



SEMICONDUCTOR

TECHNICAL DATA

TOSHIBA FIELD EFFECT TRANSISTOR
2SK442
 SILICON N CHANNEL MOS TYPE

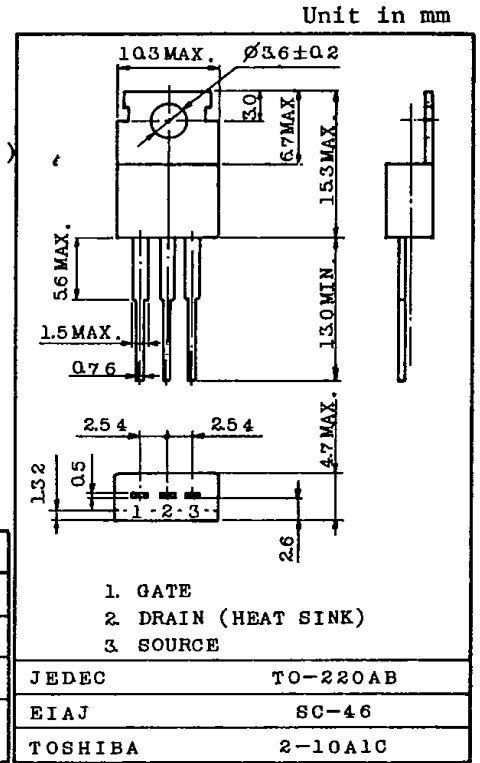
HIGH SPEED SWITCHING APPLICATION.
 DC-DC CONVERTER APPLICATION.

FEATURES:

- Low Drain-Source Saturation Voltage : $V_{DS(ON)}=1.4V(Typ.)$
- High Forward Transfer Admittance : $|Y_{fs}|=1.9S(Typ.)$
- Complementary to 2SJ123.

MAXIMUM RATINGS (Ta=25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|--------------------------------------|-----------|-----------|------|
| Drain-Source Voltage | V_{DSS} | 70 | V |
| Gate-Source Voltage | V_{GSS} | ±20 | V |
| Drain Current | I_D | 10 | A |
| Drain Power Dissipation (Tc=25°C) | P_D | 30 | W |
| Channel Temperature | T_{ch} | 150 | °C |
| Storage Temperature Range | T_{stg} | -55 ~ 150 | °C |



Weight : 1.9g

ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------------------|---------------|--------------------------------|------|------|------|------|
| Gate Leakage Current | I_{GSS} | $V_{DS}=0, V_{GS}=\pm 20V$ | - | - | ±1.0 | μA |
| Drain Cut-off Current | I_{DSS} | $V_{DS}=70V, V_{GS}=0$ | - | - | 1.0 | mA |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D=1mA, V_{GS}=0$ | 70 | - | - | V |
| Gate-Source Cut-off Voltage | $V_{GS(OFF)}$ | $V_{DS}=5V, I_D=1mA$ | 1.0 | - | 3.0 | V |
| Drain-Source Saturation Voltage | $V_{DS(ON)}$ | $I_D=7A, V_{GS}=15V$ | - | 1.4 | 2.8 | V |
| Forward Transfer Admittance | $ Y_{fs} $ | $V_{DS}=5V, I_D=2A$ | 1.0 | 1.9 | - | S |
| Input Capacitance | C_{iss} | $V_{DS}=10V, V_{GS}=0, f=1MHz$ | - | 330 | - | pF |
| Output Capacitance | C_{oss} | $V_{DS}=10V, V_{GS}=0, f=1MHz$ | - | 300 | - | pF |
| Reverse Transfer Capacitance | C_{rs} | $V_{DS}=10V, V_{GS}=0, f=1MHz$ | - | 130 | - | pF |

