

MGFC41V6472

6.4 ~ 7.2GHz BAND 12W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFC41V6472 is an internally impedance-matched GaAs power FET especially designed for use in 6.4 ~ 7.2 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 = 12W (TYP.) @ f=6.4~7.2GHz
- High power gain
GLP = 9 dB (TYP.) @ f=6.4~7.2GHz
- High power added efficiency
P.A.E. = 32 % (TYP.) @ f=6.4~7.2GHz
- Low distortion [item -51]
IM3= -45 dBc(TYP.) @Po=30dBm S.C.L.
- Thermal Resistance
Rth(ch-c)= deg.C/W(TYP.)

APPLICATION

- item 01 : 6.4~7.2 GHz band power amplifier
- item 51 : 6.4~7.2 GHz band digital radio communication

QUALITY GRADE

IG

RECOMMENDED BIAS CONDITIONS

- VDS = 10 V
- ID = 3.4 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 | 12 | A |
| IGR | Reverse gate current | -30 | mA |
| IGF | Forward gate current | 63 | mA |
| PT | Total power dissipation *1 | 53.6 | 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)

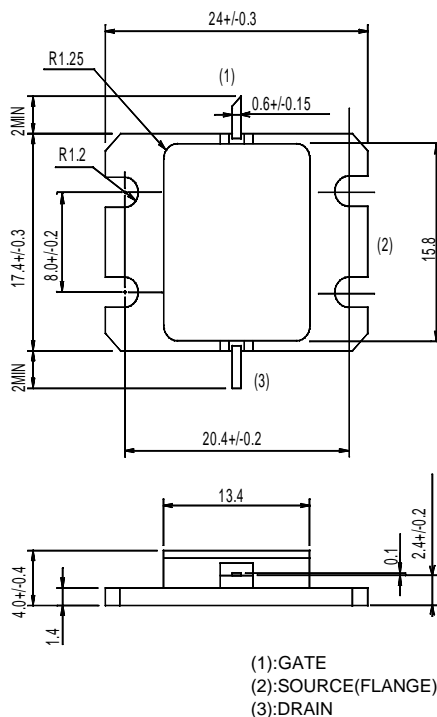
| Symbol | Parameter | Test conditions | Limits | | | Unit | |
|-----------|--------------------------------------|--|-----------------|------|------|------|---------|
| | | | Min. | Typ. | Max. | | |
| IDSS | Saturated drain current | VDS=3V, VGS=0V | - | - | 12 | A | |
| gm | Transconductance | VDS=3V, ID=3A | - | 3 | - | S | |
| VGS(off) | Gate to source cut-off voltage | VDS=3V, ID=30mA | - | - | -5 | V | |
| P1dB | Output power at 1dB gain compression | VDS=10V, ID(RF off)=3.4A, f=6.4~7.2GHz | 40 | 41 | - | dBm | |
| GLP | Linear power gain | | 8 | 9 | - | dB | |
| ID | Drain current | | - | - | - | 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 | - | 2.2 | 2.8 | deg.C/W |

*1 : item -51, 2 tone test, Po=30dBm Single Carrier Level, f=7.2GHz, Delta f=10MHz

*2 : Channel to case

OUTLINE DRAWING

Unit: millimeters (inches)



GF-18

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

< Keep safety first in your circuit designs! >

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