

# 2SK3075

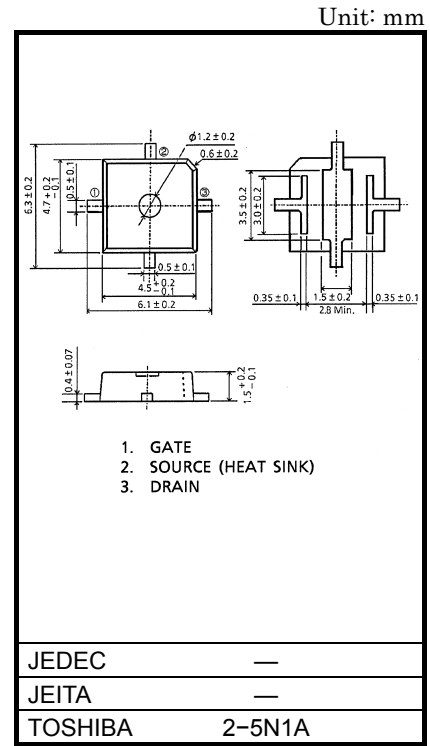
## RF Power MOSFET for VHF- and UHF-Band Power Amplifier

(Note)The TOSHIBA products listed in this document are intended for high frequency Power Amplifier of telecommunications equipment. These TOSHIBA products are neither intended nor warranted for any other use. Do not use these TOSHIBA products listed in this document except for high frequency Power Amplifier of telecommunications equipment.

- Output Power :  $P_O \geq 7.5W$
- Power Gain :  $G_P \geq 11.7dB$
- Drain Efficiency :  $\eta_D \geq 50\%$

### Absolute Maximum Ratings (Ta = 25°C)

| CHARACTERISTIC            | SYMBOL    | RATING  | UNIT |
|---------------------------|-----------|---------|------|
| Drain-Source Voltage      | $V_{DSS}$ | 30      | V    |
| Gate-Source Voltage       | $V_{GSS}$ | 25      | V    |
| Drain Current             | $I_D$     | 5       | A    |
| Drain Power Dissipation   | $P_{D^*}$ | 20      | W    |
| Channel Temperature       | $T_{ch}$  | 150     | °C   |
| Storage Temperature Range | $T_{stg}$ | -45~150 | °C   |

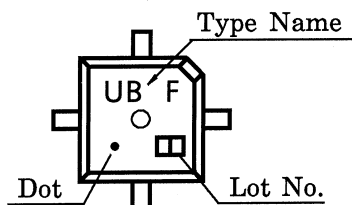


Weight: 0.08 g (typ.)

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/“Derating Concept and Methods”) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

\*:  $T_c = 25^\circ C$  When mounted on a 1.6mm glass epoxy PCB

### Marking



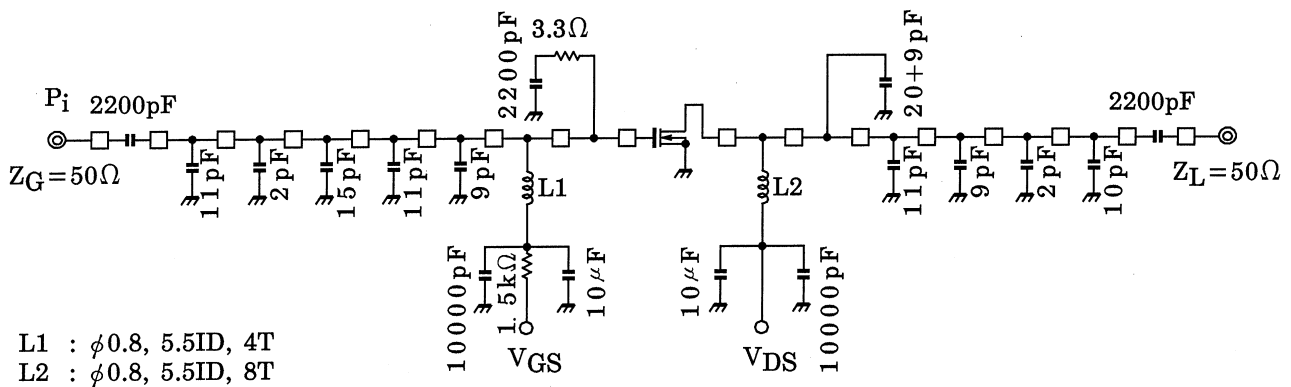
## Electrical Characteristics (Ta = 25°C)

