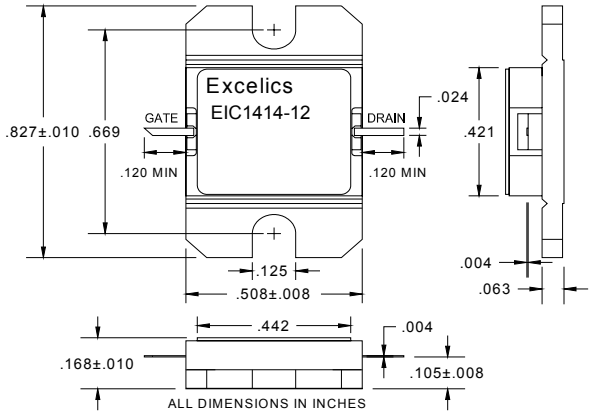
EIC1414-12

ISSUED 6/30/2006

14.0-14.5 GHz 12-Watt Internally Matched Power FET

FEATURES

- **14.0– 14.5GHz Bandwidth**
- **Input/Output Impedance Matched to 50 Ohms**
- **+40.5 dBm Output Power at 1dB Compression**
- **5.0 dB Power Gain at 1dB Compression**
- **20% Power Added Efficiency**
- **Hermetic Metal Flange Package**



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 = 14.0-14.5GHz V_{DS} = 10 V, I_{DSQ} ≈ 3500mA	39.5	40.5		dBm
G_{1dB}	Gain at 1dB Compression f = 14.0-14.5GHz V_{DS} = 10 V, I_{DSQ} ≈ 3500mA	4.0	5.0		dB
ΔG	Gain Flatness f = 14.0-14.5GHz V_{DS} = 10 V, I_{DSQ} ≈ 3500mA			±0.6	dB
PAE	Power Added Efficiency at 1dB Compression V_{DS} = 10 V, I_{DSQ} ≈ 3500mA f = 14.0-14.5GHz		20		%
Id_{1dB}	Drain Current at 1dB Compression f = 14.0-14.5GHz		3600	4200	mA
I_{DSS}	Saturated Drain Current V_{DS} = 3 V, V_{GS} = 0 V		6000	7500	mA
V_P	Pinch-off Voltage V_{DS} = 3 V, I_{DS} = 60 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 Rth depends on case mounting.

ABSOLUTE MAXIMUM RATING[1,2]

SYMBOLS	PARAMETERS	ABSOLUTE[1]	CONTINUOUS[2]
Vds	Drain-Source Voltage	15	10V
Vgs	Gate-Source Voltage	-5	-4V
Igsf	Forward Gate Current	136mA	45mA
Igsr	Reverse Gate Current	-23mA	-8mA
Pin	Input Power	39.5dBm	@ 3dB Compression
Tch	Channel Temperature	175 °C	175 °C
Tstg	Storage Temperature	-65 to +175 °C	-65 to +175 °C
Pt	Total Power Dissipation	58W	58W

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.