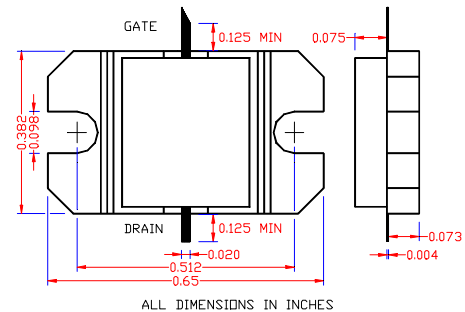


**Not recommended for new designs. Contact factory. Effective 03/2003**  
**10.7-11.7GHz, 4W Internally Matched Power FET**

- 10.7-11.7GHz BANDWIDTH AND INPUT/OUTPUT IMPEDANCE MATCHED TO 50 OHM
- EIA FEATURES HIGH PAE( 30% TYPICAL)
- EIB FEATURES HIGH IP3(49dBm TYPICAL)
- +36.5/+35.5dBm TYPICAL  $P_{1dB}$  OUTPUT POWER FOR EIA/EIB
- 9/8dB TYPICAL  $G_{1dB}$  POWER GAIN FOR EIA/EIB
- NON-HERMETIC METAL FLANGE PACKAGE



### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

| SYMBOLS    | PARAMETERS/TEST CONDITIONS                                                                                                                                 | EIA1011-4P |      |      | EIB1011-4P |      |      | UNIT               |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------|------|------------|------|------|--------------------|
|            |                                                                                                                                                            | MIN        | TYP  | MAX  | MIN        | TYP  | MAX  |                    |
| $P_{1dB}$  | Output Power at 1dB Compression $f=10.7-11.7\text{GHz}$<br>$V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}(\text{EIA})$ , $0.6 I_{dss}(\text{EIB})$              | 35.5       | 36.5 |      | 35         | 35.5 |      | dBm                |
| $G_{1dB}$  | Gain at 1dB Compression $f=10.7-11.7\text{GHz}$<br>$V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}(\text{EIA})$ , $0.6 I_{dss}(\text{EIB})$                      | 8          | 9    |      | 7          | 8    |      | dB                 |
| PAE        | Power Added Efficiency at 1dB compression<br>$f=10.7-11.7\text{GHz}$<br>$V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}(\text{EIA})$ , $0.6 I_{dss}(\text{EIB})$ |            | 30   |      |            | 25   |      | %                  |
| $I_{d1dB}$ | Drain Current at 1dB Compression                                                                                                                           |            | 1760 |      |            | 1700 |      | mA                 |
| IP3        | Output 3 <sup>rd</sup> Order Intercept Point $f=10.7-11.7\text{GHz}$<br>$V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}(\text{EIA})$ , $0.6 I_{dss}(\text{EIB})$ |            | 43   |      |            | 49*  |      | dBm                |
| $I_{dss}$  | Saturated Drain Current $V_{ds}=3\text{V}$ , $V_{gs}=0\text{V}$                                                                                            | 2200       | 2880 | 3400 | 2200       | 2720 | 3400 | mA                 |
| $G_m$      | Transconductance $V_{ds}=3\text{V}$ , $V_{gs}=0\text{V}$                                                                                                   |            | 3000 |      |            | 1400 |      | mS                 |
| $V_p$      | Pinch-off Voltage $V_{ds}=3\text{V}$ , $I_{ds}=24\text{mA}$                                                                                                |            | -1.0 | -2.5 |            | -2.0 | -3.5 | V                  |
| $BV_{gd}$  | Drain Breakdown Voltage $I_{gd}=9.6\text{mA}$                                                                                                              | -13        | -15  |      |            | -15  |      | V                  |
| $R_{th}$   | Thermal Resistance (Au-Sn Eutectic Attach)                                                                                                                 |            | 4.5  |      |            | 4.5  |      | $^\circ\text{C/W}$ |

\*Typical -45dBc IM3 at  $P_{out}=26\text{dBm/Tone}$

### MAXIMUM RATINGS AT $25^\circ\text{C}$

| SYMBOLS   | PARAMETERS              | ABSOLUTE <sup>1</sup>    | CONTINUOUS <sup>2</sup>  |
|-----------|-------------------------|--------------------------|--------------------------|
| $V_{ds}$  | Drain-Source Voltage    | 12V                      | 8V                       |
| $V_{gs}$  | Gate-Source Voltage     | -8V                      | -3V                      |
| $I_{ds}$  | Drain Current           | $I_{dss}$                | 3120mA                   |
| $I_{gsf}$ | Forward Gate Current    | 360mA                    | 60mA                     |
| $P_{in}$  | Input Power             | 35dBm                    | @ 3dB Compression        |
| $T_{ch}$  | Channel Temperature     | 175 $^\circ\text{C}$     | 150 $^\circ\text{C}$     |
| $T_{stg}$ | Storage Temperature     | -65/175 $^\circ\text{C}$ | -65/150 $^\circ\text{C}$ |
| $P_t$     | Total Power Dissipation | 30W                      | 25W                      |

Note: 1. Exceeding any of the above ratings may result in permanent damage.

2. Exceeding any of the above ratings may reduce MTTF below design goals.

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