**TOSHIBA**

*MICROWAVE SEMICONDUCTOR*

*TECHNICAL DATA*

**MICROWAVE POWER GaAs FET**

# TPM2626-60

## FEATURES

- **HIGH POWER**
  P1dB=48.0dBm at 2.6GHz
- **HIGH GAIN**
  G1dB=10.0dB at 2.6GHz
- **PARTIALLY MATCHED TYPE**
- **HERMETICALLY SEALED PACKAGE**

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

| CHARACTERISTICS | SYMBOL | CONDITIONS | UNIT | MIN. | TYP. | MAX. |
|---|---|---|---|---|---|---|
| Output Power at 1dB Gain Compression Point | $P_{1dB}$ | $V_{DS}$= 12V<br>f = 2.6GHz<br>$I_{DS}$set≅8.0A | dBm | 47.0 | 48.0 | — |
| Power Gain at 1dB Gain Compression Point | $G_{1dB}$ | | dB | 9.0 | 10.0 | — |
| Drain Current | $I_{DS1}$ | | A | — | 12.0 | 15.0 |
| Power Added Efficiency | $\eta_{add}$ | | % | — | 39 | — |
| Channel Temperature Rise | $\Delta T_{ch}$ | (VDS X IDS + Pin – P1dB) X Rth(c-c) | °C | — | — | 100 |

**Recommended gate resistance (Rg) : Rg = 30 Ω (Max.)**

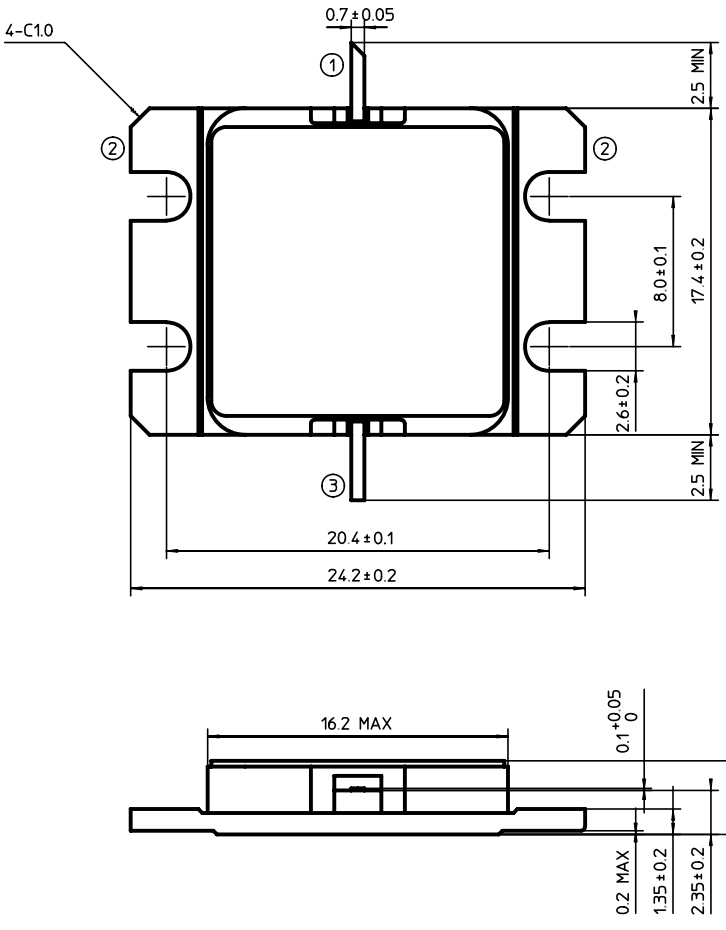
## ELECTRICAL CHARACTERISTICS ( Ta= 25°C )

| CHARACTERISTICS | SYMBOL | CONDITIONS | UNIT | MIN. | TYP. | MAX. |
|---|---|---|---|---|---|---|
| Transconductance | gm | VDS= 3V<br>IDS= 12.0A | S | — | 20.0 | — |
| Pinch-off Voltage | VGSoff | VDS= 3V<br>IDS= 300mA | V | -1.0 | -1.8 | -3.0 |
| Saturated Drain Current | IDSS | VDS= 3V<br>VGS= 0V | A | — | 38 | — |
| Gate-Source Breakdown Voltage | VGSO | IGS= -10.0mA | V | -5 | — | — |
| Thermal Resistance | Rth(c-c) | Channel to Case | °C/W | — | 0.6 | 0.8 |

## 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 | 26.0 |
| Total Power Dissipation (Tc= 25 °C ) | PT | W | 187.5 |
| Channel Temperature | Tch | °C | 175 |
| Storage | Tstg | °C | -65 ~ +175 |

