

2SJ168

High Speed Switching Applications
Analog Switch Applications
Interface Applications

- Excellent switching time: $t_{on} = 14 \text{ ns (typ.)}$
- High forward transfer admittance: $|Y_{fs}| = 100 \text{ mS (min)}$
@ $I_D = -50 \text{ mA}$
- Low on resistance: $R_{DS(ON)} = 1.3 \text{ } \Omega \text{ (typ.) @ } I_D = -50 \text{ mA}$
- Enhancement mode
- Complementary to 2SK1062

Absolute Maximum Ratings (Ta = 25°C)

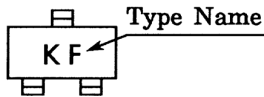
| Characteristics | | Symbol | Rating | Unit |
|-------------------------------------|-------|-----------|---------|------|
| Drain-source voltage | | V_{DSS} | -60 | V |
| Gate-source voltage | | V_{GSS} | ±20 | V |
| Drain current | DC | I_D | -200 | mA |
| | Pulse | I_{DP} | -800 | |
| Drain power dissipation (Ta = 25°C) | | P_D | 200 | mW |
| Channel temperature | | T_{ch} | 150 | °C |
| Storage temperature range | | T_{stg} | -55~150 | °C |

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.

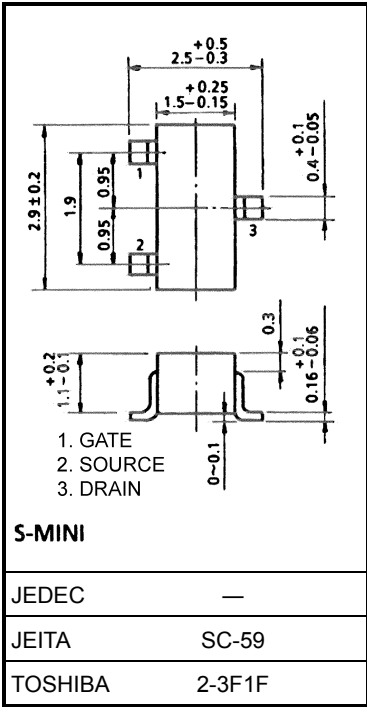
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Note: This transistor is the electrostatic sensitive device. Please handle with caution.

