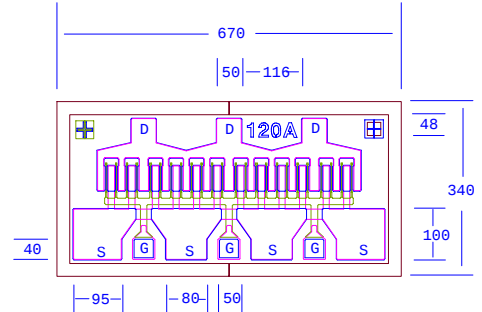


DATA SHEET
Low Distortion GaAs Power FET

- +28.0dBm TYPICAL OUTPUT POWER
- 9.5dB TYPICAL POWER GAIN AT 12GHz
- 0.3 X 1200 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY
- Idss SORTED IN 20mA PER BIN RANGE



Chip Thickness: 75 ± 13 microns
All Dimensions In Microns

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
P_{1dB}	Output Power at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz f=18GHz	26.0	28.0 28.0		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz f=18GHz	8.0	9.5 7.0		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz		34		%
I_{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	200	340	440	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	140	180		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =3.0mA		-2.0	-3.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =1.2mA	-12	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =1.2mA	-7	-14		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		37		°C/W

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	12V	8V
V_{gs}	Gate-Source Voltage	-8V	-4V
I_{ds}	Drain Current	I _{dss}	385mA
I_{gsf}	Forward Gate Current	30mA	5mA
P_{in}	Input Power	26dBm	@ 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	3.7 W	3.1 W

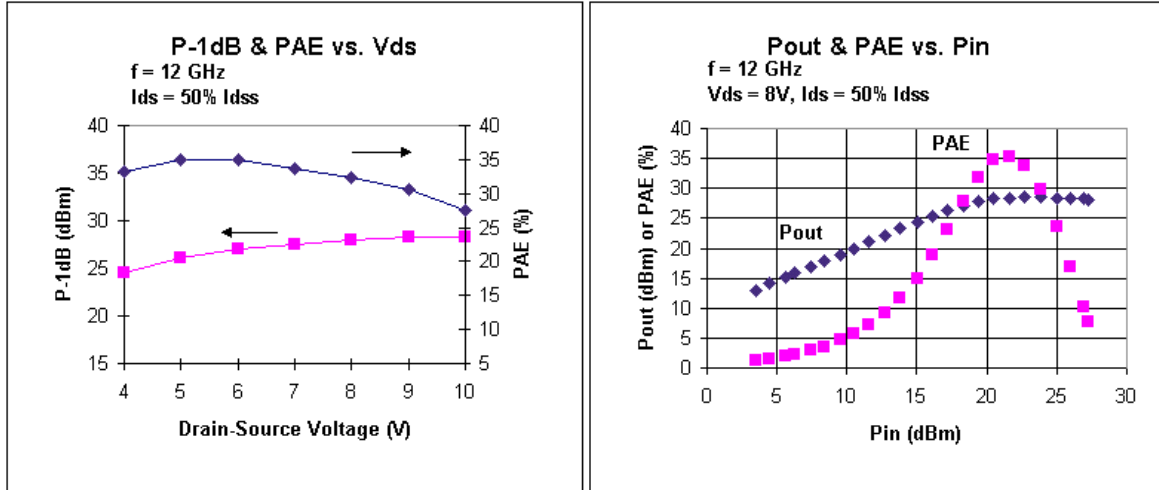
Note: 1. Exceeding any of the above ratings may result in permanent damage.

2. Exceeding any of the above ratings may reduce MTTF below design goals.

EFA120A

DATA SHEET

Low Distortion GaAs Power FET



S-PARAMETERS

8V, 1/2 Idss

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.943	-63.6	9.082	141.1	0.034	54.8	0.243	-57.3
2.0	0.912	-102.6	6.636	117.0	0.049	36.0	0.247	-92.6
3.0	0.896	-125.1	4.987	101.3	0.055	24.4	0.259	-111.5
4.0	0.892	-139.2	3.926	89.9	0.057	17.1	0.280	-121.4
5.0	0.889	-149.7	3.190	80.2	0.056	12.6	0.309	-128.0
6.0	0.890	-155.8	2.675	72.6	0.056	9.4	0.337	-131.7
7.0	0.892	-160.3	2.294	65.8	0.055	7.0	0.369	-134.6
8.0	0.895	-163.5	2.003	59.7	0.053	5.4	0.399	-136.9
9.0	0.898	-166.1	1.773	54.1	0.051	3.7	0.430	-139.1
10.0	0.899	-168.3	1.588	48.9	0.048	3.2	0.457	-140.9
11.0	0.903	-170.5	1.442	43.6	0.047	2.4	0.484	-143.3
12.0	0.906	-172.2	1.318	38.6	0.047	2.8	0.508	-145.6
13.0	0.911	-174.5	1.215	33.6	0.045	2.3	0.530	-148.4
14.0	0.912	-177.1	1.128	28.4	0.044	1.8	0.550	-151.3
15.0	0.914	-179.8	1.055	23.0	0.044	1.7	0.570	-154.9
16.0	0.919	-176.8	0.986	17.3	0.044	1.3	0.587	-158.8
17.0	0.921	-173.2	0.926	11.6	0.044	0.1	0.605	-163.1
18.0	0.924	-169.5	0.868	5.7	0.045	-0.2	0.625	-167.3
19.0	0.927	-166.1	0.811	-0.2	0.045	-1.6	0.643	-172.3
20.0	0.931	-162.8	0.757	-5.8	0.045	-1.7	0.666	-176.9
21.0	0.947	-162.4	0.655	-10.0	0.041	-1.6	0.705	-178.4
22.0	0.952	-160.7	0.608	-14.5	0.042	-0.3	0.726	-174.7
23.0	0.957	-158.9	0.564	-18.9	0.043	1.2	0.749	-172.0
24.0	0.959	-158.2	0.527	-22.6	0.043	4.5	0.769	-169.7
25.0	0.965	-157.5	0.499	-25.5	0.043	7.3	0.785	-167.5
26.0	0.968	-157.2	0.474	-29.0	0.046	10.0	0.803	-166.2

Note: The data included 0.7 mils diameter Au bonding wires:
3 gate wires, 15 mils each; 3 drain wires, 20 mils each; 8 source wires, 7 mils each.