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MITSUBISHI SEMICONDUCTOR <GaAs FET>

MGFS45V2123A

2.1 - 2.3GHz BAND 32W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFS45V2123A is an internally impedance-matched GaAs power FET especially designed for use in 2.1 - 2.3 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 = 32W (TYP.) @ f=2.1 - 2.3 GHz
High power gain
GLP = 12 dB (TYP.) @ f=2.1 - 2.3GHz
High power added efficiency
P.A.E. = 45 % (TYP.) @ f=2.1 - 2.3GHz
Low distortion [item -51]
IM3=-45dBc(TYP.) @Po=34.5dBm S.C.L.

APPLICATION

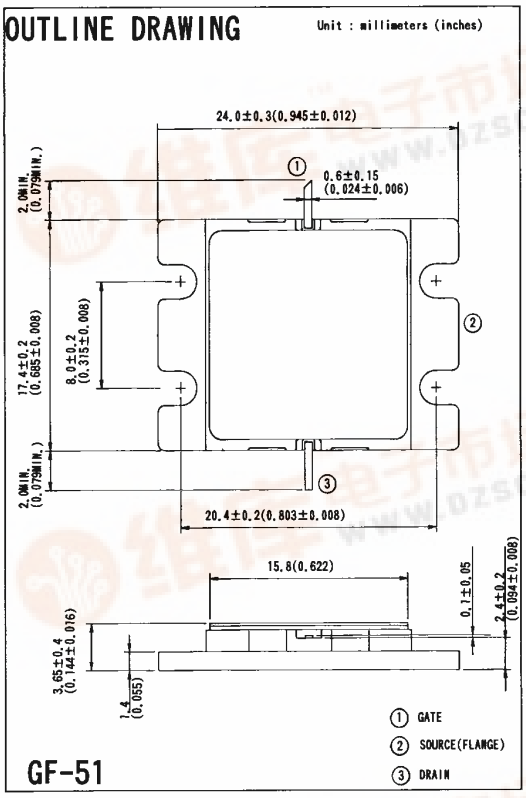
item 01 : 2.1 - 2.3 GHz band power amplifier
item 51 : 2.1 - 2.3 GHz band digital ratio communication

QUALITY GRADE

IG

RECOMMENDED BIAS CONDITIONS

VDS = 10 (V)
ID = 6.5 (A)
RG=25 (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
ID	Drain current	22	A
IGR	Reverse gate current	-61	mA
IGF	Forward gate current	76	mA
PT *1	Total power dissipation	88	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 CARACTERISTICS (Ta=25deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Saturated drain current	VDS = 3V , ID = 60mA	-	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=6.5A, f=2.1 - 2.3GHz	44	45	-	dBm
GLP	Linear power gain		11	12	-	dB
ID	Drain current		-	7.5	-	A
P.A.E.	Power added efficiency		-	45	-	%
IM3 *2	3rd order IM distortion		-42	-45	-	dBc
Rth(ch-c) *3	Thermal resistance	delta Vf method	-	-	1.5	deg.C/W

*2 : item -51,2 tone test,Po=34.5dBm Single Carrier Level,f=2.1,2.2,2.3GHz,dfelta f=5MHz
*3 : Channel-case

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