

### FEATURES

- BROAD BAND INTERNALLY MATCHED HEMT
- HIGH POWER  
Pout= 51.0dBm at Pin= 44.0dBm
- HIGH GAIN  
GL= 11.0dB at Pin= 20.0dBm
- LOW INTERMODULATION DISTORTION  
IM3(Min.)= -25dBc at Po=44.0dBm  
Single Carrier Level
- HERMETICALLY SEALED PACKAGE



### RF PERFORMANCE SPECIFICATIONS ( Ta= 25°C )

| CHARACTERISTICS                      | SYMBOL          | CONDITIONS  | UNIT | MIN. | TYP. | MAX.      |
|--------------------------------------|-----------------|---|------|------|------|-----------|
| Output Power                         | Pout            | VDS= 24V<br>IDSset= 4.0A                                  | dBm  | 50.0 | 51.0 | —         |
| Drain Current                        | IDS1            | f= 7.7 to 8.5 GHz<br>@Pin= 44dBm                          | A    | —    | 10.0 | 12.0      |
| Power Added Efficiency               | $\eta_{add}$    |   | %    | —    | 42   | —         |
| Linear Gain                          | GL              | @Pin= 20dBm   | dB   | 10.0 | 11.0 | —         |
| Gain flatness                        | $\Delta G$      |   | dB   | —    | —    | $\pm 0.8$ |
