

PRELIMINARY

Notice: This is not a final specification.
Some parametric limits are subject to change.

MGFC45V6472A

6.4-7.2GHz BAND 32W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFC45V6472A is an internally impedance-matched GaAs power FET especially designed for use in 6.4-7.2 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

- Class A operation
- Internally matched to 50(ohm) system
- High output power
P1dB = 32W (TYP.) @ f=6.4-7.2 GHz
- High power gain
GLP = 8 dB (TYP.) @ f=6.4-7.2GHz
- High power added efficiency
PAE = 28 % (TYP.) @ f=6.4-7.2GHz
- Low distortion [item -51]
IM3=-42dBc(min.) @Po=34.5dBm S.C.L.
- Thermal Resistance
Rth(ch-c)=1.0 deg.C/W(MAX.)

APPLICATION

- item 01 : 6.4-7.2 GHz band power amplifier
- item 51 : 6.4-7.2 GHz band digital radio communication

QUALITY GRADE

IG

RECOMMENDED BIAS CONDITIONS

- VDS = 10V
- ID = 8.0 A
- RG=25 ohm

ABSOLUTE MAXIMUM RATINGS

(Ta=25 deg.C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-15	V
VGSO	Gate to source voltage	-15	V
ID	Drain current	30	A
IGR	Reverse gate current	-60	mA
IGF	Forward gate current	126	mA
PT	Total power dissipation	125	W
Tch	Channel temperature	175	deg.C
Tstg	Storage temperature	-65/+175	deg.C

*1 : Tc=25 deg.C

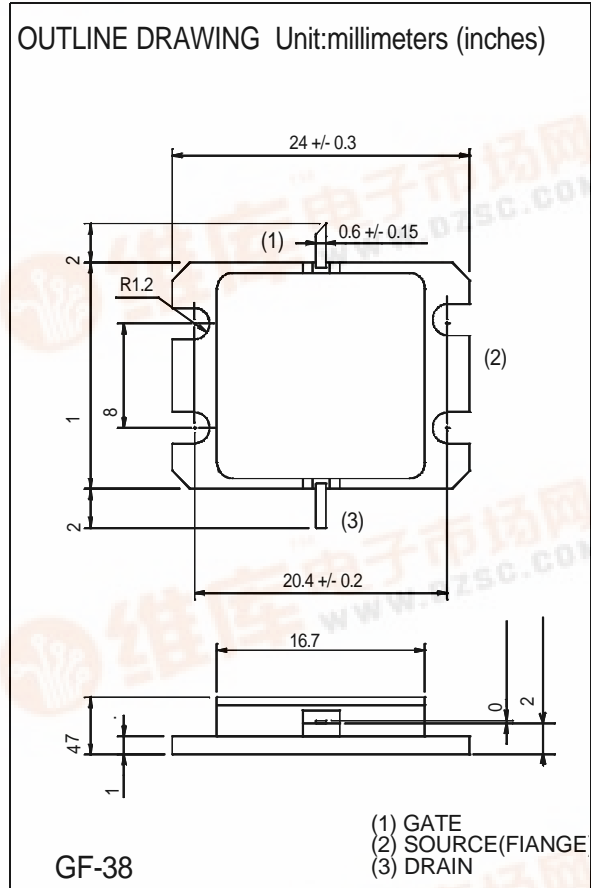
ELECTRICAL CHARACTERISTICS

(Ta=25 deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VGS=0V	-	20	-	A
Gm	Transconductance	VDS=3V, ID=6.4A	-	8.0	-	V
VGS(off)	Gate to source cut-off voltage	VDS = 3V , ID = 120mA	-	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=8.0A, f=6.4-7.2GHz	44.5	45	-	dBm
GLP	Linear power gain		7	8	-	dB
PAE	Power added efficiency		-	35	-	%
IM3	3rd order IM distortion *1		-42	-45	-	dBc
Rth(ch-c)	Thermal resistance *2	Delta Vf method	-	-	1.0	deg.C/W

*1 : Item -51 2 tone test, Po=34.5dBm Single Carrier Level, f=7.2GHz, Delta f=10MHz *2 : Channel-case

