

< C band internally matched power GaAs FET >

MGFC40V7177

7.1 – 7.7 GHz BAND / 10W

DESCRIPTION

The MGFC40V7177 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

Internally matched to 50(ohm) system

- High output power
P1dB=10W (TYP.) @f=7.1 – 7.7GHz
- High power gain
GLP=8.0dB (TYP.) @f=7.1 – 7.7GHz
- High power added efficiency
P.A.E.=30% (TYP.) @f=7.1 – 7.7GHz
- Low distortion [item -51]
IM3=-45dBc (Typ.) @Po=29.0dBm S.C.L

APPLICATION

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

QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=2.4A • RG=50ohm 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	6	A
IGR	Reverse gate current	-20	mA
IGF	Forward gate current	42	mA
PT *1	Total power dissipation	50	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

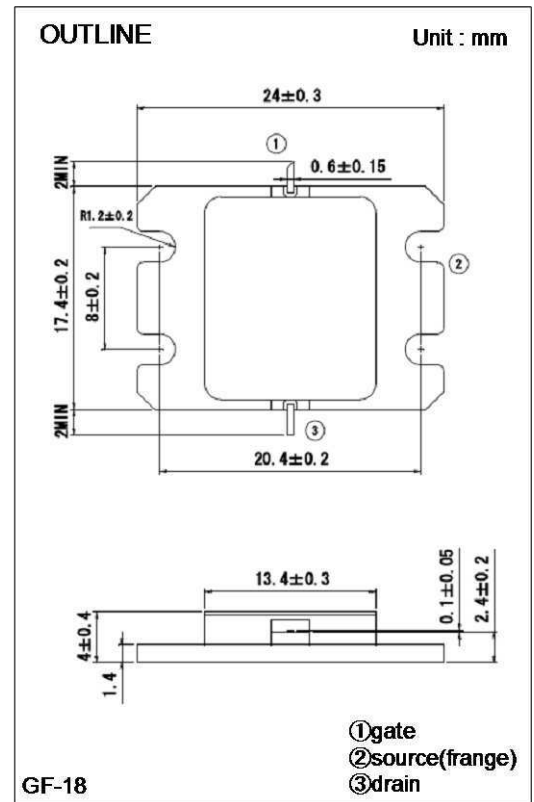
*1 : Tc=25°C

Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VGS=0V	-	4.5	6	A
gm	Trans conductance	VDS=3V, ID=2.2A	-	2	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=40mA	-2	-3	-4	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=2.4A	39	40	-	dBm
GLP *2	Linear Power Gain	f=7.1 – 7.7GHz	7	8	-	dB
P.A.E.	Power added efficiency	Pin=22dBm *2	-	30	-	%
ID	Drain current		-	2.4	-	A
IM3 *3	3rd order IM distortion		-42	-45-	-	dBc
Rth(ch-c) *4	Thermal resistance	delta Vf method	-	-	3.5	°C/W

*3 : item -51, 2 tone test, Po=29.0dBm Single Carrier Level, f=7.7GHz, delta f=10MHz

*4 : Channel-case



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