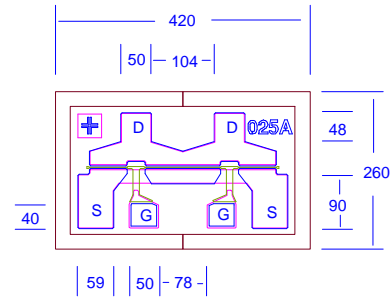


**PRELIMINARY DATA SHEET**  
**General Purpose GaAs FET**

- +18.5dBm TYPICAL OUTPUT POWER
- 11.0dB TYPICAL POWER GAIN AT 12GHz
- TYPICAL 1.3 dB NOISE FIGURE AND 11 dB ASSOCIATED GAIN AT 12GHz
- 0.3 X 250 MICRON RECESSED “MUSHROOM” GATE
- Si<sub>3</sub>N<sub>4</sub> PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY
- Idss SORTED IN 5mA PER BIN RANGE



Chip Thickness: 75 ± 13 microns  
 All Dimensions In Microns

**ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = 25 °C)**

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>P<sub>1dB</sub></b>	Output Power at 1dB Compression f=12GHz	17	18.5		dBm
	V <sub>ds</sub> =6V, I <sub>ds</sub> =50% Id <sub>ss</sub> f=18GHz		18.5		
<b>G<sub>1dB</sub></b>	Gain at 1dB Compression f=12GHz	9	11		dB
	V <sub>ds</sub> =6V, I <sub>ds</sub> =50% Id <sub>ss</sub> f=18GHz		9		
<b>NF</b>	Noise Figure V <sub>ds</sub> =3V, I <sub>ds</sub> =15mA f=12GHz		1.3		dB
<b>GA</b>	Associated Gain V <sub>ds</sub> =3V, I <sub>ds</sub> =15mA f=12GHz		11		dB
<b>I<sub>ds</sub></b>	Saturated Drain Current V <sub>ds</sub> =3V, V <sub>gs</sub> =0V	35	65	105	mA
<b>G<sub>m</sub></b>	Transconductance V <sub>ds</sub> =3V, V <sub>gs</sub> =0V	40	60		mS
<b>V<sub>p</sub></b>	Pinch-off Voltage V <sub>ds</sub> =3V, I <sub>ds</sub> =1.0mA		-1.5	-3.0	V
<b>BV<sub>gd</sub></b>	Drain Breakdown Voltage I <sub>gd</sub> =100uA	-5.5	-8.5		V
<b>BV<sub>gs</sub></b>	Source Breakdown Voltage I <sub>gs</sub> =100uA	-5.5	-8.5		V
<b>R<sub>th</sub></b>	Thermal Resistance (Au-Sn Eutectic Attach)		155		°C/W

**MAXIMUM RATINGS AT 25 °C**

SYMBOLS	PARAMETERS	ABSOLUTE <sup>1</sup>	CONTINUOUS <sup>2</sup>
<b>V<sub>ds</sub></b>	Drain-Source Voltage	10V	6V
<b>V<sub>gs</sub></b>	Gate-Source Voltage	-6V	-4V
<b>I<sub>ds</sub></b>	Drain Current	I <sub>ds</sub>	I <sub>ds</sub>
<b>I<sub>gsf</sub></b>	Forward Gate Current	6mA	1mA
<b>P<sub>in</sub></b>	Input Power	16dBm	@ 3dB Compression
<b>T<sub>ch</sub></b>	Channel Temperature	175°C	150°C
<b>T<sub>stg</sub></b>	Storage Temperature	-65/175°C	-65/150°C
<b>P<sub>t</sub></b>	Total Power Dissipation	880mW	730mW

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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## PRELIMINARY DATA SHEET General Purpose GaAs FET

### S-PARAMETERS

6V, Idss

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.959	-15.7	5.152	166.7	0.018	62.0	0.655	-6.9
2.0	0.938	-30.7	5.002	155.2	0.034	62.8	0.640	-15.2
3.0	0.912	-44.3	4.745	144.2	0.048	57.5	0.628	-24.3
4.0	0.886	-56.8	4.460	134.8	0.060	52.3	0.609	-28.9
5.0	0.867	-68.2	4.277	126.5	0.071	48.0	0.580	-34.2
6.0	0.823	-78.5	3.995	116.6	0.078	41.7	0.563	-45.7
7.0	0.808	-87.9	3.699	108.9	0.084	36.8	0.565	-48.7
8.0	0.795	-97.9	3.543	102.3	0.091	32.9	0.515	-49.9
9.0	0.769	-107.9	3.371	93.9	0.097	27.4	0.469	-60.5
10.0	0.749	-115.8	3.140	86.7	0.098	22.5	0.470	-67.9
11.0	0.743	-124.1	2.971	80.1	0.100	19.3	0.444	-71.6
12.0	0.727	-131.1	2.771	73.4	0.101	15.5	0.440	-79.6
13.0	0.731	-137.8	2.613	68.3	0.101	12.7	0.439	-77.4
14.0	0.738	-145.6	2.541	61.9	0.105	9.2	0.352	-83.7
15.0	0.705	-152.3	2.364	54.0	0.103	4.2	0.387	-108.7
16.0	0.705	-155.6	2.141	50.7	0.098	4.6	0.490	-99.8
17.0	0.731	-160.8	2.122	47.6	0.103	4.6	0.412	-85.9
18.0	0.719	-168.3	2.091	39.2	0.107	-0.7	0.327	-116.4
19.0	0.694	-171.2	1.896	34.1	0.102	-2.3	0.473	-122.7
20.0	0.708	-173.8	1.834	33.0	0.104	-0.9	0.472	-103.1
21.0	0.716	-177.8	1.894	27.1	0.114	-3.0	0.328	-115.7
22.0	0.696	176.6	1.782	19.6	0.111	-6.9	0.406	-140.1
23.0	0.693	172.5	1.673	15.8	0.110	-7.4	0.431	-134.3
24.0	0.692	168.0	1.653	10.2	0.113	-8.9	0.401	-147.1
25.0	0.687	163.5	1.531	4.4	0.109	-10.7	0.473	-156.4
26.0	0.710	160.7	1.520	0.4	0.113	-11.1	0.439	-150.6

Note: The data included 0.7 mils diameter Au bonding wires:  
2 gate wires, 15 mils each; 2 drain wires, 20 mils each; 4 source wires, 7 mils each.