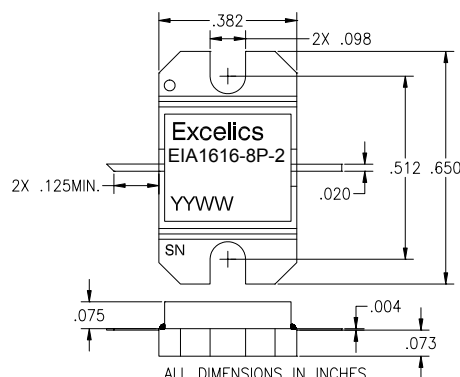


### FEATURES

- 16.2– 16.4GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +39.0 dBm Output Power at 1dB Compression
- 6.0 dB Min. Power Gain at 1dB Compression
- 30% Power Added Efficiency
- Non-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 <sup>1</sup>	MIN	TYP	MAX	UNITS
$P_{1dB}$	Output Power at 1dB Compression $f = 16.2\text{-}16.4\text{GHz}$ $V_{DS} = 8\text{ V}$ , $I_{DSQ} \approx 2200\text{mA}$	38.0	39.0		dBm
$G_{1dB}$	Gain at 1dB Compression $f = 16.2\text{-}16.4\text{GHz}$ $V_{DS} = 8\text{ V}$ , $I_{DSQ} \approx 2200\text{mA}$	6.0	7.0		dB
$\Delta G$	Gain Flatness $f = 16.2\text{-}16.4\text{GHz}$ $V_{DS} = 8\text{ V}$ , $I_{DSQ} \approx 2200\text{mA}$			$\pm 0.6$	dB
PAE	Power Added Efficiency at 1dB Compression $f = 16.2\text{-}16.4\text{GHz}$ $V_{DS} = 8\text{ V}$ , $I_{DSQ} \approx 2200\text{mA}$		30		%
$I_{d1dB}$	Drain Current at 1dB Compression $f = 16.2\text{-}16.4\text{GHz}$		2600	3200	mA
$I_{DSS}$	Saturated Drain Current $V_{DS} = 3\text{ V}$ , $V_{GS} = 0\text{ V}$		4000	6000	mA
$V_P$	Pinch-off Voltage $V_{DS} = 3\text{ V}$ , $I_{DS} = 40\text{ mA}$		-1.0	-2.5	V
$R_{TH}$	Thermal Resistance <sup>2</sup>		3.5	4.0	$^\circ\text{C/W}$

Note:

1. Tested with 100 Ohm gate resistor.
2. Overall  $R_{th}$  depends on case mounting.

### ABSOLUTE MAXIMUM RATING<sup>1,2</sup>

SYMBOLS	PARAMETERS	ABSOLUTE <sup>1</sup>	CONTINUOUS <sup>2</sup>
$V_{ds}$	Drain-Source Voltage	10V	8V
$V_{gs}$	Gate-Source Voltage	-5V	-3V
$I_{gf}$	Forward Gate Current	86.4mA	28.8mA
$I_{gr}$	Reverse Gate Current	-14.4mA	-4.8mA
$P_{in}$	Input Power	38 dBm	@ 3dB Compression
$T_{ch}$	Channel Temperature	175 $^\circ\text{C}$	175 $^\circ\text{C}$
$T_{stg}$	Storage Temperature	-65 to +175 $^\circ\text{C}$	-65 to +175 $^\circ\text{C}$
$P_t$	Total Power Dissipation	38W	38W

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  $P_T = (V_{DS} * I_{DS}) - (P_{OUT} - P_{IN})$ .

Specifications are subject to change without notice.

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# EIA1616-8P-2

UPDATED 11/09/06

## 16.2-16.4GHz 8-Watt Internally Matched Power FET

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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