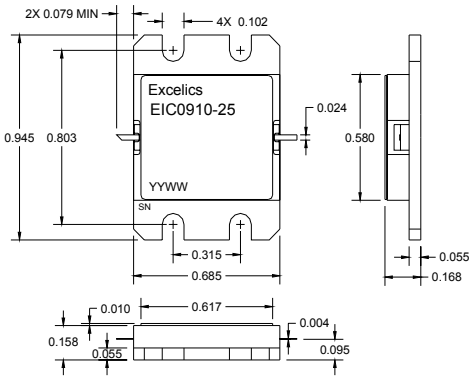
EIC0910-25

9.50-10.50 GHz 25-Watt Internally Matched Power FET

FEATURES

- **9.50 – 10.50GHz Bandwidth**
- **Input/Output Impedance Matched to 50 Ohms**
- **+44 dBm Output Power at 1dB Compression**
- **7 dB Power Gain at 1dB Compression**
- **30% Power Added Efficiency**
- **Hermetic Metal Flange Package**
- **100% Tested for DC, RF, and R_{TH}**



ELECTRICAL CHARACTERISTICS (T_a = 25°C)

Caution! ESD sensitive device.

SYMBOL	PARAMETERS/TEST CONDITIONS[1]	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression f = 9.50-10.50GHz V_{DS} = 10 V, I_{DSQ} ≈ 5000mA	43	44		dBm
G_{1dB}	Gain at 1dB Compression f = 9.50-10.50GHz V_{DS} = 10 V, I_{DSQ} ≈ 5000mA	6	7		dB
ΔG	Gain Flatness f = 9.50-10.50GHz V_{DS} = 10 V, I_{DSQ} ≈ 5000mA			±0.6	dB
PAE	Power Added Efficiency at 1dB Compression V_{DS} = 10 V, I_{DSQ} ≈ 5000mA f = 9.50-10.50GHz		30		%
Id_{1dB}	Drain Current at 1dB Compression f = 9.50-10.50GHz		6800	8300	mA
I_{DSS}	Saturated Drain Current V_{DS} = 3 V, V_{GS} = 0 V		11	16	A
V_P	Pinch-off Voltage V_{DS} = 3 V, I_{DS} = 130 mA		-2.5	-4.0	V
R_{TH}	Thermal Resistance[2]		1.4	1.8	°C/W

1. Tested with 15 Ohm gate resistor, forward and reverse gate current should not exceed 105mA and -10.5mA respectively
2. Overall Rth 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 °C	175 °C
Tstg	Storage Temperature	-65 to +175 °C	-65 to +175 °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.

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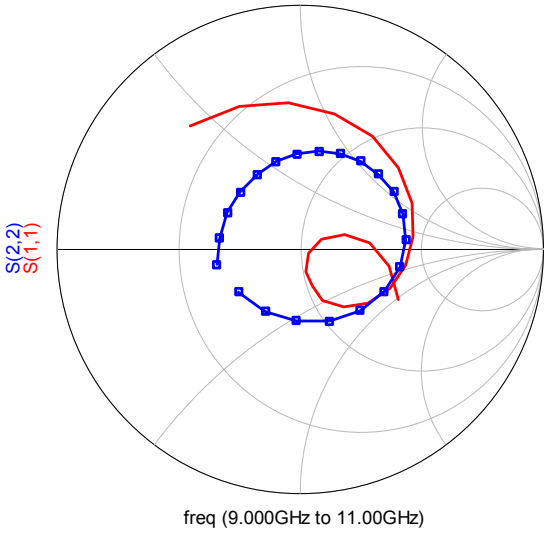

