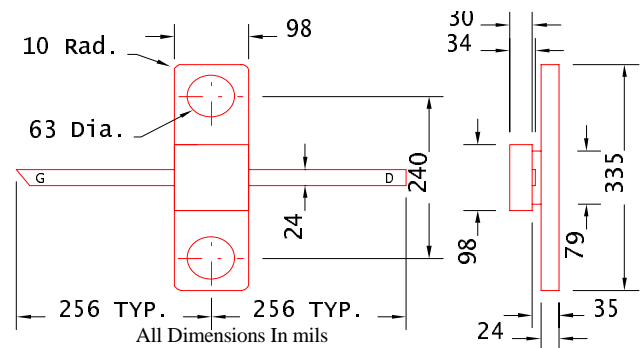


DATA SHEET
Low Distortion GaAs Power FET

- HERMETIC 100mil CERAMIC FLANGE PACKAGE
- +25.0dBm TYPICAL OUTPUT POWER
- 8.0dB TYPICAL POWER GAIN AT 12GHz
- 0.3 X 600 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY


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	23.0	25.0		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss}	f=12GHz	6.5	8.0		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss}	f=12GHz		33		%
I_{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V		100	170	240	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V		70	90		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =1.5mA			-2.0	-3.5	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			78*		°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	12V	8V
V_{gs}	Gate-Source Voltage	-8V	-4V
I_{ds}	Drain Current	I _{dss}	190mA
I_{gsf}	Forward Gate Current	15mA	2.5mA
P_{in}	Input Power	23dBm	@ 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	1.8 W	1.5 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.

EFA060B-100F

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	0.966	-38.4	6.259	147.0	0.018	65.5	0.599	-25.0
2.0	0.912	-70.3	5.205	120.6	0.031	46.2	0.599	-42.0
3.0	0.865	-93.4	4.360	100.3	0.036	31.3	0.598	-53.5
4.0	0.827	-112.8	3.903	82.2	0.039	21.6	0.596	-62.5
5.0	0.794	-134.9	3.581	63.6	0.046	12.1	0.577	-70.8
6.0	0.779	-152.5	3.266	46.5	0.051	2.4	0.510	-81.0
7.0	0.749	-176.2	3.032	27.9	0.057	-8.3	0.481	-92.5
8.0	0.720	162.1	2.825	9.0	0.059	-20.0	0.472	-105.6
9.0	0.716	149.3	2.662	-8.3	0.060	-25.5	0.462	-121.5
10.0	0.700	140.4	2.451	-25.2	0.064	-30.0	0.462	-140.5
11.0	0.676	125.9	2.284	-40.3	0.074	-39.9	0.478	-151.9
12.0	0.654	105.8	2.169	-58.6	0.082	-52.8	0.485	-159.1
13.0	0.650	91.8	2.087	-76.6	0.092	-65.3	0.450	-172.9
14.0	0.628	82.4	2.069	-94.6	0.109	-76.0	0.420	167.6
15.0	0.585	60.5	2.007	-115.6	0.134	-90.7	0.404	150.1
16.0	0.584	34.3	1.844	-136.5	0.154	-107.1	0.341	140.2
17.0	0.605	24.6	1.717	-156.3	0.188	-121.2	0.309	122.6
18.0	0.573	19.1	1.754	-176.3	0.257	-137.0	0.317	92.6
19.0	0.521	-7.8	1.761	157.1	0.352	-159.4	0.291	72.1
20.0	0.627	-44.0	1.630	132.8	0.451	175.2	0.145	49.3