Marking

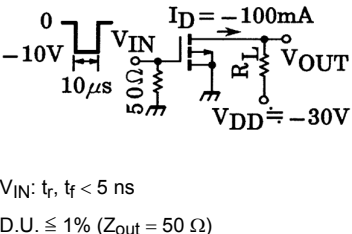


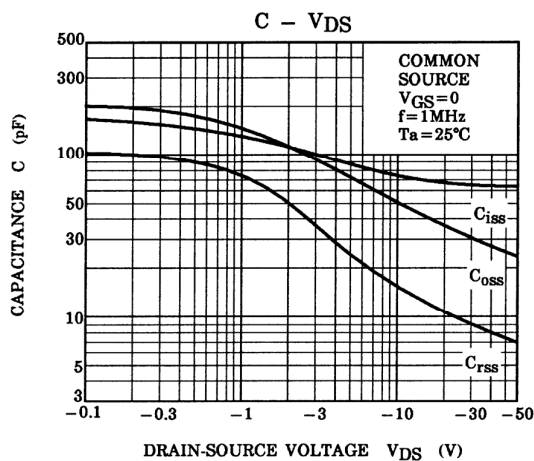
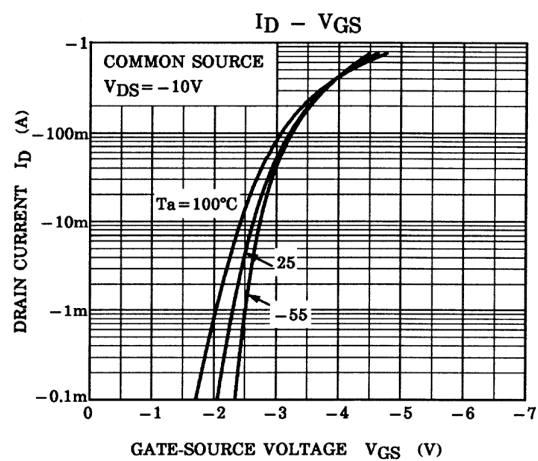
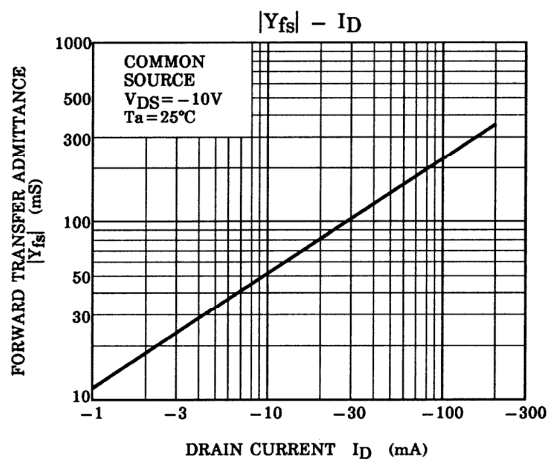
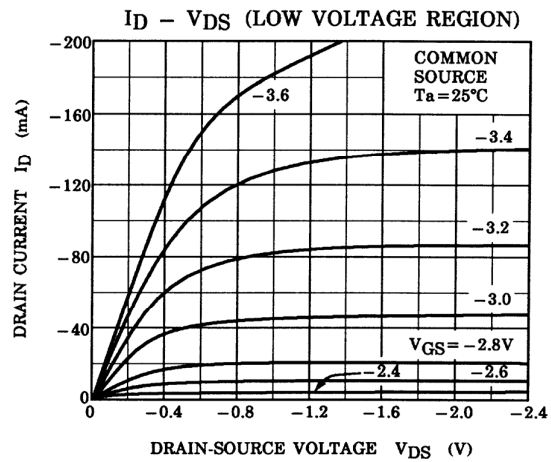
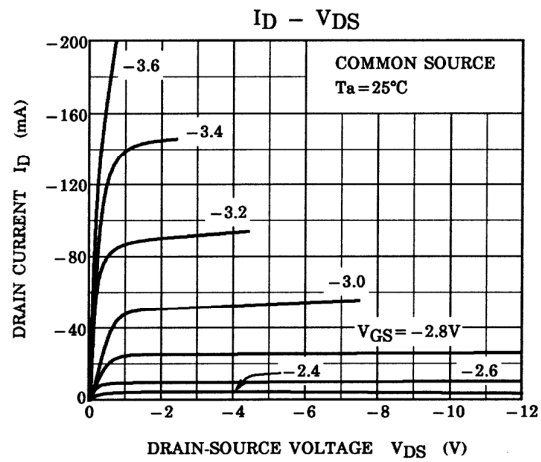
Unit: mm

