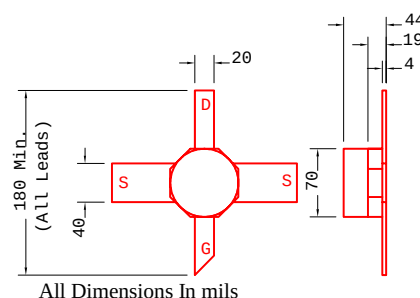


DATA SHEET
Low Noise High Gain Heterojunction FET

- NON-HERMETIC LOW COST CERAMIC 70 mil PACKAGE
- TYPICAL 0.85dB NOISE FIGURE AND 10.5dB ASSOCIATED GAIN AT 12GHz
- 0.3 X 250 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES SUPER LOW NOISE, HIGH GAIN AND HIGH RELIABILITY


ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
NF	Noise Figure f = 12GHz V _{ds} =2V, I _{ds} =15mA		0.85	1.0	dB
Ga	Associated Gain f = 12GHz V _{ds} =2V, I _{ds} =15mA	9.5	10.5		dB
P _{1dB}	Output Power at 1dB Compression f=12GHz V _{ds} =3V, I _{ds} =25mA		15.0		dBm
G _{1dB}	Gain at 1dB Compression f=12GHz V _{ds} =3V, I _{ds} =25mA		12.0		dB
I _{dss}	Saturated Drain Current V _{ds} =2V, V _{gs} =0V	20	50	80	mA
G _m	Transconductance V _{ds} =2V, V _{gs} =0V	50	80		mS
V _p	Pinch-off Voltage V _{ds} =2V, I _{ds} =1.0mA		-1.0	-2.5	V
BV _{gd}	Drain Breakdown Voltage I _{gd} =10uA	-3	-5		V
BV _{gs}	Source Breakdown Voltage I _{gs} =10uA	-3	-5		V
R _{th}	Thermal Resistance		370*		°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	5V	3V
V _{gs}	Gate-Source Voltage	-3V	-3V
I _{ds}	Drain Current	I _{dss}	50mA
I _{gsf}	Forward Gate Current	2mA	0.3mA
P _{in}	Input Power	12dBm	@ 1dB Compression
T _{ch}	Channel Temperature	175°C	150°C
T _{stg}	Storage Temperature	-65/175°C	-65/150°C
P _t	Total Power Dissipation	370mW	310mW

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.

Excelics Semiconductor, Inc., 2908 Scott Blvd., Santa Clara, CA 95054

Phone: (408) 970-8664 Fax: (408) 970-8998 Web Site: www.excelics.com

EPB025A-70

DATA SHEET

Low Noise High Gain Heterojunction FET

S-PARAMETERS

2V, 15mA

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.977	-21.3	5.991	159.2	0.026	75.1	0.641	-16.1
2.0	0.922	-42.4	5.602	138.8	0.048	60.3	0.604	-33.3
3.0	0.857	-61.7	5.110	120.4	0.065	48.3	0.567	-48.6
4.0	0.793	-79.8	4.758	103.7	0.079	38.2	0.532	-61.2
5.0	0.729	-97.0	4.445	87.9	0.091	27.6	0.480	-73.9
6.0	0.672	-111.1	4.087	73.0	0.098	18.2	0.426	-88.7
7.0	0.612	-125.3	3.757	58.9	0.104	9.1	0.399	-101.8
8.0	0.558	-138.7	3.494	45.7	0.105	0.3	0.354	-113.4
9.0	0.508	-160.7	3.354	31.6	0.110	-6.9	0.329	-123.7
10.0	0.473	178.3	3.169	17.1	0.114	-15.8	0.307	-139.6
11.0	0.437	168.8	3.014	4.5	0.117	-23.9	0.299	-159.3
12.0	0.404	154.6	2.898	-8.6	0.120	-31.1	0.298	-177.4
13.0	0.430	127.9	2.734	-23.4	0.122	-40.9	0.276	165.2
14.0	0.460	105.7	2.535	-37.4	0.120	-51.0	0.269	149.4
15.0	0.436	91.0	2.424	-51.6	0.122	-60.3	0.306	130.5
16.0	0.424	73.5	2.311	-66.6	0.123	-71.4	0.328	108.8
17.0	0.450	59.1	2.084	-79.5	0.114	-79.0	0.296	96.1
18.0	0.496	49.9	2.021	-90.2	0.123	-85.3	0.334	92.8
19.0	0.472	30.9	1.938	-104.6	0.121	-99.1	0.376	76.2
20.0	0.518	15.6	1.884	-120.1	0.119	-111.5	0.412	62.4
21.0	0.566	8.9	1.792	-133.9	0.120	-122.4	0.394	51.5
22.0	0.554	0.6	1.713	-147.9	0.123	-134.0	0.388	46.2
23.0	0.534	-18.5	1.639	-164.8	0.124	-149.4	0.378	29.4
24.0	0.575	-35.4	1.557	176.7	0.126	-167.0	0.362	8.2
25.0	0.550	-43.9	1.513	161.6	0.130	-179.0	0.368	-4.3
26.0	0.522	-57.1	1.516	145.7	0.143	166.3	0.346	-15.8