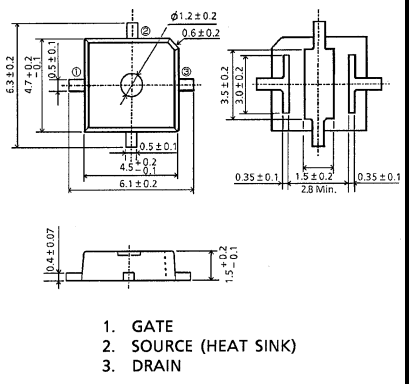
TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

# 2SK3075

## RF POWER MOSFET FOR VHF−AND UHF−BAND POWER AMPLIFIER

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

Unit: mm




1. GATE
2. SOURCE (HEAT SINK)
3. DRAIN

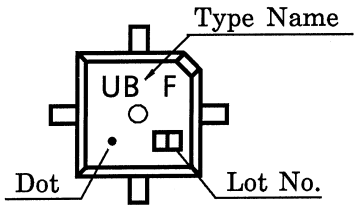
| | |
|---|---|
| JEDEC | — |
| EIAJ | — |
| TOSHIBA | 2−5N1A |

## 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 |

*: Tc = 25°C When mounted on a 1.6mm glass epoxy PCB

## MARKING




000707EAA1

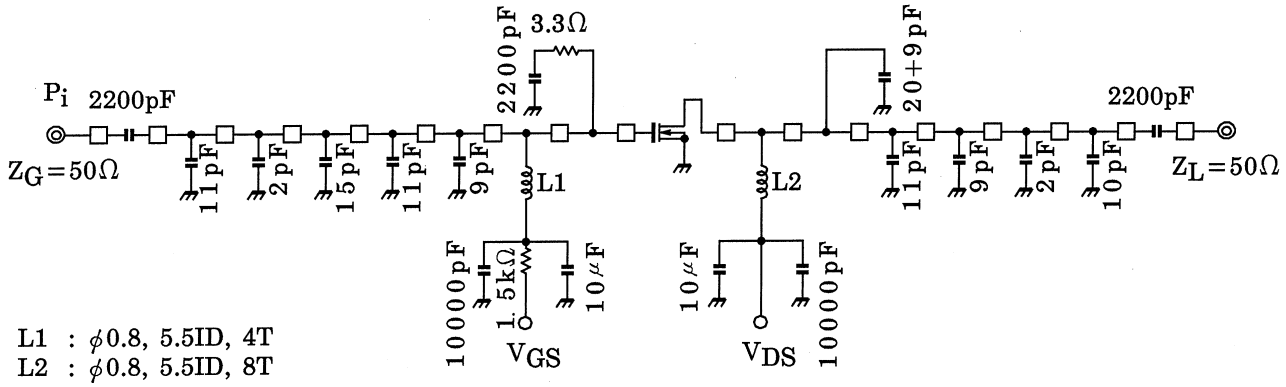
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| Output Power | $P_O$ | $V_{DS}$ = 9.6V<br>Iidle = 50mA ($V_{GS}$ = adjust)<br>f = 520MHz, $P_i$ = 500mW<br>$Z_G = Z_L = 50\Omega$ | 7.5 | — | — | W |
| Drain Efficiency | $\eta_D$ | | 50 | — | — | % |
| Power Gain | $G_P$ | | 11.7 | — | — | dB |
| Gate Threshold Voltage | $V_{th}$ | $V_{DS}$ = 9.6V, $I_D$ = 0.5mA | 1.0 | 1.5 | 2.0 | V |
| Drain Cut-off Current | $I_{DSS}$ | $V_{DS}$ = 20V, $V_{GS}$ = 0 | — | — | 10 | μA |
| Gate-Source Leakage Current | $I_{GSS}$ | $V_{GS}$ = 10V, $V_{DS}$ = 0 | — | — | 5 | μA |

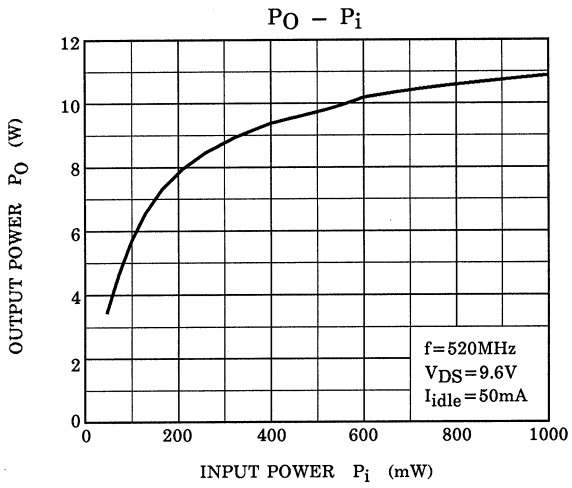
## HANDLING PRECAUTION

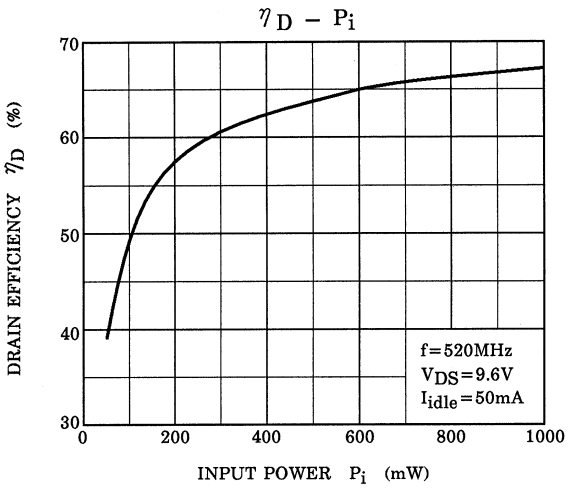
- When handling individual devices, be sure that working desks, human bodies and soldering iron are protected against electrostatic electricity.

## RF OUTPUT POWER TEST FIXTURE




L1 : φ0.8, 5.5ID, 4T
L2 : φ0.8, 5.5ID, 8T




## CAUTION

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