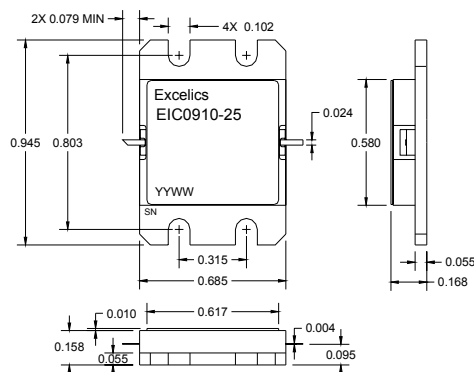


9.50-10.50 GHz 25-Watt Internally Matched Power FET

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 ($T_a = 25^\circ\text{C}$)



Caution! ESD sensitive device.

SYMBOL	PARAMETERS/TEST CONDITIONS ¹	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression $f = 9.50-10.50\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 5000\text{mA}$	43	44		dBm
G_{1dB}	Gain at 1dB Compression $f = 9.50-10.50\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 5000\text{mA}$	6	7		dB
ΔG	Gain Flatness $f = 9.50-10.50\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 5000\text{mA}$			± 0.6	dB
PAE	Power Added Efficiency at 1dB Compression $V_{DS} = 10\text{ V}, I_{DSQ} \approx 5000\text{mA}$ $f = 9.50-10.50\text{GHz}$		30		%
I_{d1dB}	Drain Current at 1dB Compression $f = 9.50-10.50\text{GHz}$		6800	8300	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.

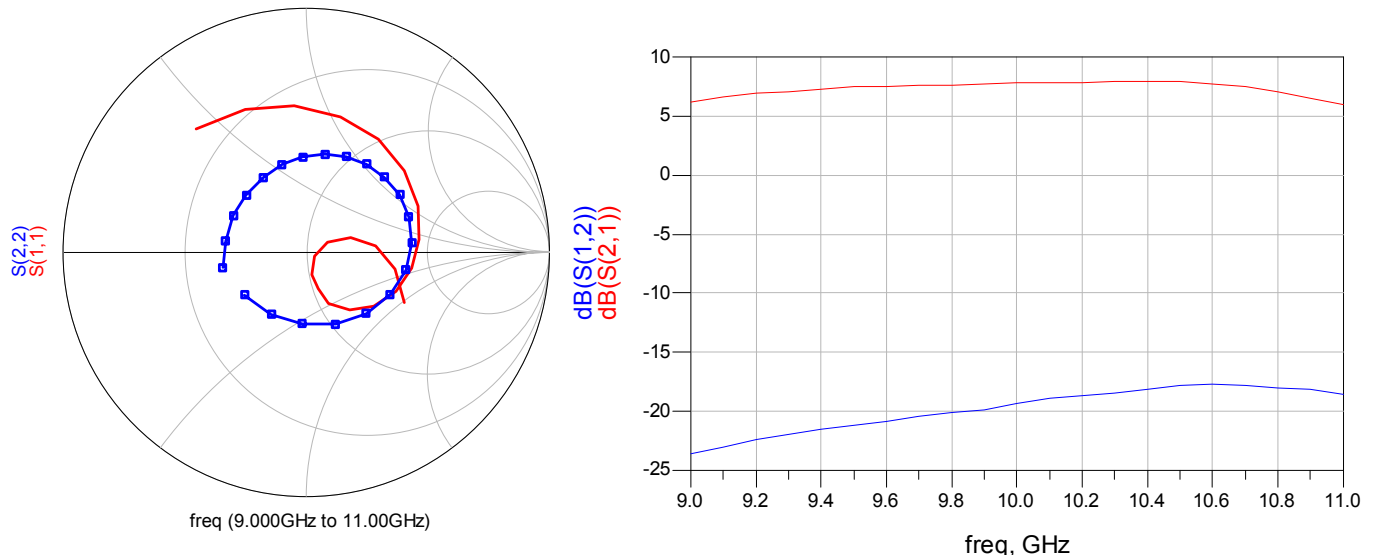
MAXIMUM RATING AT 25°C ^{1,2}

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	15	10V
V_{gs}	Gate-Source Voltage	-5	-4V
P_{in}	Input Power	38.5 dBm	@ 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	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.

