



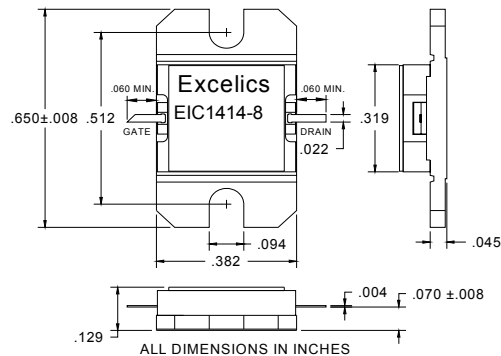
EIC1414-8

ISSUED 6/30/2006

14.0-14.5 GHz 8-Watt Internally Matched Power FET

FEATURES

- 14.0– 14.5GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +39.0 dBm Output Power at 1dB Compression
- 5.0 dB Power Gain at 1dB Compression
- 24% Power Added Efficiency
- Hermetic Metal Flange Package



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



Caution! ESD sensitive device.

| SYMBOL | PARAMETERS/TEST CONDITIONS ¹ | MIN | TYP | MAX | UNITS |
|------------|---|------|------|-----------|--------------------|
| P_{1dB} | Output Power at 1dB Compression $f = 14.0-14.5\text{GHz}$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 2200\text{mA}$ | 38.5 | 39.0 | | dBm |
| G_{1dB} | Gain at 1dB Compression $f = 14.0-14.5\text{GHz}$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 2200\text{mA}$ | 4.0 | 5.0 | | dB |
| ΔG | Gain Flatness $f = 14.0-14.5\text{GHz}$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 2200\text{mA}$ | | | ± 0.6 | dB |
| PAE | Power Added Efficiency at 1dB Compression $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 2200\text{mA}$ $f = 14.0-14.5\text{GHz}$ | | 24 | | % |
| I_{d1dB} | Drain Current at 1dB Compression $f = 14.0-14.5\text{GHz}$ | | 2300 | 2600 | mA |
| I_{DSS} | Saturated Drain Current $V_{DS} = 3\text{ V}$, $V_{GS} = 0\text{ V}$ | | 4000 | 5000 | mA |
| V_P | Pinch-off Voltage $V_{DS} = 3\text{ V}$, $I_{DS} = 40\text{ mA}$ | | -2.5 | -4.0 | V |
| R_{TH} | Thermal Resistance ³ | | 3.5 | 4.0 | $^\circ\text{C/W}$ |

Note: 1) Tested with 100 Ohm gate resistor.

2) S.C.L. = Single Carrier Level.

3) Overall R_{th} depends on case mounting.

ABSOLUTE MAXIMUM RATING^{1,2}

| SYMBOLS | PARAMETERS | ABSOLUTE ¹ | CONTINUOUS ² |
|---------|-------------------------|------------------------------|------------------------------|
| Vds | Drain-Source Voltage | 15 | 10V |
| Vgs | Gate-Source Voltage | -5 | -4V |
| Igsf | Forward Gate Current | 86.4mA | 28.8mA |
| Igsr | Reverse Gate Current | -14.4mA | -4.8mA |
| Pin | Input Power | 38.5dBm | @ 3dB Compression |
| Tch | Channel Temperature | 175 $^\circ\text{C}$ | 175 $^\circ\text{C}$ |
| Tstg | Storage Temperature | -65 to +175 $^\circ\text{C}$ | -65 to +175 $^\circ\text{C}$ |
| Pt | Total Power Dissipation | 38W | 38W |

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.

Specifications are subject to change without notice.

Excelics Semiconductor, Inc. 310 De Guigne Drive, Sunnyvale, CA 94085

Phone: 408-737-1711 Fax: 408-737-1868 Web: www.excelics.com

page 1 of 1

Revised June 2006