

### FEATURES

- 4.40–5.00GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +40.5 dBm Output Power at 1dB Compression
- 10.0 dB Power Gain at 1dB Compression
- 35% Power Added Efficiency
- -46 dBc IM3 at PO = 29.5 dBm SCL
- 100% Tested for DC, RF, and  $R_{TH}$

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

SYMBOL	PARAMETERS/TEST CONDITIONS <sup>1</sup>	MIN	TYP	MAX	UNITS
<b>P<sub>1dB</sub></b>	Output Power at 1dB Compression $f = 4.40\text{-}5.00\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$	39.5	40.5		dBm
<b>G<sub>1dB</sub></b>	Gain at 1dB Compression $f = 4.40\text{-}5.00\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$	9.0	10.0		dB
<b><math>\Delta G</math></b>	Gain Flatness $f = 4.40\text{-}5.00\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$			$\pm 0.6$	dB
<b>PAE</b>	Power Added Efficiency at 1dB Compression $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$ $f = 4.40\text{-}5.00\text{GHz}$		35		%
<b>I<sub>d1dB</sub></b>	Drain Current at 1dB Compression $f = 4.40\text{-}5.00\text{GHz}$		3300	3800	mA
<b>IM3</b>	Output 3rd Order Intermodulation Distortion $\Delta f = 10\text{ MHz}$ 2-Tone Test; Pout = 29.5 dBm S.C.L. <sup>2</sup> $V_{DS} = 10\text{ V}, I_{DSQ} \approx 65\% IDSS$ $f = 5.00\text{GHz}$	-43	-46		dBc
<b>I<sub>DSS</sub></b>	Saturated Drain Current $V_{DS} = 3\text{ V}, V_{GS} = 0\text{ V}$		5800	6400	mA
<b>V<sub>P</sub></b>	Pinch-off Voltage $V_{DS} = 3\text{ V}, I_{DS} = 60\text{ mA}$		-2.5	-4.0	V
<b>R<sub>TH</sub></b>	Thermal Resistance <sup>3</sup>		2.5	3.0	$^\circ\text{C/W}$

Note: 1. Tested with 50 Ohm gate resistor.  
2. S.C.L. = Single Carrier Level.  
3. Overall Rth depends on case mounting.

### ABSOLUTE MAXIMUM RATING<sup>1,2</sup>

SYMBOLS	PARAMETERS	CONTINUOUS <sup>2</sup>
<b>V<sub>ds</sub></b>	Drain-Source Voltage	10V
<b>V<sub>gs</sub></b>	Gate-Source Voltage	-4.5V
<b>I<sub>ds</sub></b>	Drain Current	I <sub>dss</sub>
<b>I<sub>gsf</sub></b>	Forward Gate Current	120mA
<b>P<sub>in</sub></b>	Input Power	@ 3dB Compression
<b>T<sub>ch</sub></b>	Channel Temperature	150 $^\circ\text{C}$
<b>T<sub>stg</sub></b>	Storage Temperature	-65 to +150 $^\circ\text{C}$
<b>P<sub>t</sub></b>	Total Power Dissipation	42W

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](http://www.excelics.com)

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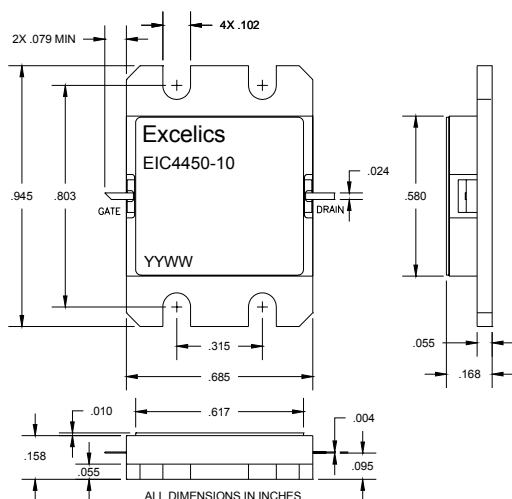
UPDATED 07/25/2007

## 4.40-5.00 GHz 10-Watt Internally Matched Power FET

### PACKAGES OUTLINE

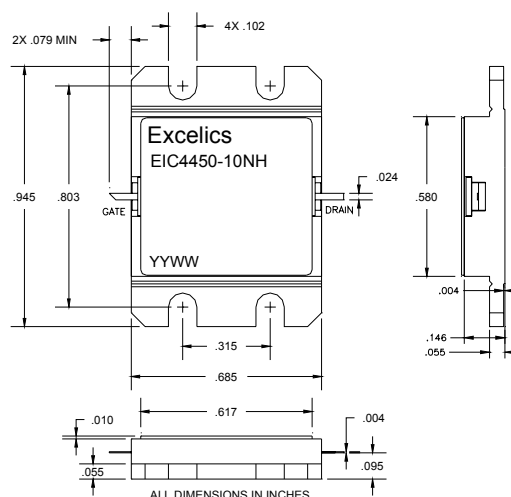
Dimensions in inches, Tolerance  $\pm .005$  unless otherwise specified

**EIC4450-10 (Hermetic)**



**Caution! ESD sensitive device.**

**EIC4450-10NH (Non-Hermetic)**



**Caution! ESD sensitive device.**

### ORDERING INFORMATION

Part Number	Packages	Grade <sup>1</sup>	f <sub>Test</sub> (GHz)	P <sub>1dB</sub> (min)	IM <sub>3</sub> (min) <sup>2</sup>
EIC4450-10	Hermetic	Industrial	4.40-5.00GHz	39.5	-43
EIC4450-10NH	Non-Hermetic	Industrial	4.40-5.00GHz	39.5	-43

Notes: 1. Contact factory for military and hi-rel grades.  
2. Exact test conditions are specified in "Electrical Characteristics" table.

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness

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