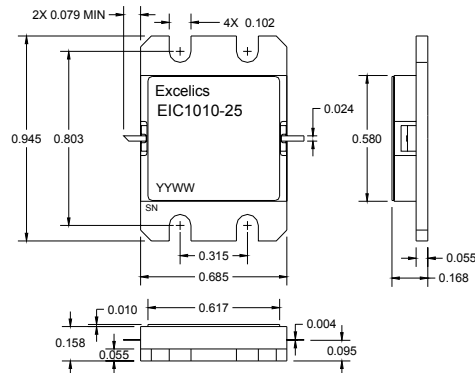


EIC1010-25

10.0-10.25 GHz 25-Watt Internally Matched Power FET

FEATURES

- 10.0 – 10.25 GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +44 dBm Output Power at 1dB Compression
- 7 dB Power Gain at 1dB Compression
- 33% 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 ¹	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression $f = 10.0-10.25\text{GHz}$ $V_{DS} = 9\text{ V}, I_{DSQ} \approx 4000\text{mA}$	43	44		dBm
G_{1dB}	Gain at 1dB Compression $f = 10.0-10.25\text{GHz}$ $V_{DS} = 9\text{ V}, I_{DSQ} \approx 4000\text{mA}$	6.5	7		dB
ΔG	Gain Flatness $f = 10.0-10.25\text{GHz}$ $V_{DS} = 9\text{ V}, I_{DSQ} \approx 4000\text{mA}$			± 0.6	dB
PAE	Power Added Efficiency at 1dB Compression $V_{DS} = 9\text{ V}, I_{DSQ} \approx 4000\text{mA}$ $f = 10.0-10.25\text{GHz}$		33		%
I_{d1dB}	Drain Current at 1dB Compression $f = 10.0-10.25\text{GHz}$		6500	7200	mA
I_{DSS}	Saturated Drain Current $V_{DS} = 3\text{ V}, V_{GS} = 0\text{ V}$		11	16	A
V_P	Pinch-off Voltage $V_{DS} = 3\text{ V}, I_{DS} = 130\text{ mA}$		-2.5	-4.0	V
R_{TH}	Thermal Resistance ²		1.4	1.8	$^\circ\text{C}/\text{W}$

1. Tested with 15 Ohm gate resistor, forward and reverse gate current should not exceed 105mA and -10.5mA respectively
2. Overall R_{th} depends on case mounting.

MAXIMUM RATING AT 25°C ^{1,2}

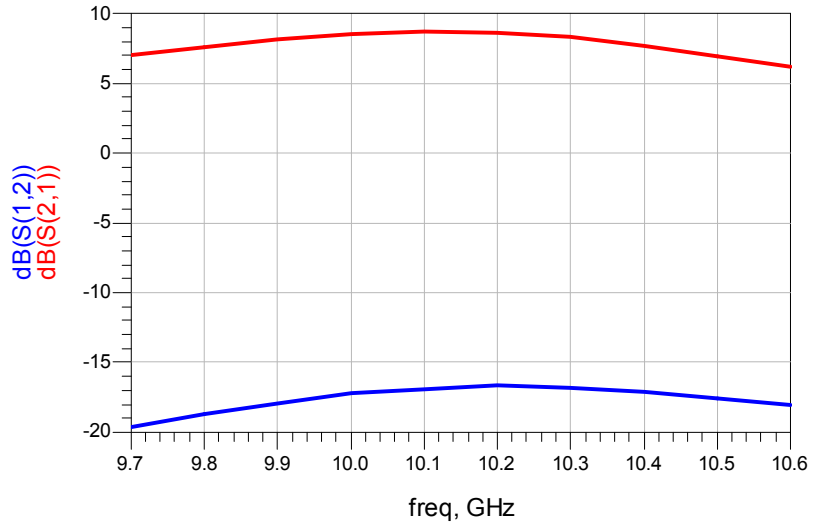
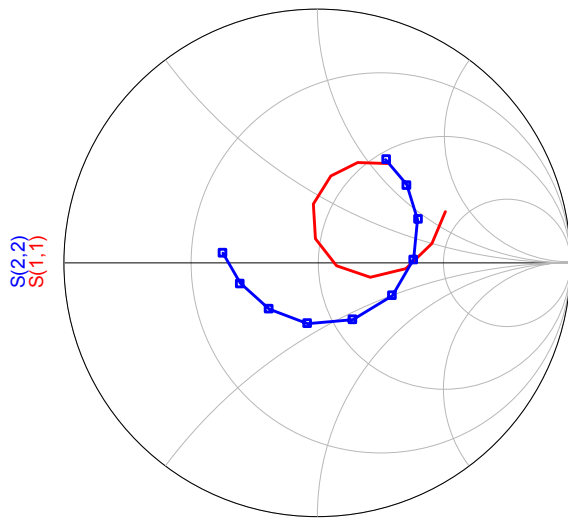
SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
Vds	Drain-Source Voltage	15	10V
Vgs	Gate-Source Voltage	-5	-4V
Pin	Input Power	38.5 dBm	@ 3dB Compression
Tch	Channel Temperature	175 $^\circ\text{C}$	175 $^\circ\text{C}$
Tstg	Storage Temperature	-65 to +175 $^\circ\text{C}$	-65 to +175 $^\circ\text{C}$
Pt	Total Power Dissipation	83W	83W

