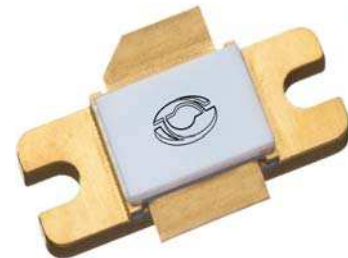


## GENERAL DESCRIPTION

The 3135GN-280LV is an internally matched, COMMON SOURCE, class AB, GaN on SiC HEMT transistor capable of providing over 13 dB gain, 280 Watts of pulsed RF output power at 200  $\mu$ s pulse width, 20% duty factor across the 3100 to 3500 MHz band. This hermetically sealed transistor utilizes gold metallization and eutectic attach to provide highest reliability and superior ruggedness.

Market Application – High Power S-Band Pulsed Radar

## CASE OUTLINE 55-KP Common Source



## ABSOLUTE MAXIMUM RATINGS

### Maximum Power Dissipation

Device Dissipation @ 25°C 616 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 <sup>1</sup>	Min	Typ	Max	Units
P <sub>out</sub>	Output Power	P <sub>in</sub> =14.1W, Freq=3100,3300,3500 MHz	280	330		W
G <sub>p</sub>	Power Gain	P <sub>in</sub> =14.1W, Freq=3100,3300,3500 MHz	13	13.7		dB
$\eta_D$	Drain Efficiency	P <sub>in</sub> =14.1W, Freq=3100,3300,3500 MHz	50	58		%
Dr	Droop	P <sub>in</sub> =14.1W, Freq=3100,3300,3500 MHz		0.2	0.5	dB
VSWR-T	Load Mismatch Tolerance	P <sub>in</sub> =14.1W, Freq=3100 MHz			3:1	
$\Theta_{jc}$	Thermal Resistance	Pulse Width=200 $\mu$ s, Duty=20%			.39	°C/W

<sup>1</sup> Bias Condition: V<sub>dd</sub>=+50V, I<sub>dq</sub>=100mA constant current (V<sub>gs</sub>= -2.0 ~ -4.5V typical)

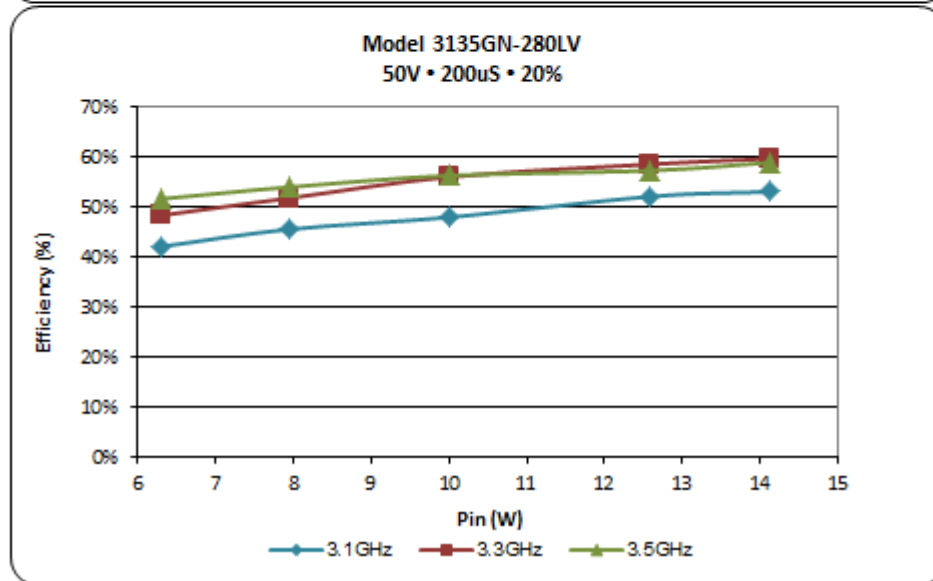
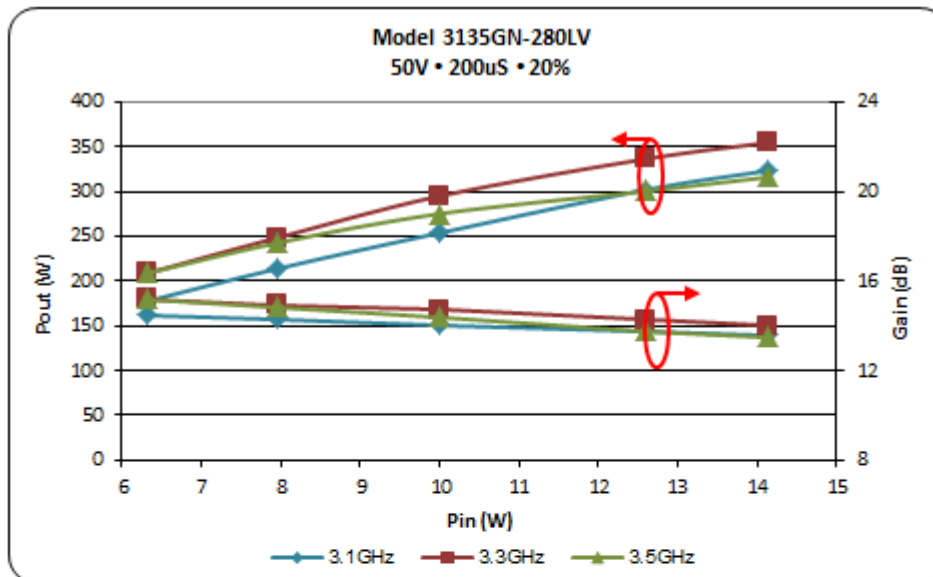
## FUNCTIONAL CHARACTERISTICS @ 25°C

