



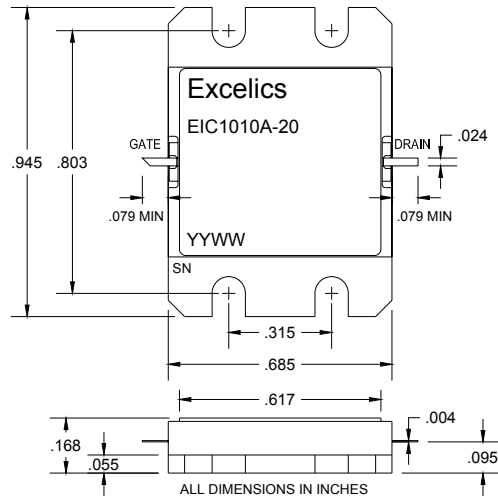
# EIC1010A-20

ISSUED 07/03/2007

## 10.00-10.25 GHz 20-Watt Internally Matched Power FET

### FEATURES

- 10.00– 10.25GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +42.5 dBm Output Power at 1dB Compression
- 6.0 dB Power Gain at 1dB Compression
- 27% Power Added Efficiency
- 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 $V_{DS} = 9\text{ V}$ , $I_{DSQ} \approx 4000\text{mA}$ $f = 10.00\text{-}10.25\text{GHz}$	41.5	42.5		dBm
$G_{1dB}$	Gain at 1dB Compression $V_{DS} = 9\text{ V}$ , $I_{DSQ} \approx 4000\text{mA}$ $f = 10.00\text{-}10.25\text{GHz}$	5.5	6.5		dB
$\Delta G$	Gain Flatness $V_{DS} = 9\text{ V}$ , $I_{DSQ} \approx 4000\text{mA}$ $f = 10.00\text{-}10.25\text{GHz}$			$\pm 0.5$	dB
PAE	Power Added Efficiency at 1dB Compression $V_{DS} = 9\text{ V}$ , $I_{DSQ} \approx 4000\text{mA}$ $f = 10.00\text{-}10.25\text{GHz}$		27		%
$I_{d1dB}$	Drain Current at 1dB Compression $f = 10.00\text{-}10.25\text{GHz}$		5500	6500	mA
$I_{DSS}$	Saturated Drain Current $V_{DS} = 3\text{ V}$ , $V_{GS} = 0\text{ V}$		14000	18000	mA
$V_P$	Pinch-off Voltage $V_{DS} = 3\text{ V}$ , $I_{DS} = 140\text{ mA}$		-2.5	-4.0	V
$R_{TH}$	Thermal Resistance <sup>2</sup>		1.4	1.6	$^\circ\text{C/W}$

Note: 1) Tested with 25 Ohm gate resistor.

2) Overall  $R_{th}$  depends on case mounting.

### MAXIMUM RATING (Case Temperature 25 °C)

SYMBOL	CHARACTERISTIC	ABSOLUTE <sup>1</sup>	CONTINUOUS <sup>2</sup>
$V_{DS}$	Drain to Source Voltage	15V	10 V
$V_{GS}$	Gate to Source Voltage	-5V	-3.0 V
$I_{DS}$	Drain Current	$I_{DSS}$	9400mA
$I_{GSF}$	Forward Gate Current	3000mA	500 mA
$P_{IN}$	Input Power	42.5 dBm	@ 3dB compression
$P_T$	Total Power Dissipation	110W	94 W
$T_{CH}$	Channel Temperature	175 $^\circ\text{C}$	175 $^\circ\text{C}$
$T_{STG}$	Storage Temperature	-65 $^\circ\text{C}$ ~ 175 $^\circ\text{C}$	-65 $^\circ\text{C}$ ~ 175 $^\circ\text{C}$

Notes: 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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