Microsemi
POWER PRODUCTS GROUP

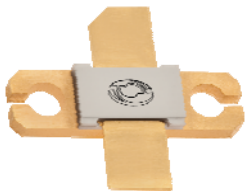
2735GN – 35M

35 Watts - 60 Volts, 300 µs, 10%
2700 - 3500 MHz

GENERAL DESCRIPTION

The 2735GN-35M is an internally matched, COMMON SOURCE, class AB GaN on SiC transistor capable of providing 11dB gain, 35 Watts of pulsed RF output power at 300µs 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 70 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=2W, Freq=2.7, 3.1, 3.5 GHz	35	45		W
Gp	Power Gain	Pin=2W, Freq=2.7, 3.1, 3.5 GHz	12.4	13.5		dB
ηd	Drain Efficiency	Pin=2W, Freq=2.7, 3.1, 3.5 GHz	40	50		%
R/L	Input Return Loss	Pin=2W, Freq=2.7, 3.1, 3.5 GHz	-7			dB
VSWR-T	Load Mismatch Tolerance	Pin=2W, Freq=2.7 GHz			5:1	
Θjc	Thermal Resistance	Pulse Width=300uS, Duty=10%			2.4	°C/W

- **Bias Condition: Vdd=+60V, Idq=150mA peak current (Vgs= -2.0 ~ -4.5V typical)**

FUNCTIONAL CHARACTERISTICS @ 25°C

$I_{D(Off)}$	Drain leakage current	V_{gS} = -8V, V_D = 60V			1	mA
$I_{G(Off)}$	Gate leakage current	V_{gS} = -8V, V_D = 0V			1	mA
BV_{DSS}	Drain-source breakdown voltage	V_{gs} =-8V, I_D = 1mA	250			V

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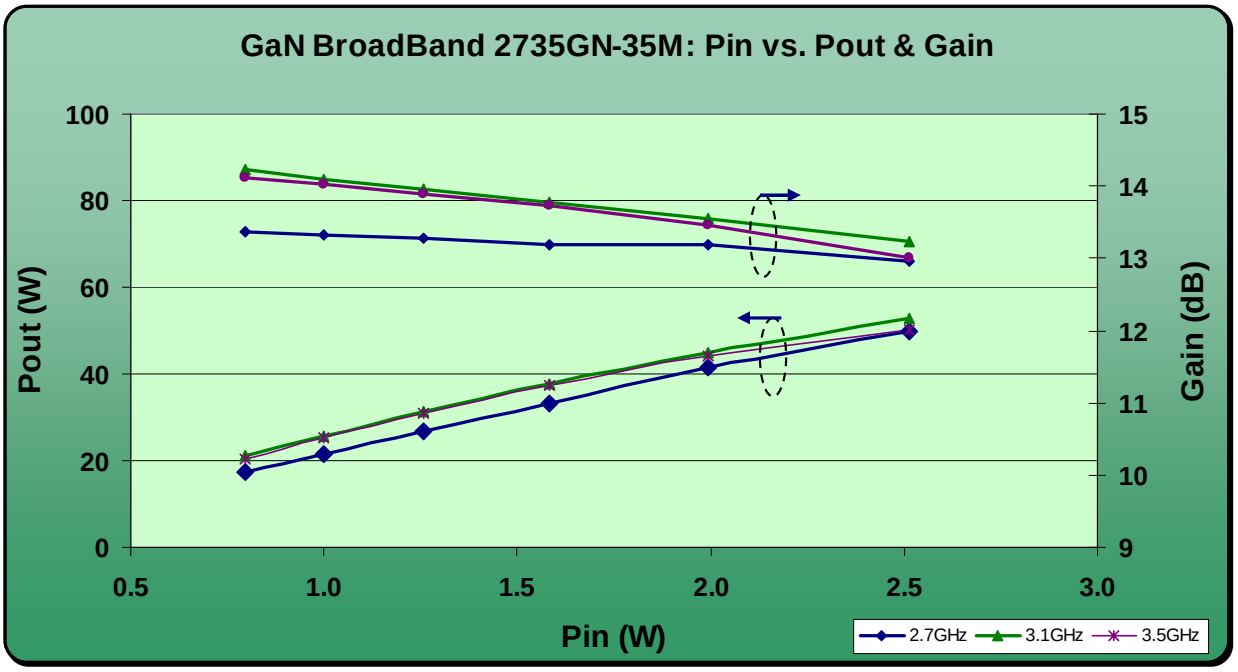
Typical Performance Data:

Frequency	Pin (W)	Pout (W)	Id (A)	RL (dB)	Nd (%)	G (dB)
2700 MHz	2	42	0.16	- 9	45	13.2
2900 MHz	2	51	0.15	- 9	56	14.1
3100 MHz	2	45	0.15	- 10	51	13.5
3300 MHz	2	48	0.14	- 10	56	13.8
3500 MHz	2	44	0.14	- 12	51	13.5