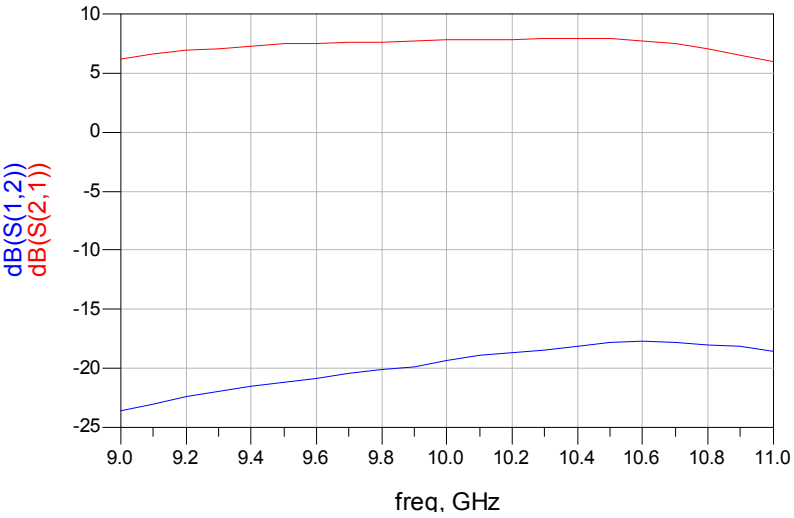

Frequency GHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
9.000	0.677	132.0	0.066	83.1	2.046	126.6	0.35	-169.5
9.100	0.636	113.3	0.07	65.7	2.152	111.0	0.337	172.0
9.200	0.604	94.8	0.075	49.9	2.216	95.8	0.336	153.5
9.300	0.573	76.1	0.08	36.1	2.268	80.9	0.341	136.7
9.400	0.548	57.5	0.084	20.1	2.327	65.4	0.354	120.1
9.500	0.524	39.6	0.087	4.4	2.361	50.7	0.373	105.7
9.600	0.496	22.5	0.091	-10.8	2.383	36.2	0.39	92.2
9.700	0.468	6.5	0.095	-24.4	2.39	21.6	0.409	79.2
9.800	0.437	-8.7	0.099	-40.0	2.407	7.0	0.423	67.4
9.900	0.401	-23.8	0.102	-53.9	2.433	-7.2	0.437	55.6
10.00	0.356	-38.8	0.108	-69.1	2.45	-21.6	0.445	44.0

Typical S-Parameters (T= 25°C, 50Ω system, de-embedded to edge of package)
V_{DS} = 10 V, I_{DSQ} ≈ 5000mA

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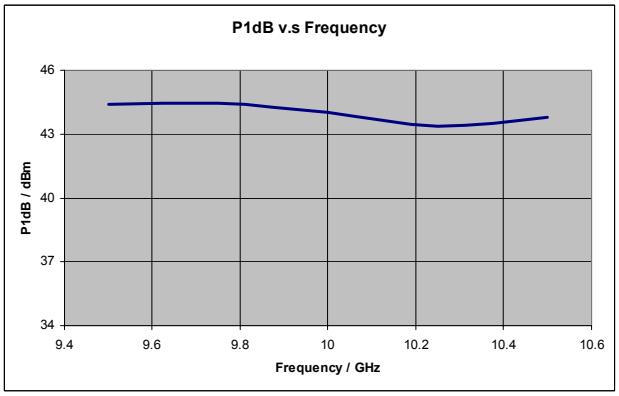

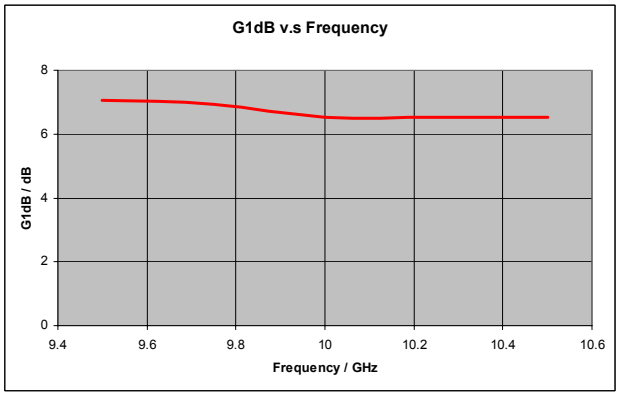

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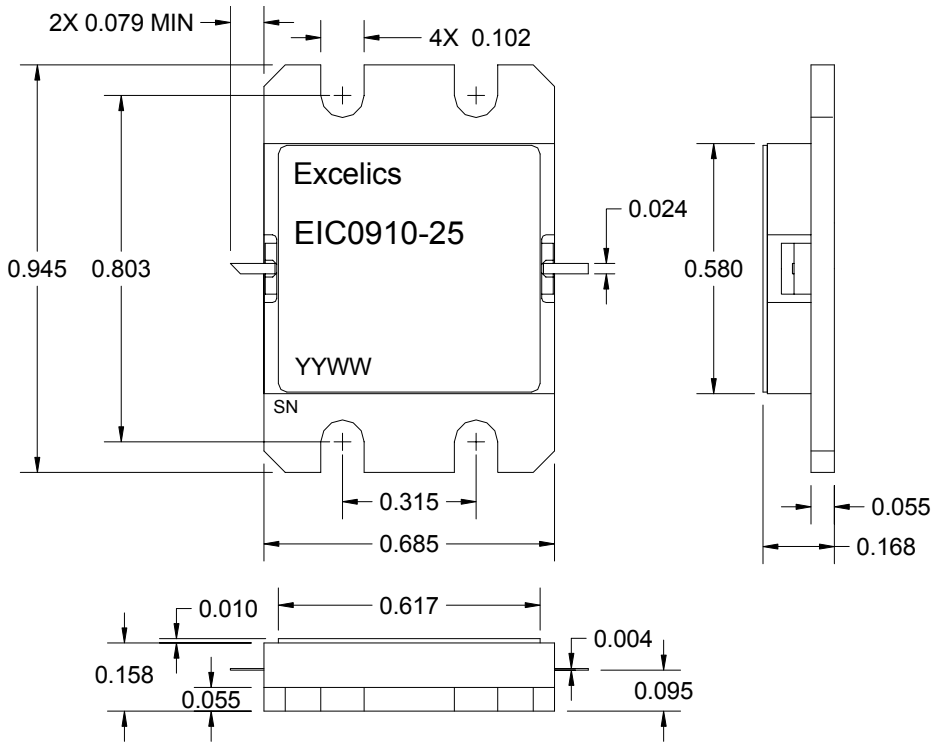
PACKAGE OUTLINE

Dimensions in inches, Tolerance ± .005 unless otherwise specified



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