



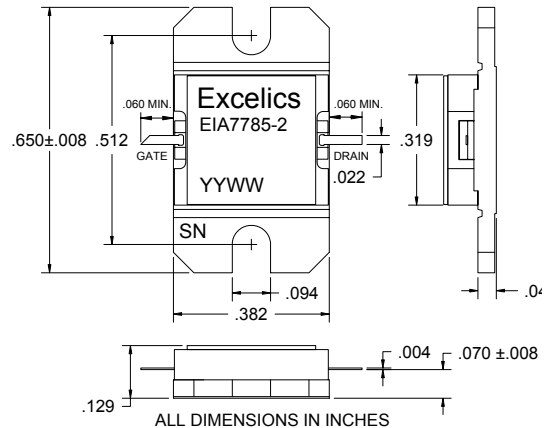
# EIA7785-2

UPDATED 02/17/2006

## 7.70-8.50 GHz 2-Watt Internally Matched Power FET

### FEATURES

- 7.70– 8.50GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +34.0 dBm Output Power at 1dB Compression
- 12.5 dB Power Gain at 1dB Compression
- 33% 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 $f = 7.70\text{-}8.50\text{GHz}$ $V_{DS} = 8\text{ V}$ , $I_{DSQ} \approx 800\text{mA}$	33.0	34.0		dBm
$G_{1dB}$	Gain at 1dB Compression $f = 7.70\text{-}8.50\text{GHz}$ $V_{DS} = 8\text{ V}$ , $I_{DSQ} \approx 800\text{mA}$	11.5	12.5		dB
$\Delta G$	Gain Flatness $f = 7.70\text{-}8.50\text{GHz}$ $V_{DS} = 8\text{ V}$ , $I_{DSQ} \approx 800\text{mA}$			$\pm 0.6$	dB
PAE	Power Added Efficiency at 1dB Compression $f = 7.70\text{-}8.50\text{GHz}$ $V_{DS} = 8\text{ V}$ , $I_{DSQ} \approx 800\text{mA}$		33		%
$I_{d1dB}$	Drain Current at 1dB Compression $f = 7.70\text{-}8.50\text{GHz}$		900	1100	mA
$I_{DSS}$	Saturated Drain Current $V_{DS} = 3\text{ V}$ , $V_{GS} = 0\text{ V}$		1400	1800	mA
$V_P$	Pinch-off Voltage $V_{DS} = 3\text{ V}$ , $I_{DS} = 14\text{ mA}$		-1.0	-2.5	V
$R_{TH}$	Thermal Resistance <sup>3</sup>		10	11	$^\circ\text{C/W}$

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<sup>1,2</sup>

SYMBOLS	PARAMETERS	ABSOLUTE <sup>1</sup>	CONTINUOUS <sup>2</sup>
Vds	Drain-Source Voltage	12	8V
Vgs	Gate-Source Voltage	-5	-3V
Igsf	Forward Gate Current	21.6mA	7.2mA
Igsr	Reverse Gate Current	-3.6mA	-1.2mA
Pin	Input Power	32.5dBm	@ 3dB Compression
Tch	Channel Temperature	175 $^\circ\text{C}$	175 $^\circ\text{C}$
Tstg	Storage Temperature	-65 to +175 $^\circ\text{C}$	-65 to +175 $^\circ\text{C}$
Pt	Total Power Dissipation	13W	13W

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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