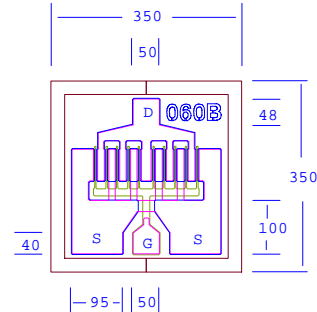


PRELIMINARY DATA SHEET
Low Distortion GaAs Power FET

- +25.0dBm TYPICAL OUTPUT POWER
- 10.5dB TYPICAL POWER GAIN AT 12GHz
- HIGH BV_{gd} FOR 10V BIAS
- 0.3 X 600 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY
- Id_{ss} SORTED IN 10mA 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 f=12GHz V _{ds} =10V, I _{ds} =50% I _{ds}	23.0	25.0		dBm
G_{1dB}	Gain at 1dB Compression f=12GHz V _{ds} =10V, I _{ds} =50% I _{ds}	9.0	10.5		dB
PAE	Power Added Efficiency at 1dB Compression V _{ds} =10V, I _{ds} =50% I _{ds}		35		%
I_{ds}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	80	130	180	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	50	70		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =1.5mA		-2.5	-4.0	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =1.0mA	-15	-20		V
BV_{gs}	Source Breakdown Voltage I _{gs} =1.0mA	-10	-17		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		75		°C/W

MAXIMUM RATINGS AT 25 °C

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	14V	10V
V_{gs}	Gate-Source Voltage	-8V	-4.5V
I_{ds}	Drain Current	I _{ds}	150mA
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	1.8W	1.5W

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.

EFC060B

PRELIMINARY DATA SHEET

Low Distortion GaAs Power FET

S-PARAMETERS

10V, 1/2 Idss

Freq	S11	S11	S21	S21	S12	S12	S22	S22
GHz	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
1.000	1.000	-22.2	4.497	162.6	0.022	75.2	0.568	-9.8
2.000	0.976	-43.5	4.274	147.4	0.042	65.1	0.553	-19.6
3.000	0.948	-64.1	3.993	132.7	0.059	53.7	0.524	-28.6
4.000	0.924	-82.9	3.676	119.0	0.072	43.1	0.492	-36.9
5.000	0.896	-100.8	3.334	105.8	0.080	34.2	0.446	-45.2
6.000	0.879	-115.2	3.005	94.5	0.086	26.7	0.418	-52.3
7.000	0.869	-127.1	2.720	84.8	0.089	20.4	0.398	-59.4
8.000	0.856	-136.5	2.487	75.7	0.091	15.0	0.380	-67.9
9.000	0.843	-145.4	2.291	67.0	0.092	9.0	0.374	-78.0
10.000	0.835	-154.1	2.119	58.4	0.092	4.2	0.384	-86.9
11.000	0.826	-162.9	1.955	50.4	0.092	0.3	0.395	-93.9
12.000	0.829	-170.1	1.826	42.7	0.091	-3.8	0.409	-100.1
13.000	0.825	-176.9	1.706	35.1	0.091	-7.5	0.415	-106.5
14.000	0.826	176.5	1.614	27.7	0.091	-10.6	0.426	-113.9
15.000	0.826	169.4	1.508	20.1	0.089	-15.0	0.435	-119.9
16.000	0.834	162.5	1.412	12.6	0.088	-17.6	0.439	-124.7
17.000	0.839	157.6	1.331	5.7	0.088	-20.3	0.432	-131.7
18.000	0.846	153.9	1.274	-1.0	0.089	-22.6	0.422	-141.5
19.000	0.844	150.1	1.218	-8.7	0.089	-25.8	0.422	-154.1
20.000	0.845	144.5	1.151	-16.6	0.089	-29.1	0.444	-166.5
21.000	0.851	134.1	1.055	-24.7	0.086	-31.9	0.476	-168.6
22.000	0.856	129.4	0.975	-31.0	0.084	-32.8	0.502	-177.0
23.000	0.866	126.8	0.907	-37.7	0.081	-34.5	0.543	175.0
24.000	0.869	124.1	0.841	-43.7	0.078	-34.4	0.574	168.2
25.000	0.874	121.9	0.775	-49.4	0.077	-34.9	0.618	162.2
26.000	0.876	118.6	0.711	-55.1	0.074	-32.9	0.660	158.1

Note: The data included 0.7 mils diameter Au bonding wires:
1 gate wires, 15 mils each; 1 drain wires, 20 mils each; 4 source wires, 7 mils each.