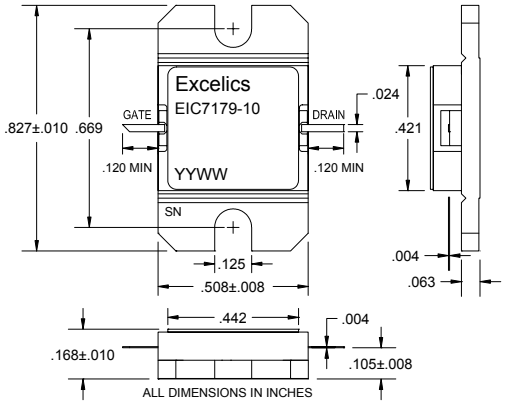
EIC7179-10

ISSUED DATE: 01/30/2008

7.10-7.90 GHz 10-Watt Internally Matched Power FET

FEATURES

- **7.10-7.90GHz Bandwidth**
- **Input/Output Impedance Matched to 50 Ohms**
- **+40.5 dBm Output Power at 1dB Compression**
- **8.5 dB Power Gain at 1dB Compression**
- **28% Power Added Efficiency**
- **-46 dBc IM3 at PO = 29.5dBm 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 = 7.10-7.90GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200mA	39.5	40.5		dBm
G_{1dB}	Gain at 1dB Compression f = 7.10-7.90GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200mA	7.5	8.5		dB
ΔG	Gain Flatness f = 7.10-7.90GHz 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 = 7.10-7.90GHz		28		%
Id_{1dB}	Drain Current at 1dB Compression f = 7.10-7.90GHz		3200	3600	mA
IM3	Output 3rd Order Intermodulation Distortion Δf = 10 MHz 2-Tone Test; Pout = 29.5dBm S.C.L[2] V_{DS} = 10 V, I_{DSQ} ≈ 65% IDSS f = 7.90GHz	-43	-46		dBc
I_{DSS}	Saturated Drain Current V_{DS} = 3 V, V_{GS} = 0 V		5700	7100	mA
V_P	Pinch-off Voltage V_{DS} = 3 V, I_{DS} = 57 mA		-2.5	-4.0	V
R_{TH}	Thermal Resistance[3]		2.5	3.0	°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	15V	10V
Vgs	Gate-Source Voltage	-5V	-4.0V
Igsf	Forward Gate Current	104.4mA	34.8mA
Igsr	Reserve Gate Current	-17.4mA	-5.8mA
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	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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