



## 3135GN-280LV

280 Watts • 50 Volts • 200  $\mu$ s, 20%  
S-Band Radar 3100 - 3500 MHz

### 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 is utilizes gold metallization and eutectic attach to provide highest reliability and superior ruggedness.

Market Application – High Power S-Band Pulsed Radar

### 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

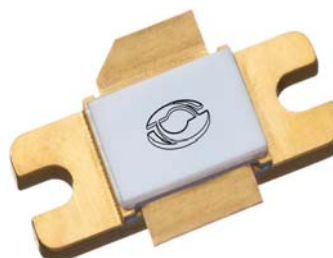
Storage Temperature ( $T_{STG}$ ) -55 to +125° C

Operating Junction Temperature +250 °C

### CASE OUTLINE

55-KP

Common Source



### ELECTRICAL CHARACTERISTICS @ 25°C

| Symbol           | Characteristics         | Test Conditions <sup>1</sup>       | Min | Typ  | Max | Units |
|------------------|-------------------------|------------------------------------|-----|------|-----|-------|
| P <sub>out</sub> | Output Power            | Pin=14.1W, Freq=3100,3300,3500 MHz | 280 | 330  |     | W     |
| G <sub>p</sub>   | Power Gain              | Pin=14.1W, Freq=3100,3300,3500 MHz | 13  | 13.7 |     | dB    |
| $\eta_D$         | Drain Efficiency        | Pin=14.1W, Freq=3100,3300,3500 MHz | 50  | 58   |     | %     |
| Dr               | Droop                   | Pin=14.1W, Freq=3100,3300,3500 MHz |     | 0.2  | 0.5 | dB    |
| VSWR-T           | Load Mismatch Tolerance | Pin=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

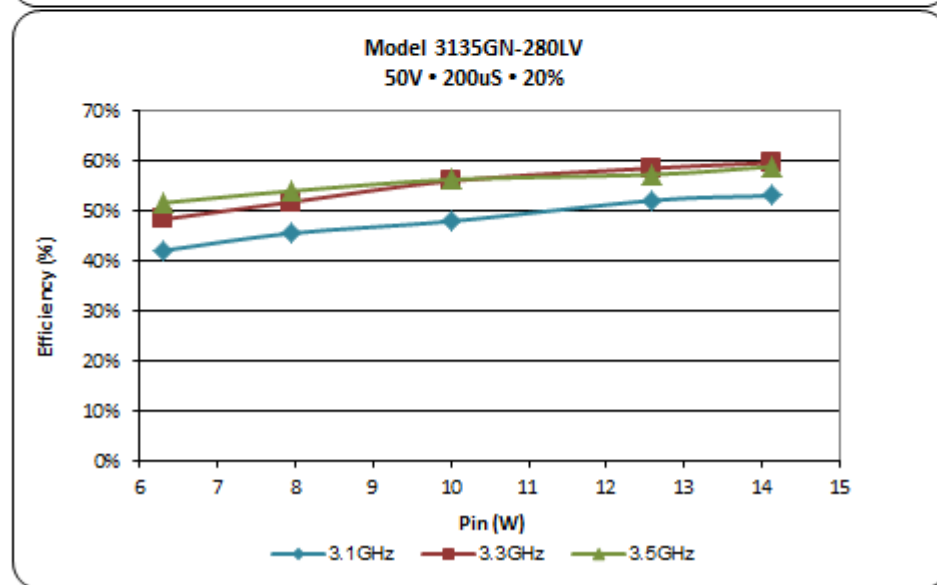
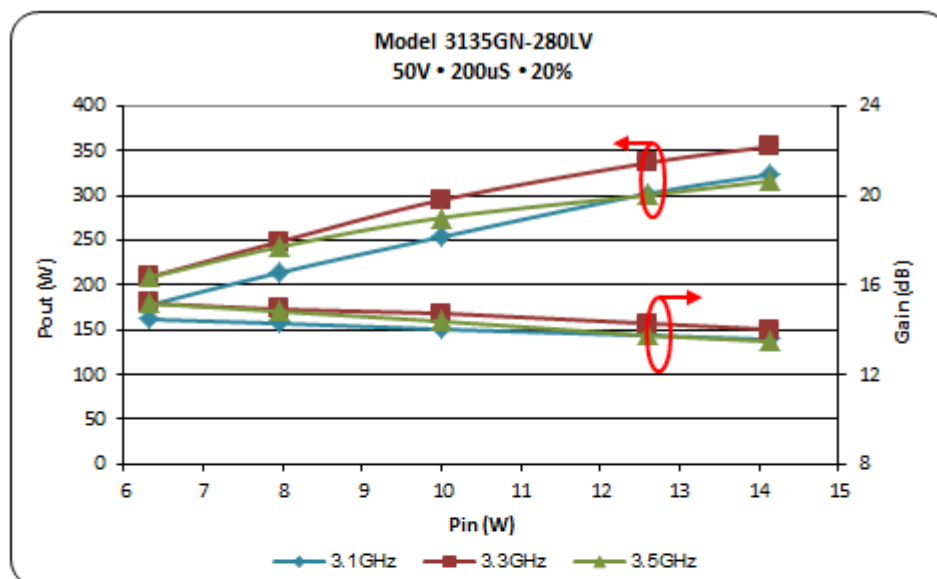


