6.00 – j6.24	5.49 – j7.20
3.5	5.83 – j5.72	3.98 – j3.98



Note: Z_{in} is looking into the input circuit;
 Z_{Load} is looking into the output circuit.

Test Circuit Layout Available Upon Request

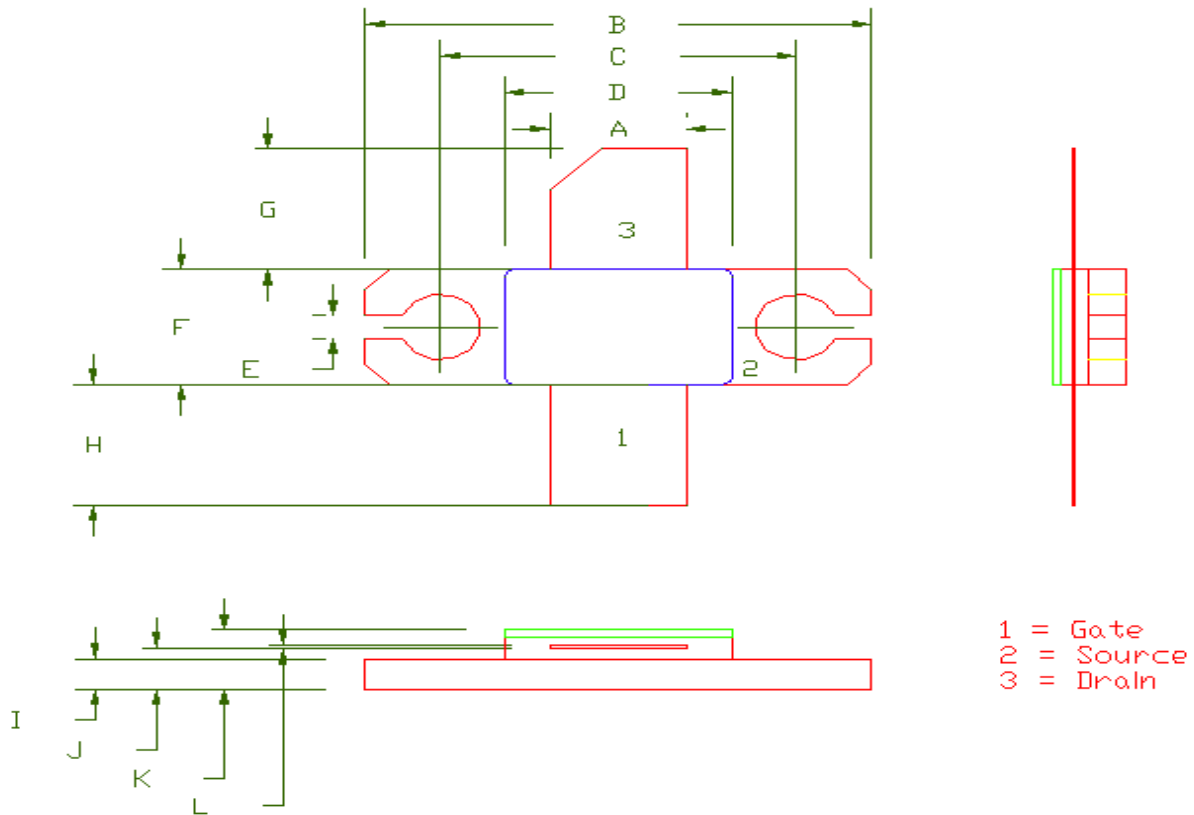
Please send your request to GaN@Microsemi.com



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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	.102	6	.152