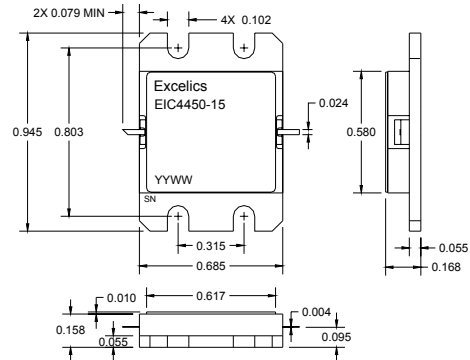


4.40-5.00GHz 15-Watt Internally Matched Power FET

FEATURES

- 4.40– 5.00GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +42 dBm Output Power at 1dB Compression
- 10.5 dB Power Gain at 1dB Compression
- 31% Power Added Efficiency
- -46 dBc IM3 at $P_o = 31$ dBm SCL
- Hermetic Metal Flange Package
- 100% Tested for DC, RF, and R_{TH}



Caution! ESD sensitive device.

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

SYMBOL	PARAMETERS/TEST CONDITIONS ¹	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression $f = 4.40\text{-}5.00\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 4500\text{mA}$	41	42		dBm
G_{1dB}	Gain at 1dB Compression $f = 4.40\text{-}5.00\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 4500\text{mA}$	9.5	10.5		dB
ΔG	Gain Flatness $f = 4.40\text{-}5.00\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 4500\text{mA}$			± 0.7	dB
PAE	Power Added Efficiency at 1dB Compression $V_{DS} = 10\text{ V}, I_{DSQ} \approx 4500\text{mA}$ $f = 4.40\text{-}5.00\text{GHz}$		31		%
I_{d1dB}	Drain Current at 1dB Compression $f = 4.40\text{-}5.00\text{GHz}$		4500	5100	mA
IM3	Output 3rd Order Intermodulation Distortion $\Delta f = 10\text{ MHz}$ 2-Tone Test; $P_{out} = 31\text{ dBm S.C.L}^2$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 65\% I_{DSS}$ $f = 5.00\text{GHz}$	-43	-46		dBc
I_{DSS}	Saturated Drain Current $V_{DS} = 3\text{ V}, V_{GS} = 0\text{ V}$		9000	13000	mA
V_P	Pinch-off Voltage $V_{DS} = 3\text{ V}, I_{DS} = 84\text{ mA}$		-2.5	-4.0	V
R_{TH}	Thermal Resistance ³		1.8	2.1	$^\circ\text{C/W}$

Note: 1. Tested with 30 Ohm gate resistor, forward and reverse gate current should not exceed 35mA and -5.1mA respectively.
 2. S.C.L. = Single Carrier Level.
 3. Overall R_{th} depends on case mounting.

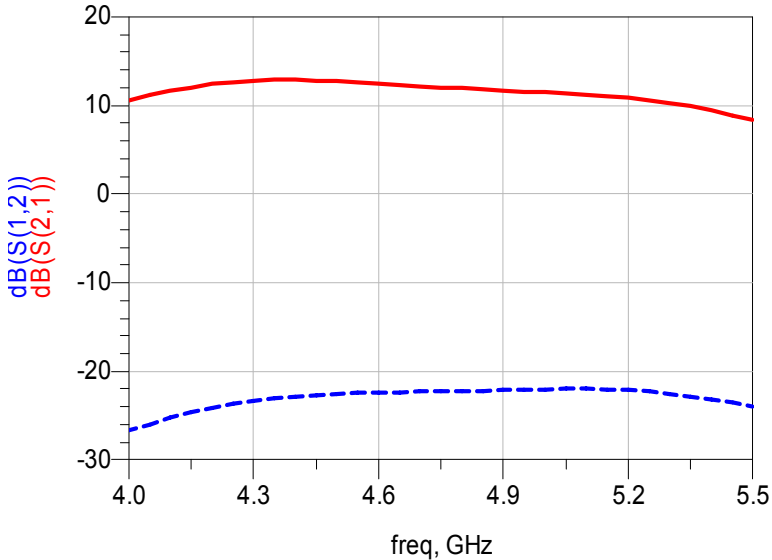
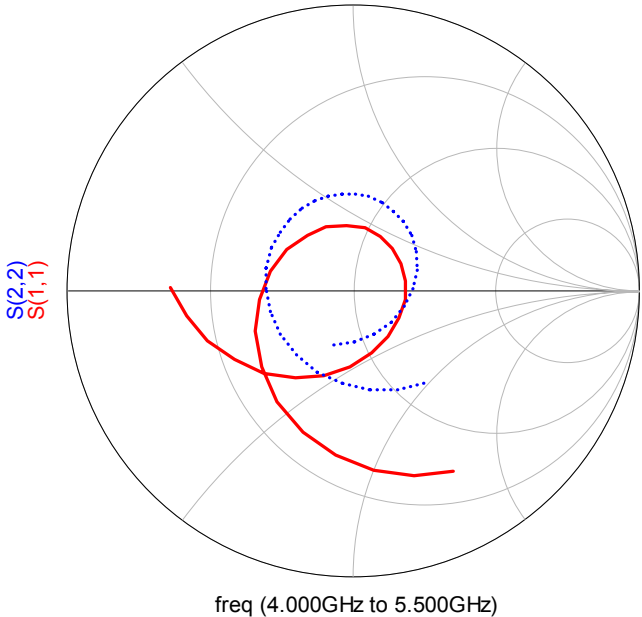
ABSOLUTE MAXIMUM RATING