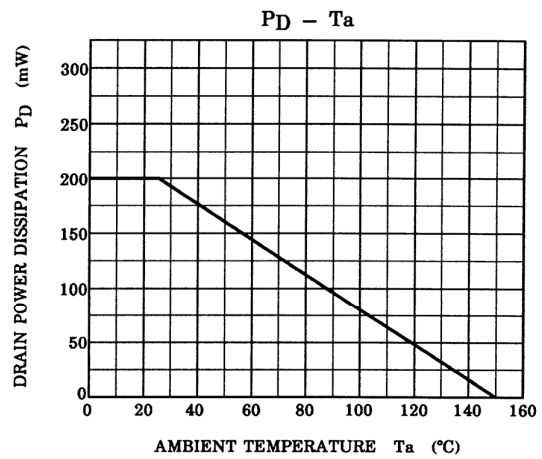
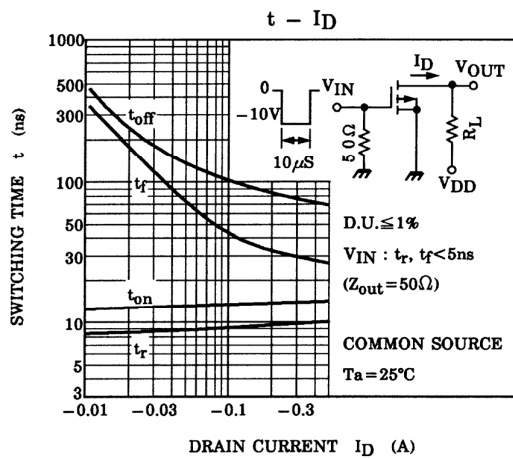
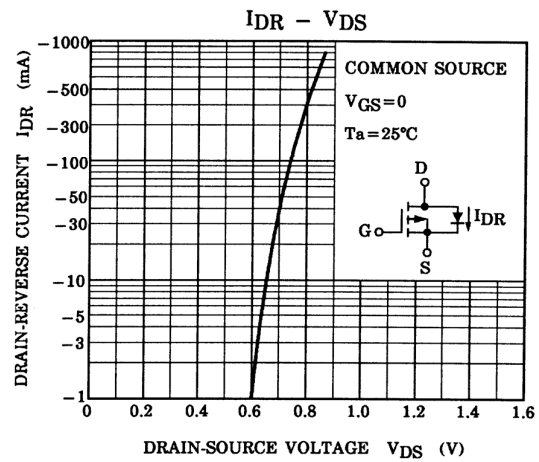
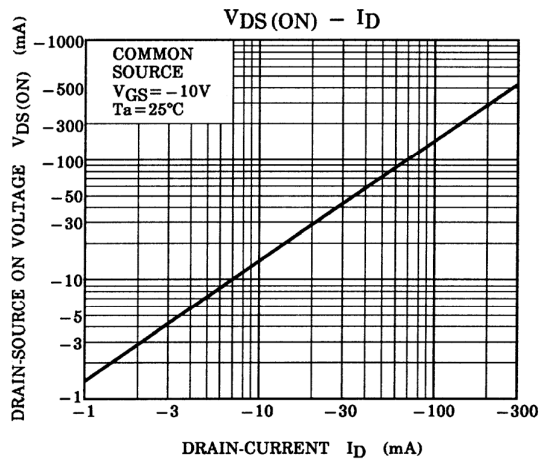


Weight: 0.012 g (typ.)

Electrical Characteristics (Ta = 25°C)

| Characteristics | | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------|---------------|---------------|--|-----|------|-----------|---------------|
| Gate leakage current | | I_{GSS} | $V_{GS} = \pm 10 \text{ V}, V_{DS} = 0$ | — | — | ± 100 | nA |
| Drain cut-off current | | I_{DSS} | $V_{DS} = -60 \text{ V}, V_{GS} = 0$ | — | — | -10 | μA |
| Drain-source breakdown voltage | | $V_{(BR)DSS}$ | $I_D = -1 \text{ mA}, V_{GS} = 0$ | -60 | — | — | V |
| Gate threshold voltage | | V_{th} | $V_{DS} = -10 \text{ V}, I_D = -1 \text{ mA}$ | -2 | — | -3.5 | V |
| Forward transfer admittance | | $ Y_{fs} $ | $V_{DS} = -10 \text{ V}, I_D = -50 \text{ mA}$ | 100 | — | — | mS |
| Drain-source ON resistance | | $R_{DS(ON)}$ | $I_D = -50 \text{ mA}, V_{GS} = -10 \text{ V}$ | — | 1.3 | 2.0 | Ω |
| Drain-source ON voltage | | $V_{DS(ON)}$ | $I_D = -50 \text{ mA}, V_{GS} = -10 \text{ V}$ | — | -65 | -100 | mV |
| Input capacitance | | C_{iss} | $V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$ | — | 73 | 85 | pF |
| Reverse transfer capacitance | | C_{rss} | $V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$ | — | 15 | 22 | pF |
| Output capacitance | | C_{oss} | $V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$ | — | 48 | 60 | pF |
| Switching time | Rise time | t_r |  | — | 8 | — | ns |
| | Turn-on time | t_{on} | | — | 14 | — | |
| | Fall time | t_f | | — | 35 | — | |
| | Turn-off Time | t_{off} | | — | 100 | — | |





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20070701-EN GENERAL

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