

## PRELIMINARY

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

MITSUBISHI SEMICONDUCTOR &lt;GaAs FET&gt;

## 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 ratio communication

## QUALITY GRADE

IG

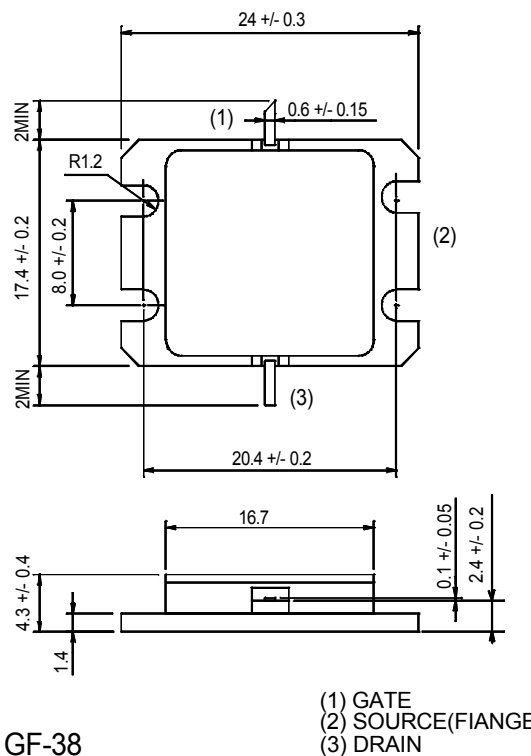
## RECOMMENDED BIAS CONDITIONS

VDS = 10V

ID = 8.0 A

RG=25 ohm

## OUTLINE DRAWING Unit:millimeters (inches)



## 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

MITSUBISHI  
ELECTRIC

**PRELIMINARY**

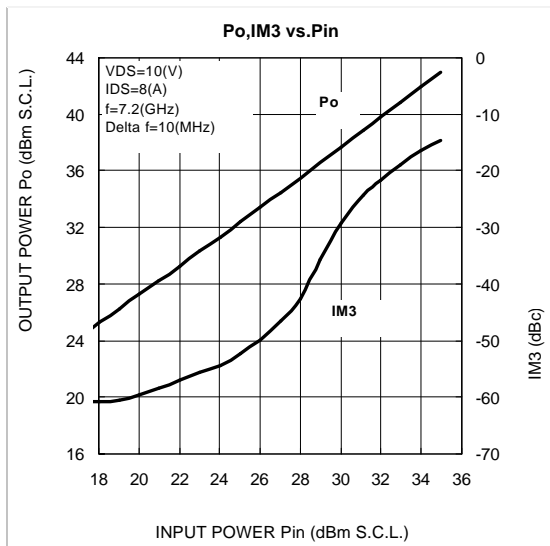
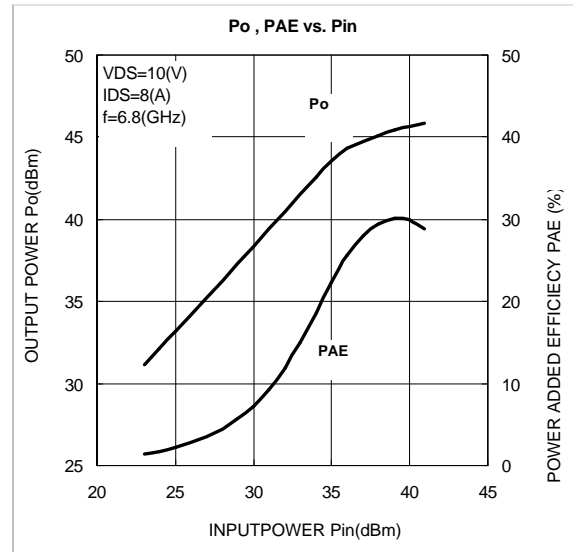
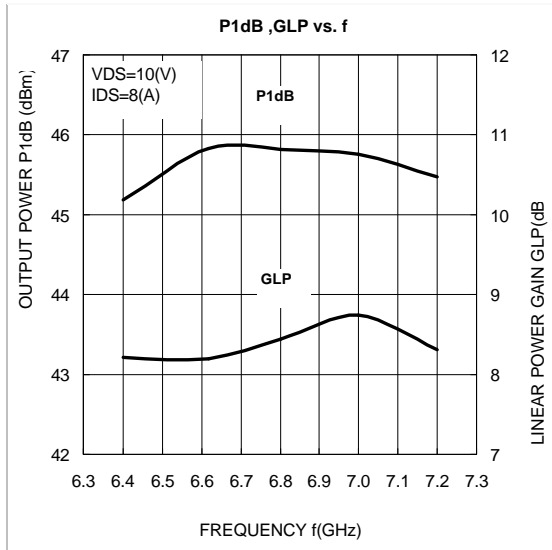
Notice: This is not a final specification.  
Some parametric limits are subject to change.

MITSUBISHI SEMICONDUCTOR <GaAs FET>

**MGFC45V6472A**

**6.4-7.2GHz BAND 32W INTERNALLY MATCHED GaAs FET**

**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



**MITSUBISHI  
ELECTRIC**