## PACKAGE OUTLINE (2-16G1B)




**Unit in mm**

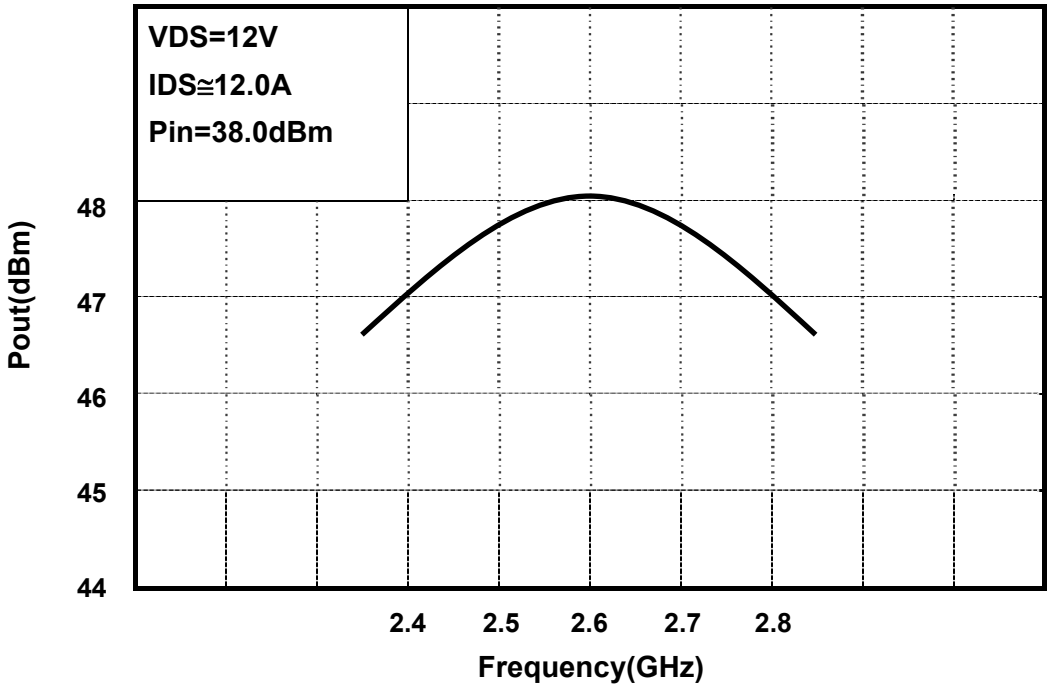
**① Gate**
**② Source**
**③ Drain**

**HANDLING PRECAUTIONS FOR PACKAGE MODEL**

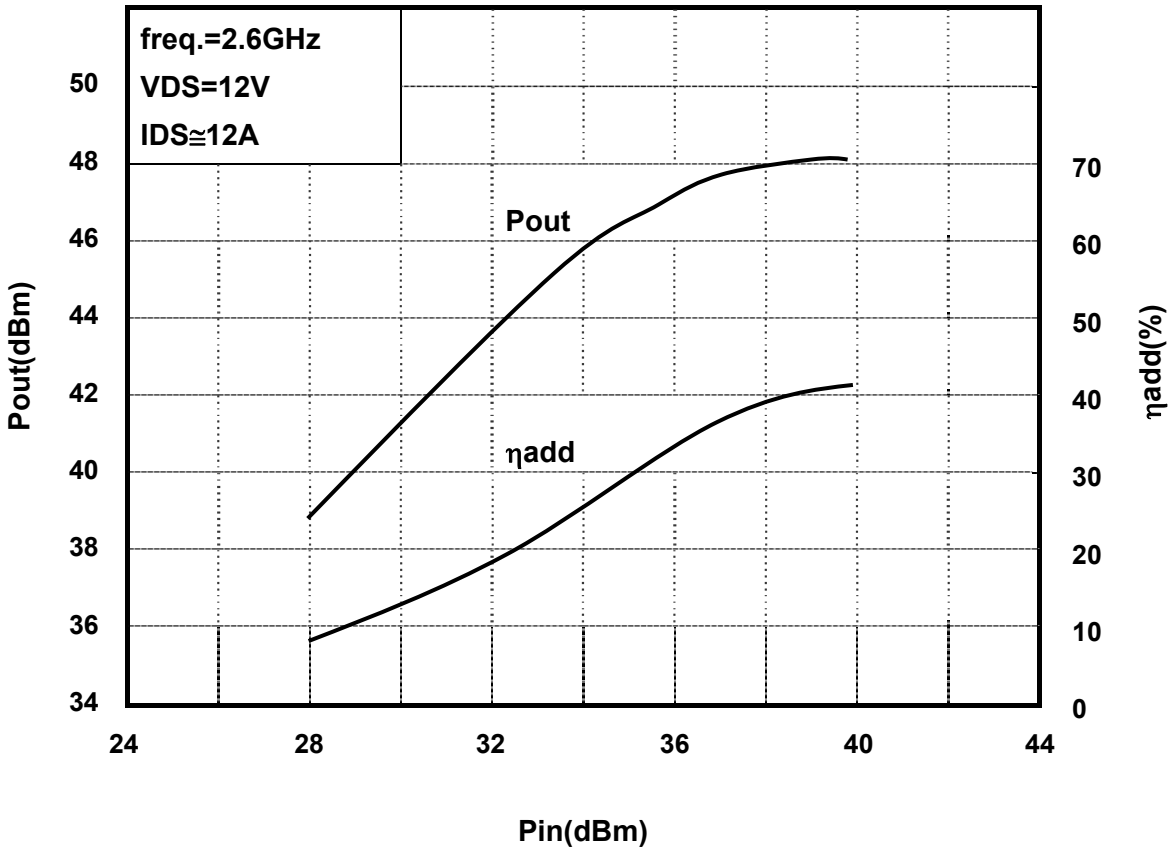
**Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.**

