

# MGFC47A7785

7.7 ~ 8.5GHz BAND 50W INTERNALLY MATCHED GaAs FET

## 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

- Class A operation
- Internally matched to 50(ohm) system
- High output power  
P1dB = 46.7dBm (TYP.) @ f=7.7 ~ 8.5GHz
- High power gain  
GLP = 5.7 dB (TYP.) @ f=7.7 ~ 8.5GHz
- High power added efficiency  
P.A.E. = 30 % (TYP.) @ f=7.7 ~ 8.5GHz

## APPLICATION

Solid-state power amplifier for satellite earth-station communication transmitter and VSAT

## RECOMMENDED BIAS CONDITIONS

- VDS = 10 (V)
- ID = 9.8 (A)
- RG = 10 (ohm)

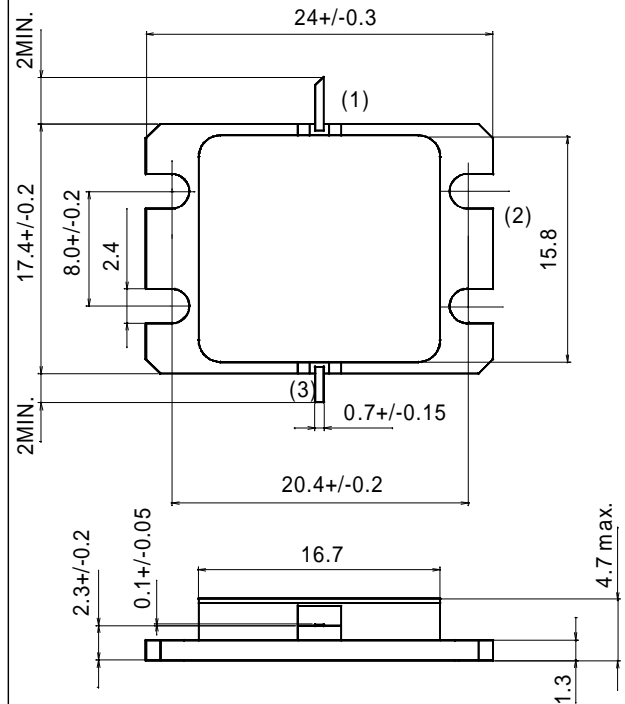
## ABSOLUTE MAXIMUM RATINGS (Ta=25 deg.C)

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

\*1 : Tc=25 deg.C

## OUTLINE DRAWING

Unit : millimeters



GF-53

- (1) : Gate
- (2) : Source
- (3) : Drain

< Keep safety first in your circuit designs! >  
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## ELECTRICAL CHARACTERISTICS (Ta=25 deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Pinch-off voltage	VDS=3V, ID=168mA	-1	-	-4	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=9.8A, f=7.7~8.5GHz	45.7	46.7	-	dBm
GLP	Linear power gain		4.7	5.7	-	dB
ID	Drain current		-	11	-	A
P.A.E.	Power added efficiency		-	30	-	%
IM3	3rd order IM distortion *1		-39	-42	-	dBc
Rth(ch-c)	Thermal resistance *2	Delta Vf method	-	0.8	0.9	deg.C/W

\*1 : item -51,2 tone test, Po=35dBm Single Carrier Level, f=8.5GHz, Delta f=10MHz \*2 : Channel-case

**MGFC47A7785****7.7 ~ 8.5GHz BAND 50W INTERNALLY MATCHED GaAs FET****Requests Regarding Safety Designs**

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