MITSUBISHI ELECTRIC

< C band internally matched power GaAs FET >

MGFC39V4450A

4.4 – 5.0 GHz BAND / 8W

DESCRIPTION

The MGFC39V4450A is an internally impedance-matched GaAs power FET especially designed for use in 4.4 – 5.0 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=8W (TYP.) @f=4.4 – 5.0GHz
- High power gain
  GLP=11.5dB (TYP.) @f=4.4 – 5.0GHz
- High power added efficiency
  P.A.E.=30% (TYP.) @f=4.4 – 5.0GHz
- Low distortion [item -51]
  IM3=-45dBc (TYP.) @Po=28dBm S.C.L

APPLICATION

- item 01 : 4.4 – 5.0 GHz band power amplifier
- item 51 : 4.4 – 5.0 GHz band digital radio communication

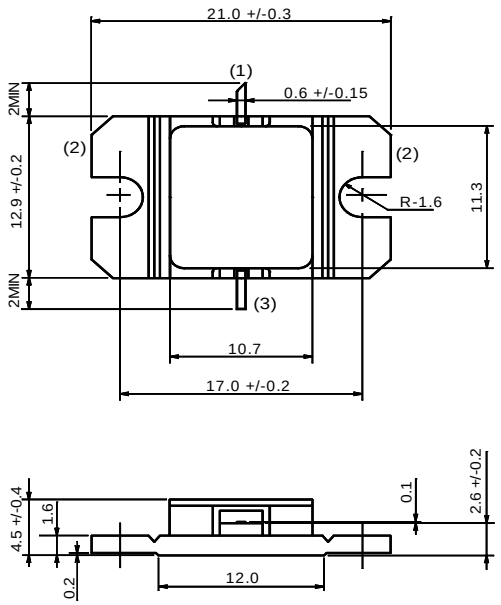
QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=2.4A Refer to Bias Procedure • RG=50ohm

OUTLINE DRAWING Unit : millimeters



GF-8

(1) GATE
(2) SOURCE (FLANGE)
(3) DRAIN

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	7.5	A
IGR	Reverse gate current	-20	mA
IGF	Forward gate current	42	mA
PT *1	Total power dissipation	42.8	W
Tch	Cannel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

*1 : Tc=25°C

Keep Safety first in your circuit designs!

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Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	-	-	7.5	A
gm	Transconductance	VDS=3V,ID=2.2A	-	2	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=20mA	-	-	-4.5	V
P1dB	Output power at 1dB gain compression	VDS=10V,ID(RF off)=2.4A	38	39	-	dBm
GLP	Linear Power Gain	f=4.4 – 5.0GHz	8	11.5	-	dB
ID	Drain current		-	-	3	A
P.A.E.	Power added efficiency		-	30	-	%
IM3 *2	3rd order IM distortion		-42	-45	-	dBc
Rth(ch-c) *3	Thermal resistance	delta Vf method	-	-	3.5	°C/W

*2 :item -51 ,2 tone test,Po=28dBm Single Carrier Level ,f=5.0GHz,delta f=10MHz
*3 :Channel-case

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