

FEATURES

- 7.10–7.90GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +39.5 dBm Output Power at 1dB Compression
- 8.5 dB Power Gain at 1dB Compression
- 30% Power Added Efficiency
- -46 dBc IM3 at PO = 28.5 dBm SCL
- 100% Tested for DC, RF, and R_{TH}



Caution! ESD sensitive device.

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

SYMBOL	PARAMETERS/TEST CONDITIONS ¹	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression f = 7.10-7.90GHz V _{DS} = 10 V, I _{DSQ} ≈ 2200mA	38.5	39.5		dBm
G_{1dB}	Gain at 1dB Compression f = 7.10-7.90GHz V _{DS} = 10 V, I _{DSQ} ≈ 2200mA	7.5	8.5		dB
ΔG	Gain Flatness f = 7.10-7.90GHz 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 = 7.10-7.90GHz		30		%
I_{d1dB}	Drain Current at 1dB Compression f = 7.10-7.90GHz		2400	2800	mA
IM3	Output 3rd Order Intermodulation Distortion Δf = 10 MHz 2-Tone Test; Pout = 28.5 dBm S.C.L. ² V _{DS} = 10 V, I _{DSQ} ≈ 65% IDSS f = 7.90GHz	-43	-46		dBc
I_{DSS}	Saturated Drain Current V _{DS} = 3 V, V _{GS} = 0 V		4000	4500	mA
V_P	Pinch-off Voltage V _{DS} = 3 V, I _{DS} = 40 mA		-2.5	-4.0	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	96mA	28.8mA
I_{gr}	Reverse Gate Current	-19.2mA	-4.8mA
P_{in}	Input Power	39dBm	@ 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

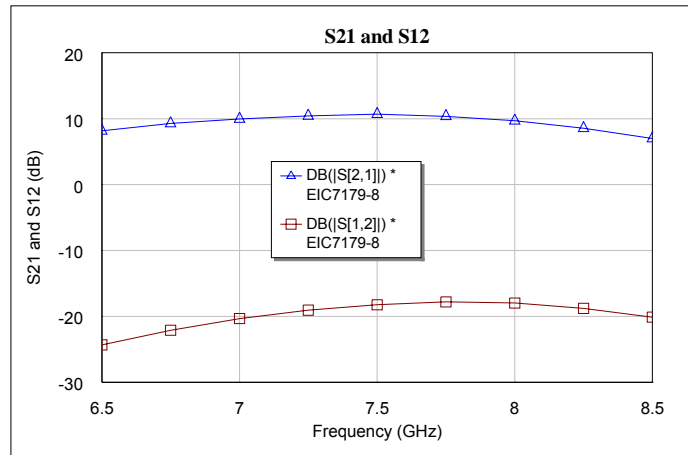
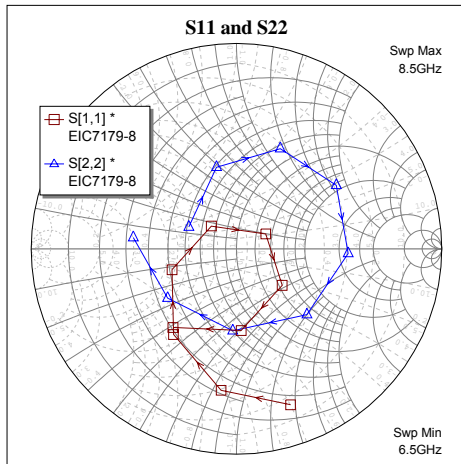
Note: 1. Exceeding any of the above ratings may result in permanent damage.
2. Exceeding any of the above ratings may reduce MTTF below design goals.

Specifications are subject to change without notice.

PERFORMANCE DATA

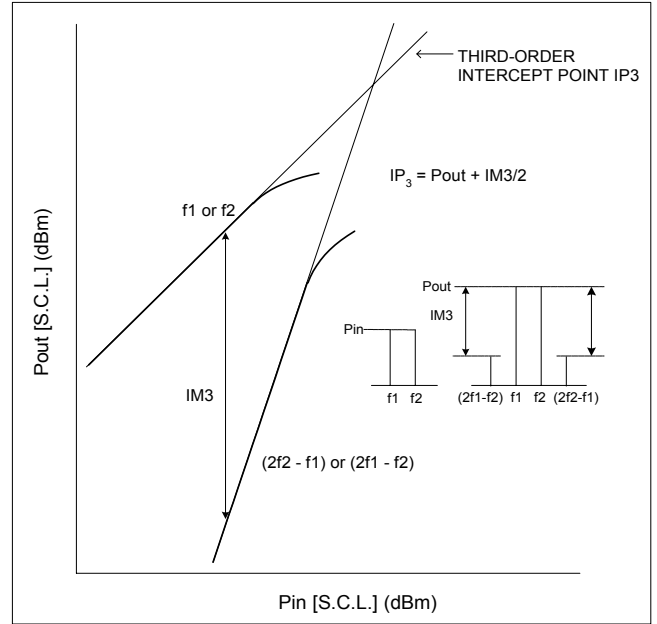
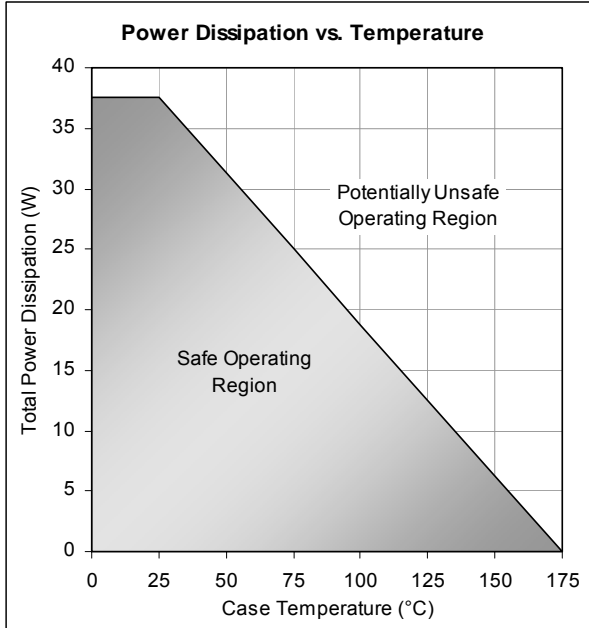
Typical S-Parameters (T= 25°C, 50Ω system, de-embedded to edge of package)

