



EIC4450-10

UPDATED 07/25/2007

4.40-5.00 GHz 10-Watt Internally Matched Power FET

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 ¹	MIN	TYP	MAX	UNITS
P_{1dB}	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
G_{1dB}	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
ΔG	Gain Flatness $f = 4.40\text{-}5.00\text{GHz}$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 3200\text{mA}$			± 0.6	dB
PAE	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		%
I_{d1dB}	Drain Current at 1dB Compression $f = 4.40\text{-}5.00\text{GHz}$		3300	3800	mA
IM3	Output 3rd Order Intermodulation Distortion $\Delta f = 10\text{ MHz}$ 2-Tone Test; $P_{out} = 29.5\text{ dBm S.C.L.}^2$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 65\% IDSS$ $f = 5.00\text{GHz}$	-43	-46		dBc
I_{DSS}	Saturated Drain Current $V_{DS} = 3\text{ V}$, $V_{GS} = 0\text{ V}$		5800	6400	mA
V_P	Pinch-off Voltage $V_{DS} = 3\text{ V}$, $I_{DS} = 60\text{ mA}$		-2.5	-4.0	V
R_{TH}	Thermal Resistance ³		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 R_{th} depends on case mounting.

ABSOLUTE MAXIMUM RATING^{1,2}

SYMBOLS	PARAMETERS	CONTINUOUS ²
Vds	Drain-Source Voltage	10V
Vgs	Gate-Source Voltage	-4.5V
Ids	Drain Current	I_{DSS}
Igsf	Forward Gate Current	120mA
Pin	Input Power	@ 3dB Compression
Tch	Channel Temperature	150 $^\circ\text{C}$
Tstg	Storage Temperature	-65 to +150 $^\circ\text{C}$
Pt	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.

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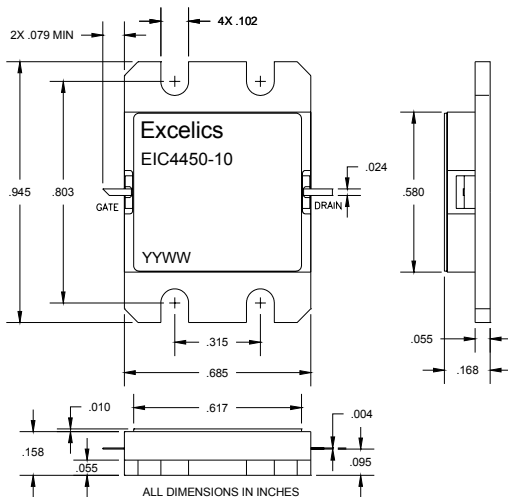
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PACKAGES OUTLINE

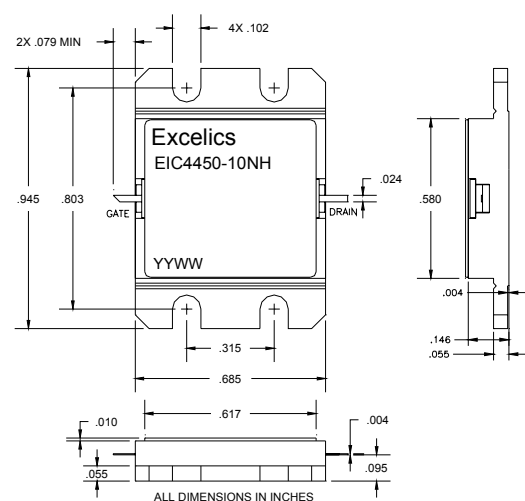
Dimensions in inches, Tolerance $\pm .005$ unless otherwise specified

EIC4450-10 (Hermetic)



Caution! ESD sensitive device.

EIC4450-10NH (Non-Hermetic)



Caution! ESD sensitive device.

ORDERING INFORMATION

Part Number	Packages	Grade ¹	f _{Test} (GHz)	P _{1dB} (min)	IM ₃ (min) ²
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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