

**FEATURES**

n **HIGH POWER**

P1dB=41.5dBm at 7.7GHz to 8.5GHz

n **HIGH GAIN**

G1dB=8.5dB at 7.7GHz to 8.5GHz

n **BROAD BAND INTERNALLY MATCHED FET**

n **HERMETICALLY SEALED PACKAGE**

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

| CHARACTERISTICS                            | SYMBOL           | CONDITIONS   | UNIT | MIN. | TYP. | MAX. |
|--|------------------|--|------|------|------|------|
| Output Power at 1dB Gain Compression Point | P1dB             | V <sub>DS</sub> = 10V<br>f = 7.5 to 8.5GHz   | dBm  | 40.5 | 41.5 | —    |
| Power Gain at 1dB Gain Compression Point   | G1dB             |  | dB   | 7.5  | 8.5  | —    |
| Drain Current                              | I <sub>DS1</sub> |  | A    | —    | 3.2  | 3.8  |
| Gain Flatness                              | ΔG               |  | dB   | —    | —    | ±0.6 |
| Power Added Efficiency                     | η <sub>add</sub> |  | %    | —    | 38   | —    |
| 3rd Order Intermodulation Distortion       | IM3              | Two Tone Test<br>Po=30.5dBm  | dBc  | -44  | -47  | —    |
| Drain Current                              | I <sub>DS2</sub> | (Single Carrier Level)   | A    | —    | 3.2  | 3.8  |
| Channel Temperature Rise                   | ΔT <sub>ch</sub> | (V <sub>DS</sub> X I <sub>DS</sub> + P <sub>in</sub> - P1dB)<br>X R <sub>th(c-c)</sub> | °C   | —    | —    | 80   |

**Recommended gate resistance(Rg) : Rg= 100 W(MAX.)**

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

| CHARACTERISTICS               | SYMBOL               | CONDITIONS                                     | UNIT | MIN. | TYP. | MAX. |
|-------------------------------|----------------------|--|------|------|------|------|
| Transconductance              | gm                   | V <sub>DS</sub> = 3V<br>I <sub>DS</sub> = 4.0A | mS   | —    | 2500 | —    |
| Pinch-off Voltage             | V <sub>GSoff</sub>   | V <sub>DS</sub> = 3V<br>I <sub>DS</sub> = 40mA | V    | -1.0 | -2.5 | -4.0 |
| Saturated Drain Current       | I <sub>DSS</sub>     | V <sub>DS</sub> = 3V<br>V <sub>GS</sub> = 0V   | A    | —    | 7.2  | —    |
| Gate-Source Breakdown Voltage | V <sub>GS0</sub>     | I <sub>GS</sub> = -140μA                       | V    | -5   | —    | —    |
| Thermal Resistance            | R <sub>th(c-c)</sub> | Channel to Case                                | °C/W | —    | 2.0  | 2.4  |

