



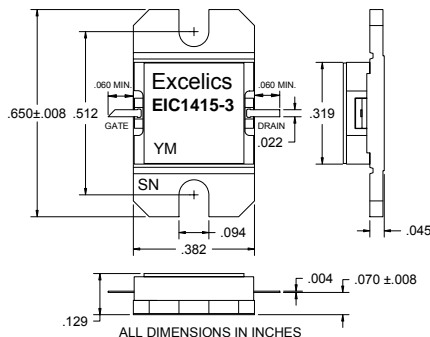
EIC1415-3

UPDATED 11/22/2004

14.40 – 15.35GHz 3-Watt Internally Matched Power FET

FEATURES

- 14.40-15.35 GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +34.5 dBm Output Power at 1dB Compression
- 6.0 dB Power Gain at 1dB Compression
- 25% Power Added Efficiency
- -42 dBc IM3 at $P_o = 23.5$ dBm SCL
- Hermetic Metal Flange Package
- 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 $f = 14.40\text{-}15.35\text{GHz}$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 800\text{mA}$	33.5	34.5		dBm
G_{1dB}	Gain at 1dB Compression $f = 14.40\text{-}15.35\text{GHz}$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 800\text{mA}$	5.0	6.0		dB
ΔG	Gain Flatness $f = 14.40\text{-}15.35\text{GHz}$ $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 800\text{mA}$			± 0.6	dB
PAE	Power Added Efficiency at 1dB Compression $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 800\text{mA}$ $f = 14.40\text{-}15.35\text{GHz}$		25		%
I_{d1dB}	Drain Current at 1dB Compression $f = 14.40\text{-}15.35\text{GHz}$		900	1100	mA
IM3	Output 3rd Order Intermodulation Distortion $\Delta f = 10\text{ MHz}$ 2-Tone Test; $P_{out} = 23.5\text{ dBm}$ S.C.L. ² $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 65\%$ IDSS $f = 15.35\text{GHz}$	-38	-42*		dBc
I_{DSS}	Saturated Drain Current $V_{DS} = 3\text{ V}$, $V_{GS} = 0\text{ V}$		1400	1800	mA
V_P	Pinch-off Voltage $V_{DS} = 3\text{ V}$, $I_{DS} = 15\text{ mA}$		-2.5	-4.0	V
R_{TH}	Thermal Resistance ³		8.0	9.0	$^\circ\text{C/W}$

Notes:

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

* These devices are available screened for IM3 performance. Please contact factory with your requirement.

ABSOLUTE MAXIMUM RATINGS FOR CONTINUOUS OPERATION^{1,2}

SYMBOL	CHARACTERISTIC	VALUE
V_{DS}	Drain to Source Voltage	10 V
V_{GS}	Gate to Source Voltage	-4.5 V
I_{DS}	Drain Current	IDSS
I_{GSF}	Forward Gate Current	30 mA
P_{IN}	Input Power	@ 3dB compression
P_T	Total Power Dissipation	14 W
T_{CH}	Channel Temperature	150 $^\circ\text{C}$
T_{STG}	Storage Temperature	-65/+150 $^\circ\text{C}$

Notes:

1. Operating the device beyond any of the above ratings may result in permanent damage or reduction of MTTF.
2. Bias conditions must also satisfy the following equation $P_T < (T_{CH} - T_{PKG})/R_{TH}$, where T_{PKG} = temperature of package, and $P_T = (V_{DS} \cdot I_{DS}) - (P_{OUT} - P_{IN})$.

Specifications are subject to change without notice.

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page 1 of 1

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