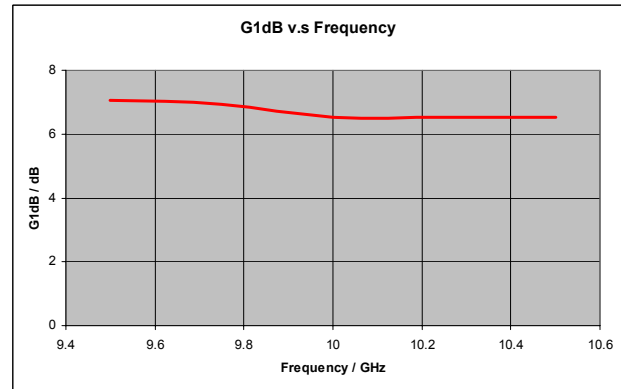
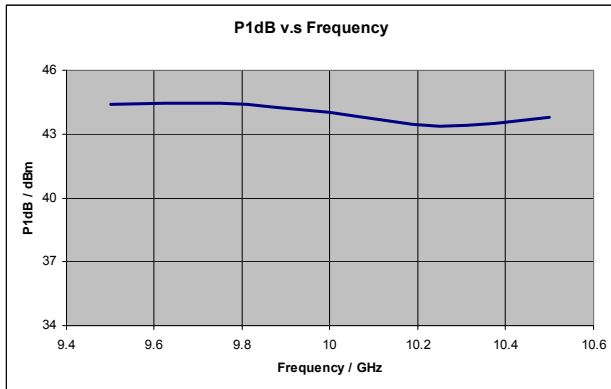
9.50-10.50 GHz 25-Watt Internally Matched Power FET



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)
 $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 5000\text{mA}$

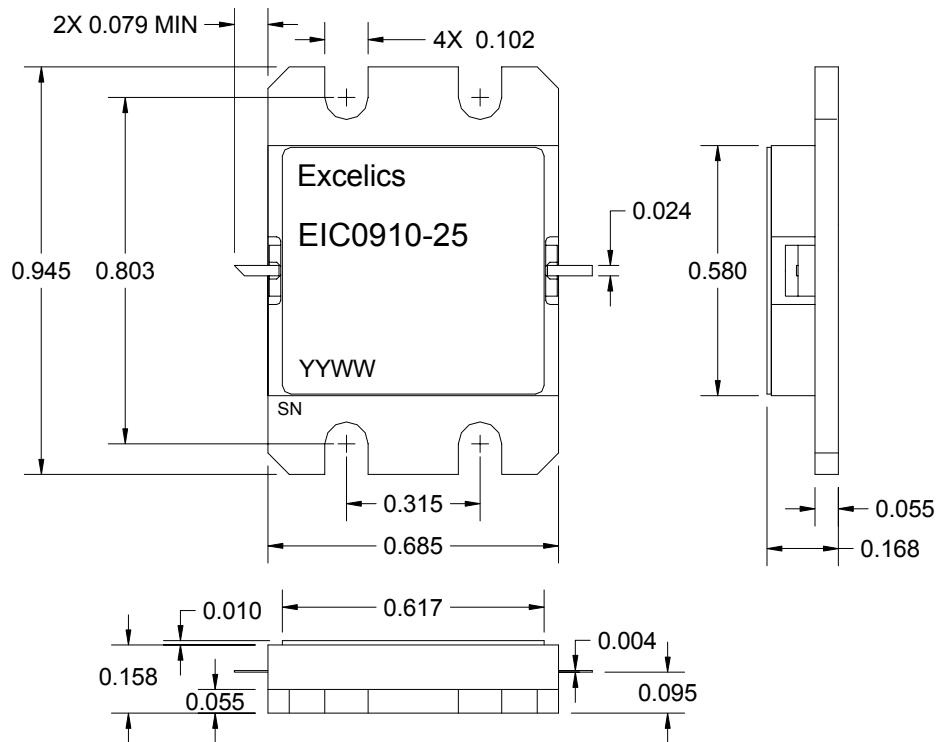
9.50-10.50 GHz 25-Watt Internally Matched Power FET



$V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 5000\text{mA}$

PACKAGE OUTLINE

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



Specifications are subject to change without notice.



EIC0910-25

9.50-10.50 GHz 25-Watt Internally Matched Power FET

DISCLAIMER

EXCELICS SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. EXCELICS DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN.

LIFE SUPPORT POLICY

EXCELICS SEMICONDUCTOR PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF EXCELICS SEMICONDUCTOR, INC.

AS HERE IN:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
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.

Specifications are subject to change without notice.

Excelics Semiconductor, Inc. 310 De Guigne Drive, Sunnyvale, CA 94085
Phone: 408-737-1711 Fax: 408-737-1868 Web: www.excelics.com

page 4 of 4
Revision. 01