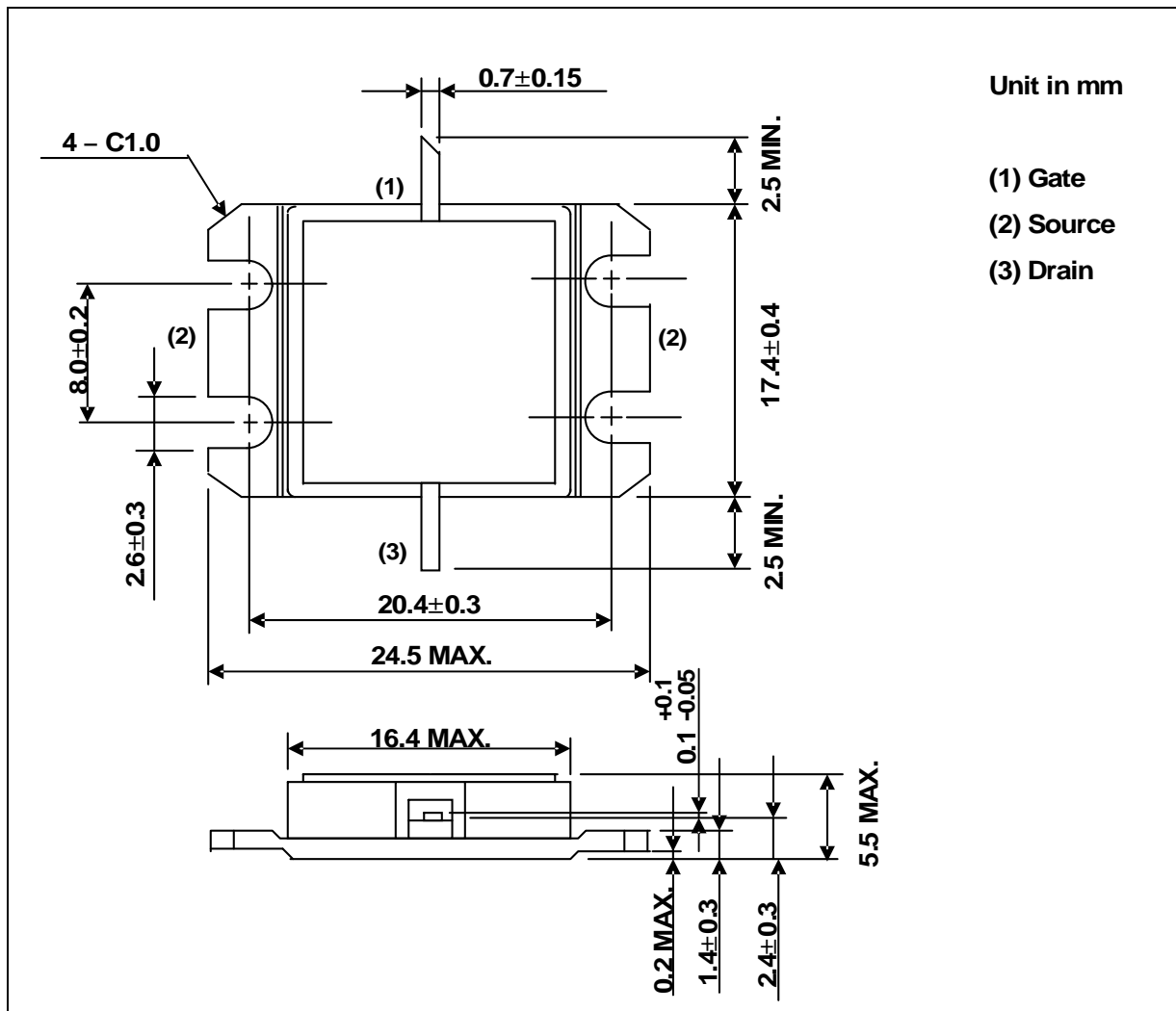
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The information contained herein is subject to change without prior notice. It is therefor advisable to contact TOSHIBA before proceeding with design of equipment incorporating this product.

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

| CHARACTERISTICS                                   | SYMBOL           | UNIT | RATING      |
|---|------------------|------|-------------|
| Drain-Source Voltage                              | V <sub>DS</sub>  | V    | 15          |
| Gate-Source Voltage                               | V <sub>GS</sub>  | V    | -5          |
| Drain Current                                     | I <sub>DS</sub>  | A    | 10.0        |
| Total Power Dissipation (T <sub>c</sub> = 25 °C ) | PT               | W    | 62.5        |
| Channel Temperature                               | T <sub>ch</sub>  | °C   | 175         |
| Storage   | T <sub>stg</sub> | °C   | -65 to +175 |

