

FEATURES

■ **HIGH POWER**

P1dB= 29.5 dBm at 8 GHz

■ **SUITABLE FOR C-BAND AMPLIFIER**

■ **HIGH GAIN**

G1dB= 7.5 dB at 8 GHz

■ **ION IMPLANTATION**

RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

| CHARACTERISTICS | SYMBOL | CONDITION | UNIT | MIN. | TYP. | MAX. |
|---------------------------------------|--------------|-----------------------|------|------|------|------|
| Output Power at 1dB Compression Point | P1dB | VDS= 10V f = 8 GHz | dBm | 28.5 | 29.5 | — |
| Power Gain at 1dB Compression Point | G1dB | | dB | 6.5 | 7.5 | — |
| Drain Current | IDS | | A | — | 0.25 | 0.4 |
| Power Added Efficiency | η_{add} | | % | — | 30 | — |

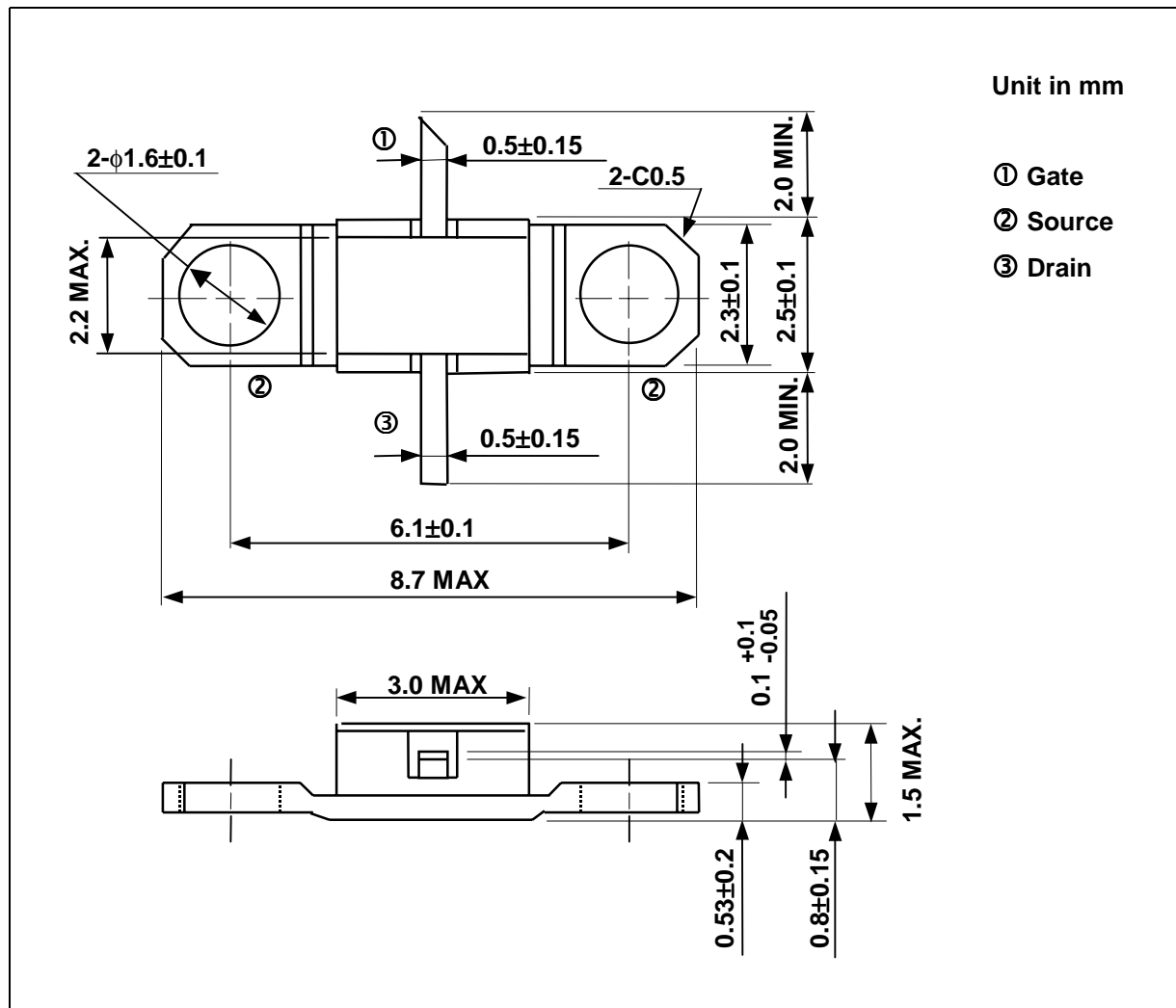
ELECTRICAL CHARACTERISTICS (Ta= 25°C)

