

< C band internally matched power GaAs FET >

MGFC44V6472

6.4 – 7.2 GHz BAND / 24W

DESCRIPTION

The MGFC44V6472 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=24W (TYP.) @f=6.4 – 7.2GHz
- High power gain
GLP=8.0dB (TYP.) @f=6.4 – 7.2GHz
- High power added efficiency
P.A.E.=31% (TYP.) @f=6.4 – 7.2GHz
- Low distortion [item -51]
IM3=-42dBc (TYP.) @Po=33.5dBm S.C.L

APPLICATION

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

QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=6.4A • RG=25ohm Refer to Bias Procedure

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain breakdown voltage	-15	V
VGSO	Gate to source breakdown voltage	-15	V
ID	Drain current	20	A
IGR	Reverse gate current	-60	mA
IGF	Forward gate current	126	mA
PT *1	Total power dissipation	93	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

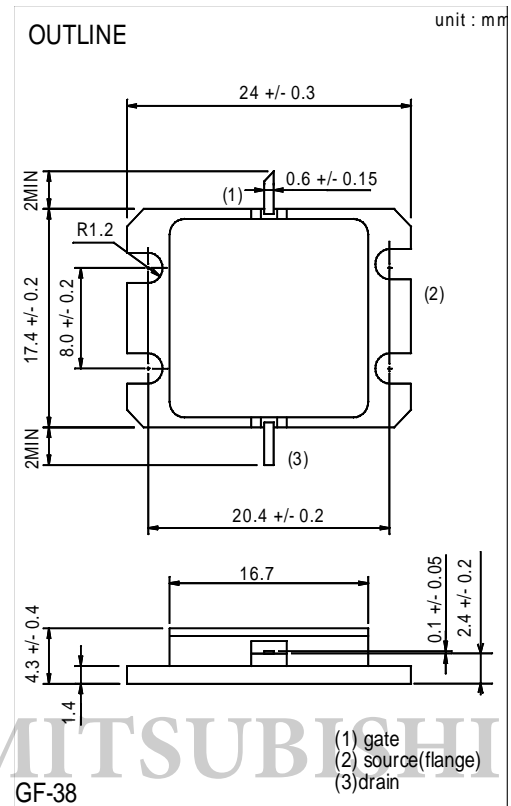
*1 : Tc=25°C

Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VGS=0V	-	18	-	A
gm	Transconductance	VDS=3V, ID=6.4A	-	6.5	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=120mA	-2	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=6.4A f=6.4 – 7.2GHz	43	44	-	dBm
GLP	Linear Power Gain		7	8	-	dB
P.A.E.	Power added efficiency		-	31	-	%
IM3 *2	3rd order IM distortion		-42	-	-	dBc
Rth(ch-c) *3	Thermal resistance		-	-	1.6	°C/W

*2 : item -51 , 2 tone test, Po=33.5dBm Single Carrier Level , f=7.2GHz, delta f=10MHz

*3 : Channel-case



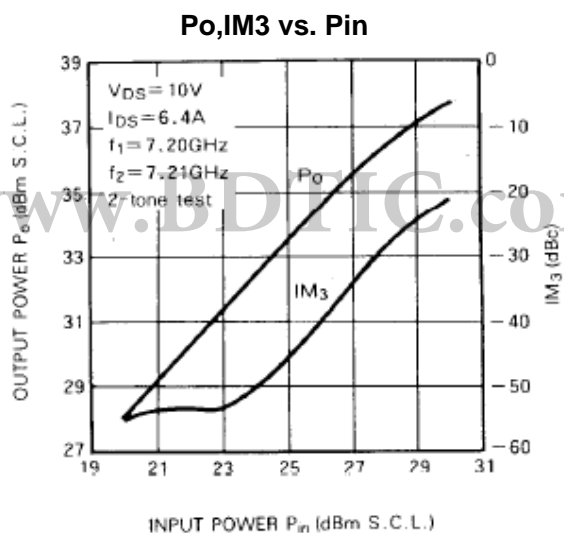
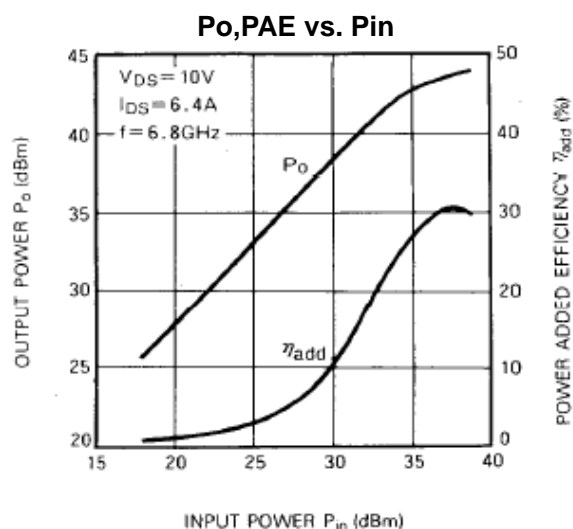
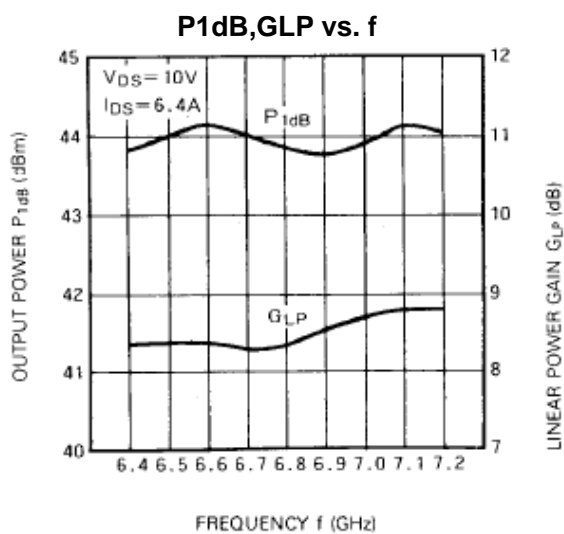
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MGFC44V6472 TYPICAL CHARACTERISTICS(Ta=25deg.C)



MGFC44V6472 S-parameters(Ta=25deg.C , VDS=10(V),IDS=6.4(A))

f (GHz)	S Parameters(Typ.)							
	S11		S21		S12		S22	
	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)
6.4	0.55	81	2.46	-124	0.039	-168	0.33	67
6.5	0.51	62	2.52	-141	0.042	173	0.35	71
6.6	0.46	43	2.49	-157	0.051	157	0.32	63
6.7	0.41	25	2.58	-174	0.054	138	0.32	51
6.8	0.37	3	2.60	169	0.062	126	0.31	29
6.9	0.33	-16	2.62	152	0.065	105	0.26	30
7.0	0.28	-37	2.64	136	0.071	91	0.22	16
7.1	0.26	-55	2.68	125	0.071	84	0.19	8
7.2	0.19	-91	2.65	107	0.076	65	0.13	0

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