## RF PERFORMANCE

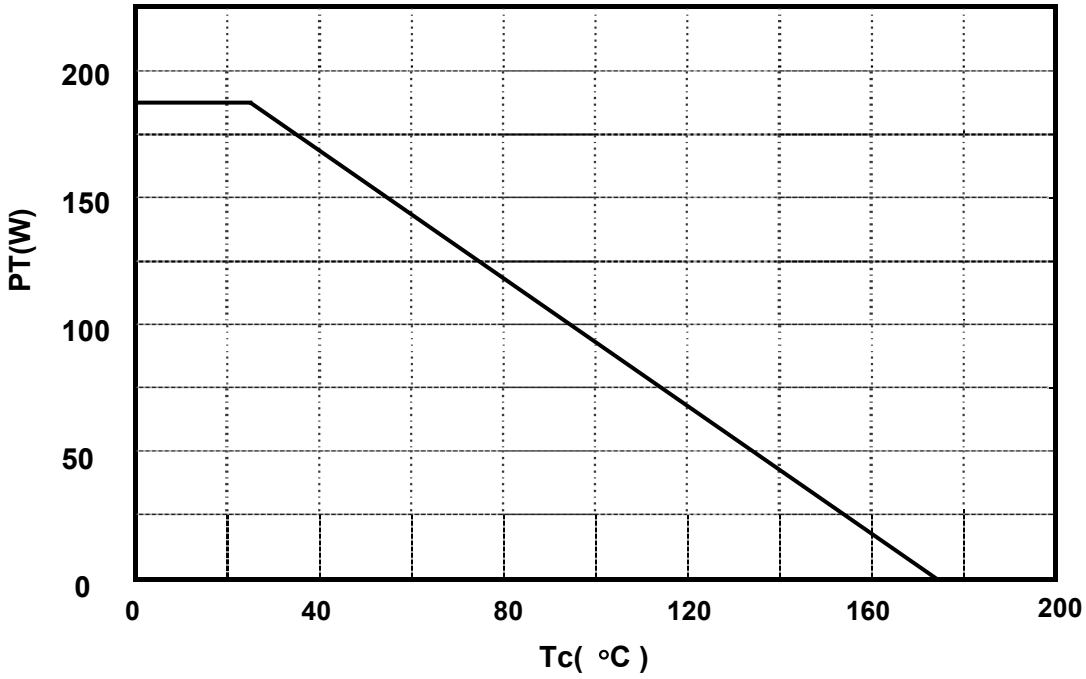
**Output Power (Pout) vs. Frequency**



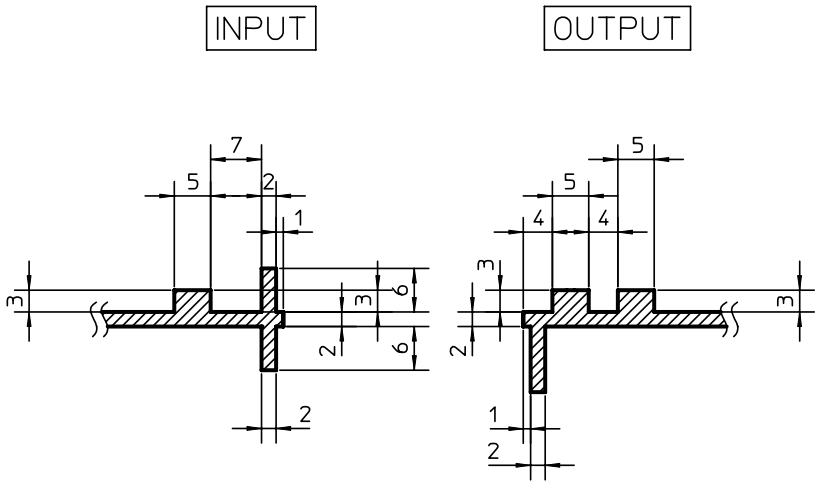

**Output Power(Pout) vs. Input Power(Pin)**



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




## DRAWING OF RECOMMENDABLE MATCHING NETWORK




Unit: mm

Substrate Material: Teflon ( $\varepsilon_r$=2.8)

Thickness: 0.76mm