| CHARACTERISTICS | SYMBOL | CONDITION | UNIT | MIN. | TYP. | MAX. |
|-------------------------------|----------|-----------------------|------|------|------|------|
| Transconductance | gm | VDS= 3V IDS= 0.28A | mS | — | 170 | — |
| Pinch-off Voltage | VGSoff | VDS= 3V IDS= 5mA | V | -2.0 | -3.5 | -5.0 |
| Saturated Drain Current | IDSS | VDS= 3V VGS= 0V | A | — | 0.55 | 0.7 |
| Gate-Source Breakdown Voltage | VGS0 | IGS= -10 μ A | V | -5 | — | — |
| Thermal Resistance | Rth(c-c) | Channel to Case | °C/W | — | 20 | 30 |

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ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

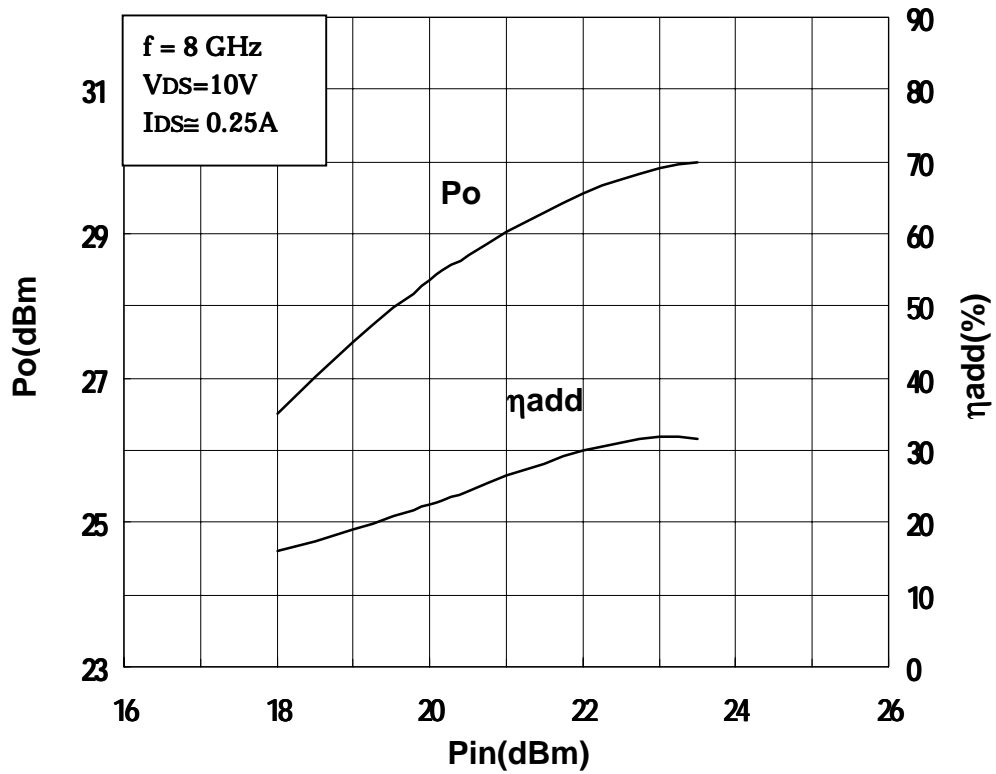
| CHARACTERISTICS | SYMBOL | UNIT | RATING |
|-------------------------------------|--------|------|------------|
| Drain-Source Voltage | VDS | V | 15 |
| Gate-Source Voltage | VGS | V | -5 |
| Drain Current | IDS | A | 1.4 |
| Total Power Dissipation (Tc= 25 °C) | PT | W | 7.5 |
| Channel Temperature | Tch | °C | 175 |
| Storage | Tstg | °C | -65 ~ +175 |

