EIC8596-15

UPDATED 04/25/2006

8.50-9.60 GHz 15-Watt Internally Matched Power FET
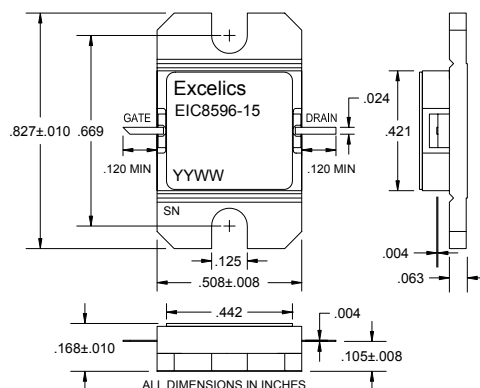

ALL DIMENSIONS IN INCHES

FEATURES

- **8.50– 9.60GHz Bandwidth**
- **Input/Output Impedance Matched to 50 Ohms**
- **+42.5 dBm Output Power at 1dB Compression**
- **7.0 dB Power Gain at 1dB Compression**
- **31% Power Added Efficiency**
- **-46 dBc IM3 at PO = 31.5 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 V_{DS} = 10 V, I_{DSQ} ≈ 4500mA	f = 8.50-9.60GHz	41.5	42.5		dBm
G_{1dB}	Gain at 1dB Compression V_{DS} = 10 V, I_{DSQ} ≈ 4500mA	f = 8.50-9.60GHz	6.0	7.0		dB
ΔG	Gain Flatness V_{DS} = 10 V, I_{DSQ} ≈ 4500mA	f = 8.50-9.60GHz			±0.6	dB
PAE	Power Added Efficiency at 1dB Compression V_{DS} = 10 V, I_{DSQ} ≈ 4500mA	f = 8.50-9.60GHz		31		%
Id_{1dB}	Drain Current at 1dB Compression	f = 8.50-9.60GHz		4600	5200	mA
IM3	Output 3rd Order Intermodulation Distortion Δf = 10 MHz 2-Tone Test; Pout = 31.5 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		8500	11000	mA
V_P	Pinch-off Voltage	V_{DS} = 3 V, I_{DS} = 85 mA		-2.5	-4.0	V
R_{TH}	Thermal Resistance[3]			2.0	2.5	°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	189.9mA	63.3mA
Igsr	Reserve Gate Current	-10.6mA	-31.7mA
Pin	Input Power	41.5dBm	@ 3dB Compression
Tch	Channel Temperature	175 °C	175 °C
Tstg	Storage Temperature	-65 to +175 °C	-65 to +175 °C
Pt	Total Power Dissipation	60W	60W

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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