| 3rd Order Intermodulation Distortion | IM3             | Two-Tone Test   | dBc  | -25  | -30  | —         |
| Drain Current                        | IDS2            | Po= 44.0dBm, $\Delta f = 5$ MHz<br>(Single Carrier Level) | A    | —    | —    | 8.0       |
| Channel Temperature Rise             | $\Delta T_{ch}$ | (VDS X IDS + Pin - P1dB)<br>X Rth(c-c)                    | °C   | —    | 120  | 140       |

**Recommended Gate Resistance(Rg): 28  $\Omega$  (Max.)**

### ELECTRICAL CHARACTERISTICS ( Ta= 25°C )

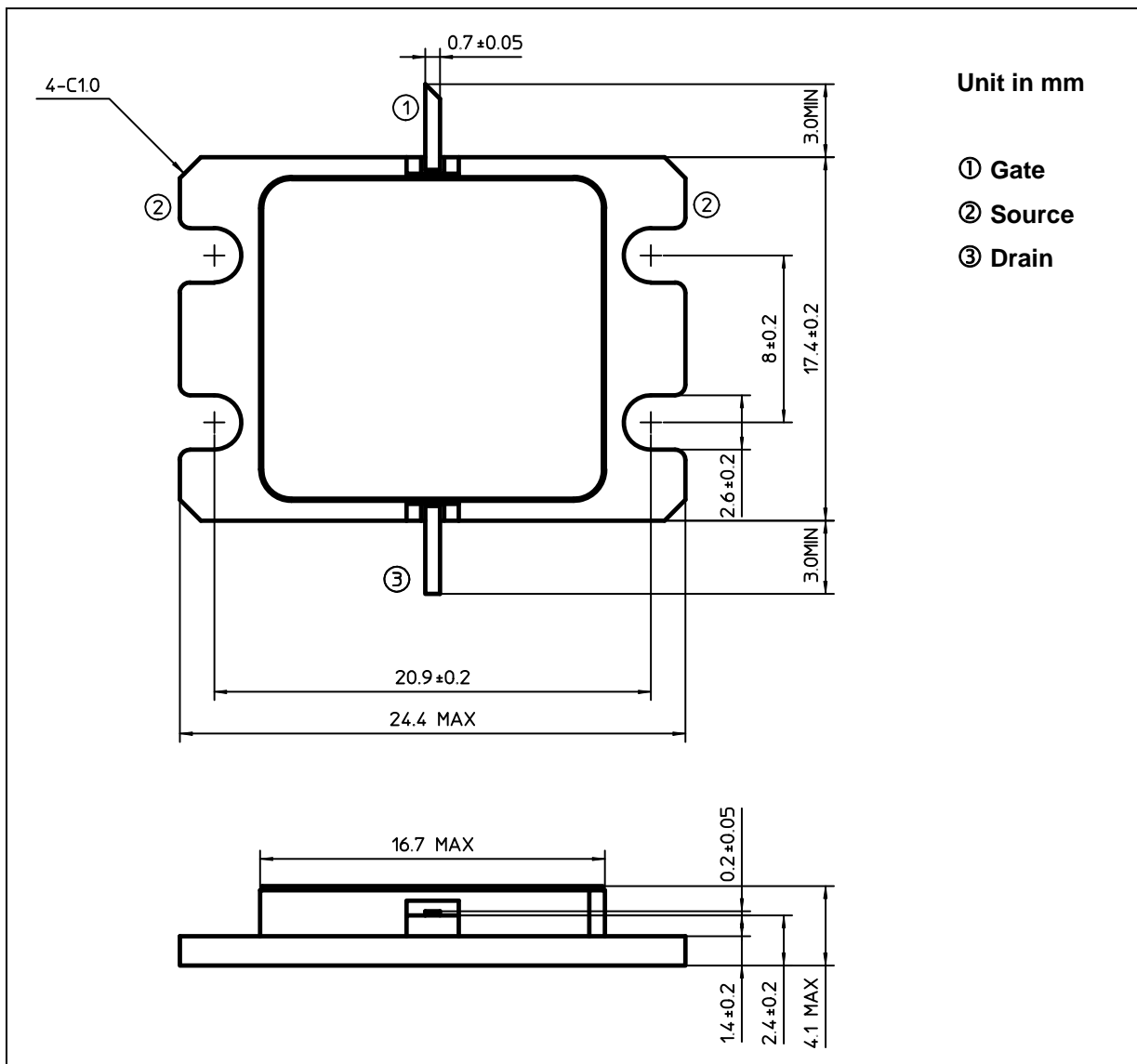
| CHARACTERISTICS               | SYMBOL   | CONDITIONS            | UNIT | MIN. | TYP. | MAX. |
|-------------------------------|----------|-----------------------|------|------|------|------|
| Transconductance              | gm       | VDS= 5V<br>IDS= 10.0A | S    | —    | 8.0  | —    |
| Pinch-off Voltage             | VGSoff   | VDS= 5V<br>IDS= 46mA  | V    | -1   | -4   | -6   |
| Gate-Source Breakdown Voltage | VGSO     | IGS= -20mA            | V    | -10  | —    | —    |
| Thermal Resistance            | Rth(c-c) | Channel to Case       | °C/W | —    | 0.6  | 0.8  |

