

## < C band internally matched power GaAs FET >

# MGFC36V3436

3.4 – 3.6 GHz BAND / 4W

### DESCRIPTION

The MGFC36V3436 is an internally impedance-matched GaAs power FET especially designed for use in 3.4 – 3.6 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=4W (TYP.) @f=3.4 – 3.6GHz
- High power gain  
GLP=13.5dB (TYP.) @f=3.4 – 3.6GHz
- High power added efficiency  
P.A.E.=32% (TYP.) @f=3.4 – 3.6GHz
- Low distortion [item -51]  
IM3=-45dBc (TYP.) @Po=25dBm S.C.L

### APPLICATION

- item 01 : 3.4 – 3.6 GHz band power amplifier
- item 51 : 3.4 – 3.6 GHz band digital radio communication

### QUALITY

- IG

### RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=1.2A • RG=100ohm

### 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

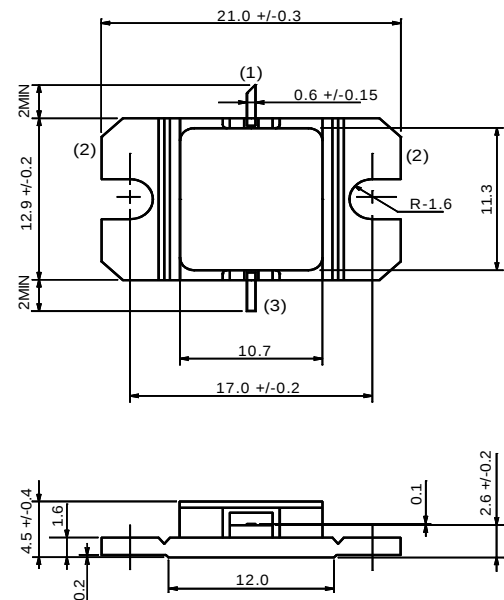
### Electrical characteristics (Ta=25°C)

| Symbol       | Parameter                            | Test conditions                            | Limits |      |      | Unit |
|--------------|--------------------------------------|--------------------------------------------|--------|------|------|------|
|              |                                      |                                            | Min.   | Typ. | Max. |      |
| IDSS         | Saturated drain current              | VDS=3V, VGS=0V                             | -      | -    | 3.75 | A    |
| gm           | Transconductance                     | 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<br>f=3.4 – 3.6GHz | 35     | 37   | -    | dBm  |
| GLP          | Linear Power Gain                    |                                            | 11     | 13.5 | -    | dB   |
| ID           | Drain current                        |                                            | -      | 1.1  | 1.8  | A    |
| P.A.E.       | Power added efficiency               |                                            | -      | 32   | -    | %    |
| IM3 *2       | 3rd order IM distortion              |                                            | -42    | -45  | -    | dBc  |
| Rth(ch-c) *3 | Thermal resistance                   | delta Vf method                            | -      | 5    | 6    | °C/W |

\*2 : item -51, 2 tone test, Po=25dBm Single Carrier Level, f=3.6GHz, delta f=5MHz

\*3 : Channel-case

OUTLINE DRAWING Unit : millimeters



GF-8

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

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