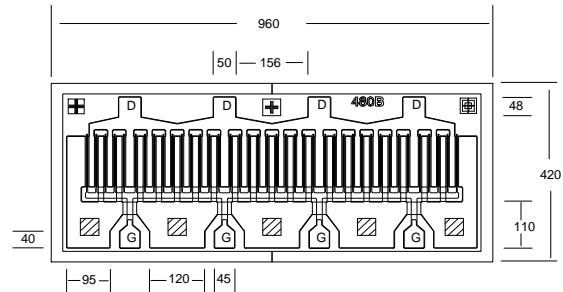


PRELIMINARY DATA SHEET
Low Distortion GaAs Power FET

- +34.0dBm TYPICAL OUTPUT POWER
- 6.0dB TYPICAL POWER GAIN FOR EFA480B AND 7.5dB FOR EFA480BV AT 12GHz
- 0.5X 4800 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY
- EPA480BV WITH VIA HOLE SOURCE GROUNDING
- Idss SORTED IN 80mA PER BIN RANGE



Chip Thickness: 60 ± 10 microns
All Dimensions In Microns

▨ : Via Hole **No Via Hole For EFA480B**

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOLS	PARAMETERS/TEST CONDITIONS	EFA480B			EFA480BV			UNIT
		MIN	TYP	MAX	MIN	TYP	MAX	
P_{1dB}	Output Power at 1dB Compression f=8GHz V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz	32.0	34.0		32.0	34.0		dBm
G_{1dB}	Gain at 1dB Compression f=8GHz V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz	4.5	10.0		5.0	12.0		dB
PAE	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz		32			36		%
I_{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	800	1360	1760	800	1360	1760	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	560	720		560	720		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =10mA		-2.0	-3.5		-2.0	-3.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =4.8mA	-12	-15		-12	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =4.8mA	-7	-14		-7	-14		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		10			8		°C/W

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	EFA480B		EFA480BV	
		ABSOLUTE ¹	CONTINUOUS ²	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	12V	8V	12V	8V
V_{gs}	Gate-Source Voltage	-8V	-3V	-8V	-3V
I_{ds}	Drain Current	I _{dss}	1.4A	I _{dss}	1.75A
I_{gsf}	Forward Gate Current	120mA	20mA	120mA	20mA
P_{in}	Input Power	32dBm	@ 3dB Compression	32dBm	@ 3dB Compression
T_{ch}	Channel Temperature	175°C	150°C	175°C	150°C
T_{stg}	Storage Temperature	-65/175°C	-65/150°C	-65/175°C	-65/150°C
P_t	Total Power Dissipation	14W	11W	17W	14W

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.

EFA480B/EFA480BV

PRELIMINARY DATA SHEET Low Distortion GaAs Power FET

S-PARAMETERS

EFA480B 8V, 1/2 Idss

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.944	-149.6	6.808	97.1	0.021	20.4	0.444	-166.1
2.0	0.940	-165.7	3.472	80.6	0.022	17.4	0.481	-167.7
3.0	0.946	-172.1	2.290	69.2	0.022	20.0	0.514	-166.7
4.0	0.950	-176.7	1.685	59.5	0.021	24.8	0.554	-165.3
5.0	0.954	179.6	1.281	51.0	0.020	31.0	0.605	-164.3
6.0	0.956	176.5	1.040	43.1	0.020	38.9	0.643	-162.5
7.0	0.959	173.5	0.864	36.1	0.021	44.2	0.682	-161.0
8.0	0.961	170.7	0.728	29.9	0.021	50.4	0.710	-159.0
9.0	0.965	169.0	0.620	24.4	0.023	55.5	0.733	-158.2
10.0	0.968	169.5	0.538	20.0	0.024	63.4	0.753	-158.5
11.0	0.970	171.2	0.480	15.1	0.026	63.9	0.777	-162.5
12.0	0.968	172.1	0.428	10.2	0.029	65.8	0.794	-165.8
14.0	0.966	168.4	0.348	0.2	0.033	63.5	0.835	-170.5
16.0	0.963	165.6	0.290	-11.1	0.035	56.8	0.871	-179.3
18.0	0.960	154.2	0.238	-23.5	0.036	46.7	0.901	176.7
20.0	0.964	146.1	0.194	-34.0	0.039	40.8	0.920	171.6
22.0	0.965	138.6	0.154	-43.1	0.042	35.7	0.931	168.0
24.0	0.971	139.0	0.117	-45.2	0.044	36.9	0.946	165.8
26.0	0.968	148.0	0.089	-41.9	0.050	39.7	0.950	158.4

EFA480BV 8V, 1/2 Idss

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.939	-132.8	6.946	105.6	0.024	22.8	0.504	-165.9
2.0	0.943	-157.5	3.642	86.7	0.026	11.2	0.519	-167.8
3.0	0.938	-167.3	2.433	74.8	0.025	6.2	0.555	-167.4
4.0	0.945	-173.1	1.802	65.2	0.024	4.7	0.580	-166.3
5.0	0.944	179.1	1.430	56.0	0.022	2.9	0.608	-161.9
6.0	0.950	175.5	1.170	47.9	0.021	2.8	0.635	-162.0
7.0	0.952	174.3	0.976	41.1	0.020	3.6	0.664	-163.4
8.0	0.955	173.8	0.827	34.2	0.019	4.4	0.691	-167.0
9.0	0.961	173.5	0.707	27.6	0.017	7.2	0.723	-170.3
10.0	0.963	172.8	0.601	23.5	0.016	6.4	0.764	-169.0
11.0	0.971	172.1	0.535	15.9	0.016	10.5	0.767	-174.8
12.0	0.973	171.6	0.468	10.4	0.015	16.2	0.789	-177.6
14.0	0.979	170.1	0.364	1.5	0.014	19.3	0.834	-178.8
16.0	0.975	166.5	0.294	-8.8	0.014	15.6	0.865	178.1
18.0	0.982	163.0	0.248	-17.1	0.015	18.0	0.891	177.3
20.0	0.980	160.4	0.217	-26.0	0.016	18.1	0.906	172.9
22.0	0.972	156.2	0.188	-35.3	0.017	14.6	0.920	168.5
24.0	0.972	155.8	0.159	-42.5	0.019	18.0	0.937	161.4
26.0	0.976	152.7	0.137	-50.4	0.022	22.6	0.945	156.1

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; no source wires for EFA480BV.