MITSUBISHI ELECTRIC

<C band Internally Matched Power GaAs FET>

MGFC42V7177

7.1 - 7.7GHz BAND / 16W

DESCRIPTION

The MGFC42V7177 is an internally impedance-matched GaAs power FET especially designed for use in 7.1 – 7.7 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

Crass A operation

Internally matched to 50(ohm)

- High output power: P1dB = 16 W (typ.) @ P1dB
- High power gain: GLP = 8.0 dB (typ.)
- High power added efficiency: PAE = 30 % (typ.)

APPLICATIONS

- item 01 : 7.1 – 7.7GHz band power amplifier
- item 51 : 7.1 – 7.7GHz band digital radio communication

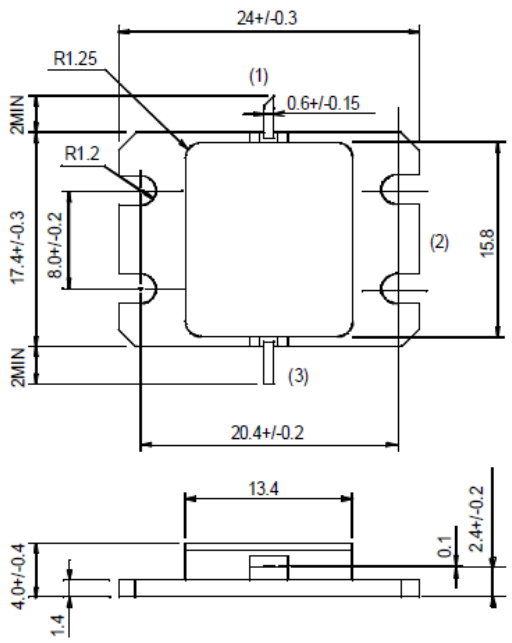
QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

- Vds = 10 V
- Ids = 4.5 A
- Rg = 25 Ω

OUTLINE DRAWING Unit: millimeters (inches)



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

GF-18

Keep Safety first in your circuit designs!

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Absolute maximum ratings (Ta = 25° C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain breakdown voltage	-15	V
VGSO	Gate to source breakdown	-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	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.	
VGS(off)	Gate to sourse cut-off voltage	VDS = 3V, ID = 80mA	-2	-3	-4	V
P1dB	1dB gain comp. output power	VDS = 10V, ID = 4.5A, f=7.1 – 7.7GHz	41	42	-	dBm
GLP	Linear Power Gain		7	8	-	dB
IDS (RF)	Drain Current at P1dB		-	4.5	-	A
η add	Power added efficiency		-	30	-	%
IM3 *2	3rd order IM distortion		-42	-45	-	dBc
Rth(ch-c) *3	Thermal resistance	Delta Vf Method	-	-	1.9	°C/W

*2: item -51, 2 tone test, Po=32dBm single carrier level, f=7.7GHz, delta f=10MHz

*3 : Channel to case

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