

Preliminary
 Notice: This is not a final specification.
 Some parametric limits are subject to change.

MITSUBISHI SEMICONDUCTOR <GaAs FET>

MGFC47V5864

5.8~6.4GHz BAND 50W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFC47V5864 device is an internally impedance-matched GaAs power FET especially designed for use in 5.8 ~ 6.4GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

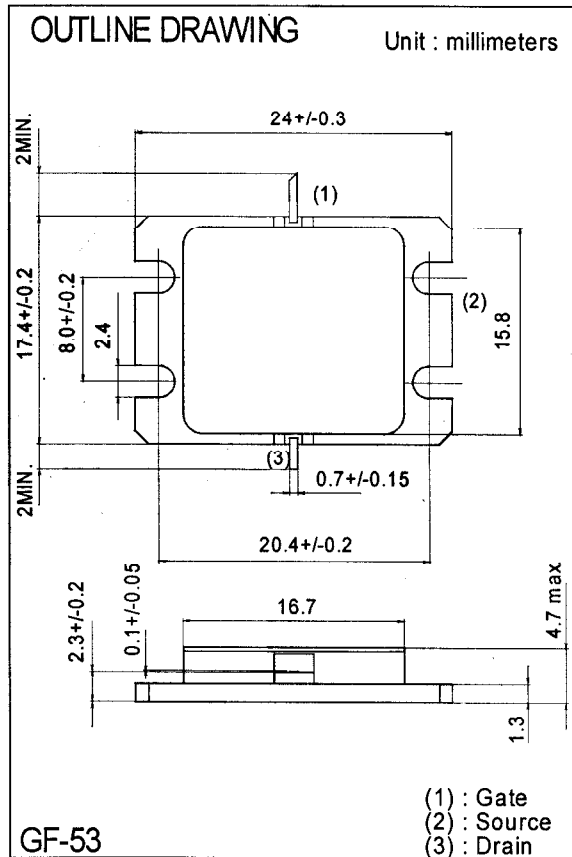
- Class AB operation
- Internally matched to 50(ohm) system
- High output power
P1dB = 47dBm (TYP.) @ f=5.8 ~ 6.4 GHz
- High power gain
GLP = 9.5 dB (TYP.) @ f=5.8 ~ 6.4GHz
- High power added efficiency
PAE = 30 % (TYP.) @ f=5.8 ~ 6.4GHz

APPLICATION

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

RECOMMENDED BIAS CONDITIONS

VDS = 10 (V)
 ID = 8.4 (A)
 RG=10 (ohm)



ABSOLUTE MAXIMUM RATINGS (Ta=25deg.C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-15	V
VGSO	Gate to source voltage	-15	V
IGR	Reverse gate current	-130	mA
IGF	Forward gate current	168	mA
PT *1	Total power dissipation	TBD	W
Tch	Channel temperature	175	deg.C
Tstg	Storage temperature	-65 / +175	deg.C

*1 : Tc=25deg.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. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (1)placement of substitutive, auxiliary circuits, (2)use of non-flammable material or (3)prevention against any malfunction or mishap.

ELECTRICAL CHARACTERISTICS (Ta=25deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Pinch-off voltage	VDS = 3V, ID = 17mA	-1	-	-4	V
P2dB	Output power at 2dB gain compression	VDS=10V, ID(RF off)=8.4A, f=5.8 ~ 6.4GHz	46	47	-	dBm
GLP	Linear power gain		8.5	9.5	-	dB
ID	Drain Current		-	15	-	A
PAE	Power added efficiency		-	30	-	%
IM3	3rd Order IM Distortion *1		-42	-	-	dBc
Rth(ch-c)	Thermal resistance *2	delta Vf method	TBD			deg.C/W

*1 : Po = 36.5dBm Single Carrier Level f=6.4GHz, Δf=10MHz

*2 : Channel-case



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