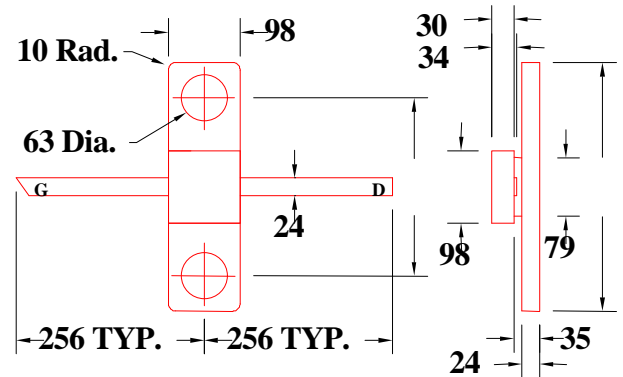


DATA SHEET
Low Distortion GaAs Power FET

- HERMETIC 100mil CERAMIC FLANGE PACKAGE
- +28.0dBm TYPICAL OUTPUT POWER
- HIGH BV_{gd} FOR 10V BIAS
- 9.0dB TYPICAL POWER GAIN AT 8GHz
- 0.3 X 1200 MICRON RECESSED "MUSHROOM" GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY


ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

All Dimensions In mils

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
P_{1dB}	Output Power at 1dB Compression		28.0		dBm
	f = 8GHz V _{ds} =10V, I _{ds} =50% I _{ds}		28.0		
G_{1dB}	Gain at 1dB Compression		9.0		dB
	f = 8GHz V _{ds} =10V, I _{ds} =50% I _{ds}		6.0		
PAE	Gain at 1dB Compression		30		%
	f = 12GHz V _{ds} =10V, I _{ds} =50% I _{ds}				
I_{ds}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	160	260	360	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	100	140		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =3.0mA		-2.5	-4.0	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =1.2mA	-15	-20		V
BV_{gs}	Source Breakdown Voltage I _{gs} =1.2mA	-10	-17		V
R_{th}	Thermal Resistance		43*		°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	14V	10V
V_{gs}	Gate-Source Voltage	-8V	-4.5V
I_{ds}	Drain Current	I _{ds}	270mA
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	3.2W	2.7W

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.

Excelics Semiconductor, Inc., 2908 Scott Blvd., Santa Clara, CA 95054
Phone: (408) 970-8664 Fax: (408) 970-8998 Web Site: www.excelics.com

EFC120B-100F

DATA SHEET

Low Distortion GaAs Power FET

S-PARAMETERS								
10V, 1/2 Idss								
FREQ	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
GHz	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
1.0	1.015	-66.9	5.333	134.5	0.037	44.1	0.311	-73.2
2.0	0.910	-87.7	3.771	112.9	0.048	35.0	0.362	-71.6
3.0	0.871	-112.8	3.081	90.2	0.056	23.0	0.369	-87.9
4.0	0.836	-134.1	2.646	70.1	0.061	13.8	0.365	-100.5
5.0	0.810	-154.5	2.338	50.6	0.066	5.4	0.350	-114.3
6.0	0.783	-170.8	2.087	32.6	0.068	-2.6	0.332	-132.7
7.0	0.763	171.7	1.878	14.9	0.071	-9.7	0.347	-149.7
8.0	0.761	157.6	1.688	-2.6	0.072	-16.2	0.380	-169.0
9.0	0.766	139.5	1.514	-19.9	0.078	-24.7	0.404	-177.2
10.0	0.770	126.1	1.376	-35.5	0.082	-32.6	0.395	173.5
11.0	0.759	117.3	1.314	-50.3	0.091	-40.7	0.403	161.2
12.0	0.740	105.5	1.290	-66.4	0.104	-47.9	0.405	153.6
13.0	0.738	88.2	1.237	-84.1	0.122	-58.2	0.362	144.5
14.0	0.734	73.0	1.196	-102.5	0.146	-71.1	0.309	123.6
15.0	0.718	59.3	1.162	-123.4	0.176	-86.9	0.301	94.9
16.0	0.693	44.2	1.099	-143.5	0.209	-103.3	0.270	78.9
17.0	0.686	31.0	1.082	-161.9	0.266	-118.3	0.245	79.9
18.0	0.664	18.1	1.085	176.9	0.350	-138.1	0.215	73.9
19.0	0.666	1.0	1.071	153.7	0.465	-163.0	0.170	68.8
20.0	0.703	-26.1	1.066	127.7	0.621	167.1	0.193	106.0
21.0	0.546	-62.2	1.004	100.2	0.779	129.7	0.222	117.8
22.0	0.391	-119.2	0.993	74.3	0.903	90.1	0.170	110.1
23.0	0.493	-176.8	0.951	41.8	0.908	45.7	0.323	104.9
24.0	0.455	138.2	0.872	10.2	0.821	5.4	0.413	86.0
25.0	0.354	86.0	0.765	-28.8	0.691	-39.2	0.465	78.0
26.0	0.489	96.7	0.431	-78.0	0.341	-89.7	0.632	79.9