



EIC8596-12

UPDATED 07/25/2007

8.50-9.60 GHz 12-Watt Internally Matched Power FET

FEATURES

- 8.50– 9.60GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +41.5 dBm Output Power at 1dB Compression
- 7.0 dB Power Gain at 1dB Compression
- 34% Power Added Efficiency
- -46 dBc IM3 at PO = 30.5 dBm SCL
- 100% Tested for DC, RF, and R_{TH}

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

SYMBOL	PARAMETERS/TEST CONDITIONS ¹	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression V _{DS} = 10 V, I _{DSQ} ≈ 3200mA f = 8.50-9.60GHz	40.5	41.5		dBm
G_{1dB}	Gain at 1dB Compression V _{DS} = 10 V, I _{DSQ} ≈ 3200mA f = 8.50-9.60GHz	6.0	7.0		dB
ΔG	Gain Flatness V _{DS} = 10 V, I _{DSQ} ≈ 3200mA f = 8.50-9.60GHz			±0.6	dB
PAE	Power Added Efficiency at 1dB Compression V _{DS} = 10 V, I _{DSQ} ≈ 3200mA f = 8.50-9.60GHz		34		%
I_{d1dB}	Drain Current at 1dB Compression f = 8.50-9.60GHz		3300	3700	mA
IM3	Output 3rd Order Intermodulation Distortion Δf = 10 MHz 2-Tone Test; Pout = 30.5 dBm S.C.L. ² V _{DS} = 10 V, I _{DSQ} ≈ 65% IDSS f = 9.60GHz	-43	-46		dBc
I_{DSS}	Saturated Drain Current V _{DS} = 3 V, V _{GS} = 0 V		6200	7800	mA
V_P	Pinch-off Voltage V _{DS} = 3 V, I _{DS} = 62 mA		-2.5	-4.0	V
R_{TH}	Thermal Resistance ³		2.5	3.0	°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	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	15	10V
V_{gs}	Gate-Source Voltage	-5	-3V
I_{gsf}	Forward Gate Current	129.6mA	43.2mA
I_{gsr}	Reverse Gate Current	-21.6mA	-7.2mA
P_{in}	Input Power	40.5dBm	@ 3dB Compression
T_{ch}	Channel Temperature	175 °C	175 °C
T_{stg}	Storage Temperature	-65 to +175 °C	-65 to +175 °C
P_t	Total Power Dissipation	50W	50W

- 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.



EIC8596-12

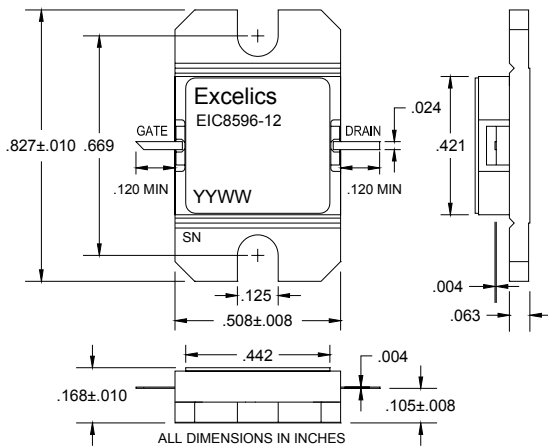
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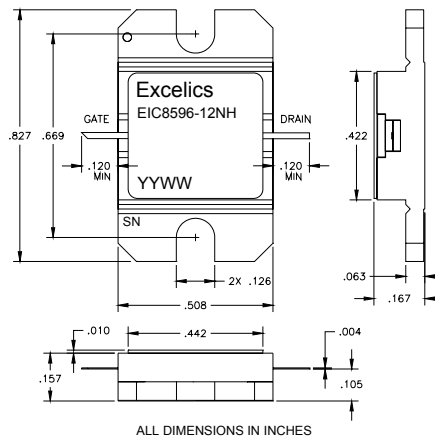
PACKAGES OUTLINE

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

EIC8596-12 (Hermetic)



EIC8596-12NH (Non-Hermetic)



Caution! ESD sensitive device.



Caution! ESD sensitive device.

ORDERING INFORMATION

Part Number	Packages	Grade ¹	f _{Test} (GHz)	P _{1dB} (min)	IM ₃ (min) ²
EIC8596-12	Hermetic	Industrial	8.50-9.60GHz	40.5	-43
EIC8596-12NH	Non-Hermetic	Industrial	8.50-9.60GHz	40.5	-43

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

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