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

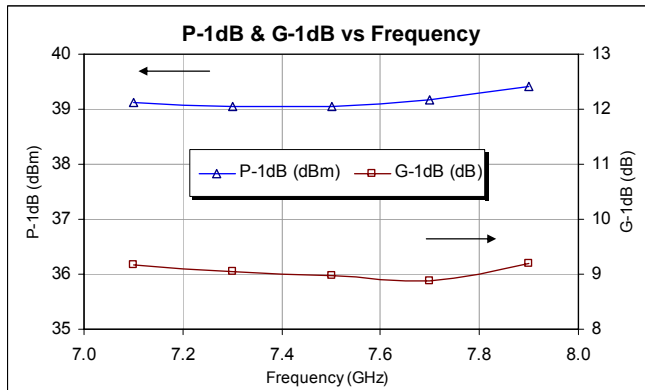


FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
6.25	0.880	-49.670	2.147	58.460	0.045	1.160	0.220	-119.050
6.50	0.803	-70.860	2.561	25.780	0.061	-30.980	0.255	155.400
6.75	0.693	-96.200	2.913	-8.850	0.078	-66.370	0.409	103.720
7.00	0.517	-126.330	3.150	-44.530	0.096	-100.870	0.533	66.370
7.25	0.330	-162.030	3.324	-79.880	0.112	-136.570	0.576	32.440
7.50	0.165	137.750	3.420	-117.150	0.122	-173.260	0.545	-2.360
7.75	0.160	26.960	3.298	-154.880	0.129	150.260	0.470	-43.000
8.00	0.285	-38.600	3.055	167.050	0.126	113.450	0.399	-92.540
8.25	0.398	-86.640	2.676	129.920	0.115	77.180	0.413	-144.320
8.50	0.492	-128.940	2.241	93.730	0.099	43.170	0.505	173.770
8.75	0.570	-165.600	1.765	59.440	0.081	10.010	0.606	143.580

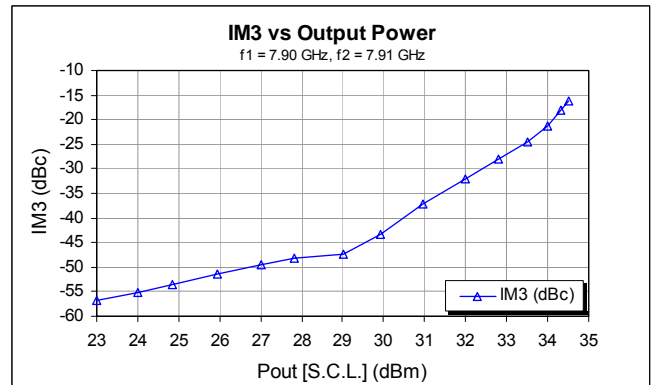
Power De-rating Curve and IM3 Definition



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



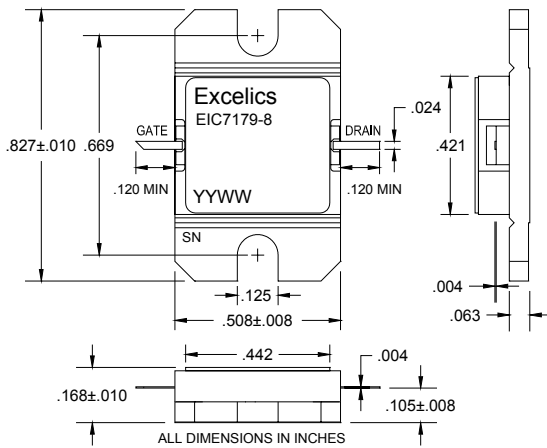
Typical IM3 Data ($V_{DS} = 10\text{ V}$, $I_{DSQ} \approx 65\% IDSS$)



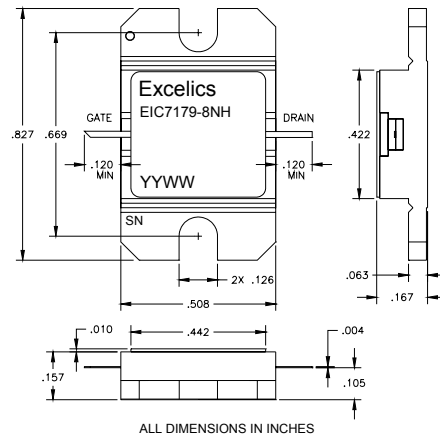
PACKAGES OUTLINE

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

EIC7179-8 (Hermetic)



EIC7179-8NH (Non-Hermetic)



Caution! ESD sensitive device.



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ORDERING INFORMATION

Part Number	Packages	Grade ¹	f _{Test} (GHz)	P _{1dB} (min)	IM ₃ (min) ²
EIC7179-8	Hermetic	Industrial	7.10-7.90GHz	38.5	-43
EIC7179-8NH	Non-Hermetic	Industrial	7.10-7.90GHz	38.5	-43

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

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