

MICROWAVE POWER GaAs FET

TIM1414-8-252

MICROWAVE SEMICONDUCTOR TECHNICAL DATA

FEATURES

- ·BROAD BAND INTERNALLY MATCHED FET
- ·HIGH POWER

P1dB= 39.0dBm at 13.75GHz to 14.5GHz

·HIGH GAIN

G1dB= 5.0dB at 13.75GHz to 14.5GHz

·HERMETICALLY SEALED PACKAGE



RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

| CHARACTERISTICS | SYMBOL | CONDITIONS | UNIT | MIN. | TYP. | MAX. |
|--|--------|--|------|------|------|------|
| Output Power at 1dB Gain Compression Point | P1dB | | dBm | 38.0 | 39.0 | _ |
| Power Gain at 1dB Gain Compression Point | G1dB | VDS= 9V IDSset= 4.0A | dB | 4.0 | 5.0 | _ |
| Drain Current | IDS | f = 13.75 to 14.5GHz | А | _ | 3.4 | 4.4 |
| Power Added Efficiency | ηadd | | % | | 18 | _ |
| Channel Temperature Rise | ΔTch | (VDS X IDS + Pin – P1dB) X Rth(c-c) | °C | | | 80 |

Recommended Gate Resistance(Rg): 100 Ω

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

| CHARACTERISTICS | SYMBOL | CONDITIONS | UNIT | MIN. | TYP. | MAX. |
|-------------------------------|----------|--------------------------|------|------|------|------|
| Transconductance | gm | VDS= 3V IDS= 4.0A | S | _ | 2.4 | _ |
| Pinch-off Voltage | VGSoff | VDS= 3V IDS= 120mA | V | -2.0 | -3.5 | -5.0 |
| Saturated Drain Current | IDSS | VDS= 3V VGS= 0V | А | _ | 8.0 | 10.4 |
| Gate-Source Breakdown Voltage | VGSO | IGS= -120 _μ A | V | -5 | _ | _ |
| Thermal Resistance | Rth(c-c) | Channel to Case | °C/W | _ | 1.6 | 2.5 |

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- MICROWAVE SEMICONDUCTOR TECHNICAL DATA

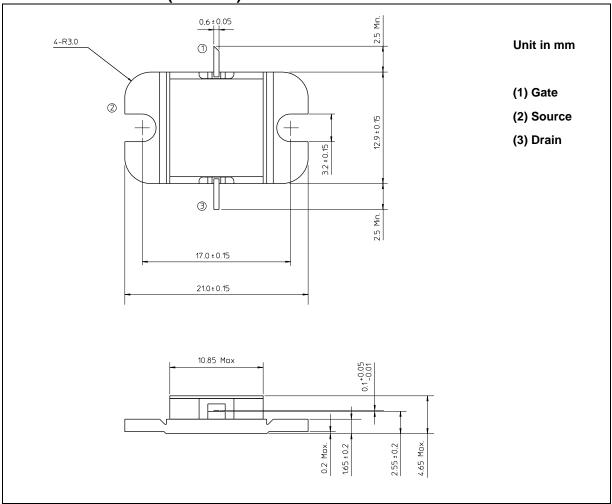


MICROWAVE SEMICONDUCTOR TECHNICAL DATA

ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

| CHARACTERISTICS | SYMBOL | UNIT | RATING |
|------------------------------------|--------|------|-------------|
| Drain-Source Voltage | VDS | V | 15 |
| Gate-Source Voltage | VGS | V | -5 |
| Drain Current | IDS | А | 10.4 |
| Total Power Dissipation (Tc= 25°C) | PT | W | 60 |
| Channel Temperature | Tch | °C | 175 |
| Storage | Tstg | °C | -65 to +175 |

PACKAGE OUTLINE (2-11C1B)

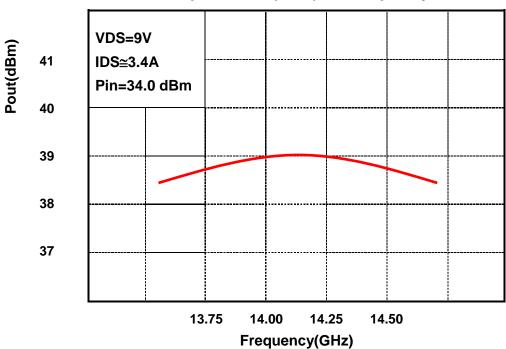


HANDLING PRECAUTIONS FOR PACKAGE MODEL

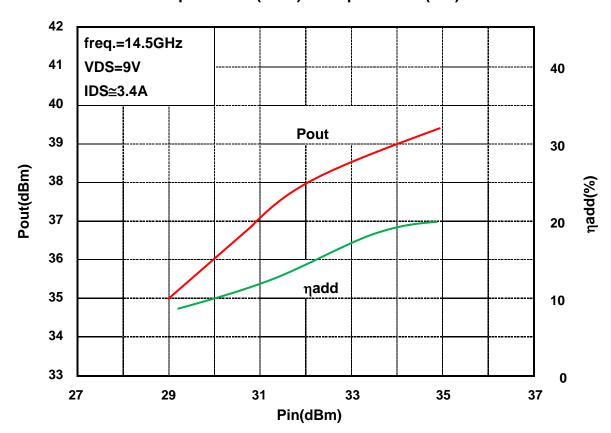
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C or 3 seconds at 350°C.

RF PERFORMANCE





Output Power(Pout) vs. Input Power(Pin)





MICROWAVE SEMICONDUCTOR TECHNICAL DATA

Power Dissipation(PT) vs. Case Temperature(Tc)