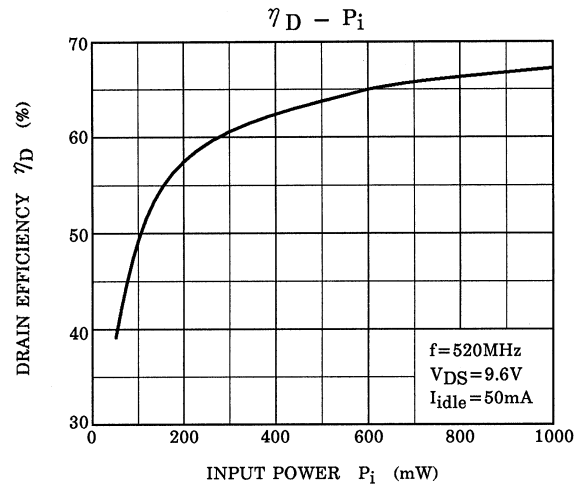
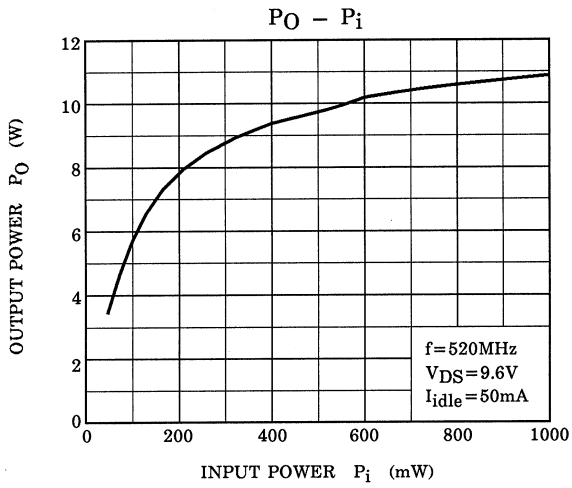
| CHARACTERISTIC              | SYMBOL           | TEST CONDITION  | MIN  | TYP. | MAX | UNIT |
|-----------------------------|------------------|---|------|------|-----|------|
| Output Power                | P <sub>O</sub>   | V <sub>DS</sub> = 9.6V<br>I <sub>idle</sub> = 50mA (V <sub>GS</sub> = adjust)<br>f = 520MHz, P <sub>i</sub> = 500mW | 7.5  | —    | —   | W    |
| Drain Efficiency            | η <sub>D</sub>   |   | 50   | —    | —   | %    |
| Power Gain                  | G <sub>p</sub>   |   | 11.7 | —    | —   | dB   |
| Gate Threshold Voltage      | V <sub>th</sub>  | V <sub>DS</sub> = 9.6V, I <sub>D</sub> = 0.5mA  | 1.0  | 1.5  | 2.0 | V    |
| Drain Cut-off Current       | I <sub>DSS</sub> | V <sub>DS</sub> = 20V, V <sub>GS</sub> = 0  | —    | —    | 10  | μA   |
| Gate-Source Leakage Current | I <sub>GSS</sub> | V <sub>GS</sub> = 10V, V <sub>DS</sub> = 0  | —    | —    | 5   | μA   |

## Handling Precaution

- When handling individual devices, be sure that working desks, human bodies and soldering iron are protected against electrostatic electricity.

## RF Output Power Test Fixture





**Caution**

These are only typical curves and devices are not necessarily guaranteed at these curves.

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