EIC8596-12
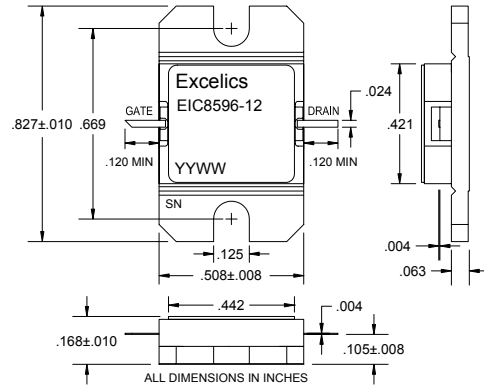
8.50-9.60 GHz 12-Watt Internally Matched Power FET

FEATURES

- **8.50– 9.60GHz Bandwidth**
- **Input/Output Impedance Matched to 50 Ohms**
- **+41.5 dBm Output Power at 1dB Compression**
- **7.0 dB Power Gain at 1dB Compression**
- **34% Power Added Efficiency**
- **-46 dBc IM3 at PO = 30.5 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 = 8.50-9.60GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200mA	40.5	41.5		dBm
G_{1dB}	Gain at 1dB Compression f = 8.50-9.60GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200mA	6.0	7.0		dB
ΔG	Gain Flatness f = 8.50-9.60GHz 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 = 8.50-9.60GHz		34		%
Id_{1dB}	Drain Current at 1dB Compression f = 8.50-9.60GHz		3300	3700	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 = 9.60GHz	-43	-46		dBc
I_{DSS}	Saturated Drain Current V_{DS} = 3 V, V_{GS} = 0 V		6200	7800	mA
V_P	Pinch-off Voltage V_{DS} = 3 V, I_{DS} = 62 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.

ABSOLUTE MAXIMUM RATING[1,2]

SYMBOLS	PARAMETERS	ABSOLUTE[1]	CONTINUOUS[2]
Vds	Drain-Source Voltage	15	10V
Vgs	Gate-Source Voltage	-5	-3V
Igsf	Forward Gate Current	129.6mA	43.2mA
Igsr	Reserve 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.

Specifications are subject to change without notice.
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Revised January 2006