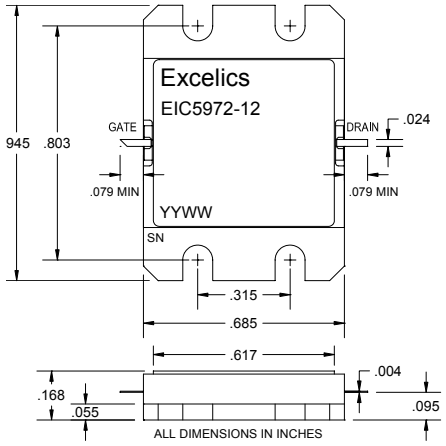
EIC5972-12

UPDATED 11/10/2006

5.90-7.20 GHz 12-Watt Internally Matched Power FET

FEATURES

- 5.90– 7.20GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +41.5 dBm Output Power at 1dB Compression
- 9.0 dB Power Gain at 1dB Compression
- 36% Power Added Efficiency
- -46 dBc IM3 at P_{out} = 30.5 dBm SCL
- 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 = 5.90-7.20GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200mA	40.5	41.5		dBm
G_{1dB}	Gain at 1dB Compression f = 5.90-7.20GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200mA	8.0	9.0		dB
ΔG	Gain Flatness f = 5.90-7.20GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200mA			±0.8	dB
PAE	Power Added Efficiency at 1dB Compression V_{DS} = 10 V, I_{DSQ} ≈ 3200mA f = 5.90-7.20GHz		36		%
Id_{1dB}	Drain Current at 1dB Compression f = 5.90-7.20GHz		3400	3800	mA
IM3	Output 3rd Order Intermodulation Distortion Δf = 10 MHz 2-Tone Test; Pout = 30.5 dBm S.C.L[2] V_{DS} = 10 V, I_{DSQ} ≈ 65% IDSS f = 7.20GHz	-43	-46		dBc
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]		2.5	3.0	°C/W

Note: 1) Tested with 50 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	CONTINUOUS
Vds	Drain-Source Voltage	15	10V
Vgs	Gate-Source Voltage	-5	-4V
Igsf	Forward Gate Current	129.6mA	43.2mA
Igsr	Reverse Gate Current	-21.6mA	-7.2mA
Pin	Input Power	40.5dBm	@ 3dB Compression
Tch	Channel Temperature	175 °C	175 °C
Tstg	Storage Temperature	-65 to +175 °C	-65 to +175 °C
Pt	Total Power Dissipation	50W	50W

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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