MITSUBISHI ELECTRIC

< C band internally matched power GaAs FET >

MGFC42V5258

5.2 – 5.8 GHz BAND / 16W

DESCRIPTION

The MGFC42V5258 is an internally impedance-matched GaAs power FET especially designed for use in 5.2 – 5.8 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

Internally matched to 50(ohm) system
- High output power
  P1dB=16W (TYP.) @f=5.2 – 5.8GHz
- High power gain
  GLP=9.0dB (TYP.) @f=5.2 – 5.8GHz
- High power added efficiency
  P.A.E.=31% (TYP.) @f=5.2 – 5.8GHz
- Low distortion [item -51]
  IM3=-45dBc (Typ.) @Po=32dBm S.C.L

APPLICATION

- item 01 : 5.2 – 5.8GHz band microwave high power amplifier
- item 51 : 5.2 – 5.8GHz band digital radio communication

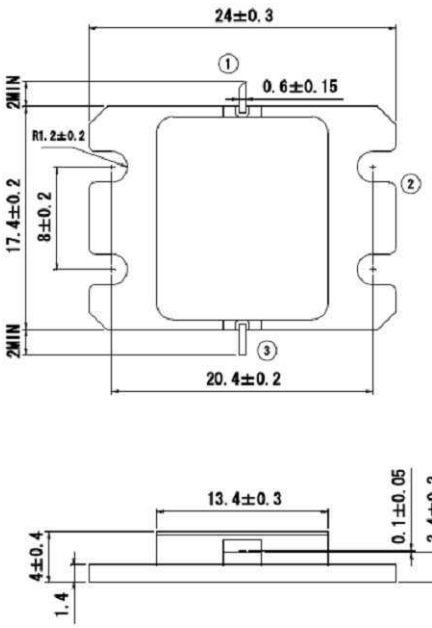
QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

- VDS=10V - ID=4.5A - RG=25ohm Refer to Bias Procedure

OUTLINE Unit : mm



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	12	A
IGR	Reverse gate current	-40	mA
IGF	Forward gate current	84	mA
PT *1	Total power dissipation	78.9	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	-	9	12	A
gm	Trans conductance	VDS=3V, ID=4.4A	-	4	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=80mA	-2	-3	-4	V
P1dB	Output power at 1dB gain compression	VDS=10V,ID(RF off)=4.5A	41.5	42.5	-	dBm
GLP *2	Linear Power Gain	f=5.2 – 5.8GHz	8	9	-	dB
P.A.E.	Power added efficiency	Pin=23dBm *2	-	31	-	%
ID	Drain current		-	4.5	-	A
IM3 *3	3rd order IM distortion		-42	-45-	-	dBc
Rth(ch-c) *4	Thermal resistance	Delta Vf method	-	-	1.9	°C/W

*3 :item -51, 2 tone test,Po=32dBm Single Carrier Level ,f=5.8GHz,delta f=10MHz
*4 :Channel-case

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