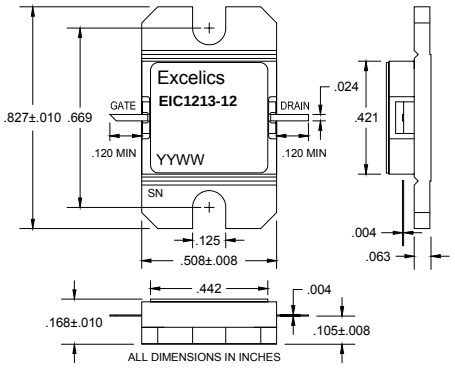
EIC1213-12

ISSUED 3-19-09

12.75-13.25 GHz 12-Watt Internally Matched Power FET

FEATURES

- **12.75– 13.25 GHz Bandwidth**
- **Input/Output Impedance Matched to 50 Ohms**
- **+41 dBm Output Power at 1dB Compression**
- **6 dB Power Gain at 1dB Compression**
- **25% Power Added Efficiency**
- **Hermetic Metal Flange Package**
- **100% Tested for DC, RF, and R_{TH}**



ELECTRICAL CHARACTERISTICS (T_a = 25°C)

Caution! ESD sensitive device.

SYMBOL	PARAMETERS/TEST CONDITIONS[1]	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression f = 12.75-13.25GHz V_{DS} = 10 V, I_{DSQ} ≈ 3700mA	40.5	41		dBm
G_{1dB}	Gain at 1dB Compression f = 12.75-13.25GHz V_{DS} = 10 V, I_{DSQ} ≈ 3700mA	5	6		dB
ΔG	Gain Flatness f = 12.75-13.25GHz V_{DS} = 10 V, I_{DSQ} ≈3700mA			±0.6	dB
IMD3	Output 3rd Order Intermodulation Distortion Δf = 10 MHz 2-Tone Test; Pout = 30.0 dBm S.C.L[2] V_{DS} = 10 V, I_{DSQ} ≈ 65% IDSS f = 13.25 GHz	-41	-45		dBc
PAE	Power Added Efficiency at 1dB Compression V_{DS} = 10 V, I_{DSQ} ≈ 3700mA f = 12.75-13.25GHz		25		%
Id_{1dB}	Drain Current at 1dB Compression f = 12.75-13.25GHz		3800	4300	mA
I_{DSS}	Saturated Drain Current V_{DS} = 3 V, V_{GS} = 0 V		8	10	A
V_P	Pinch-off Voltage V_{DS} = 3 V, I_{DS} = 75 mA		-2.5	-4.0	V
R_{TH}	Thermal Resistance[3]		1.8	2.1	°C/W

Note: 1) Tested with 30 Ohm gate resistor. 2) S.C.L. = Single Carrier Level. 3) Overall Rth depends on case mounting.

MAXIMUM RATING AT 25°C[1,2]

SYMBOLS	PARAMETERS	ABSOLUTE[1]	CONTINUOUS[2]
Vds	Drain-Source Voltage	15	10V
Vgs	Gate-Source Voltage	-5	-4V
Pin	Input Power	37.5dBm	@ 3dB Compression
Tch	Channel Temperature	175 °C	175 °C
Tstg	Storage Temperature	-65 to +175 °C	-65 to +175 °C
Pt	Total Power Dissipation	71.5W	71.5W

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.

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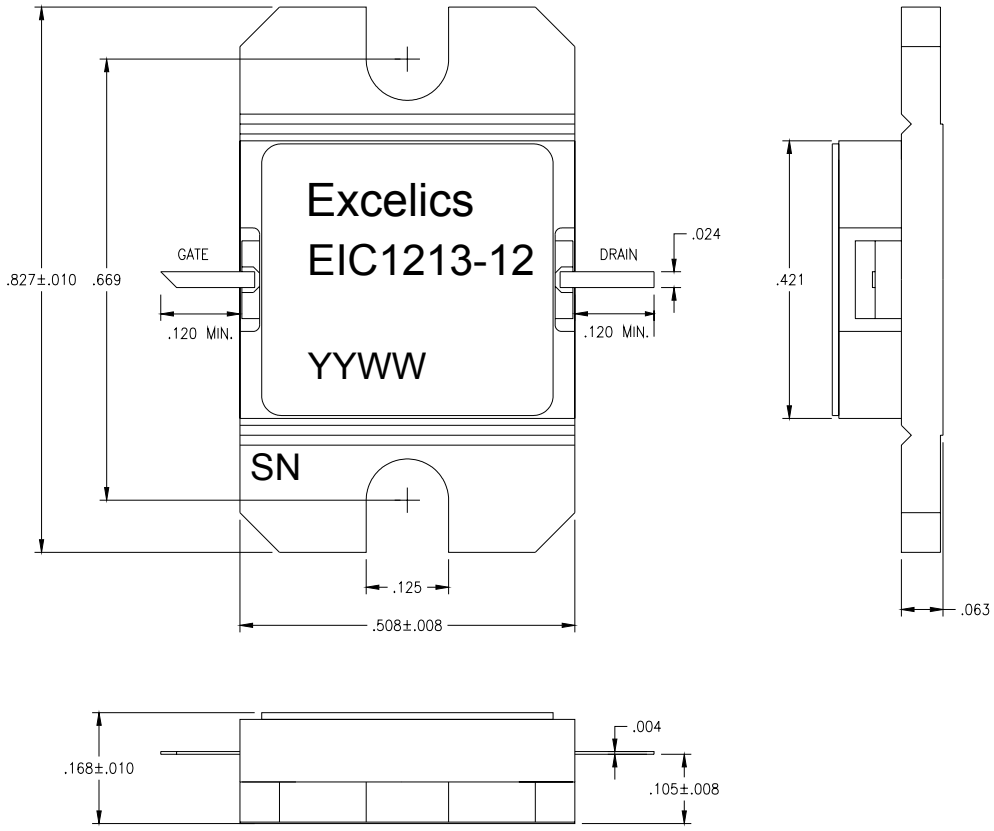
PACKAGE OUTLINE

Dimensions in inches, Tolerance ± .005 unless otherwise specified



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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.