

<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

Class 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

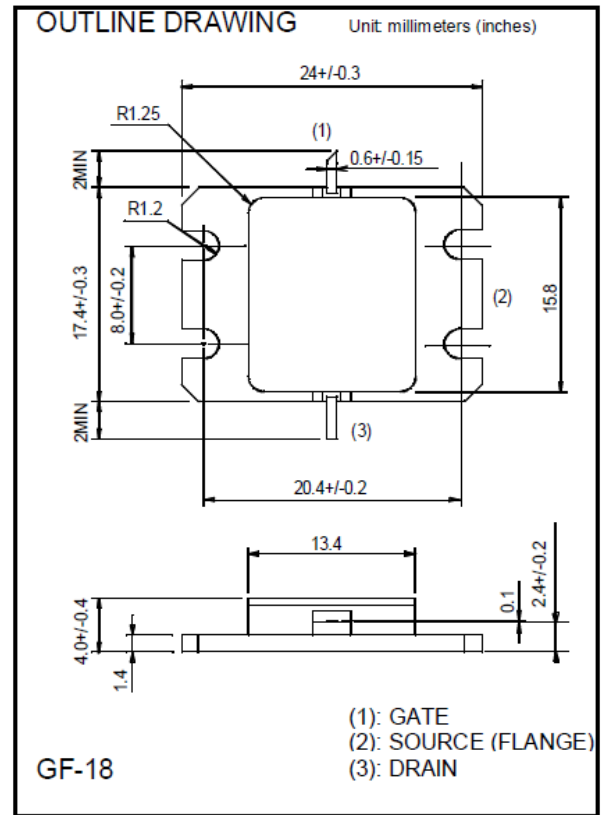
- item 01 : 7.1 – 7.7GHz band power amplifier
- item 51 : 7.1 – 7.7GHz band digital radio communication

QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

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


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

Keep Safety first in your circuit designs!

Mitsubishi Electric Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them.

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Electrical characteristics (Ta = 25 °C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Gate to source 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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