

< C band internally matched power GaAs FET >

MGFC40V5964

5.9 – 6.4 GHz BAND / 10W

DESCRIPTION

The MGFC40V5964 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=10W (TYP.) @f=5.9 – 6.4GHz
- High power gain
GLP=10dB (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=-49dBc (TYP.) @Po=29dBm S.C.L

APPLICATION

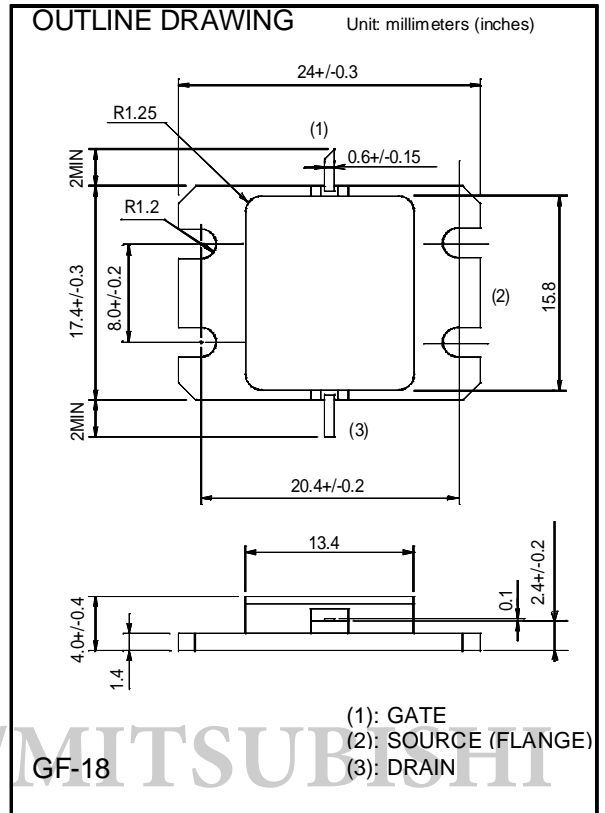
- item 01 : 5.9 – 6.4 GHz band power amplifier
- item 51 : 5.9 – 6.4 GHz band digital radio communication

QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=2.4A • RG=50ohm Refer to Bias Procedure



Absolute maximum ratings (Ta=25°C)

| Symbol | Parameter | Ratings | Unit |
|--------|----------------------------------|-------------|------|
| VGDO | Gate to drain breakdown voltage | -15 | V |
| VGSO | Gate to source breakdown voltage | -15 | V |
| ID | Drain current | 7.5 | A |
| IGR | Reverse gate current | -20 | mA |
| IGF | Forward gate current | 42 | mA |
| PT *1 | Total power dissipation | 42.8 | W |
| Tch | Channel temperature | 175 | °C |
| Tstg | Storage temperature | -65 to +175 | °C |

*1 : Tc=25°C

Electrical characteristics (Ta=25°C)

| Symbol | Parameter | Test conditions | Limits | | | Unit |
|--------------|--------------------------------------|--------------------------|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| IDSS | Saturated drain current | VDS=3V, VGS=0V | - | 4.5 | 6 | A |
| gm | Transconductance | VDS=3V, ID=2.2A | - | 2 | - | S |
| VGS(off) | Gate to source cut-off voltage | VDS=3V, ID=40mA | -2 | -3 | -4 | V |
| P1dB | Output power at 1dB gain compression | VDS=10V, ID(RF off)=2.4A | 39.5 | 40.5 | - | dBm |
| GLP | Linear Power Gain | f=5.9 – 6.4GHz | 8 | 10 | - | dB |
| ID | Drain current | | - | 2.4 | - | A |
| P.A.E. | Power added efficiency | | - | 30 | - | % |
| IM3 *2 | 3rd order IM distortion | | -42 | -49 | - | dBc |
| Rth(ch-c) *3 | Thermal resistance | delta Vf method | - | 3 | 3.5 | °C/W |

*2 : item -51 , 2 tone test, Po=29dBm Single Carrier Level , f=6.4GHz, delta f=10MHz

*3 : Channel-case

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