

< C band internally matched power GaAs FET >

MGFC36V4450A

4.4 – 5.0 GHz BAND / 4W

DESCRIPTION

The MGFC36V4450A is an internally impedance-matched GaAs power FET especially designed for use in 4.4 – 5.0 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

Internally matched to 50(ohm) system

- High output power
P1dB=4W (TYP.) @f=4.4 – 5.0GHz
- High power gain
GLP=10.0dB (TYP.) @f=4.4 – 5.0GHz
- High power added efficiency
P.A.E.=32% (TYP.) @f=4.4 – 5.0GHz
- Low distortion [item -51]
IM3=-45dBc (Typ.) @Po=25.0dBm S.C.L

APPLICATION

- item 01 : 4.4 – 5.0 GHz band microwave high power amplifier
- item 51 : 4.4 – 5.0 GHz band digital radio communication

QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=1.2A • RG=100ohm 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 | 3.75 | A |
| IGR | Reverse gate current | -10 | mA |
| IGF | Forward gate current | 21 | mA |
| PT *1 | Total power dissipation | 25 | W |
| Tch | Channel temperature | 175 | °C |
| Tstg | Storage temperature | -65 to +175 | °C |

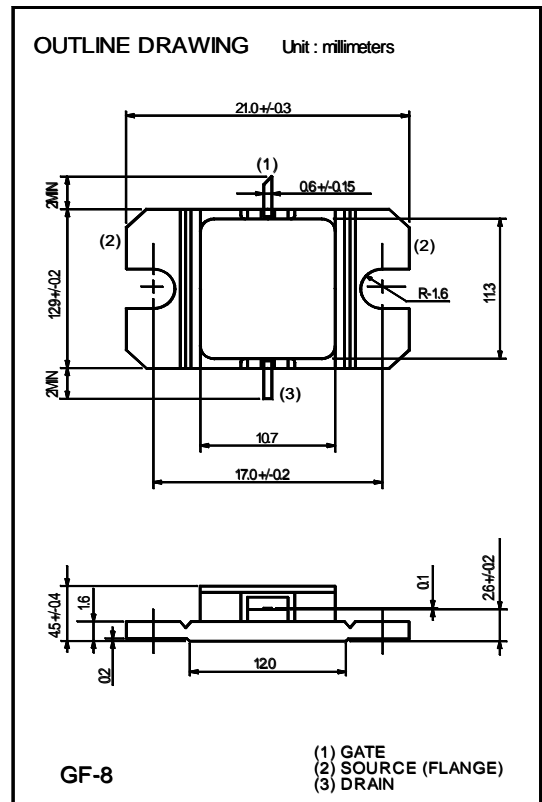
*1 : Tc=25°C

Electrical characteristics (Ta=25°C)

| Symbol | Parameter | Test conditions | Limits | | | Unit |
|--------------|--------------------------------------|--------------------------|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| IDSS | Saturated drain current | VDS=3V, VGS=0V | - | - | 3.75 | A |
| gm | Trans conductance | VDS=3V, ID=1.1A | - | 1 | - | S |
| VGS(off) | Gate to source cut-off voltage | VDS=3V, ID=10mA | - | - | -4.5 | V |
| P1dB | Output power at 1dB gain compression | VDS=10V, ID(RF off)=1.2A | 35 | 36 | - | dBm |
| GLP *2 | Linear Power Gain | f=4.4 – 5.0GHz | 9 | 10 | - | dB |
| P.A.E. | Power added efficiency | Pin=20dBm *2 | - | 32 | - | % |
| ID | Drain current | | - | - | 1.8 | A |
| IM3 *3 | 3rd order IM distortion | | -42 | -45- | - | dBc |
| Rth(ch-c) *4 | Thermal resistance | delta Vf method | - | 5 | 6 | °C/W |

*3 : item -51, 2 tone test, Po=25.0dBm Single Carrier Level, f=5.0GHz, delta f=10MHz

*4 : Channel-case



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