**Excelics**
SEMICONDUCTOR

EIA1114-2

11.0-14.0GHz 2-Watt Internally Matched Power FET

FEATURES

- **11.0– 14.0GHz Bandwidth**
- **Input/Output Impedance Matched to 50 Ohms**
- **+33.5 dBm Output Power at 1dB Compression**
- **7.0 dB Power Gain at 1dB Compression**
- **25% Power Added Efficiency**
- **-36 dBc IM3 at Po = 22.5 dBm SCL**
- **Hermetic Metal Flange Package**
- **100% Tested for DC, RF, and R_{TH}**

ALL DIMENSIONS IN INCHES

ELECTRICAL CHARACTERISTICS (T_a = 25°C)
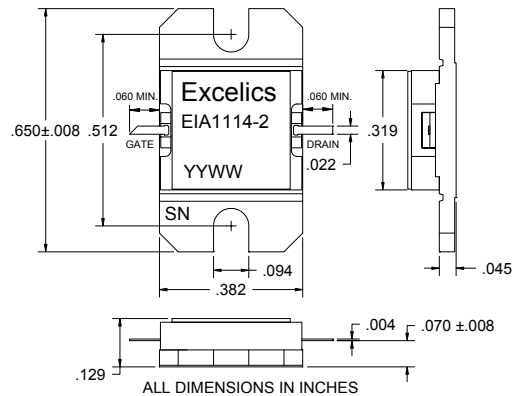
⚠ **Caution! ESD sensitive device.**

SYMBOL	PARAMETERS/TEST CONDITIONS[1]	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression f = 11.0-14.0GHz V_{DS} = 8 V, I_{DSQ} ≈ 750mA	32.5	33.5		dBm
G_{1dB}	Gain at 1dB Compression f = 11.0-14.0GHz V_{DS} = 8 V, I_{DSQ} ≈ 750mA	6.0	7.0		dB
ΔG	Gain Flatness f = 11.0-14.0GHz V_{DS} = 8 V, I_{DSQ} ≈ 750mA			±0.8	dB
PAE	Power Added Efficiency at 1dB Compression V_{DS} = 8 V, I_{DSQ} ≈ 750mA f = 11.0-14.0GHz		25		%
Id_{1dB}	Drain Current at 1dB Compression f = 11.0-14.0GHz		850	1000	mA
IM3	Output 3rd Order Intermodulation Distortion Δf = 10 MHz 2-Tone Test; Pout = 22.5 dBm S.C.L[2] V_{DS} = 8 V, I_{DSQ} ≈ 65% IDSS f = 14.0GHz		-36		dBc
I_{DSS}	Saturated Drain Current V_{DS} = 3 V, V_{GS} = 0 V		1440	1800	mA
V_P	Pinch-off Voltage V_{DS} = 3 V, I_{DS} = 15 mA		-1.0	-2.5	V
R_{TH}	Thermal Resistance[3]		11.0	12.0	°C/W

Note: 1) Tested with 100 Ohm gate resistor.   2) S.C.L. = Single Carrier Level.   3) Overall Rth depends on case mounting.

ABSOLUTE MAXIMUM RATING[1,2]

SYMBOLS	PARAMETERS	ABSOLUTE[1]	CONTINUOUS[2]
Vds	Drain-Source Voltage	10	8V
Vgs	Gate-Source Voltage	-5	-3V
Igsf	Forward Gate Current	21.6mA	7.2mA
Igsr	Reverse Gate Current	-3.6mA	-1.2mA
Pin	Input Power	32.5dBm	@ 3dB Compression
Tch	Channel Temperature	175 °C	175 °C
Tstg	Storage Temperature	-65 to +175 °C	-65 to +175 °C
Pt	Total Power Dissipation	12W	12W

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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