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**ABSOLUTE MAXIMUM RATINGS ( Ta= 25°C )**

| CHARACTERISTICS                     | SYMBOL | UNIT | RATING      |
|-------------------------------------|--------|------|-------------|
| Drain-Source Voltage                | VDS    | V    | 50          |
| Gate-Source Voltage                 | VGS    | V    | -10         |
| Drain Current                       | IDS    | A    | 18.0        |
| Total Power Dissipation (Tc= 25 °C) | PT     | W    | 280         |
| Channel Temperature                 | Tch    | °C   | 250         |
| Storage Temperature                 | Tstg   | °C   | -65 to +175 |

**PACKAGE OUTLINE (7-AA06A)**



**HANDLING PRECAUTIONS FOR PACKAGE MODEL**

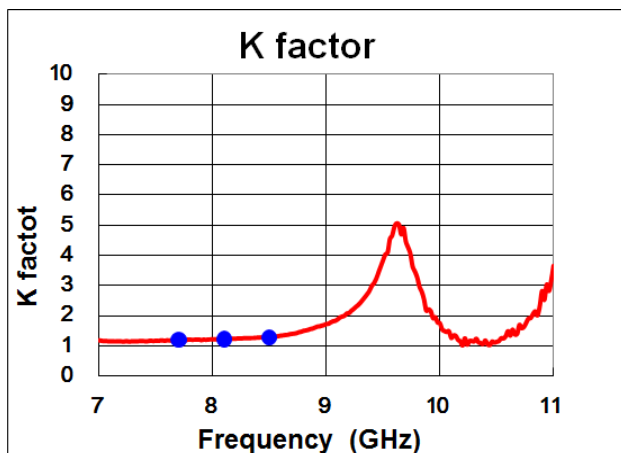
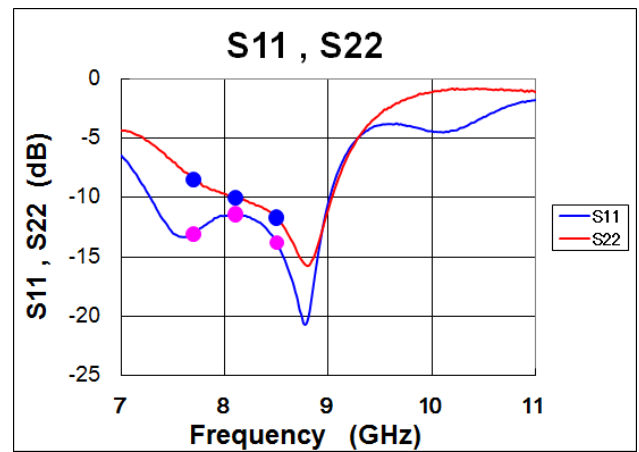
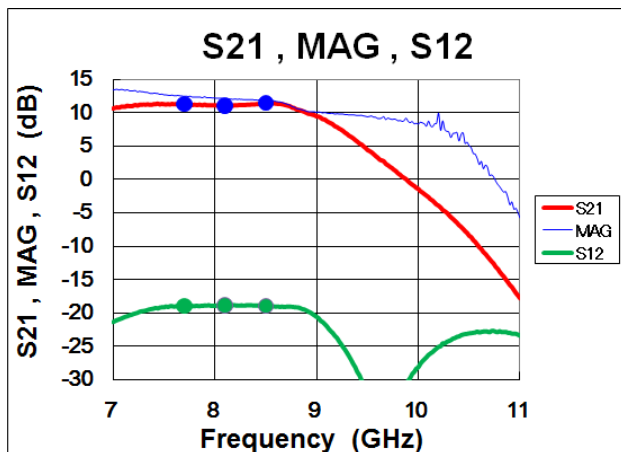
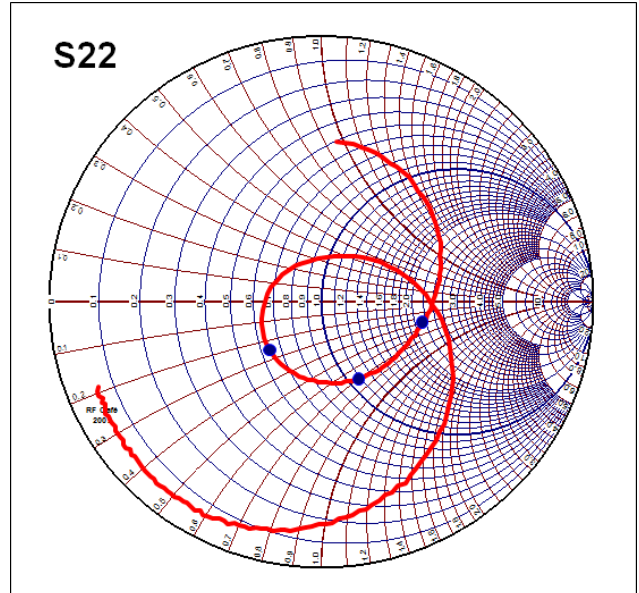
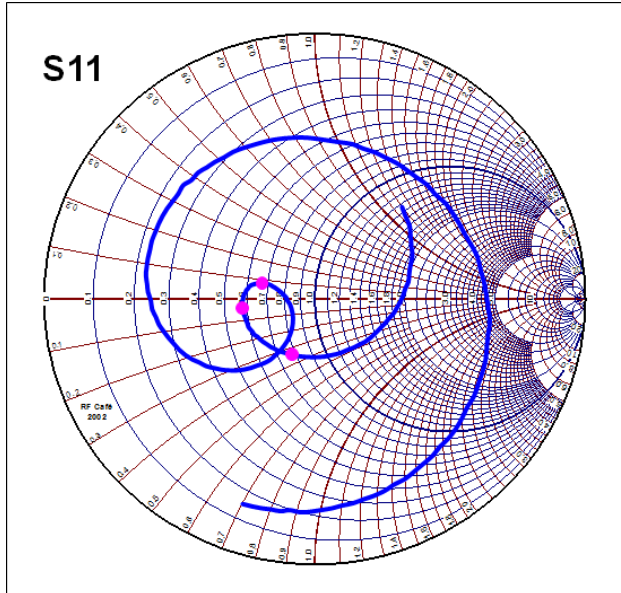
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C or 3 seconds at 350°C.

