3135GN-200V

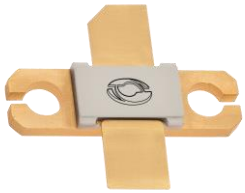
200 Watts • 50 Volts • 200 μs, 10%
S-Band Radar 3100 - 3500 MHz

GENERAL DESCRIPTION

The 3135GN-200V is an internally matched, COMMON SOURCE, class AB, GaN on SiC HEMT transistor capable of providing over 14.5 dB gain, 200 Watts of pulsed RF output power at 200uS pulse width, 10% duty factor across the 3100 – 3500 MHz band. This hermetically sealed transistor is designed for S-Band Radar applications. It 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 440 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[1]	Min	Typ	Max	Units
Pout	Output Power	Pin=7W Freq=3100,3300,3500 MHz	200	240		W
Gp	Power Gain	Pin=7W Freq=3100,3300,3500 MHz	14.5	15.3		dB
η_D	Drain Efficiency	Pin=7W Freq=3100,3300,3500 MHz	50	55		%
Dr	Droop	Pin=7W Freq=3100,3300,3500 MHz		0.4	0.7	dB
VSWR-T	Load Mismatch Tolerance	Pin=7W Freq=3100 MHz			3:1	
Θjc	Thermal Resistance	Pulse Width=200 μ S, Duty=10%			.56	°C/W

[1] Bias Condition: Vdd=+50V, Idq=60mA constant current (Vgs= -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 Santa Clara factory at (408) 986-8031 for the latest information.

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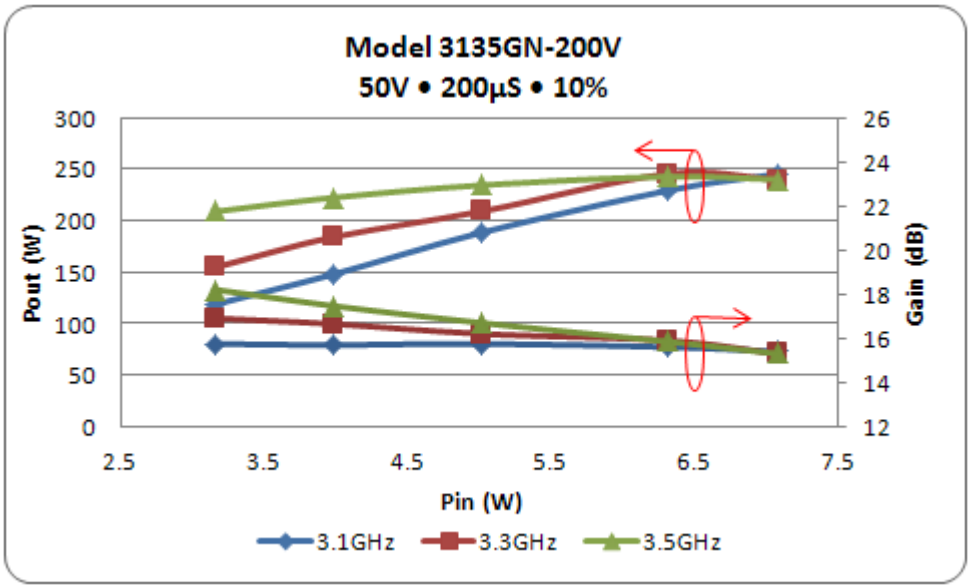
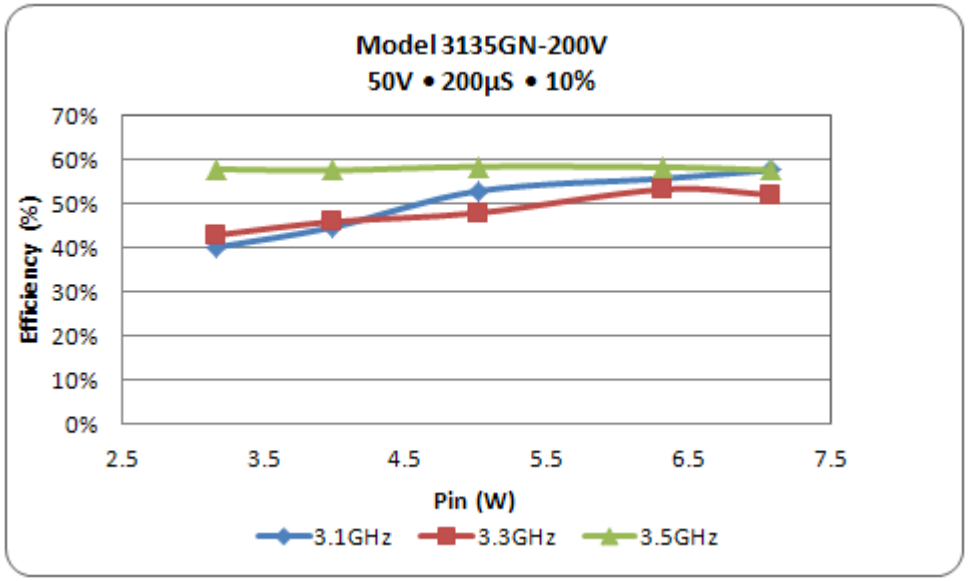
TYPICAL BROAD BAND PERFORMACE DATA

