

UPDATED 07/25/2007

10.7-11.7 GHz 12-Watt Internally Matched Power FET

FEATURES

- 10.7–11.7GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +40.5 dBm Output Power at 1dB Compression
- 6.0 dB Power Gain at 1dB Compression
- 27% Power Added Efficiency
- -46 dBc IM3 at PO = 28.5 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 = 10.7-11.7GHz	39.5	40.5		dBm
G_{1dB}	Gain at 1dB Compression V _{DS} = 10 V, I _{DSQ} ≈ 3200mA f = 10.7-11.7GHz	5.0	6.0		dB
ΔG	Gain Flatness V _{DS} = 10 V, I _{DSQ} ≈ 3200mA f = 10.7-11.7GHz			±0.6	dB
PAE	Power Added Efficiency at 1dB Compression V _{DS} = 10 V, I _{DSQ} ≈ 3200mA f = 10.7-11.7GHz		27		%
I_{d1dB}	Drain Current at 1dB Compression f = 10.7-11.7GHz		3300	3700	mA
IM3	Output 3rd Order Intermodulation Distortion Δf=10MHz 2-Tone Test. Pout=28.5 dBm S.C.L V _{ds} = 10 V, I _{DSQ} ≈ 65% I _{DSS} f = 11.7GHz	-43	-46		dBc
I_{DSS}	Saturated Drain Current V _{DS} = 3 V, V _{GS} = 0 V		5800	7200	mA
V_P	Pinch-off Voltage V _{DS} = 3 V, I _{DS} = 58 mA		-2.5	-4.0	V
R_{TH}	Thermal Resistance ³		2.3	2.6	°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	-4V
I_{gsf}	Forward Gate Current	130mA	43mA
I_{gsr}	Reserve Gate Current	-21mA	-7mA
P_{in}	Input Power	40.0dBm	@ 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	57W	57W

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.

EIC1011-12

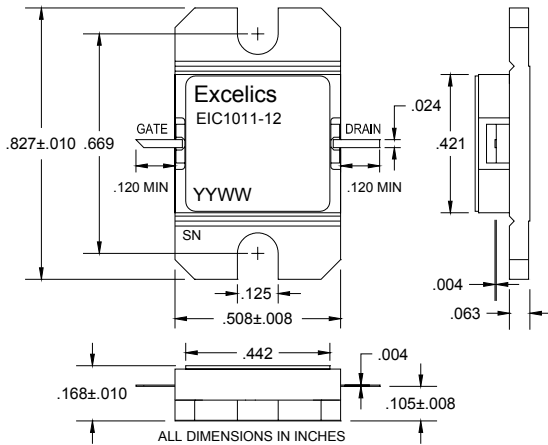
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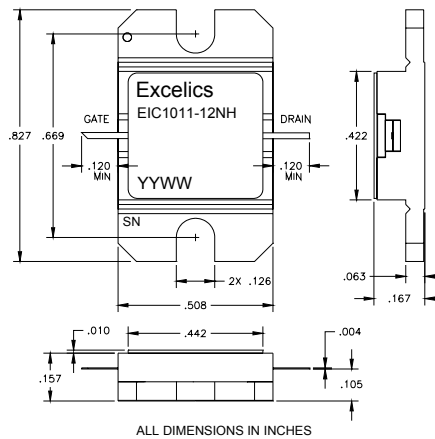
PACKAGES OUTLINE

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

EIC1011-12 (Hermetic)



EIC1011-12NH (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
EIC1011-12	Hermetic	Industrial	10.7-11.7GHz	40.0	-43
EIC1011-12NH	Non-Hermetic	Industrial	10.7-11.7GHz	40.0	-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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