

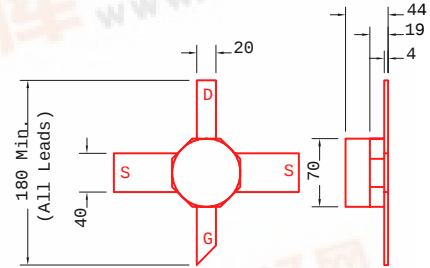


EPA080A-70

DATA SHEET

High Efficiency Heterojunction Power FET

- NON-HERMETIC LOW COST CERAMIC 70mil PACKAGE
- +25.5dBm TYPICAL OUTPUT POWER
- 7.0dB TYPICAL POWER GAIN AT 12GHz
- 0.3 X 800 MICRON RECESSED "MUSHROOM" GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES EXTRA HIGH POWER EFFICIENCY, AND HIGH RELIABILITY



All Dimensions In mils.

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
P _{1dB}	Output Power at 1dB Compression f=12GHz V _{ds} =5V, I _{ds} =50% I _{dss}	24.0	25.5		dBm
G _{1dB}	Gain at 1dB Compression f=12GHz V _{ds} =5V, I _{ds} =50% I _{dss}	5.5	7.0		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =5V, I _{ds} =50% I _{dss} f=12GHz		40		%
I _{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	130	240	320	mA
G _m	Transconductance V _{ds} =3V, V _{gs} =0V	160	260		mS
V _p	Pinch-off Voltage V _{ds} =3V, I _{ds} =2.5mA		-1.0	-2.5	V
BV _{gd}	Drain Breakdown Voltage I _{gd} =1.0mA	-10	-15		V
BV _{gs}	Source Breakdown Voltage I _{gs} =1.0mA	-6	-14		V
R _{th}	Thermal Resistance		135*		°C/W

* Overall R_{th} depends on case mounting.

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V _{ds}	Drain-Source Voltage	8V	5V
V _{gs}	Gate-Source Voltage	-5V	-3V
I _{ds}	Drain Current	I _{dss}	185mA
I _{gsf}	Forward Gate Current	40mA	7mA
P _{in}	Input Power	23dBm	@ 3dB Compression
T _{ch}	Channel Temperature	175°C	150 °C
T _{stg}	Storage Temperature	-65/175°C	-65/150 °C
P _t	Total Power Dissipation	1.1W	0.9W

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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S-PARAMETERS

6V, 1/2 Idss

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.866	-71.0	12.893	130.8	0.029	55.7	0.443	-37.6
2.0	0.744	-116.0	8.854	100.2	0.039	40.1	0.354	-61.3
3.0	0.694	-144.0	6.494	79.6	0.044	35.2	0.325	-76.0
4.0	0.674	-167.3	5.126	62.2	0.047	34.1	0.316	-87.5
5.0	0.671	174.4	4.223	46.6	0.051	33.5	0.299	-100.8
6.0	0.674	162.0	3.620	32.5	0.057	33.7	0.294	-118.5
7.0	0.678	147.6	3.162	18.9	0.064	33.2	0.314	-130.9
8.0	0.683	135.4	2.803	5.5	0.072	32.0	0.313	-144.8
9.0	0.709	117.2	2.462	-8.7	0.082	26.7	0.333	-156.3
10.0	0.738	102.6	2.179	-22.9	0.091	20.6	0.360	-172.2
11.0	0.750	93.1	2.025	-36.7	0.102	12.4	0.391	168.0
12.0	0.773	82.2	1.874	-51.2	0.115	3.5	0.427	149.7
13.0	0.815	70.3	1.640	-64.5	0.118	-6.0	0.453	133.7
14.0	0.841	59.8	1.424	-76.5	0.119	-14.4	0.485	121.1
15.0	0.848	49.5	1.308	-90.6	0.123	-25.1	0.535	105.0
16.0	0.857	38.3	1.175	-106.6	0.123	-37.7	0.570	86.3
17.0	0.847	30.3	1.017	-117.0	0.122	-42.3	0.574	75.0
18.0	0.853	24.6	0.946	-125.7	0.130	-54.7	0.617	67.3
19.0	0.861	13.5	0.879	-139.3	0.121	-64.6	0.649	54.3
20.0	0.879	3.2	0.810	-153.5	0.121	-76.1	0.701	40.3
21.0	0.898	-2.6	0.753	-164.7	0.120	-85.7	0.701	29.4
22.0	0.864	-11.2	0.714	-175.8	0.122	-95.8	0.688	21.7
23.0	0.855	-26.2	0.684	168.0	0.124	-110.9	0.672	4.6
24.0	0.856	-41.2	0.633	149.2	0.130	-129.7	0.683	-15.7
25.0	0.825	-52.8	0.607	136.3	0.138	-142.9	0.696	-26.3
26.0	0.811	-68.1	0.622	121.5	0.161	-156.6	0.677	-40.3