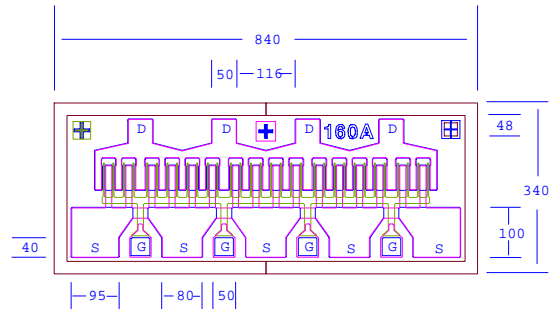


DATA SHEET
Low Distortion GaAs Power FET

- +29.0dBm TYPICAL OUTPUT POWER
- 9.0dB TYPICAL POWER GAIN AT 12GHz
- 0.3 X 1600 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY
- Idss SORTED IN 30mA 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 29.0 f=18GHz 29.0		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss}		f=12GHz 9.0 f=18GHz 6.5		dB
PAE	Gain 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	260	420	600	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	180	240		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =4.0mA		-2.0	-3.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =1.6mA	-12	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =1.6mA	-7	-14		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		30		°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}	475mA
I_{gsf}	Forward Gate Current	40mA	7mA
P_{in}	Input Power	28dBm	@ 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	4.5W	3.8W

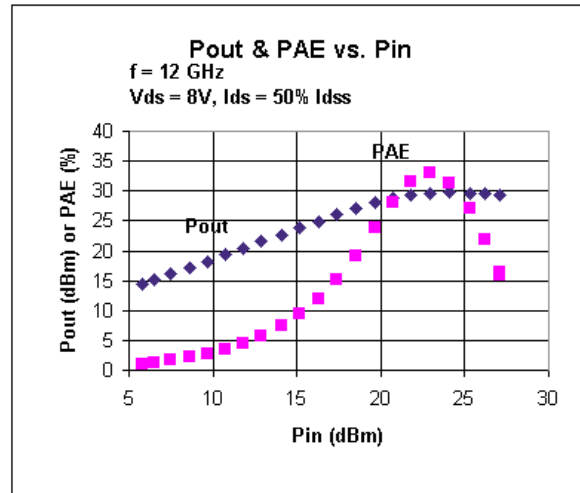
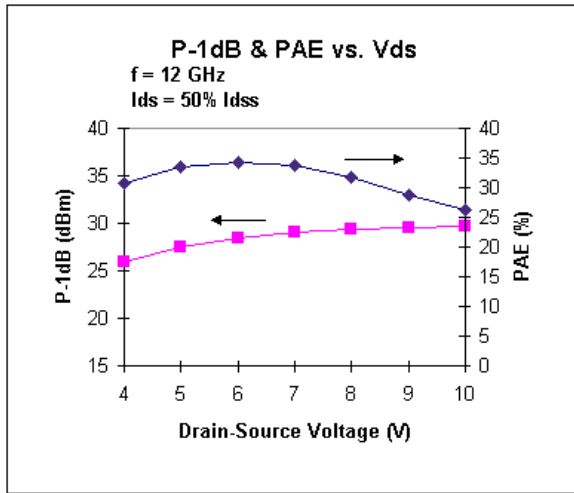
Note: 1. Exceeding any of the above ratings may result in permanent damage.

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

EFA160A

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	0.936	-81.9	9.025	133.3	0.035	48.7	0.221	-106.2
2.0	0.911	-119.8	5.964	108.8	0.047	27.7	0.285	-132.0
3.0	0.903	-138.7	4.275	94.5	0.050	18.4	0.319	-141.6
4.0	0.903	-149.8	3.297	84.3	0.050	13.0	0.347	-145.0
5.0	0.900	-157.8	2.644	75.5	0.049	9.3	0.382	-147.5
6.0	0.903	-162.4	2.207	68.6	0.048	6.4	0.413	-148.0
7.0	0.905	-165.8	1.884	62.3	0.047	5.6	0.445	-148.7
8.0	0.908	-168.0	1.640	56.4	0.046	3.6	0.476	-149.5
9.0	0.913	-170.0	1.451	51.2	0.044	3.1	0.510	-150.4
10.0	0.914	-171.8	1.297	46.2	0.042	3.9	0.536	-151.0
11.0	0.918	-173.7	1.172	41.0	0.041	3.2	0.563	-152.2
12.0	0.920	-175.2	1.067	36.1	0.039	2.6	0.592	-153.8
13.0	0.924	-177.4	0.977	31.0	0.038	2.9	0.612	-155.2
14.0	0.925	-179.9	0.901	25.9	0.038	1.8	0.635	-157.2
15.0	0.925	177.5	0.836	20.8	0.038	1.6	0.653	-159.4
16.0	0.929	174.2	0.775	15.4	0.038	0.7	0.675	-161.8
17.0	0.927	171.0	0.721	10.0	0.037	1.5	0.688	-164.7
18.0	0.928	167.6	0.670	4.6	0.037	2.2	0.706	-167.7
19.0	0.927	164.8	0.626	-0.6	0.037	1.4	0.721	-171.1
20.0	0.931	162.1	0.580	-5.4	0.037	1.0	0.738	-174.6
21.0	0.945	162.3	0.502	-9.7	0.036	2.4	0.771	-178.4
22.0	0.951	161.1	0.469	-13.0	0.033	2.9	0.786	178.6
23.0	0.960	159.9	0.433	-16.9	0.035	5.0	0.803	176.2
24.0	0.961	159.6	0.409	-20.1	0.037	8.9	0.821	174.3
25.0	0.973	159.3	0.391	-22.7	0.037	10.9	0.831	172.5
26.0	0.969	159.6	0.368	-24.8	0.039	10.8	0.849	170.6

Note: The data included 0.7 mils diameter Au bonding wires:
 4 gate wires, 15 mils each; 4 drain wires, 20 mils each; 10 source wires, 7 mils each.