

< C band internally matched power GaAs FET >

MGFC47A7785

7.7 – 8.5 GHz BAND / 47W

DESCRIPTION

The MGFC47A7785 is an internally impedance-matched GaAs power FET especially designed for use in 7.7 – 8.5 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

Internally matched to 50(ohm) system

- High output power
P1dB=46.7W (TYP.) @f=7.7 – 8.5GHz
- High power gain
GLP=5.7dB (TYP.) @f=7.7 – 8.5GHz
- High power added efficiency
P.A.E.=30% (TYP.) @f=7.7 – 8.5GHz
- Low distortion [item -51]
IM3=-42dBc (Typ.) @Po=35dBm S.C.L

APPLICATION

- item 01 : 7.7 – 8.5GHz band microwave high power amplifier
- item 51 : 7.7 – 8.5GHz band digital radio communication

QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=9.8A • RG=10ohm Refer to Bias Procedure

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain breakdown voltage	-20	V
VGSO	Gate to source breakdown voltage	-10	V
ID	Drain current	30	A
IGR	Reverse gate current	-130	mA
IGF	Forward gate current	168	mA
PT *1	Total power dissipation	166	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

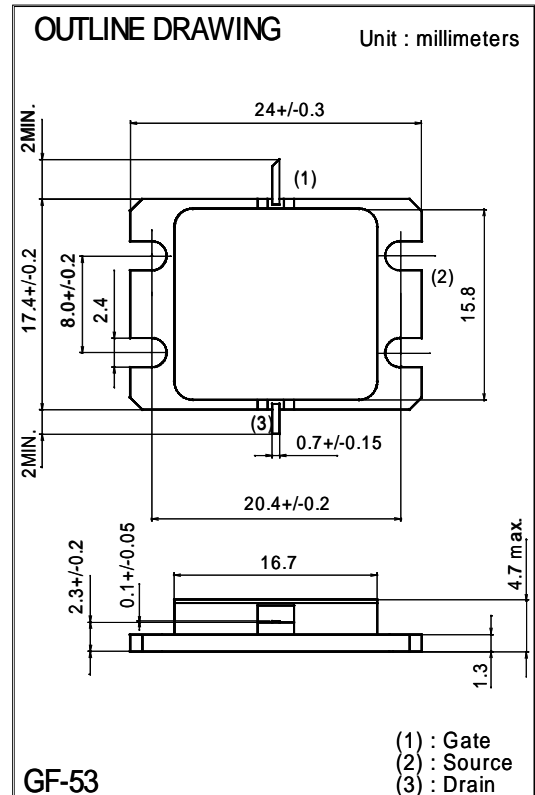
*1 : Tc=25°C

Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=168mA	-1	-	-4	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=9.8A	46	46.7	-	dBm
GLP *2	Linear Power Gain	f=7.7 – 8.5GHz	4.7	5.7	-	dB
P.A.E.	Power added efficiency	Pin=30dBm *2	-	30	-	%
ID	Drain current		-	11	-	A
IM3 *3	3rd order IM distortion		-39	-42	-	dBc
Rth(ch-c) *4	Thermal resistance	Delta Vf method	-	0.8	0.9	°C/W

*3 : item -51, 2 tone test, Po=35dBm Single Carrier Level, f=8.5GHz, delta f=10MHz

*4 : Channel-case



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