I <sub>D(off)</sub>	Drain leakage current	V <sub>gs</sub> = -8V, V <sub>D</sub> = 50V			36	mA
I <sub>G(off)</sub>	Gate leakage current	V <sub>gs</sub> = -8V, V <sub>D</sub> = 0V			6	mA
BV <sub>DSS</sub>	Drain-Source breakdown voltage	V <sub>gs</sub> = -8V, I <sub>D</sub> = 36mA	125			V

For the most current data, consult MICROSEMI's website: [www.MICROSEMI.com](http://www.MICROSEMI.com)  
Specifications are subject to change, consult the RFIS factory at (408) 986-8031 for the latest information

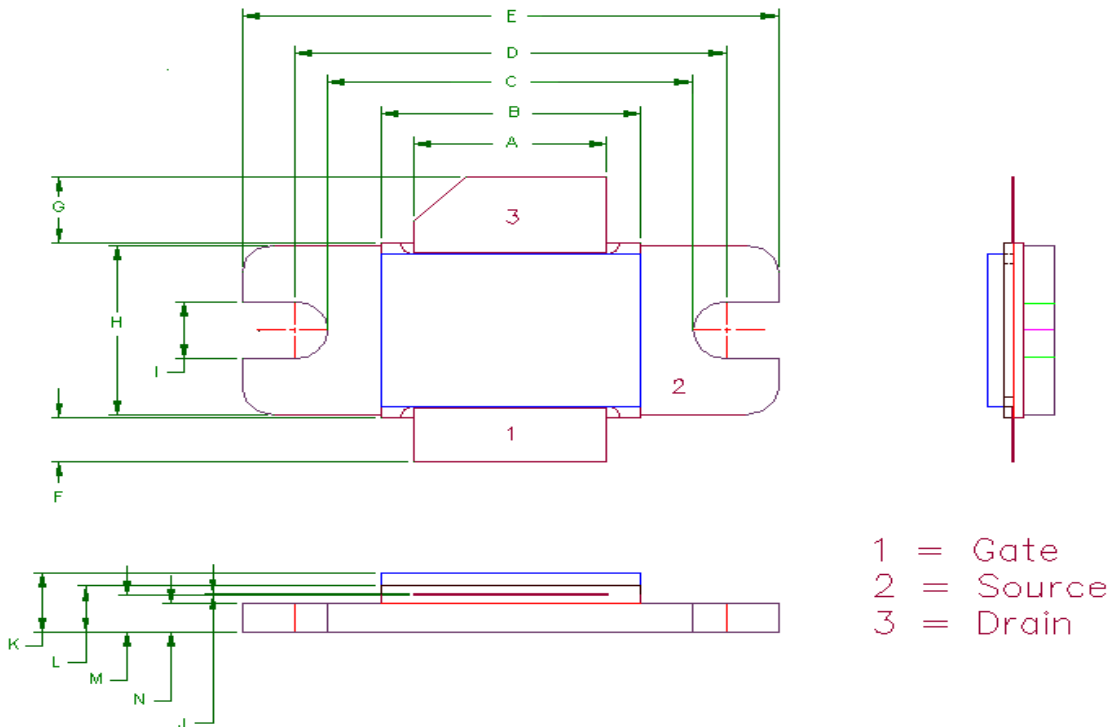
## TYPICAL BROAD BAND PERFORMANCE DATA

Frequency	Pin (W)	Pout (W)	Id (A)	RL (dB)	$\eta_D$ (%)	Gain (dB)	Droop (dB)
3100 MHz	14.1	324	2.49	-8.5	54	13.6	0.2
3300 MHz	14.1	355	2.43	-8.5	60	14.0	0.2
3500 MHz	14.1	316	2.20	-7.0	60	13.5	0.2



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## 55-KP PACKAGE DIMENSION



Dimension	Min (mil)	Min (mm)	Max (mil)	Max (mm)
A	370	9.40	372	9.44
B	498	12.65	500	12.7
C	700	17.78	702	17.83
D	830	21.08	832	21.13
E	1030	26.16	1032	26.21
F	101	2.56	102	2.59
G	151	3.84	152	3.86
H	385	9.78	387	9.83
I	130	3.30	132	3.35
J	003	.076	004	0.10
K	135	3.43	137	3.48
L	105	2.67	107	2.72
M	085	2.16	86	2.18
N	065	1.65	66	1.68

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# 3135GN-280LV

280 Watts • 50 Volts • 20µs, 20%  
S-Band Radar 3100 - 3500 MHz

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## Revision History

Revision	Date	Affected Section(s)	Description
1.0	11-20-14	-	Initial Preliminary Release

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