

MGFC42V5964

5.9-6.4GHz BAND 16W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFC42V5964 is an internally impedance-matched GaAs power FET especially designed for use in 5.9-6.4GHz 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=5.9-6.4GHz
- High power gain
GLP = 9 dB (TYP.) @ f=5.9-6.4GHz
- High power added efficiency
P.A.E. = 31 % (TYP.) @ f=5.9-6.4GHz
- Low distortion for MGFC42V5964-51
IM3= -45 dBc(TYP.) @Po=32dBm S.C.L.
- Thermal Resistance
Rth(ch-c)= 1.6 deg.C/W(TYP.)

APPLICATION

- MGFC42V5964-01: 5.9-6.4GHz power amplifier
- MGFC42V5964-51: 5.9-6.4GHz digital radio communication

QUALITY GRADE

IG

RECOMMENDED BIAS CONDITIONS

- VDS = 10 V
- ID = 4.5 A (refer to bias procedure)
- RG = 50 ohm

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

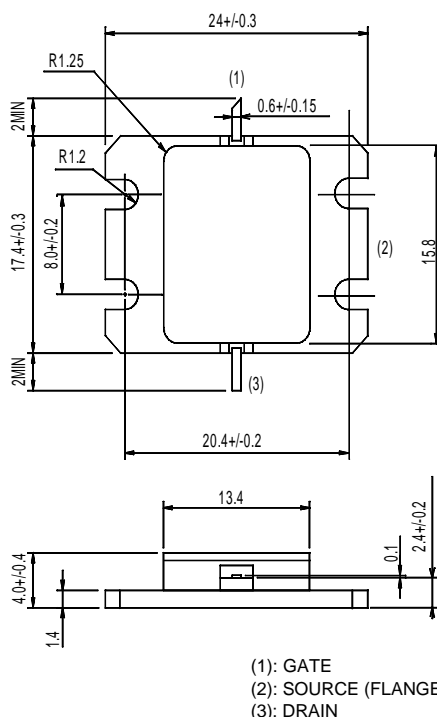
ELECTRICAL CHARACTERISTICS (Ta=25 deg.C)

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=4.4A	-	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=5.9-6.4GHz	41.5	42.5	-	dBm	
GLP	Linear power gain		8	9	-	dB	
ID	Drain current		-	4.5	-	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	-	1.6	1.9	deg.C/W

*1 : MGFC42V5964-51, 2 tone test, Po=32dBm Single Carrier Level, f=6.4GHz, Delta f=10MHz

*2 : Channel to case

OUTLINE DRAWING Unit: millimeters



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