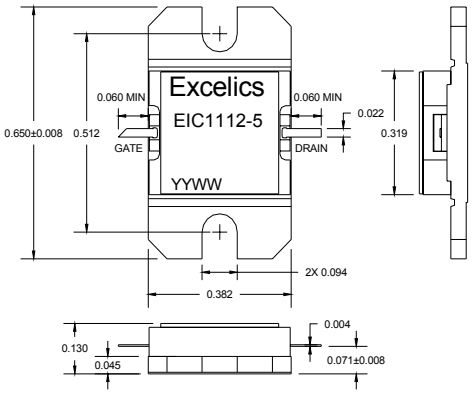
EIC1112-5

ISSUED 07/03/2007

11.7-12.7 GHz 5-Watt Internally Matched Power FET

FEATURES

- 11.7– 12.7GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +37.5 dBm Output Power at 1dB Compression
- 6.5 dB Power Gain at 1dB Compression
- 25% Power Added Efficiency
- Hermetic Metal Flange Package



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 = 11.7-12.7GHz V_{DS} = 10 V, I_{DSQ} ≈ 1600mA	36.5	37.5		dBm
G_{1dB}	Gain at 1dB Compression f = 11.7-12.7GHz V_{DS} = 10 V, I_{DSQ} ≈ 1600mA	5.5	6.5		dB
ΔG	Gain Flatness f = 11.7-12.7GHz V_{DS} = 10 V, I_{DSQ} ≈ 1600mA			±0.6	dB
PAE	Power Added Efficiency at 1dB Compression V_{DS} = 10 V, I_{DSQ} ≈ 1600mA f = 11.7-12.7GHz		25		%
Id_{1dB}	Drain Current at 1dB Compression f = 11.7-12.7GHz		1700	2000	mA
IM3	Output 3rd Order Intermodulation Distortion Δf=10MHz 2-Tone Test. Pout=26.5 dBm S.C.L Vds = 10 V, I_{DSQ} ≈ 65% I_{DSS} f = 12.7GHz	-40	-43		dBc
I_{DSS}	Saturated Drain Current V_{DS} = 3 V, V_{GS} = 0 V		2800	3500	mA
V_P	Pinch-off Voltage V_{DS} = 3 V, I_{DS} = 24 mA		-2.5	-4.0	V
R_{TH}	Thermal Resistance[3]		5.0	5.5	°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	15	10V
Vgs	Gate-Source Voltage	-5	-4V
Igsf	Forward Gate Current	61.2mA	20.4mA
Igsr	Reserve Gate Current	-10.2mA	-3.4mA
Pin	Input Power	35.5dBm	@ 3dB Compression
Tch	Channel Temperature	175 °C	175 °C
Tstg	Storage Temperature	-65 to +175 °C	-65 to +175 °C
Pt	Total Power Dissipation	27W	27W

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.

ISSUED 07/03/2007

11.7-12.7 GHz 5-Watt Internally Matched Power FET

DISCLAIMER

EXCELICS SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. EXCELICS DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN.

LIFE SUPPORT POLICY

EXCELICS SEMICONDUCTOR PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF EXCELICS SEMICONDUCTOR, INC. AS HERE IN:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness