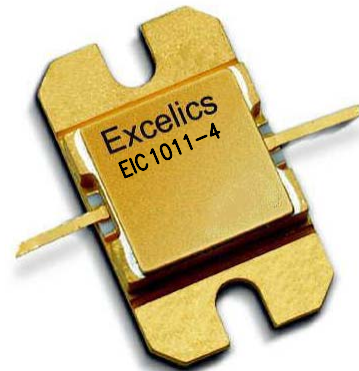


FEATURES

- 10.70 –11.70GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +36.0 dBm Output Power at 1dB Compression
- 6.5 dB Power Gain at 1dB Compression
- 30% Power Added Efficiency
- -46 dBc IM3 at $P_o = 25.5$ dBm SCL
- 100% Tested for DC, RF, and R_{TH}



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



Caution! ESD sensitive device.

SYMBOL	PARAMETERS/TEST CONDITIONS ¹	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression $f = 10.7\text{-}11.7\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 1100\text{mA}$	35.5	36.0		dBm
G_{1dB}	Gain at 1dB Compression $f = 10.7\text{-}11.7\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 1100\text{mA}$	5.5	6.5		dB
ΔG	Gain Flatness $f = 10.7\text{-}11.7\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 1100\text{mA}$			± 0.6	dB
PAE	Power Added Efficiency at 1dB Compression $V_{DS} = 10\text{ V}, I_{DSQ} \approx 1100\text{mA}$ $f = 10.7\text{-}11.7\text{GHz}$		30		%
I_{d1dB}	Drain Current at 1dB Compression $f = 10.7\text{-}11.7\text{GHz}$		1100	1300	mA
IM3	Output 3rd Order Intermodulation Distortion $\Delta f = 10\text{ MHz}$ 2-Tone Test; $P_{out} = 25.5\text{ dBm S.C.L}^2$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 65\% IDSS$ $f = 11.70\text{GHz}$	-43	-46		dBc
I_{DSS}	Saturated Drain Current $V_{DS} = 3\text{ V}, V_{GS} = 0\text{ V}$		2000	2500	mA
V_P	Pinch-off Voltage $V_{DS} = 3\text{ V}, I_{DS} = 20\text{ mA}$		-2.5	-4.0	V
R_{TH}	Thermal Resistance ³		5.5	6.0	$^\circ\text{C/W}$

Note: 1. Tested with 100 Ohm gate resistor.
2. S.C.L. = Single Carrier Level.
3. Overall R_{th} depends on case mounting.

ABSOLUTE MAXIMUM RATING FOR EFE

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	15V	10V
V_{gs}	Gate-Source Voltage	-5V	-4V
I_{gf}	Forward Gate Current	48mA	14.4mA
I_{gr}	Reverse Gate Current	-9.6mA	-2.4mA
P_{in}	Input Power	35.5dBm	@ 3dB Compression
T_{ch}	Channel Temperature	175C	175C
T_{stg}	Storage Temperature	-65C to +175C	-65C to +175C
P_t	Total Power Dissipation	25W	25W

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.



EIC1011-4

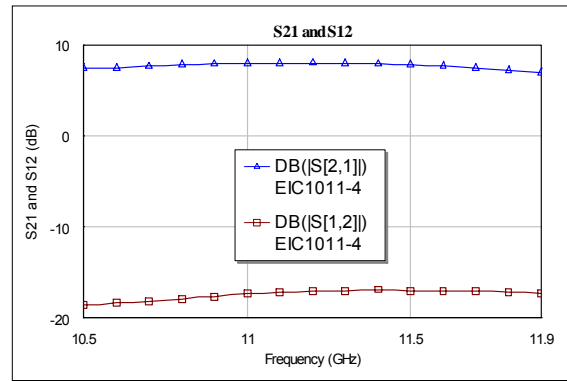
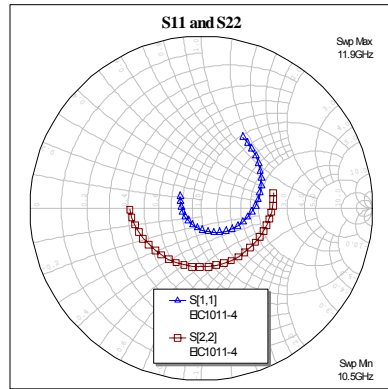
UPDATED 08/21/2007

10.70-11.70GHz 4-Watt Internally-Matched Power FET

PERFORMANCE DATA

Typical S-Parameters (T= 25°C, 50Ω system, de-embedded to edge of package)

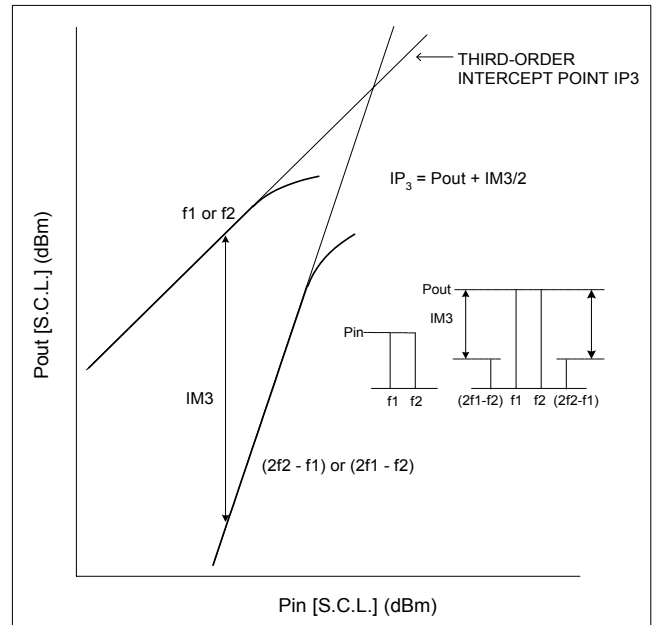
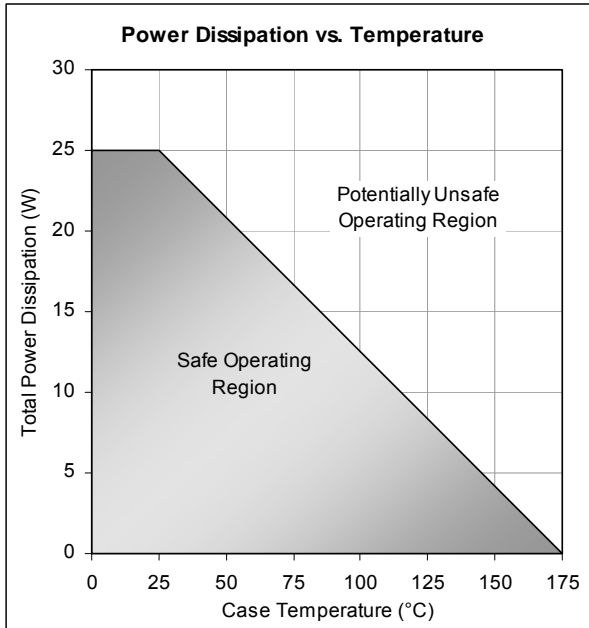
$V_{DS} = 10\text{ V}$, $I_{DSQ} = 1100\text{mA}$



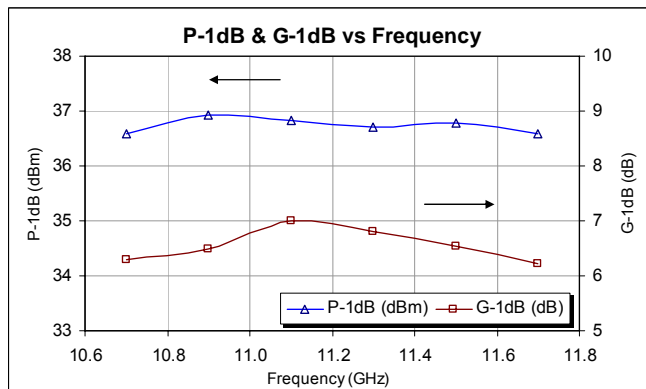
FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10.0	0.5739	108.35	2.1901	-123.52	0.1038	-170.96	0.4584	55.24
10.2	0.5419	89.44	2.2517	-141.43	0.1081	171.77	0.4527	38.81
10.4	0.5027	69.8	2.3146	-159.96	0.1142	153.91	0.4397	21.79
10.6	0.454	49.43	2.3701	-178.6	0.1209	135.5	0.4186	2.16
10.8	0.3919	26.75	2.4477	162.08	0.1272	116.3	0.3848	-20.15
11.0	0.3168	2.48	2.5075	141.24	0.1368	95.69	0.359	-45.27
11.2	0.2355	-25.9	2.5133	119.63	0.1399	74.8	0.342	-75.08
11.4	0.1589	-62.62	2.4807	97.75	0.1436	52.35	0.3447	-107.19
11.6	0.1084	-118.22	2.4142	76.04	0.141	30.62	0.3633	-137.98
11.8	0.1171	176.36	2.2904	53.87	0.1378	9.3	0.4005	-166.15
12.0	0.1688	130.2	2.157	32.3	0.1337	-13.09	0.4409	169.07

Specifications are subject to change without notice.

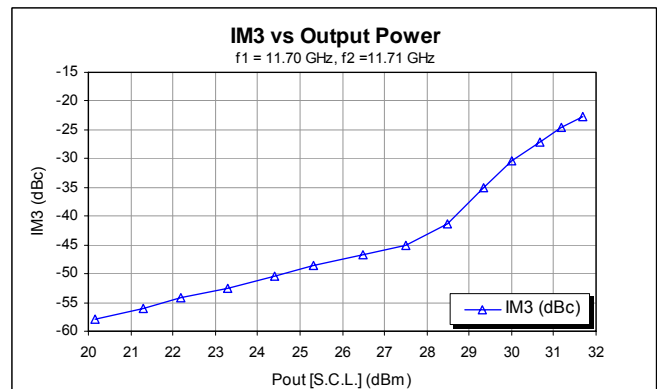
Power De-rating Curve and IM3 Definition



Typical Power Data ($V_{DS} = 10\text{ V}$, $I_{DSQ} = 1100\text{ mA}$)



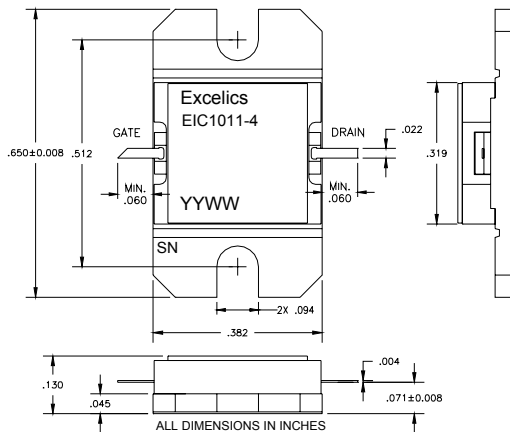
Typical IM3 Data ($V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 65\% IDSS$)



PACKAGES OUTLINE

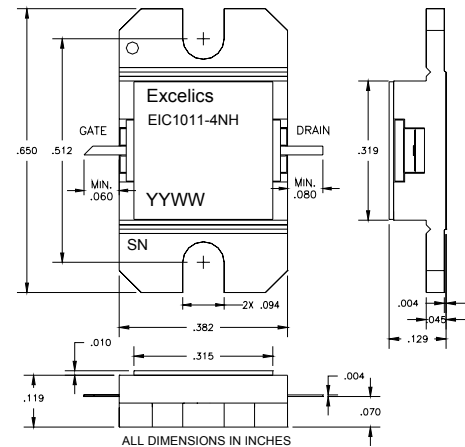
Dimensions in inches, Tolerance $\pm .005$ unless otherwise specified

EIC1011-4 (Hermetic)



Caution! ESD sensitive device.

EIC1011-4NH (Non-Hermetic)



Caution! ESD sensitive device.

ORDERING INFORMATION

Part Number	Packages	Grade ¹	f _{Test} (GHz)	P _{1dB} (min)	IM ₃ (min) ²
EIC1011-4	Hermetic	Industrial	10.70-11.70GHz	35.5	-43
EIC1011-4NH	Non-Hermetic	Industrial	10.70-11.70GHz	35.5	-43

- Notes: 1. Contact factory for military and hi-rel grades.
2. Exact test conditions are specified in "Electrical Characteristics" table.

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- 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