

< X/Ku band internally matched power GaAs FET >

MGFK25V4045

14.0 – 14.5 GHz BAND / 0.3W

DESCRIPTION

The MGFK25V4045 is an internally impedance-matched GaAs power FET especially designed for use in 14.0 – 14.5 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

Internally matched to 50(ohm) system
Flip-chip mounted

- High output power
P1dB=0.3W (TYP.) @f=14.0 – 14.5GHz
- High linear power gain
GLP=9.0dB (TYP.) @f=14.0 – 14.5GHz
- High power added efficiency
P.A.E.=25% (TYP.) @f=14.0 – 14.5GHz

APPLICATION

- 14.0 – 14.5 GHz band power amplifiers

QUALITY GRADE

- IG

RECOMMENDED BIAS CONDITIONS

- VDS=8V • ID=80mA Refer to Bias Procedure

Absolute maximum ratings (Ta=25°C)

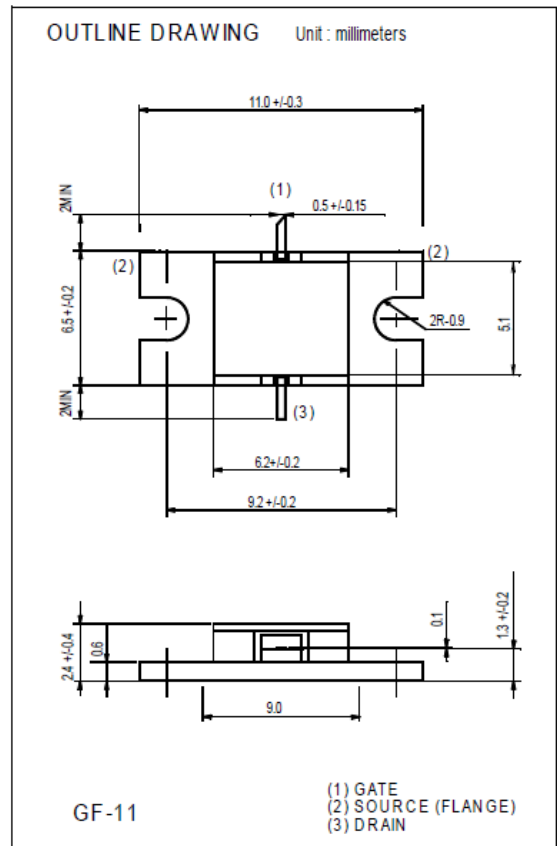
| Symbol | Parameter | Ratings | Unit |
|--------|----------------------------------|-------------|------|
| VGDO | Gate to drain breakdown voltage | -15 | V |
| VGSO | Gate to source breakdown voltage | -15 | V |
| ID | Drain current | 500 | mA |
| IGR | Reverse gate current | -1 | mA |
| IGF | Forward gate current | 1 | mA |
| PT *1 | Total power dissipation | 2.7 | 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 | - | 200 | 500 | mA |
| gm | Transconductance | VDS=3V, ID=150mA | - | 100 | - | mS |
| VGS(off) | Gate to source cut-off voltage | VDS=3V, ID=1mA | -2 | - | -5 | V |
| P1dB | Output power at 1dB gain compression | VDS=8V, ID(RF off)=150mA f=14.0 – 14.5GHz | 23 | 26 | - | dBm |
| GLP | Linear Power Gain | | 7 | 9 | - | dB |
| PAE | Power added efficiency | | - | 25 | - | % |
| Rth(ch-c) *2 | Thermal resistance | delta Vf method | - | - | 40 | °C/W |

*2 : Channel-case



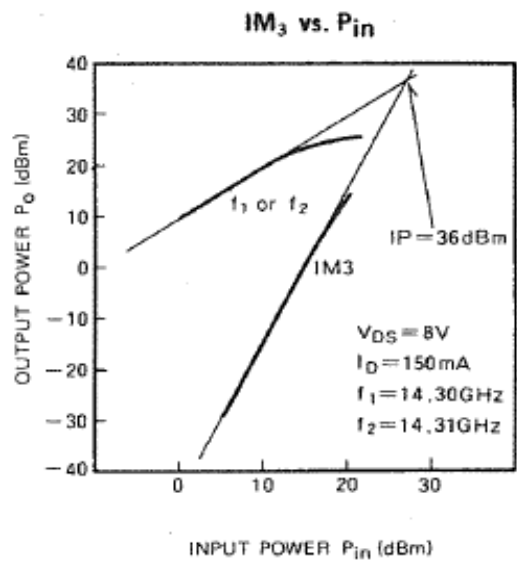
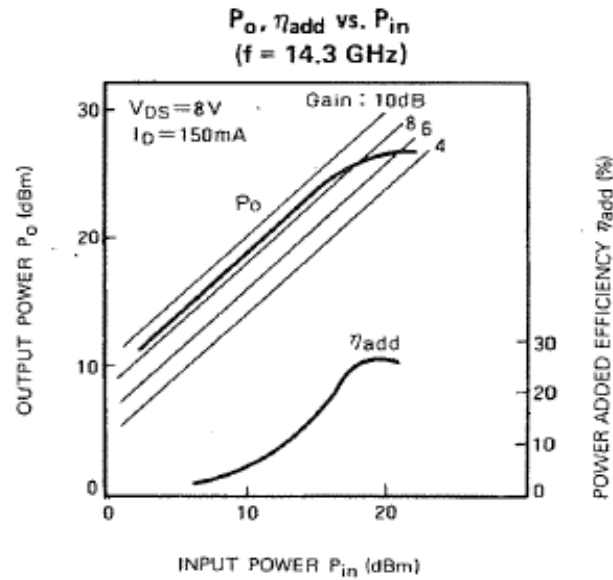
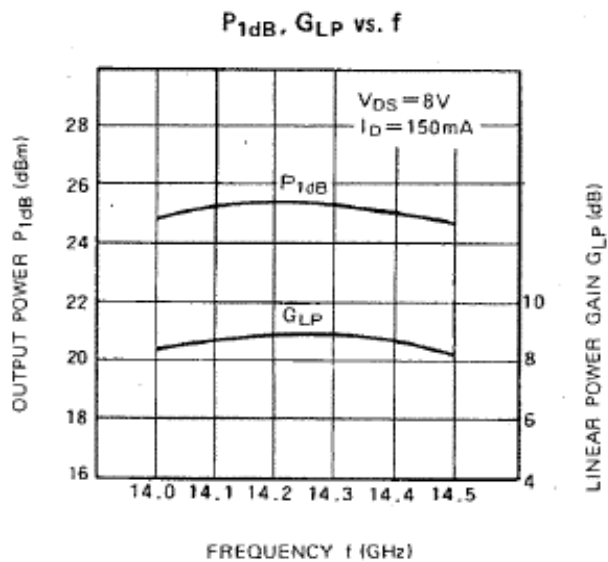
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MGFK25V4045 TYPICAL CHARACTERISTICS



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