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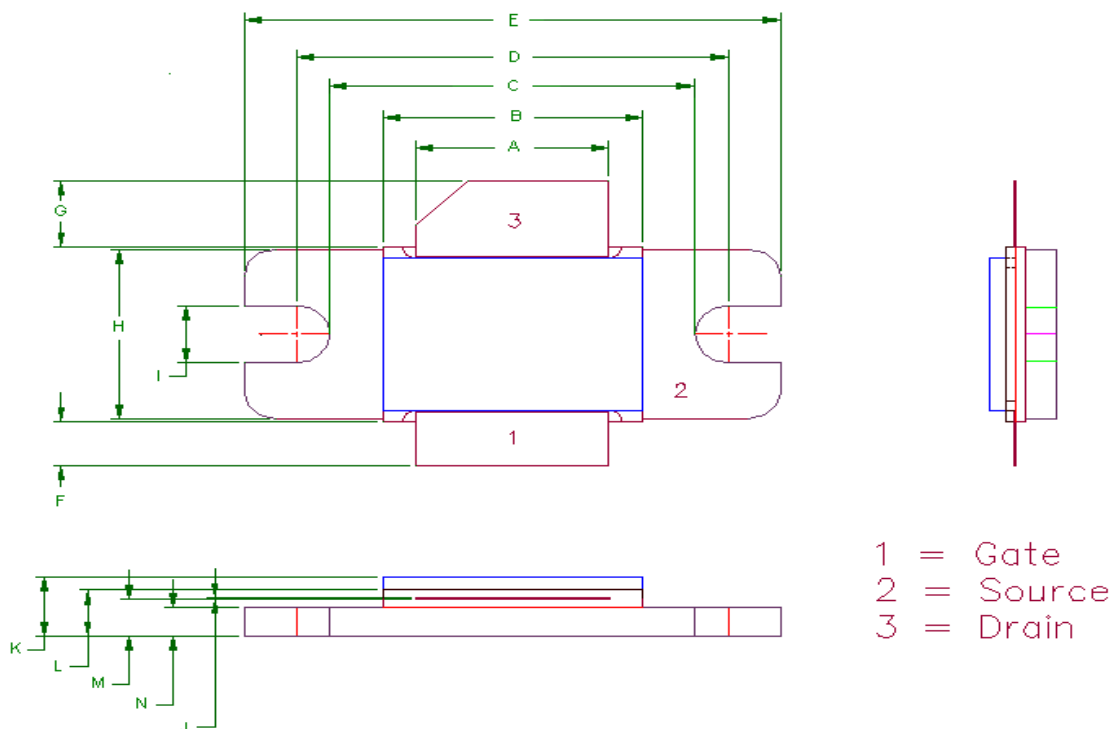
### TYPICAL BROAD BAND PERFORMANCE DATA

| 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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### Revision History

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

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