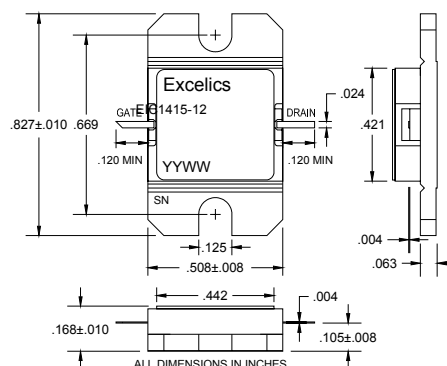


14.40-15.40GHz 12-Watt Internally Matched Power FET

FEATURES

- 14.40– 15.40GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +41 dBm Output Power at 1dB Compression
- 5 dB Power Gain at 1dB Compression
- 23% Power Added Efficiency
- -44 dBc IM3 at $P_o = 30$ dBm SCL
- 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 $V_{DS} = 10$ V, $I_{DSQ} \approx 3200$ mA $f = 14.40-15.40$ GHz	40	41		dBm
G_{1dB}	Gain at 1dB Compression $V_{DS} = 10$ V, $I_{DSQ} \approx 3200$ mA $f = 14.40-15.40$ GHz	4	5		dB
ΔG	Gain Flatness $V_{DS} = 10$ V, $I_{DSQ} \approx 3200$ mA $f = 14.40-15.40$ GHz			± 0.7	dB
PAE	Power Added Efficiency at 1dB Compression $V_{DS} = 10$ V, $I_{DSQ} \approx 3200$ mA $f = 14.40-15.40$ GHz		23		%
I_{d1dB}	Drain Current at 1dB Compression $f = 14.40-15.40$ GHz		3700	4200	mA
IM3	Output 3rd Order Intermodulation Distortion $\Delta f = 10$ MHz 2-Tone Test; $P_{out} = 30$ dBm S.C.L. ² $V_{DS} = 10$ V, $I_{DSQ} \approx 65\%$ IDSS $f = 15.40$ GHz	-41	-44		dBc
I_{DSS}	Saturated Drain Current $V_{DS} = 3$ V, $V_{GS} = 0$ V		9000	13000	mA
V_P	Pinch-off Voltage $V_{DS} = 3$ V, $I_{DS} = 84$ 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

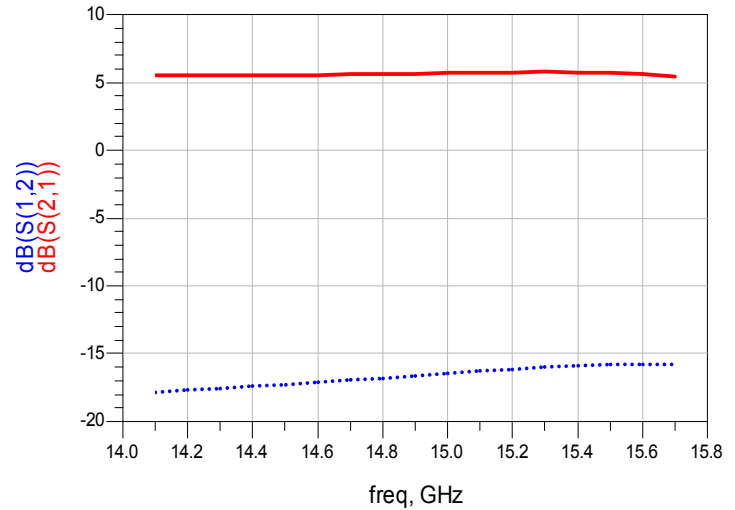
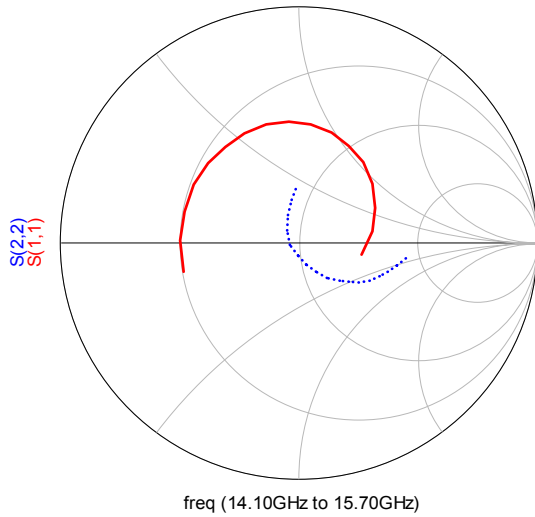
SYMBOLS	PARAMETERS	ABSOLUTE ¹	OPERATING ²
V_{ds}	Drain-Source Voltage	15V	10V
V_{gs}	Gate-Source Voltage	-5V	-4V
P_{in}	Input Power	Output power reach 3dB Gain Compression point	Output power reach 3dB Gain Compression point
T_{ch}	Channel Temperature	175 $^\circ\text{C}$	175 $^\circ\text{C}$
T_{stg}	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.

