



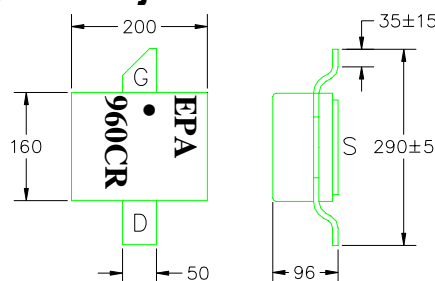
EPA960CR-CP083

UPDATED 01/16/2006

High Efficiency Heterojunction Power FET

FEATURES

- NON-HERMETIC SURFACE MOUNT
- 160MIL METAL CERAMIC PACKAGE
- +38 dBm OUTPUT POWER AT 1dB COMPRESSION
- 16.5 dB GAIN AT 2 GHz
- 0.4x9600 MICRON RECESSED "MUSHROOM" GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY



All Dimensions in mil
Tolerance: ± 3 mil



Caution! ESD sensitive device.

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

SYMBOL	PARAMETER/TEST CONDITIONS		MIN	TYP	MAX	UNITS
P _{1dB}	Output Power at 1dB Compression	f = 2.0 GHz V _{ds} = 8 V, I _{ds} =50% I _{dss}	36.5	38.0		dBm
G _{1dB}	Gain at 1dB Compression	f = 2.0 GHz V _{ds} = 8 V, I _{ds} =50% I _{dss}	15.0	16.5		dB
PAE	Power Added Efficiency at 1dB Compression	f = 4.0 GHz V _{ds} = 8 V, I _{ds} =50% I _{dss}		45		%
I _{DSS}	Saturated Drain Current	V _{DS} = 3 V, V _{GS} = 0 V	1760	2880	3760	mA
G _M	Transconductance	V _{DS} = 3 V, V _{GS} = 0 V	1920	3120		mS
V _P	Pinch-off Voltage	V _{DS} = 3 V, I _{DS} = 28 mA		-1.0	-2.5	V
BV _{GD}	Drain Breakdown Voltage	I _{GD} = 9.6 mA	-11	-15		V
BV _{GS}	Source Breakdown Voltage	I _{GS} = 9.6 mA	-7	-14		V
R _{TH} *	Thermal Resistance			6*		°C/W

Notes: * 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 _{gsf}	Forward Gate Current	86.4 mA	28.8 mA
I _{gsr}	Reserve Gate Current	14.4 mA	4.8 mA
P _{in}	Input Power	36 dBm	@ 3dB Compression
T _{ch}	Channel Temperature	175°C	175°C
T _{stg}	Storage Temperature	-65/175°C	-65/175°C
P _t	Total Power Dissipation	25 W	25 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.

Specifications are subject to change without notice.

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FREQ (GHz)	S-PARAMETERS 8V, 1/2 Idss							
	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.5	0.969	-167.6	8.140	88.4	0.008	24.0	0.814	178.7
1.0	0.978	178.4	4.058	73.8	0.011	32.3	0.784	175.2
1.5	0.935	167.8	3.512	66.1	0.016	38.4	0.741	169.4
2.0	0.929	161.0	2.695	57.2	0.021	38.2	0.741	165.6
2.5	0.922	155.5	2.253	49.3	0.025	38.3	0.727	163.4
3.0	0.918	149.8	2.032	40.2	0.030	36.2	0.705	159.7
3.5	0.908	142.2	1.891	30.6	0.037	32.0	0.685	154.5
4.0	0.891	132.4	1.814	19.2	0.045	23.2	0.659	147.7
4.5	0.879	119.7	1.753	5.8	0.052	14.6	0.634	139.9
5.0	0.868	105.9	1.673	-8.2	0.060	5.2	0.623	130.9
5.5	0.859	91.7	1.585	-22.2	0.068	-5.6	0.617	121.2
6.0	0.850	78.2	1.501	-35.7	0.076	-16.6	0.608	112.0
6.5	0.843	64.9	1.461	-46.5	0.084	-23.6	0.565	109.2
7.0	0.825	51.6	1.475	-61.0	0.098	-34.6	0.553	98.3
7.5	0.815	33.9	1.490	-78.4	0.112	-49.5	0.540	81.4
8.0	0.821	12.7	1.415	-98.4	0.119	-66.6	0.521	61.3
8.5	0.850	-6.9	1.253	-116.7	0.120	-82.4	0.546	39.2
9.0	0.877	-22.5	1.087	-133.1	0.114	-98.7	0.593	20.5
9.5	0.892	-33.5	0.928	-145.9	0.108	-110.8	0.609	8.8
10.0	0.902	-43.6	0.852	-153.8	0.111	-118.9	0.665	4.5

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