**TYPICAL RF PERFORMANCE**

**·S-Parameters**

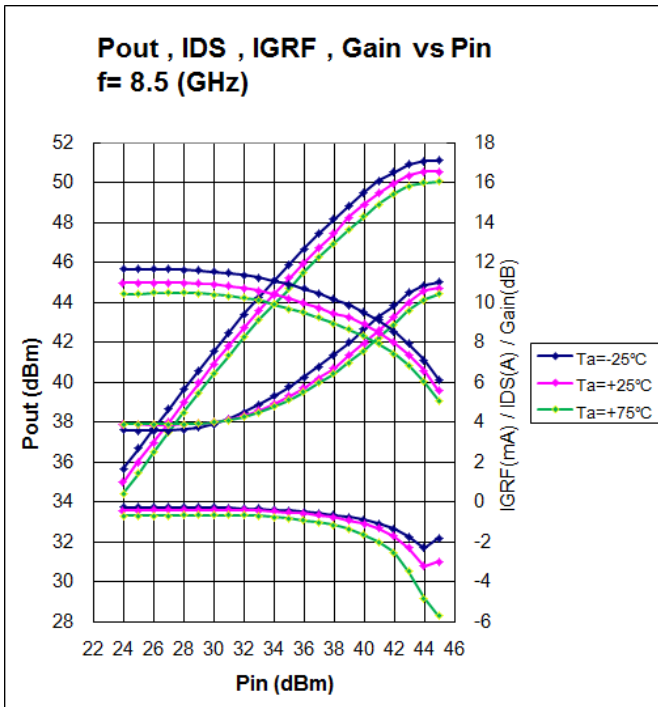
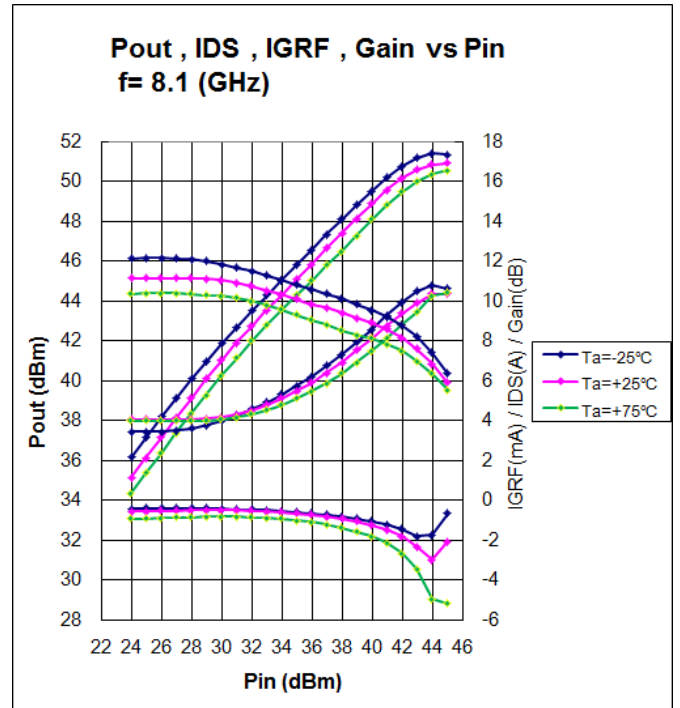
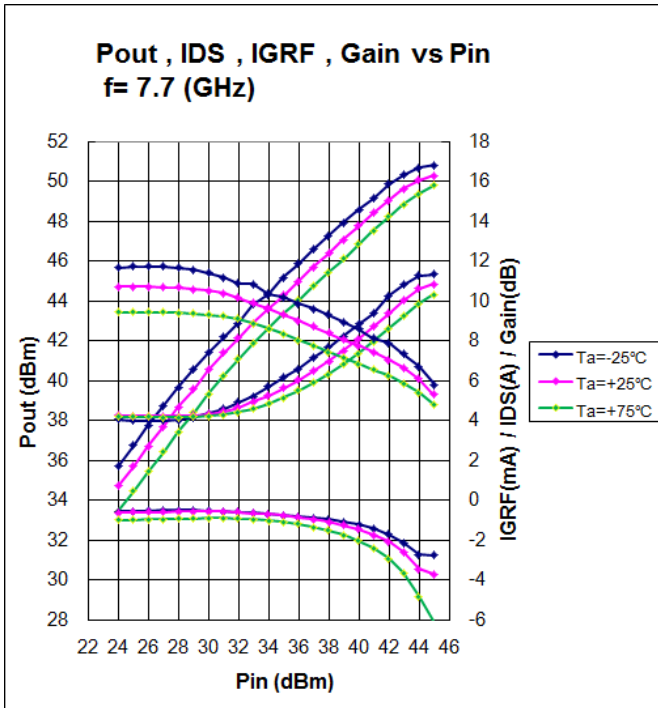
VDS= 24 (V) , IDSset= 4.0 (A) , f=7.0 to 11.0 (GHz)

Marker : 7.7 , 8.1 , 8.5 (GHz)



· Pout , IDS , IGRF , Gain vs. Pin vs. Temperature

VDS= 24 (V) , IDSset= 4.0 (A) , f= 7.7 , 8.1 , 8.5 (GHz)



•IM3 vs. Pout

VDS= 24 (V) , IDSset= 3.0 , 4.0 , 5.0 (A) , f= 7.7 , 8.1 , 8.5 (GHz)

