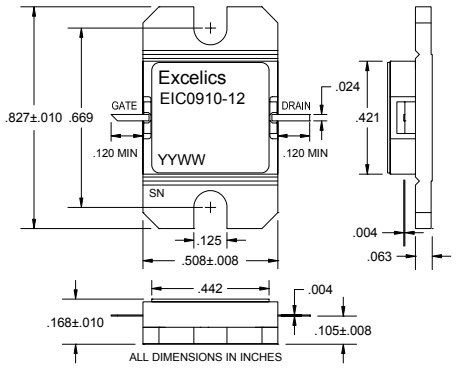
EIC0910-12

UPDATED 03/07/2008

9.50-10.50 GHz 12-Watt Internally Matched Power FET

FEATURES

- **9.50–10.50GHz Bandwidth**
- **Input/Output Impedance Matched to 50 Ohms**
- **+40.5 dBm Output Power at 1dB Compression**
- **7.0 dB Power Gain at 1dB Compression**
- **30% Power Added Efficiency**
- **-46 dBc IM3 at PO = 28.5 dBm SCL**
- **100% Tested for DC, RF, and R_{TH}**



Caution! ESD sensitive device.

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

SYMBOL	PARAMETERS/TEST CONDITIONS[1]	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression f = 9.50-10.50GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200Ma	39.5	40.5		dBm
G_{1dB}	Gain at 1dB Compression f = 9.50-10.50GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200mA	6.0	7.0		dB
ΔG	Gain Flatness f = 9.50-10.50GHz 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 = 9.50-10.50GHz		30		%
Id_{1dB}	Drain Current at 1dB Compression f = 9.50-10.50GHz		3300	4200	mA
IM3	Output 3rd Order Intermodulation Distortion Δf=10MHz 2-Tone Test. Pout=28.5 dBm S.C.L Vds = 10 V, I_{DSQ} ≈ 65% I_{DSS} f = 10.50GHz	-43	-46		dBc
I_{DSS}	Saturated Drain Current V_{DS} = 3 V, V_{GS} = 0 V		6500	9000	mA
V_P	Pinch-off Voltage V_{DS} = 3 V, I_{DS} = 58 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	130mA	43mA
Igsr	Reverse Gate Current	-21mA	-7mA
Pin	Input Power	40.0dBm	@ 3dB Compression
Tch	Channel Temperature	175 °C	175 °C
Tstg	Storage Temperature	-65 to +175 °C	-65 to +175 °C
Pt	Total Power Dissipation	57W	57W

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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