PACKAGE OUTLINE (2-3K1B)**HANDLING PRECAUTIONS FOR PACKAGED TYPE**

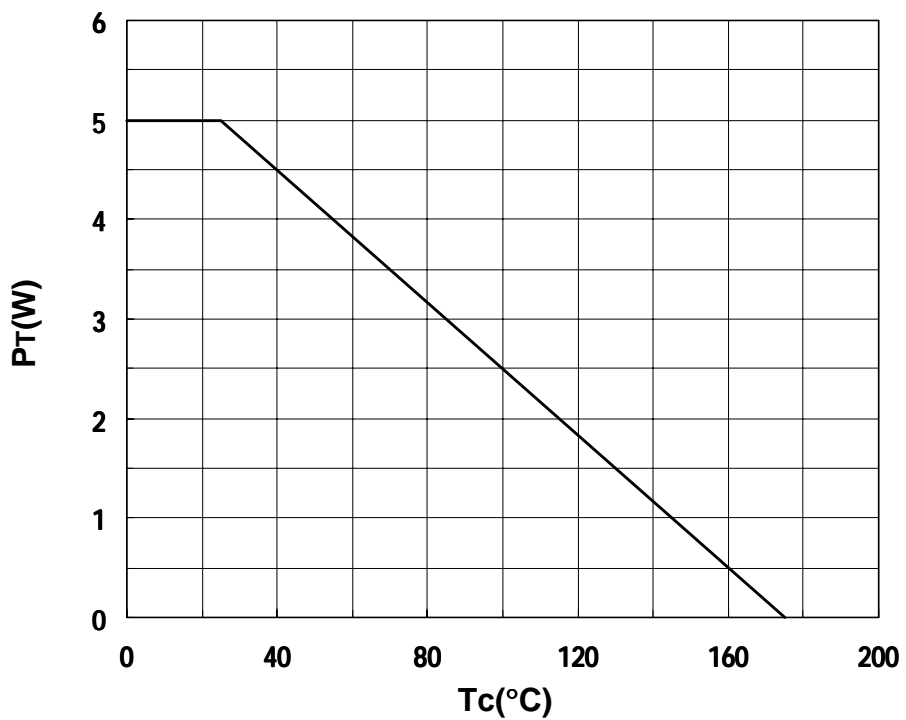
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCES

