

< C band internally matched power GaAs FET >

# MGFC45V4450A

4.4 – 5.0 GHz BAND / 32W

## DESCRIPTION

The MGFC45V4450A 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

Internally matched to 50(ohm) system

- High output power  
P1dB=32W (TYP.) @f=4.4 – 5.0GHz
- High power gain  
GLP=9.5dB (TYP.) @f=4.4 – 5.0GHz
- High power added efficiency  
P.A.E.=34% (TYP.) @f=4.4 – 5.0GHz
- Low distortion [item -51]  
IM3=-45dBc (Typ.) @Po=34.5dBm S.C.L

## APPLICATION

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

## QUALITY

- IG

## RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=8A • 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	-80	mA
IGF	Forward gate current	168	mA
PT *1	Total power dissipation	150	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

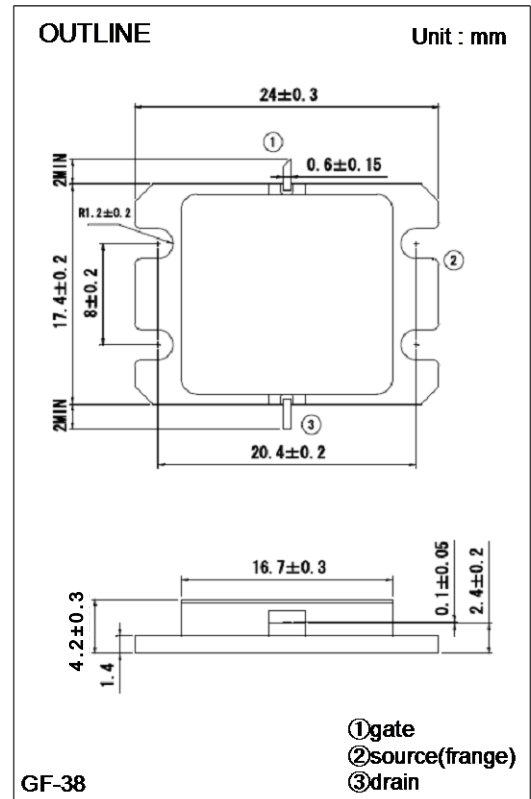
\*1 : Tc=25°C

## Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VGS=0V	-	24	-	A
gm	Trans conductance	VDS=3V, ID=8A	-	8	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=160mA	-2	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=8A	44	45	-	dBm
GLP *2	Linear Power Gain	f=4.4 – 5.0GHz	9	9.5	-	dB
P.A.E.	Power added efficiency	Pin=23dBm *2	-	34	-	%
ID	Drain current		-	8	-	A
IM3 *3	3rd order IM distortion		-42	-45	-	dBc
Rth(ch-c) *4	Thermal resistance	Delta Vf method	-	0.8	1	°C/W

\*3 : item -51, 2 tone test, Po=34.5dBm Single Carrier Level, f=5.0GHz, delta f=10MHz

\*4 : Channel-case



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