MGFC39V3742A

3.7 ~ 4.2GHz BAND 8W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFC39V3742A is an internally impedance-matched GaAs power FET especially designed for use in 3.7 ~ 4.2 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 = 8W (TYP.) @ f=3.7~4.2GHz
High power gain
GLP = 12 dB (TYP.) @ f=3.7~4.2GHz
High power added efficiency
P.A.E. = 31 % (TYP.) @ f=3.7~4.2GHz
Low distortion [item -51]
IM3= -45 dBc(TYP.) @Po=28dBm S.C.L.

APPLICATION

item 01 : 3.7~4.2 GHz band power amplifier
item 51 : 3.7~4.2 GHz band digital radio communication

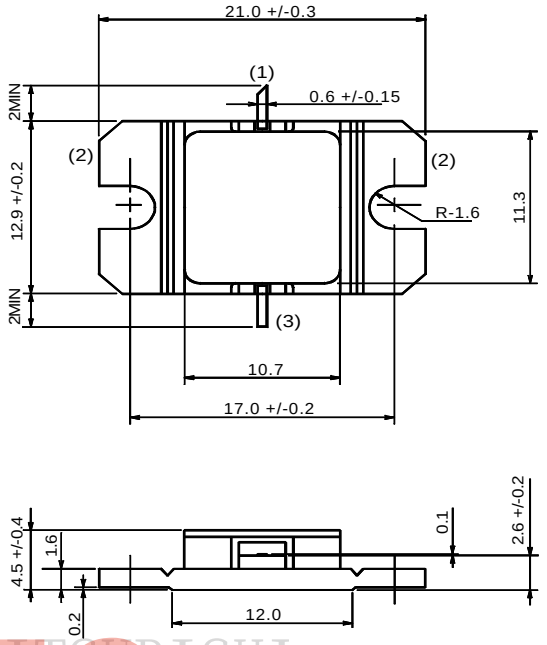
QUALITY GRADE

IG

RECOMMENDED BIAS CONDITIONS

VDS = 10(V)
ID = 2.4 (A)
Rg = 50(ohm) Refer to Bias Procedure

OUTLINE DRAWING Unit : millimeters



GF-8

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

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	7.5	A
IGR	Reverse gate current	-20	mA
IGF	Forward gate current	42	mA
PT	Total power dissipation *1	42.8	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	-	-	7.5	A
gm	Transconductance	VDS=3V, ID=2.2A	-	2	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=20mA	-	-	-4.5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=2.4A, f=3.7~4.2GHz	38	39.5	-	dBm
GLP	Linear power gain		9	12	-	dB
ID	Drain current		-	-	3	A
P.A.E.	Power added efficiency		-	31	-	%
IM3	3rd order IM distortion *1		-42	-45	-	dBc
Rth(ch-c)	Thermal resistance *2	Delta Vf method	-	-	3.5	deg.C/W

*1 : item -51, 2 tone test, Po=28dBm Single Carrier Level, f=4.2GHz, Delta f=10MHz
*2 : Channel to case

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