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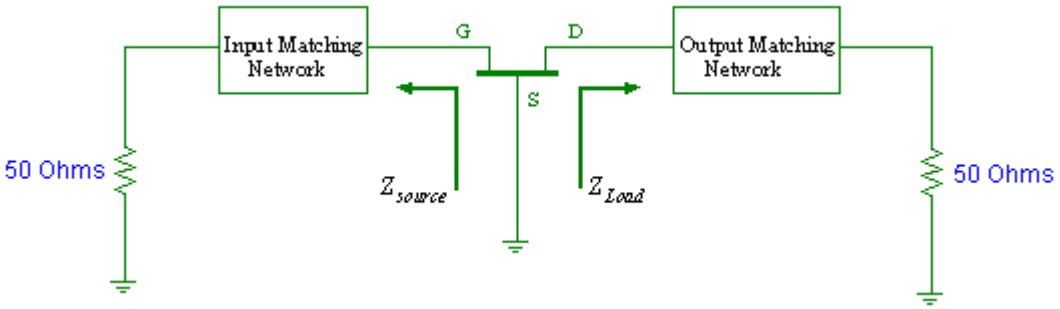
Transistor Impedance Information

Impedance Data		
Freq (GHz)	**Zs**	**Zl**
2.7	11.89 – j12.16	6.23 + j.40
2.9	11.40 – j11.88	6.48 + j.89
3.1	10.88 – j11.66	6.78 + j1.4
3.3	10.34 – j11.50	7.12 + j1.8
3.5	9.74 – j11.34	7.52 + j2.2



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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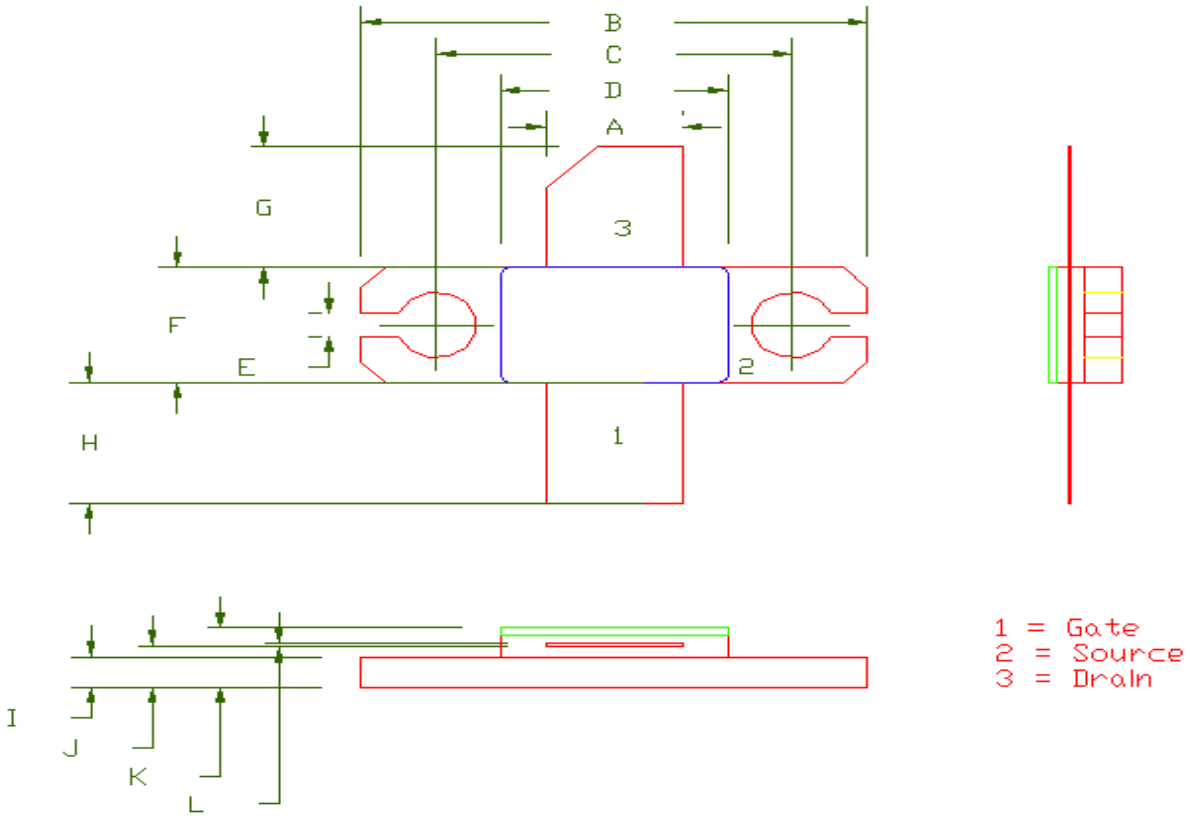
55-QP Package Dimension



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