MGFC42V4450

4.4 ~ 5.0GHz BAND 16 W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFC42V4450 is an internally impedance-matched GaAs power FET especially designed for use in 4.4 ~ 5.0 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 = 16W (TYP.) @ f=4.4~5.0GHz
High power gain
GLP = 12 dB (TYP.) @ f=4.4~5.0GHz
High power added efficiency
P.A.E. = 32 % (TYP.) @ f=4.4~5.0GHz
Low distortion [item -51]
IM3= -45 dBc(TYP.) @Po=31dBm S.C.L.

APPLICATION

item 01 : 4.4~5.0 GHz band power amplifier
item 51 : 4.4~5.0 GHz band digital radio communication

QUALITY GRADE

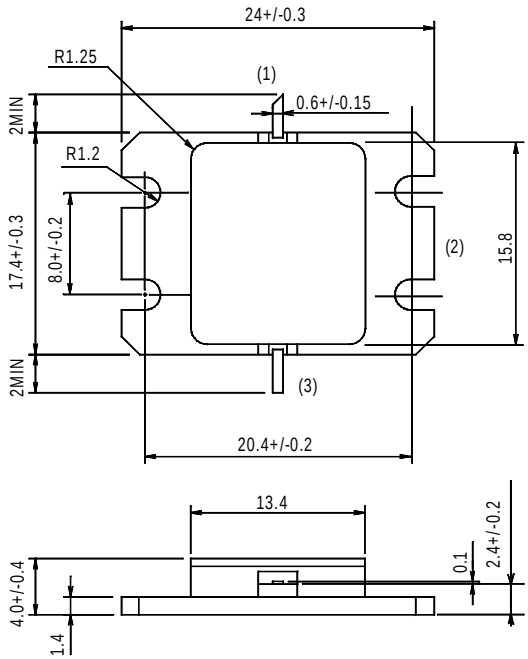
IG

RECOMMENDED BIAS CONDITIONS

VDS = 10 (V)
ID = 4.5(A) Refer to Bias Procedure
RG= 25 (ohm)

OUTLINE DRAWING

Unit: millimeters (inches)



(1): GATE
(2): SOURCE (FLANGE)
(3): DRAIN

GF-18

ABSOLUTE MAXIMUM RATINGS (Ta=25 deg.C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-15	V
VGSO	Gate to source voltage	-15	V
ID	Drain current	15	A
IGR	Reverse gate current	-40	mA
IGF	Forward gate current	84	mA
PT	Total power dissipation *1	78.9	W
Tch	Channel temperature	175	deg.C
Tstg	Storage temperature	-65 / +175	deg.C

*1 : Tc=25 deg.C

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ELECTRICAL CHARACTERISTICS (Ta=25 deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VGS=0V	-	9	12	A
gm	Transconductance	VDS=3V, ID=4.4 A	-	4	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=80mA	-2	-3	-4	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=4.5A, f=4.4~5.0GHz	41.5	42.5	-	dBm
GLP	Linear power gain		9	12	-	dB
ID	Drain current		-	5.4	-	A
P.A.E.	Power added efficiency		-	32	-	%
IM3	3rd order IM distortion *1		-42	-45	-	dBc
Rth(ch-c)	Thermal resistance *2	Delta Vf method	-	-	1.9	deg.C/W

*1 : item -51, 2 tone test, Po=31dBm Single Carrier Level, f=5GHz, Delta f=10MHz
*2 : Channel to case

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