Output Power vs. Input Power



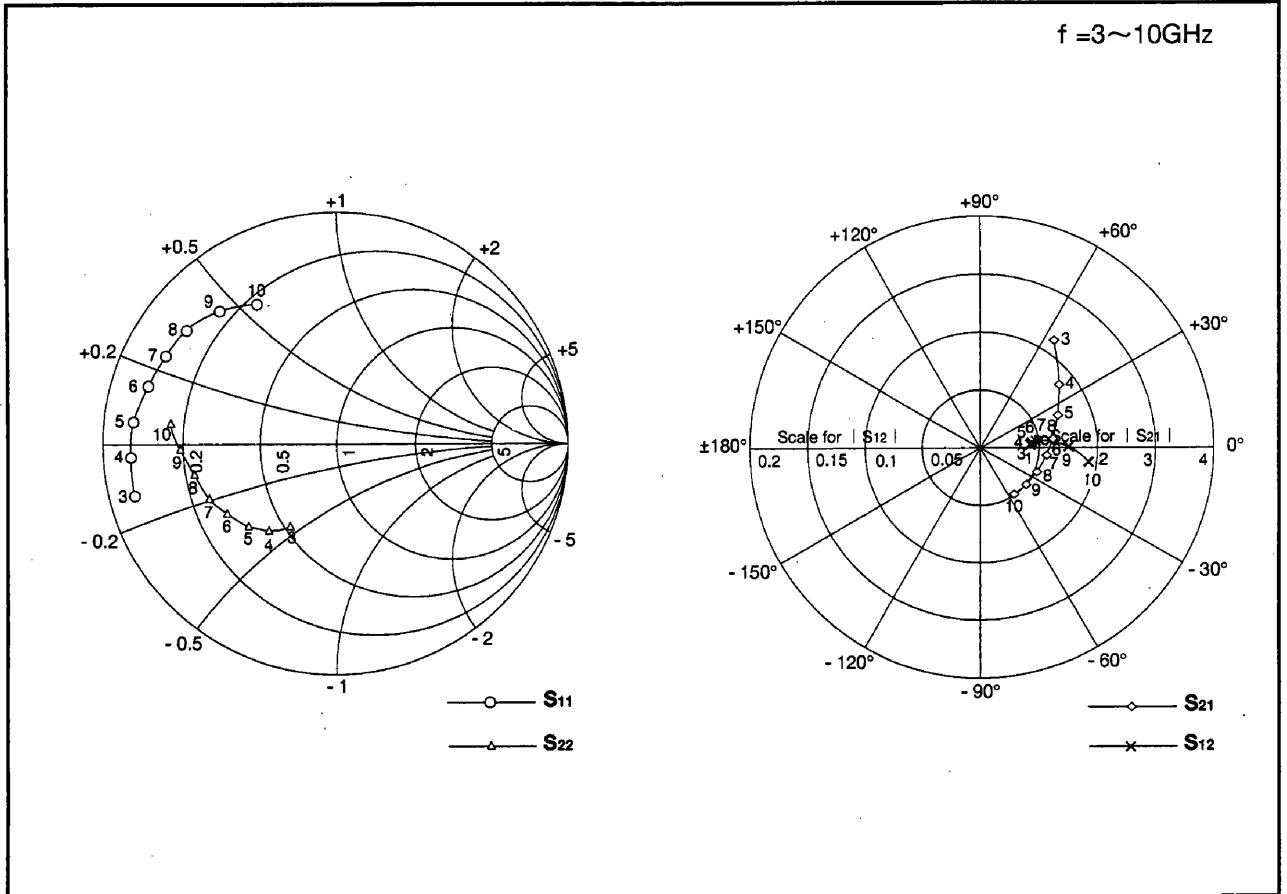
POWER DISSIPATION vs. CASE TEMPERATURE



S8836B

S-PARAMETERS (MAG, ANG)

$V_{DS} = 10V, I_{DS} = 226mA$



| FREQUENCY (GHz) | S_{11} | | S_{12} | | S_{21} | | S_{22} | |
|--------------------|----------|------|----------|------|----------|-----|----------|------|
| | MAG | ANG | MAG | ANG | MAG | ANG | MAG | ANG |
| 3 | 0.89 | -166 | 0.042 | 6.7 | 2.23 | 56 | 0.40 | -119 |
| 4 | 0.88 | -177 | 0.042 | 4.8 | 1.72 | 39 | 0.47 | -129 |
| 5 | 0.87 | 173 | 0.043 | 4.2 | 1.43 | 23 | 0.52 | -138 |
| 6 | 0.84 | 162 | 0.044 | 4.3 | 1.23 | 7 | 0.56 | -148 |
| 7 | 0.83 | 152 | 0.050 | 7.3 | 1.12 | -8 | 0.60 | -158 |
| 8 | 0.81 | 142 | 0.060 | 6.0 | 1.04 | -24 | 0.63 | -169 |
| 9 | 0.77 | 131 | 0.074 | 0.3 | 1.00 | -40 | 0.68 | -179 |
| 10 | 0.70 | 119 | 0.093 | -7.6 | 1.00 | -56 | 0.72 | 172 |