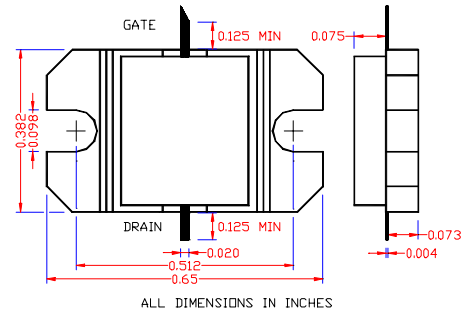


**PRELIMINARY DATA SHEET**
**14.0-14.5GHz, 4W Internally Matched Power FET**

- 14.0-14.5GHz BANDWIDTH AND INPUT/OUTPUT IMPEDANCE MATCHED TO 50 OHM
- EIA FEATURES HIGH PAE( 27% TYPICAL)
- EIB FEATURES HIGH IP3(49dBm TYPICAL)
- +36.5/+35.5dBm TYPICAL  $P_{1dB}$  OUTPUT POWER FOR EIA/EIB
- 8.5/7.5dB 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   | EIA1414-4P |      |      | EIB1414-4P |      |      | UNIT                      |
|------------|--|------------|------|------|------------|------|------|---------------------------|
|            |  | MIN        | TYP  | MAX  | MIN        | TYP  | MAX  |                           |
| $P_{1dB}$  | Output Power at 1dB Compression $f=14.0-14.5\text{GHz}$<br>$V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}$ (EIA), $0.6I_{dss}$ (EIB)              | 35.5       | 36.5 |      | 35         | 35.5 |      | dBm                       |
| $G_{1dB}$  | Gain at 1dB Compression $f=14.0-14.5\text{GHz}$<br>$V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}$ (EIA), $0.6I_{dss}$ (EIB)                      | 7.5        | 8.5  |      | 6.5        | 7.5  |      | dB                        |
| PAE        | Power Added Efficiency at 1dB compression<br>$f=14.0-14.5\text{GHz}$<br>$V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}$ (EIA), $0.6I_{dss}$ (EIB) |            | 27   |      |            | 22   |      | %                         |
| $I_{d1dB}$ | Drain Current at 1dB Compression   |            | 1760 |      |            | 1700 |      | mA                        |
| IP3        | Output 3 <sup>rd</sup> Order Intercept Point $f=14.0-14.5\text{GHz}$<br>$V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}$ (EIA), $0.6I_{dss}$ (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  |      | $^\circ\text{C}/\text{W}$ |

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

**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.