

FEATURES

- 14.40-15.35GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +39.5 dBm Output Power at 1dB Compression
- 6.5 dB Power Gain at 1dB Compression
- 27% Power Added Efficiency
- 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 = 14.40-15.35GHz V _{DS} = 10 V, I _{DSQ} ≈ 2200mA	38.5	39.5		dBm
G_{1dB}	Gain at 1dB Compression f = 14.40-15.35GHz V _{DS} = 10 V, I _{DSQ} ≈ 2200mA	5.5	6.5		dB
ΔG	Gain Flatness f = 14.40-15.35GHz V _{DS} = 10 V, I _{DSQ} ≈ 2200mA			±0.6	dB
PAE	Power Added Efficiency at 1dB Compression V _{DS} = 10 V, I _{DSQ} ≈ 2200mA f = 14.40-15.35GHz		27		%
I_{d1dB}	Drain Current at 1dB Compression f = 14.40-15.35GHz		2800	3600	mA
I_{DSS}	Saturated Drain Current V _{DS} = 3 V, V _{GS} = 0 V		4200	5760	mA
V_P	Pinch-off Voltage V _{DS} = 3 V, I _{DS} = 40 mA		-1.2	-2.5	V
R_{TH}	Thermal Resistance ³		3.5	4.0	°C/W

Note: 1. Tested with 100 Ohm gate resistor.
 2. S.C.L. = Single Carrier Level.
 3. Overall R_{th} depends on case mounting.

ABSOLUTE MAXIMUM RATING FOR EFE

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	15V	10V
V_{gs}	Gate-Source Voltage	-5V	-4V
I_{gf}	Forward Gate Current	96.0mA	28.8mA
I_{gr}	Reverse Gate Current	-19.2mA	-4.8mA
P_{in}	Input Power	38.5dBm	@ 3dB Compression
T_{ch}	Channel Temperature	175C	175C
T_{stg}	Storage Temperature	-65C to +175C	-65C to +175C
P_t	Total Power Dissipation	37.5W	37.5W

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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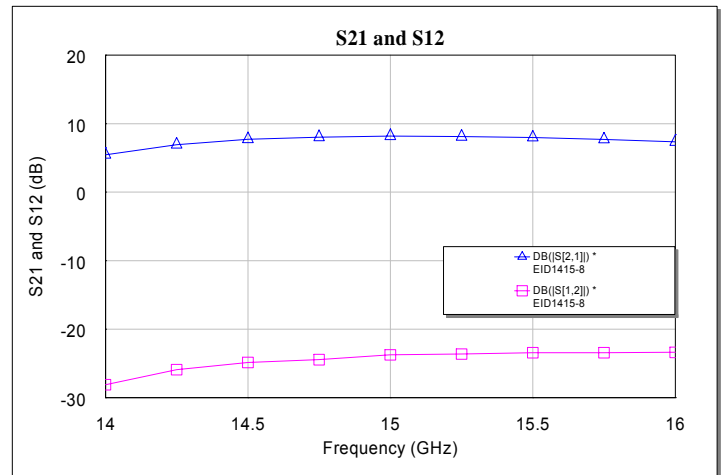
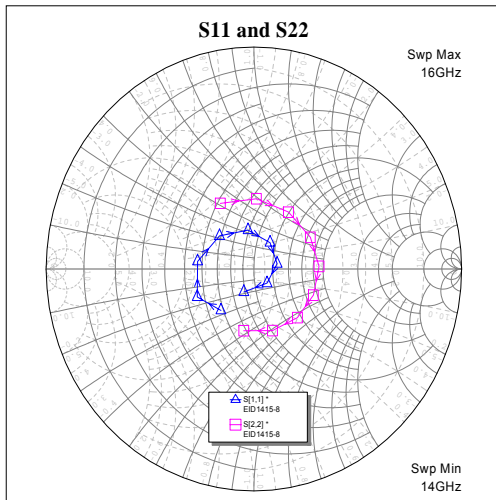
UPDATED 11/12/2007

14.40-15.35GHz 8-Watt Internally-Matched Power FET

PERFORMANCE DATA

Typical S-Parameters (T= 25°C, 50Ω system, de-embedded to edge of package)

$V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 2200\text{mA}$



FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
14.00	0.2450	-130.30	1.8778	115.29	0.0393	99.39	0.3370	118.62
14.20	0.2992	-148.84	2.1685	100.98	0.0463	85.54	0.3201	94.18
14.40	0.2904	-173.75	2.3778	82.93	0.0540	66.32	0.3111	68.35
14.60	0.2558	159.14	2.4914	64.05	0.0582	47.41	0.3062	43.95
14.80	0.2117	130.18	2.5593	45.58	0.0635	26.31	0.3090	22.47
15.00	0.1773	98.99	2.5706	27.10	0.0649	8.39	0.3143	2.10
15.20	0.1484	65.63	2.5618	8.94	0.0656	-11.68	0.3119	-17.31
15.40	0.1225	30.44	2.5022	-9.51	0.0675	-31.59	0.3086	-36.12
15.60	0.1012	-7.86	2.4780	-27.74	0.0667	-50.84	0.2987	-55.37
15.80	0.0906	-59.05	2.4084	-46.06	0.0671	-69.19	0.2882	-76.98
16.00	0.1147	-115.00	2.3324	-64.47	0.0677	-88.41	0.2827	-99.97

Specifications are subject to change without notice.

