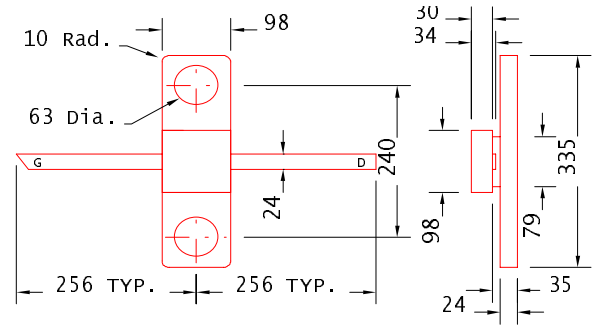


DATA SHEET
High Efficiency Heterojunction Power FET

- **HERMETIC 100mil CERAMIC FLANGE PACKAGE**
- **+31.0dBm TYPICAL OUTPUT POWER**
- **5.5dB TYPICAL POWER GAIN AT 12GHz**
- **0.3 X 1600 MICRON RECESSED “MUSHROOM” GATE**
- **Si₃N₄ PASSIVATION**
- **ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES EXTRA HIGH POWER EFFICIENCY, AND HIGH 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 f=12GHz V _{ds} =8V, I _{ds} =50% I _{dss}	29.0	31.0		dBm
G_{1dB}	Gain at 1dB Compression f=12GHz V _{ds} =8V, I _{ds} =50% I _{dss}	4.5	5.5		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	290	480	660	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	320	500		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =4.5mA		-1.0	-2.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =1.6mA	-11	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =1.6mA	-7	-14		V
R_{th}	Thermal Resistance		35*		°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	-3V
I_{ds}	Drain Current	I _{dss}	410mA
I_{gsf}	Forward Gate Current	80mA	14mA
P_{in}	Input Power	28dBm	@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	4.0W	3.3W

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.

EPA160B-100F

DATA SHEET

High Efficiency Heterojunction Power FET

S-PARAMETERS

8V, 1/2 Idss

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.816	-114.7	14.973	112.1	0.026	44.1	0.238	-125.0
2.0	0.764	-149.8	8.770	85.9	0.035	38.9	0.234	-145.2
3.0	0.738	-167.1	6.236	68.2	0.045	37.9	0.219	-154.4
4.0	0.722	175.5	4.917	51.8	0.054	33.9	0.217	-159.9
5.0	0.716	158.4	4.084	35.4	0.064	26.3	0.204	-169.1
6.0	0.710	147.3	3.489	19.9	0.075	18.2	0.204	168.1
7.0	0.708	135.2	3.022	4.9	0.083	9.8	0.231	152.6
8.0	0.703	123.8	2.658	-9.0	0.093	1.6	0.266	143.8
9.0	0.710	108.2	2.342	-23.4	0.101	-8.2	0.258	145.3
10.0	0.714	98.5	2.125	-37.4	0.113	-18.0	0.235	139.8
11.0	0.679	93.5	2.051	-52.2	0.133	-29.3	0.254	124.4
12.0	0.626	83.5	1.999	-68.5	0.156	-42.0	0.278	118.8
13.0	0.622	65.9	1.877	-85.7	0.178	-56.2	0.232	117.6
14.0	0.625	49.7	1.750	-102.7	0.202	-70.9	0.169	103.0
15.0	0.576	34.8	1.652	-122.4	0.234	-88.9	0.241	75.7
16.0	0.532	22.8	1.529	-141.1	0.268	-105.9	0.247	66.0
17.0	0.546	13.3	1.493	-159.2	0.327	-122.7	0.197	79.9
18.0	0.516	3.1	1.428	-179.6	0.399	-142.7	0.177	84.7
19.0	0.529	-4.4	1.306	159.0	0.472	-165.7	0.254	79.4
20.0	0.641	-17.8	1.259	137.8	0.593	169.3	0.319	78.6