SYMBOLS	PARAMETERS	ABSOLUTE ¹	OPERATING ²
V_{ds}	Drain-Source Voltage	15V	10V
V_{gs}	Gate-Source Voltage	-5V	-4V
P_{in}	Input Power	Output power reach 3dB Gain Compression point	Output power reach 3dB Gain Compression point
T_{ch}	Channel Temperature	175 $^\circ\text{C}$	175 $^\circ\text{C}$
T_{stg}	Storage Temperature	-65 $^\circ\text{C}$ to +175 $^\circ\text{C}$	-65 $^\circ\text{C}$ to +175 $^\circ\text{C}$
P_t	Total Power Dissipation ($T_c=25^\circ$)	71W	71W

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.

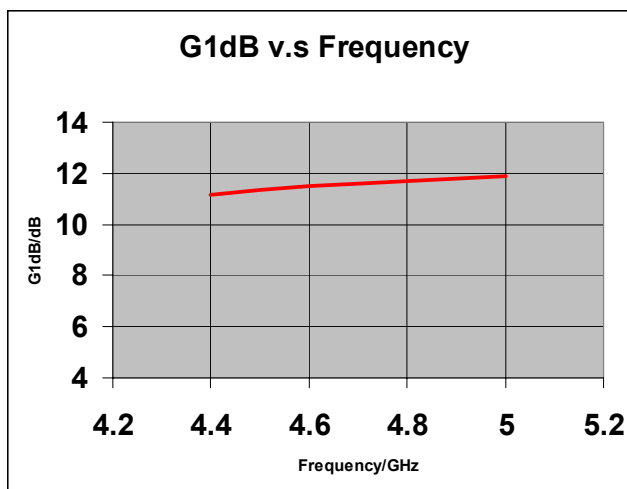
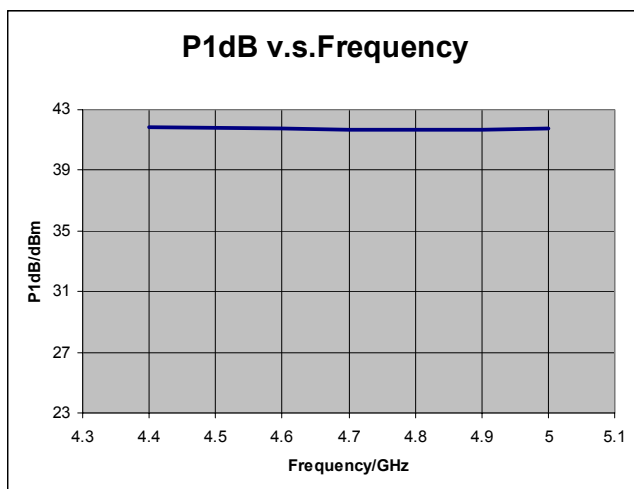
Specifications are subject to change without notice.

PERFORMANCE DATA



Frequency GHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4	0.735	-59.2	3.207	91.5	0.046	32.0	0.376	-50.2
4.1	0.651	-81.1	3.636	70.1	0.056	10.1	0.318	-79.4
4.2	0.548	-106.7	3.977	47.4	0.063	-13.9	0.277	-114.1
4.3	0.443	-136.2	4.195	24.1	0.069	-37.0	0.270	-151.3
4.4	0.355	-169.2	4.255	1.0	0.074	-60.4	0.283	175.4
4.5	0.293	155.4	4.184	-21.1	0.077	-82.8	0.307	148.5
4.6	0.255	121.6	4.087	-41.9	0.078	-104.4	0.325	127.5
4.7	0.228	88.7	3.961	-61.8	0.079	-124.9	0.336	109.1
4.8	0.202	57.4	3.855	-81.4	0.080	-145.0	0.337	93.0
4.9	0.178	22.1	3.774	-100.9	0.081	-164.5	0.329	76.8
5	0.165	-22.1	3.682	-120.7	0.082	175.0	0.310	59.4

Typical S-Parameters (T= 25°C, 50Ω system, de-embedded to edge of package)
 $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 4500\text{mA}$



$V_{DS} = 10 \text{ V}$, $I_{DSQ} \approx 4500 \text{ mA}$

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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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