- 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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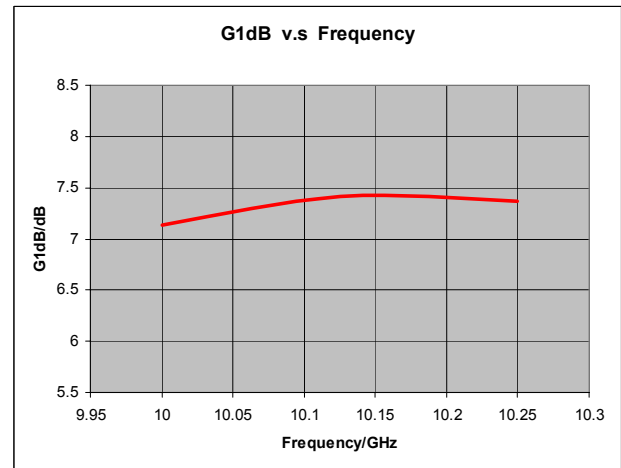
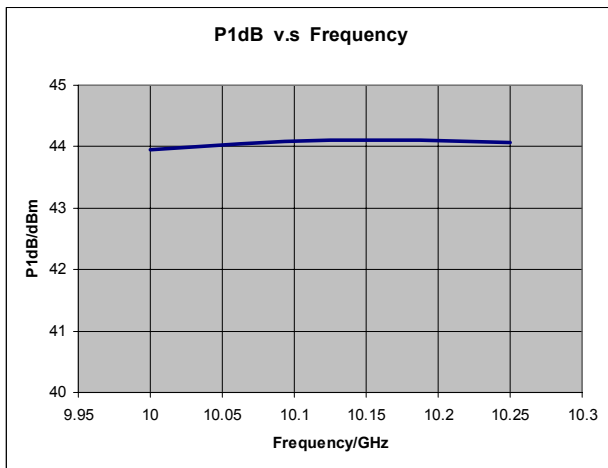
10.0-10.25 GHz 25-Watt Internally Matched Power FET



Frequency GHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
9.7	0.542	21.8	0.104	-48.9	2.238	0.3	0.488	56.5
9.8	0.457	9.2	0.116	-65.0	2.398	-15.2	0.467	41.0
9.9	0.349	-4.0	0.127	-81.8	2.551	-31.9	0.432	23.5
10	0.218	-15.3	0.138	-100.3	2.675	-50.2	0.379	2.1
10.1	0.077	-9.8	0.143	-119.5	2.731	-69.2	0.322	-23.9
10.2	0.095	96.3	0.147	-139.0	2.684	-89.1	0.264	-58.3
10.3	0.232	94.4	0.144	-158.3	2.597	-107.8	0.243	-99.5
10.4	0.346	81.5	0.139	-176.3	2.42	-126.4	0.265	-136.7
10.5	0.428	67.9	0.132	166.7	2.212	-143.3	0.317	-165.0
10.6	0.479	54.5	0.125	150.6	2.029	-159.8	0.377	174.3

Typical S-Parameters (T= 25°C, 50Ω system, de-embedded to edge of package)
 $V_{DS} = 9\text{ V}$, $I_{DSQ} \approx 4000\text{mA}$

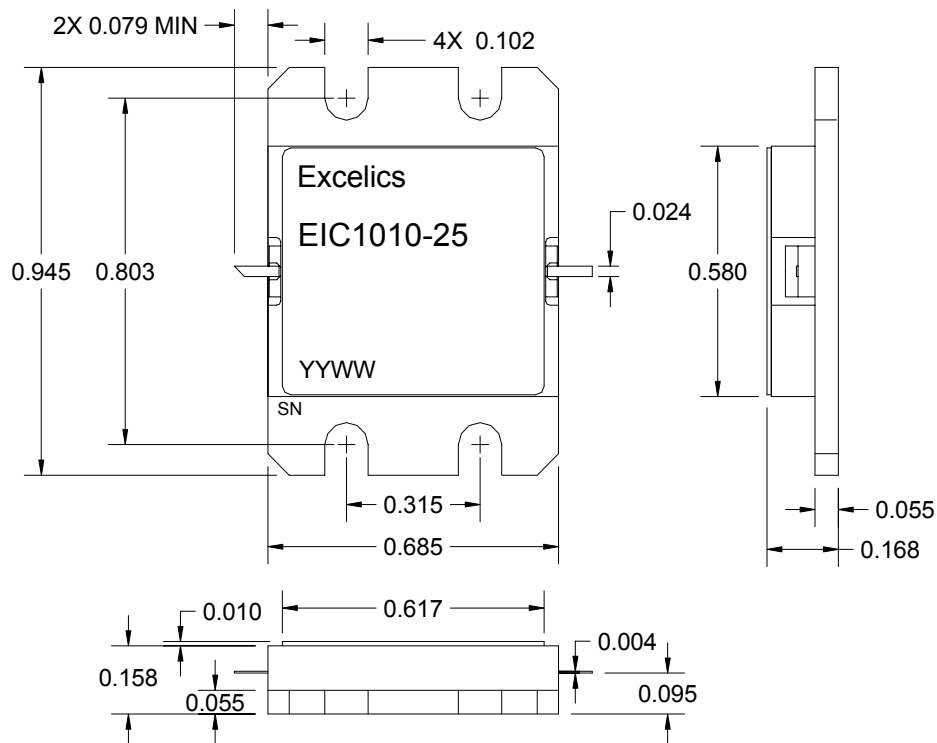
10.0-10.25 GHz 25-Watt Internally Matched Power FET



$V_{DS} = 9\text{ V}$, $I_{DSQ} \approx 400\text{mA}$

PACKAGE OUTLINE

Dimensions in inches, Tolerance $\pm .005$ unless otherwise specified



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AS HERE IN:

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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.

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