



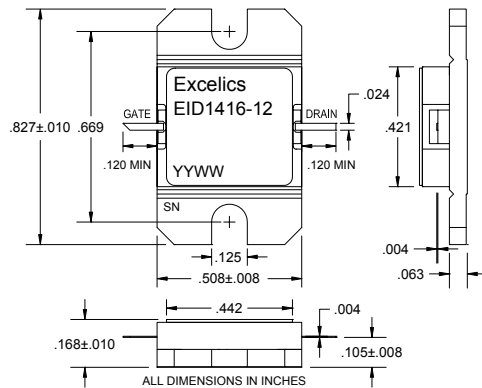
# EID1416-12

UPDATED 12/06/2006

## 14.0-16.0 GHz 12-Watt Internally Matched Power FET

### FEATURES

- 14.0– 16.0GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +41.0 dBm Output Power at 1dB Compression
- 5.0 dB Power Gain at 1dB Compression
- 22% Power Added Efficiency
- Hermetic Metal Flange Package



### 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 $f = 14.0-16.0\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$	40.0	41.0		dBm
$G_{1dB}$	Gain at 1dB Compression $f = 14.0-16.0\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$	4.0	5.0		dB
$\Delta G$	Gain Flatness $f = 14.0-16.0\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$			$\pm 1.0$	dB
PAE	Power Added Efficiency at 1dB Compression $f = 14.0-16.0\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$		22		%
$I_{d1dB}$	Drain Current at 1dB Compression $f = 14.0-16.0\text{GHz}$		4000	5000	mA
$I_{DSS}$	Saturated Drain Current $V_{DS} = 3\text{ V}, V_{GS} = 0\text{ V}$		6000	7500	mA
$V_P$	Pinch-off Voltage $V_{DS} = 3\text{ V}, I_{DS} = 60\text{ mA}$		-1.0	-2.5	V
$R_{TH}$	Thermal Resistance <sup>2</sup>		2.5	3.0	$^\circ\text{C/W}$

Note:

1. Tested with 50 Ohm gate resistor.
2. Overall Rth depends on case mounting.

### MAXIMUM RATING<sup>1,2</sup> ( $T_a = 25^\circ\text{C}$ )

SYMBOLS	PARAMETERS	ABSOLUTE <sup>1</sup>	CONTINUOUS <sup>2</sup>
$V_{DS}$	Drain-Source Voltage	15V	10V
$V_{GS}$	Gate-Source Voltage	-5V	-3V
$I_{gsf}$	Forward Gate Current	135mA	45mA
$I_{gsr}$	Reverse Gate Current	-21mA	-7mA
$P_{in}$	Input Power	40.0dBm	@ 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	50W	50W

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.

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