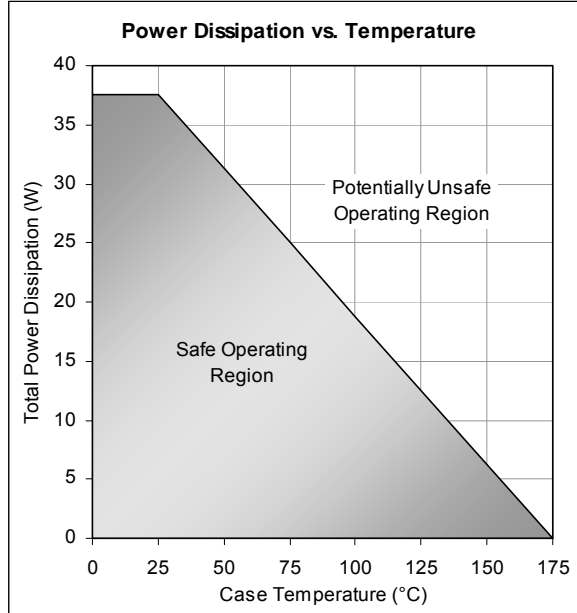


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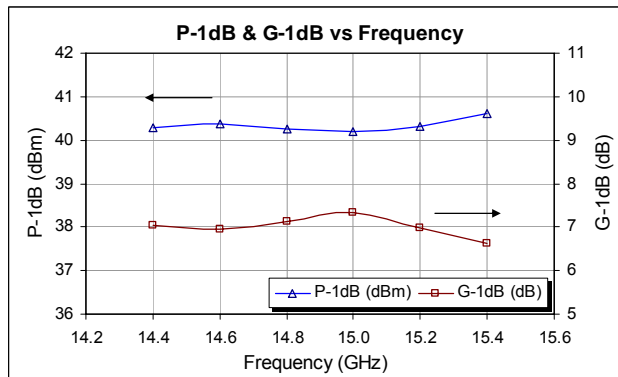
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Power De-rating Curve



Typical Power Data ($V_{DS} = 10\text{ V}$, $I_{DSQ} = 2200\text{ mA}$)



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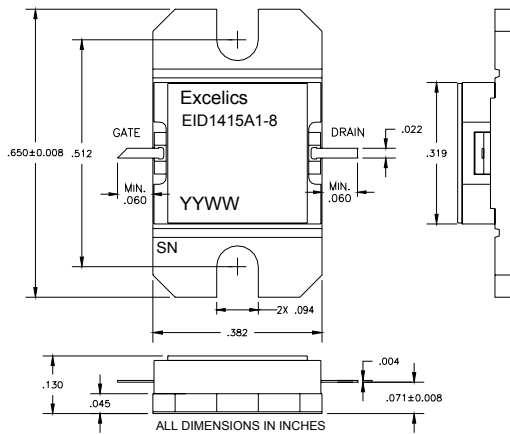
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PACKAGES OUTLINE

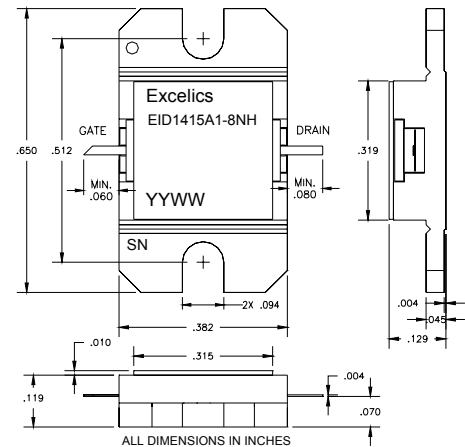
Dimensions in inches, Tolerance $\pm .005$ unless otherwise specified

EID1415A1-8 (Hermetic)



Caution! ESD sensitive device.

EID1415A1-8NH (Non-Hermetic)



Caution! ESD sensitive device.

ORDERING INFORMATION

Part Number	Packages	Grade ¹	f _{Test} (GHz)	P _{1dB} (min)
EID1415A1-8	Hermetic	Industrial	14.40-15.35GHz	38.5
EID1415A1-8NH	Non-Hermetic	Industrial	14.40-15.35GHz	38.5

Notes: 1. Contact factory for military and hi-rel grades.
2. Exact test conditions are specified in "Electrical Characteristics" table.

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