Frequency	Pin (W)	Pout (W)	Id (A)	RL (dB)	η_D (%)	Gain (dB)	Droop (dB)
3100 MHz	7.1	246	.88	-8	58	15.4	0.4
3300 MHz	7.1	240	.95	-11	52	15.3	0.4
3500 MHz	7.1	243	.86	-8	58	15.3	0.3





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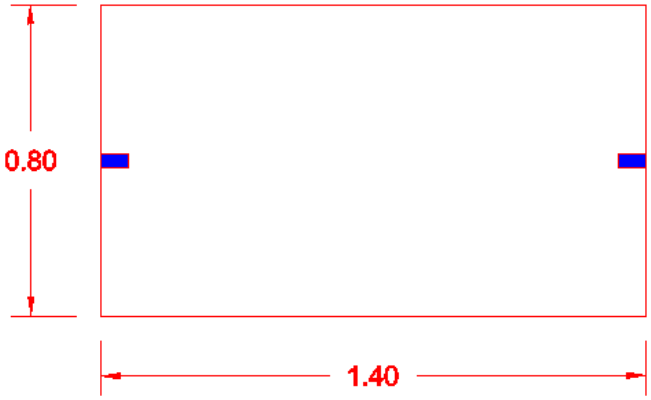
TEST CIRCUIT DIAGRAM



(Dimensions are in Inches)

Please contact us for details

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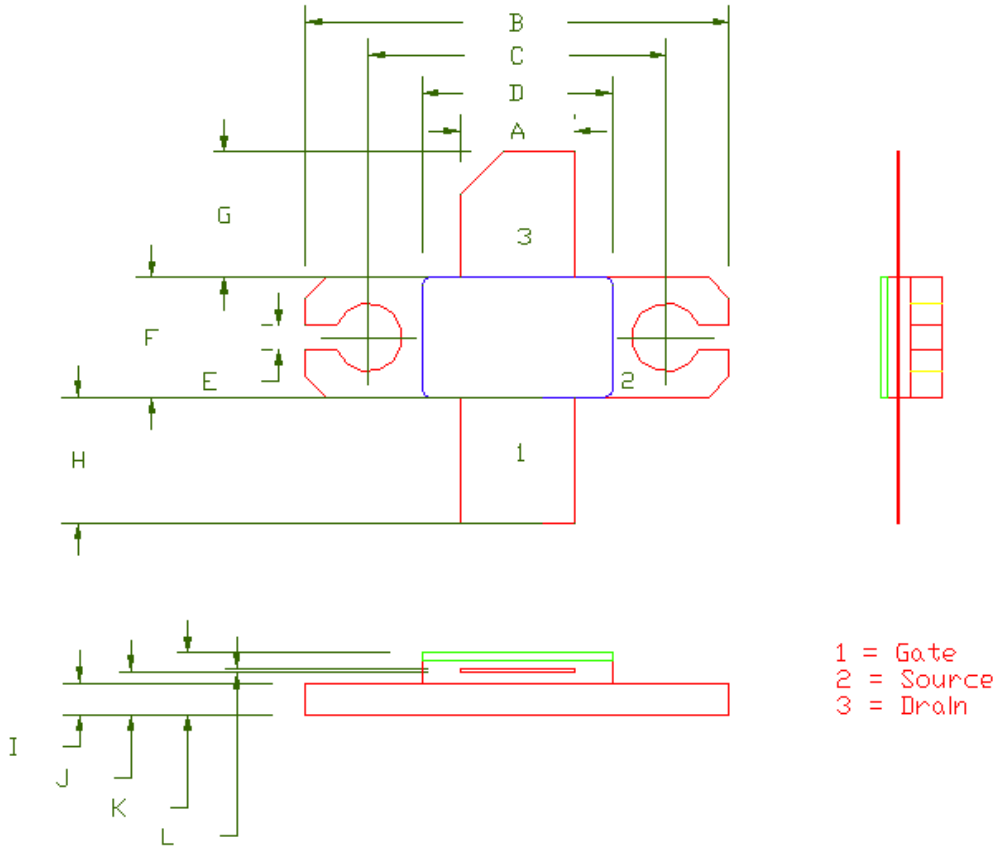
55-QP PACKAGE DIMENSION



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	03-24-15	-	Initial Preliminary Release