



3135GN-200V

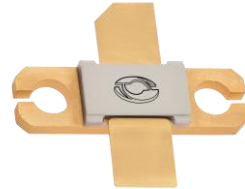
200 Watts • 50 Volts • 200 μ s, 10%
S-Band Radar 3100 - 3500 MHz

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 200 μ s 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	
Θ_{jc}	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

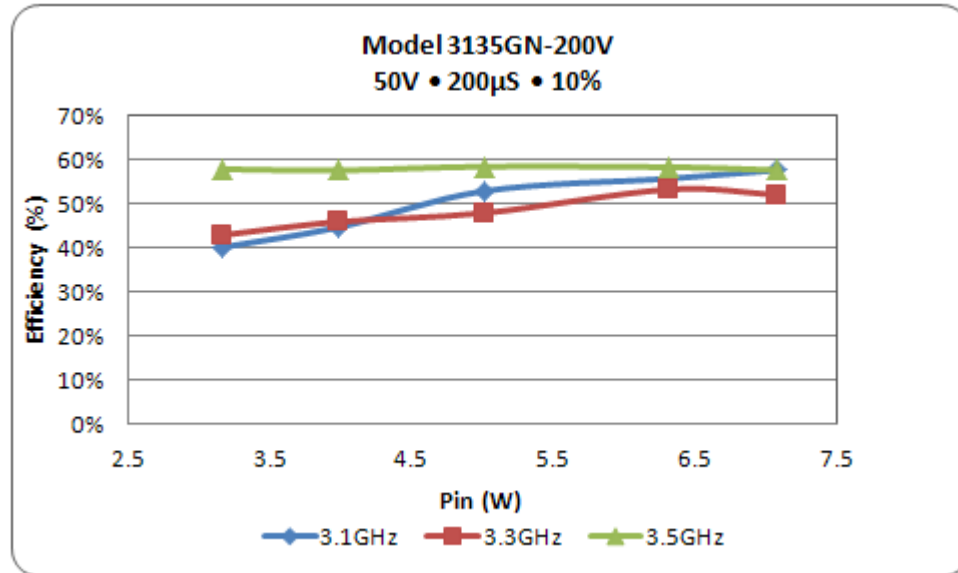
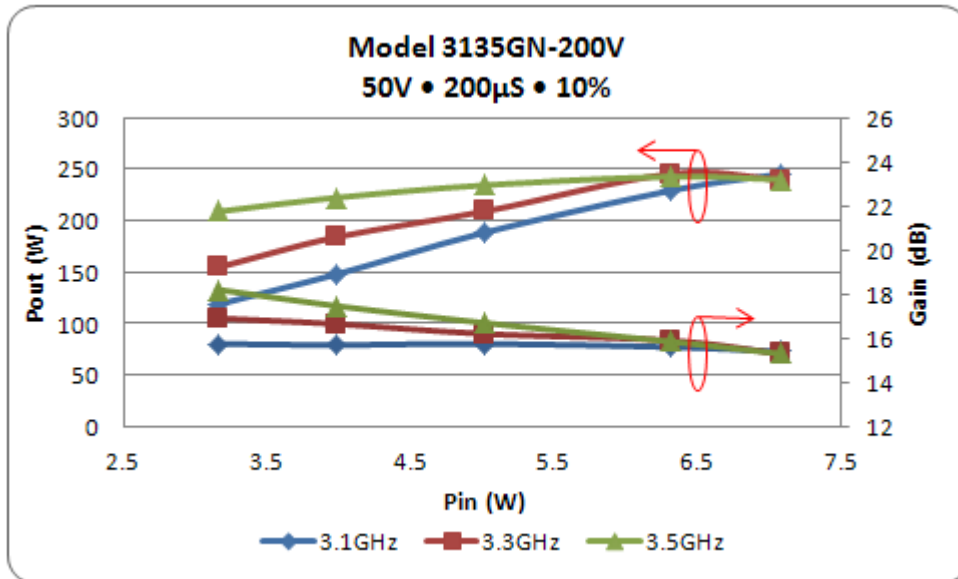
$I_{D(Off)}$	Drain leakage current	$V_{GS} = -8V, V_D = 50V$			24	mA
$I_{G(Off)}$	Gate leakage current	$V_{GS} = -8V, V_D = 0V$			8	mA
BV_{DSS}	Drain-Source breakdown voltage	$V_{GS} = -8V, I_D = 24mA$	125			V

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.