OUTLINE DRAWING Unit: millimeters (inches)



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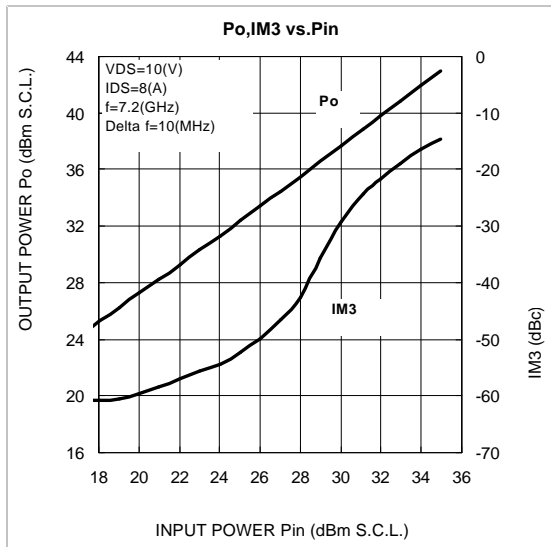
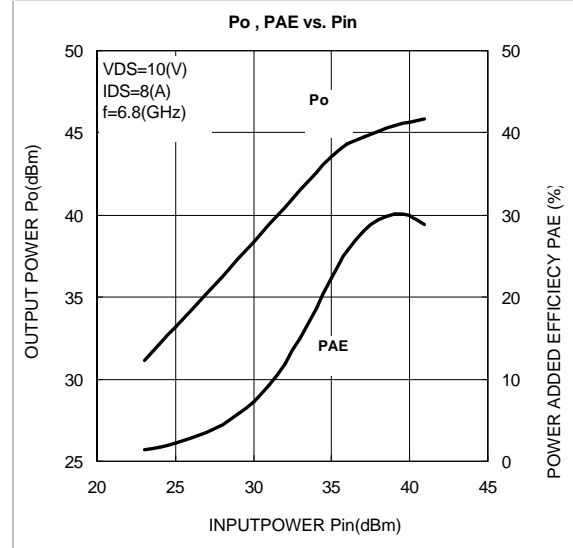
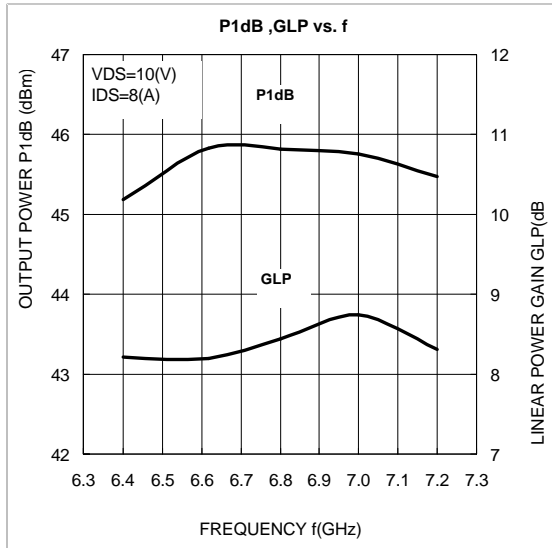
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MITSUBISHI SEMICONDUCTOR <GaAs FET>

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TYPICAL CHARACTERISTICS (Ta=25deg.C)



S PARAMETERS (Ta=25deg.C, VDS=10V, ID=8.0A)

f (GHz)	S Parameters (TYP.)							
	S11		S21		S12		S22	
	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)
6.4	0.66	100	2.39	-106	0.057	-171	0.32	74
6.5	0.61	84	2.43	-122	0.065	174	0.34	64
6.6	0.56	70	2.47	-138	0.071	160	0.35	52
6.7	0.50	57	2.54	-154	0.079	145	0.35	40
6.8	0.43	42	2.59	-170	0.088	131	0.34	27
6.9	0.35	27	2.66	173	0.095	116	0.31	12
7.0	0.24	12	2.73	155	0.101	100	0.27	-8
7.1	0.15	1	2.75	143	0.105	88	0.24	-27
7.2	0.01	-10	2.72	123	0.109	70	0.20	-61

