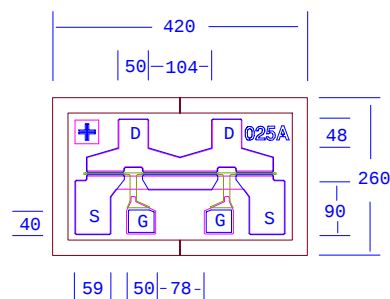


DATA SHEET
High Gain GaAs Power FET

- +20.0dBm TYPICAL OUTPUT POWER
- 11.5dB TYPICAL POWER GAIN AT 12GHz
- 0.3 X 250 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ 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_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	17.0	20.0 20.0		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz f=18GHz	9.5	11.5 9.0		dB
PAE	Power Added efficiency at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz		38		%
I_{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	20	45	65	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	30	50		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =1.0mA		-1.5	-2.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =1.0mA	-12	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =1.0mA	-7	-14		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		155		°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}	I _{dss}
I_{gsf}	Forward Gate Current	6mA	1mA
P_{in}	Input Power	19dBm	@ 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	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.

EFA025AL

DATA SHEET

High Gain 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	0.990	-19.8	5.439	163.7	0.014	78.3	0.787	-7.4
2.0	0.970	-38.4	5.095	150.4	0.027	68.7	0.772	-14.1
3.0	0.927	-55.0	4.719	137.3	0.037	58.7	0.751	-20.6
4.0	0.895	-69.0	4.328	126.3	0.043	52.7	0.727	-26.3
5.0	0.862	-81.3	3.961	116.0	0.049	45.8	0.709	-32.1
6.0	0.838	-91.8	3.630	107.0	0.051	41.8	0.692	-37.1
7.0	0.815	-101.4	3.327	98.8	0.054	37.2	0.681	-42.0
8.0	0.802	-110.2	3.078	90.9	0.055	33.0	0.675	-46.6
9.0	0.779	-118.3	2.822	83.7	0.056	28.4	0.663	-51.0
10.0	0.769	-125.4	2.613	77.3	0.053	25.0	0.655	-54.8
11.0	0.765	-132.3	2.436	71.1	0.052	23.8	0.651	-58.5
12.0	0.764	-139.0	2.285	64.8	0.051	22.4	0.645	-62.0
13.0	0.769	-144.9	2.150	58.9	0.051	20.1	0.636	-65.3
14.0	0.771	-150.5	2.032	53.3	0.050	19.7	0.628	-69.1
15.0	0.779	-155.4	1.945	47.5	0.051	20.2	0.619	-73.7
16.0	0.781	-159.8	1.852	41.3	0.053	20.5	0.614	-79.6
17.0	0.786	-163.1	1.783	35.8	0.056	19.3	0.593	-86.9
18.0	0.793	-166.7	1.732	29.6	0.061	17.0	0.580	-95.4
19.0	0.794	-170.0	1.674	22.7	0.063	16.1	0.577	-105.2
20.0	0.786	-173.1	1.607	15.7	0.067	14.6	0.582	-116.6
21.0	0.773	-175.2	1.505	9.1	0.070	12.7	0.590	-128.3
22.0	0.762	-177.7	1.437	3.0	0.071	13.3	0.604	-138.3
23.0	0.763	-179.9	1.368	-2.4	0.076	16.5	0.637	-146.1
24.0	0.762	176.7	1.305	-8.5	0.083	16.6	0.678	-153.2
25.0	0.759	173.1	1.235	-14.3	0.088	16.8	0.703	-158.7
26.0	0.753	170.5	1.168	-18.0	0.092	17.9	0.721	-161.8

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.