**PACKAGE OUTLINE (2-16G1B)**

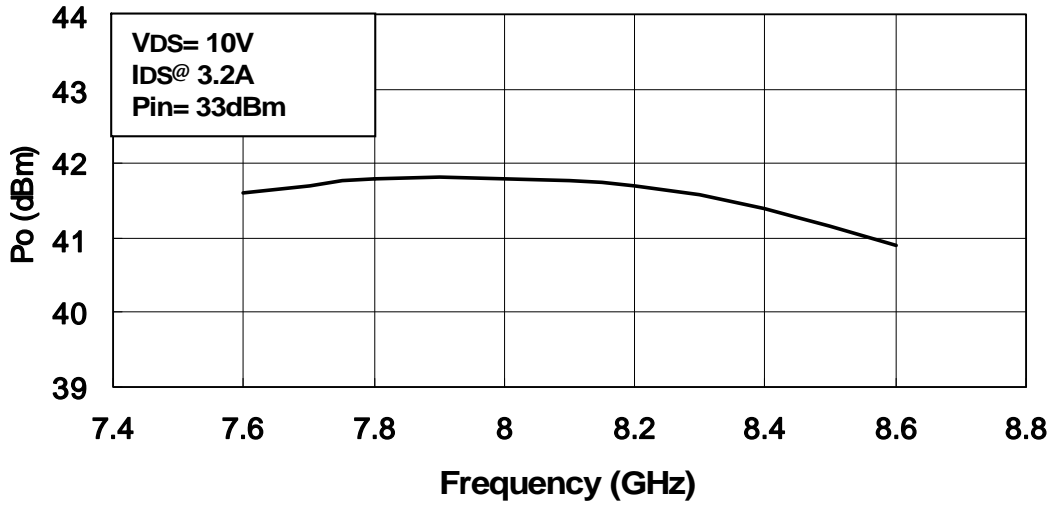


**HANDLING PRECAUTIONS FOR PACKAGE MODEL**

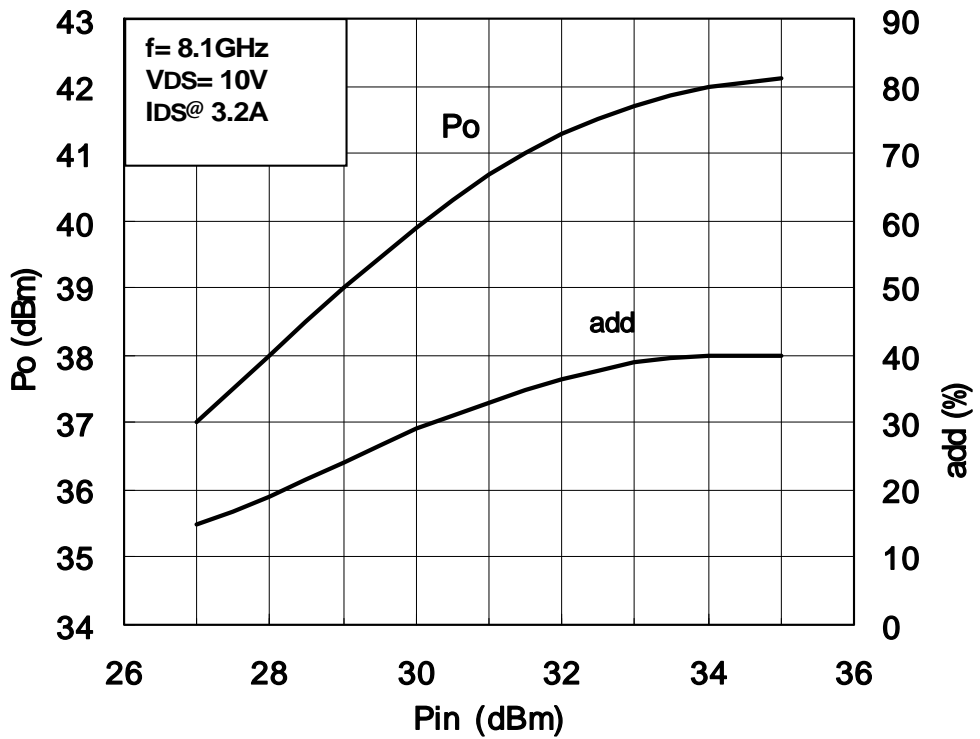
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCE

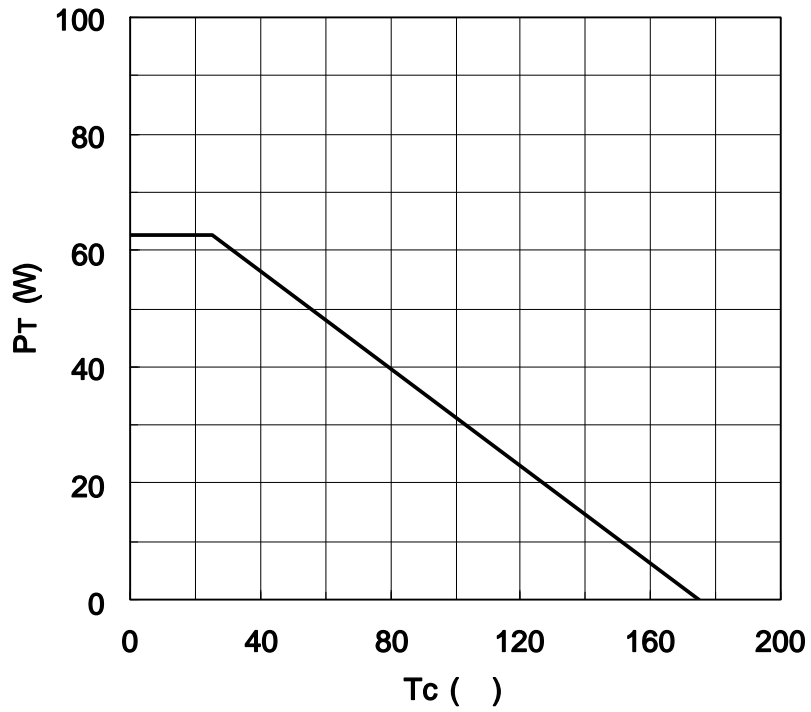
Output Power vs. Frequency



Output Power vs. Input Power



**Power Dissipation vs. Case Temperature**



**IM3 vs. Output Power Characteristics**