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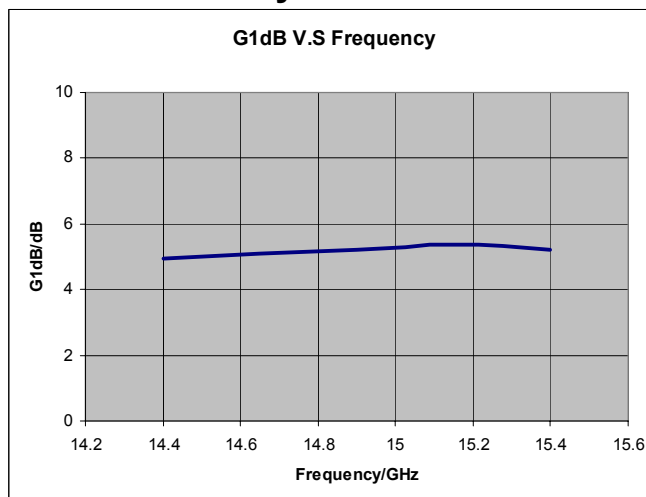
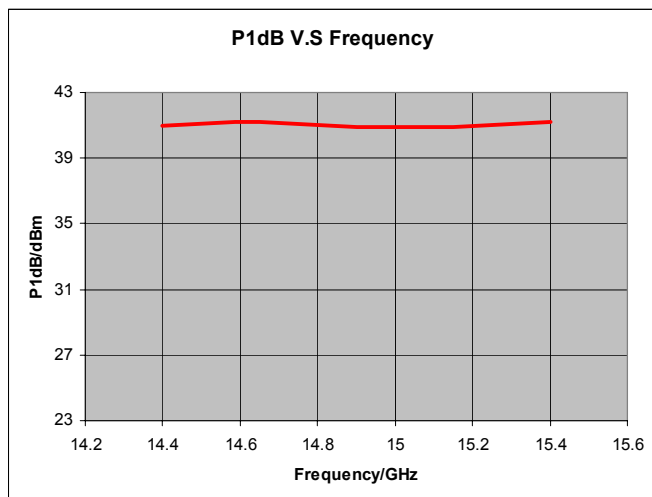
PERFORMANCE DATA



Frequency GHZ	S11		S12		S21		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
14.10	0.501	-165.9	0.127	23.5	2.02	55.8	0.451	-8.1
14.20	0.500	178.5	0.131	13.7	2.02	45.8	0.422	-13.1
14.30	0.499	164.3	0.132	4.6	2.02	36.1	0.389	-18.1
14.40	0.507	150.8	0.135	-4.7	2.03	26.5	0.365	-22.8
14.50	0.511	138.2	0.137	-13.1	2.02	17.3	0.335	-28.3
14.60	0.513	127.1	0.139	-22.4	2.02	8.2	0.300	-33.5
14.70	0.521	116.4	0.142	-30.9	2.03	-0.95	0.265	-37.9
14.80	0.522	105.3	0.144	-39.9	2.04	-10.2	0.233	-43
14.90	0.515	94.9	0.147	-48.3	2.05	-19.8	0.190	-51.7
15.00	0.506	84.5	0.151	-57.1	2.06	-29.5	0.140	-60
15.10	0.490	73.8	0.154	-66.5	2.06	-39.1	0.094	-72.2
15.20	0.462	63.1	0.156	-75.7	2.06	-49.2	0.054	-94.1
15.30	0.436	51.9	0.159	-85.1	2.07	-59.5	0.039	-170.6
15.40	0.399	39.3	0.161	-94.9	2.07	-69.9	0.076	132.5
15.50	0.351	25.2	0.162	-104.8	2.06	-80.5	0.128	111.5
15.60	0.310	9.6	0.162	-115.1	2.04	-91.4	0.185	100.2
15.70	0.264	-10.7	0.162	-124.9	2.00	-102.5	0.244	91.9

Typical S-Parameters (T= 25°C, 50Ω system, de-embedded to edge of package)
 $V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 3200\text{ mA}$

14.40-15.40GHz 12-Watt Internally Matched Power FET



$V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 3200\text{mA}$

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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