



EIC1011-12

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 f = 10.7-11.7GHz V _{DS} = 10 V, I _{DSQ} ≈ 3200mA	39.5	40.5		dBm
G _{1dB}	Gain at 1dB Compression f = 10.7-11.7GHz V _{DS} = 10 V, I _{DSQ} ≈ 3200mA	5.0	6.0		dB
ΔG	Gain Flatness f = 10.7-11.7GHz V _{DS} = 10 V, I _{DSQ} ≈ 3200mA			±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.

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

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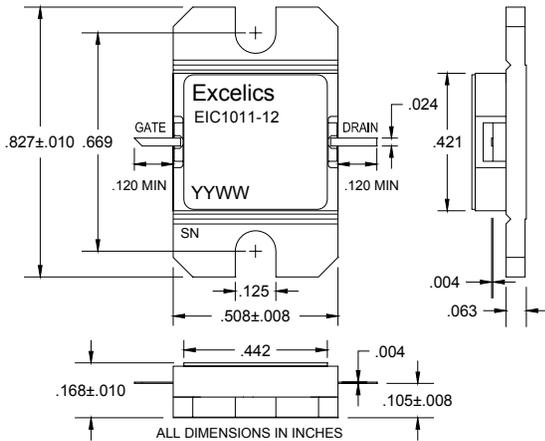
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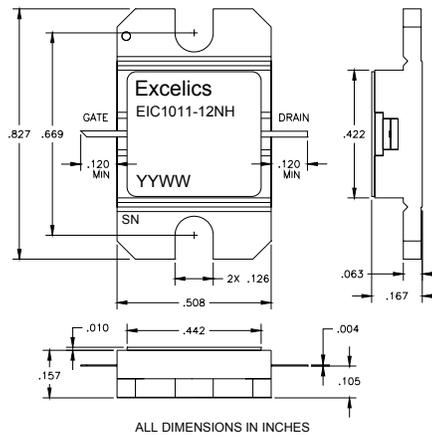
PACKAGES OUTLINE

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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