# MGFC39V5964A

## 5.9 ~ 6.4GHz BAND 8W INTERNALLY MATCHED GaAs FET

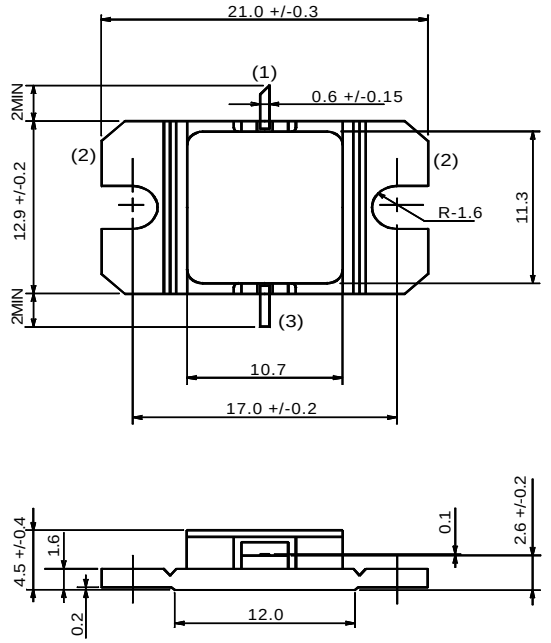
## DESCRIPTION

The MGFC39V5964A is an internally impedance-matched GaAs power FET especially designed for use in 5.9 ~ 6.4 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=5.9~6.4GHz
High power gain
GLP = 10.5 dB (TYP.) @ f=5.9~6.4GHz
High power added efficiency
P.A.E. = 30 % (TYP.) @ f=5.9~6.4GHz
Low distortion [ item -51 ]
IM3= -45 dBc(TYP.) @Po=28dBm S.C.L.

OUTLINE DRAWING Unit : millimeters




GF-8

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

## APPLICATION

item 01 : 5.9~6.4 GHz band power amplifier
item 51 : 5.9~6.4 GHz band digital radio communication

## QUALITY GRADE

IG

## RECOMMENDED BIAS CONDITIONS

VDS = 10 (V)
ID = 2.4 (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 | 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



## 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=5.9~6.4GHz | 38 | 39.5 | - | dBm |
| GLP | Linear power gain | | 8 | 10.5 | - | dB |
| ID | Drain current | | - | - | 3 | A |
| P.A.E. | Power added efficiency | | - | 30 | - | % |
| 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=6.4GHz, Delta f=10MHz
*2 : Channel to case

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