TYPICAL BROAD BAND PERFORMANCE 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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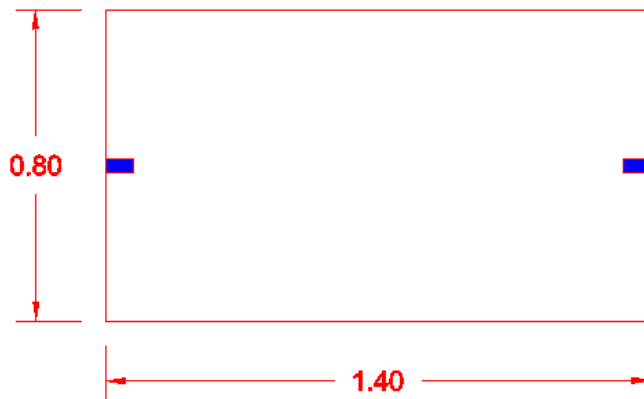
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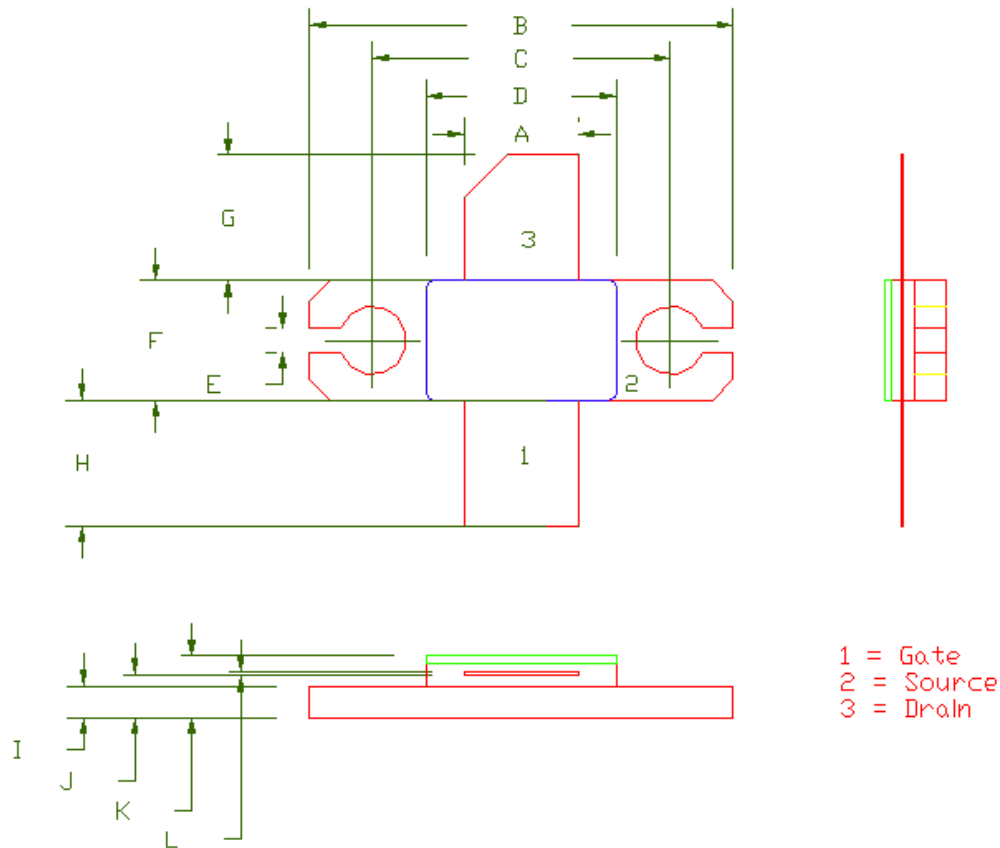
TEST CIRCUIT DIAGRAM



(Dimensions are in Inches)

Please contact us for details

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

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