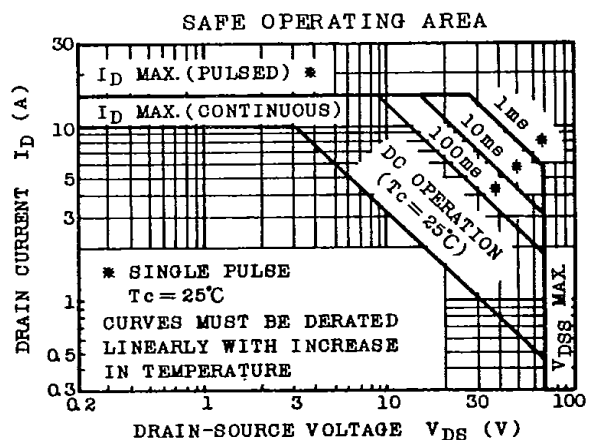
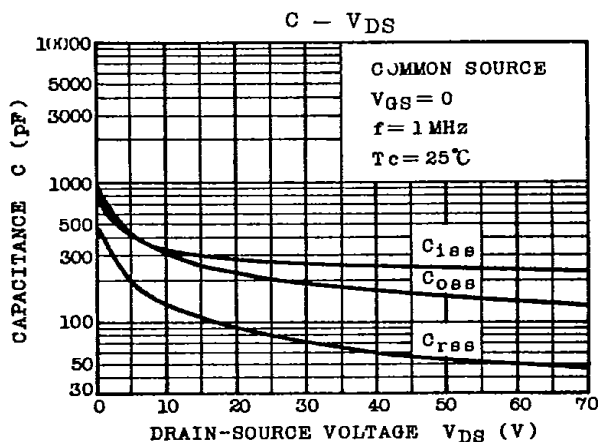
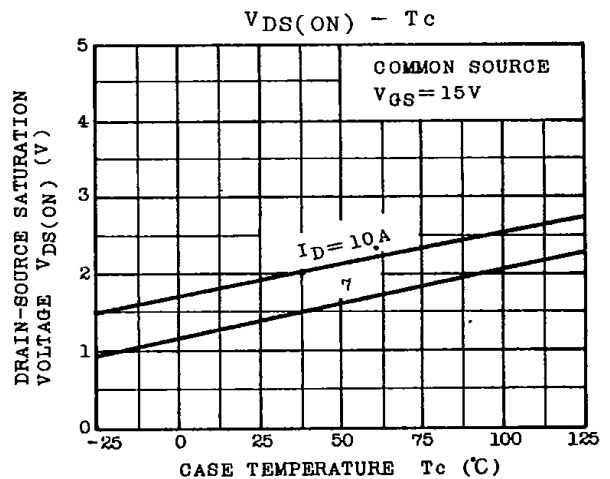
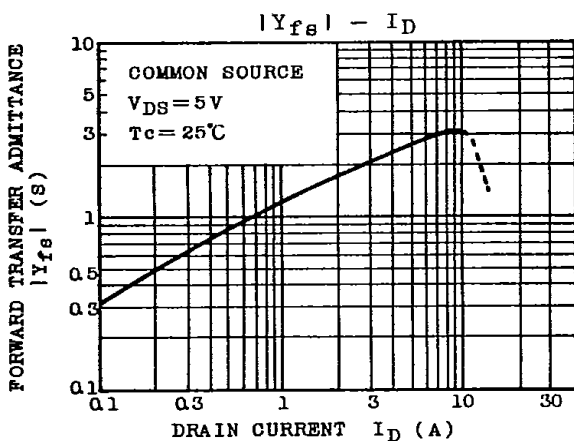
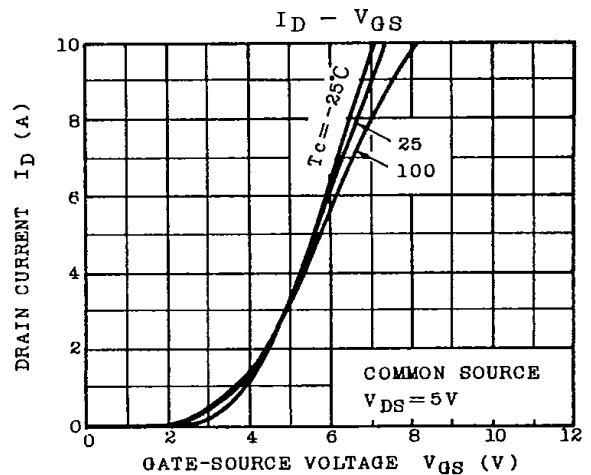
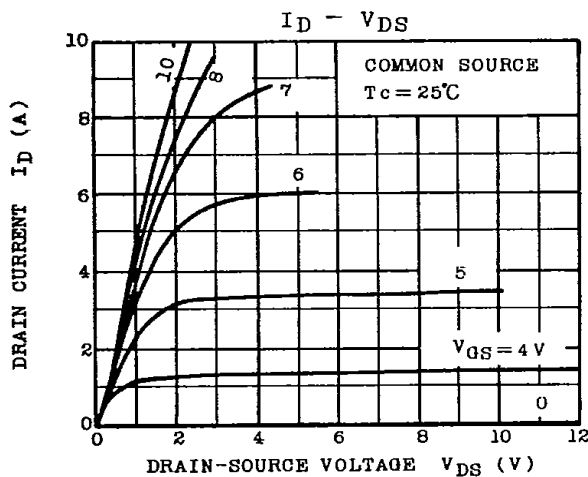
TOSHIBA CORPORATION



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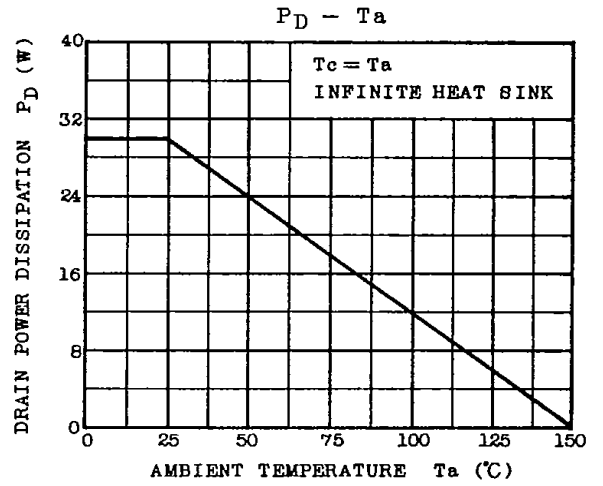
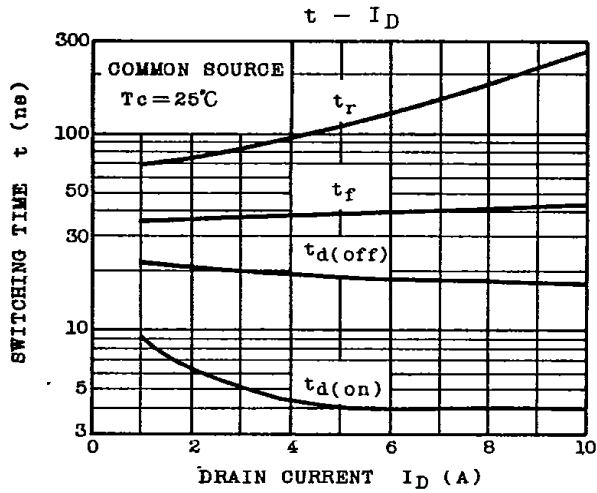
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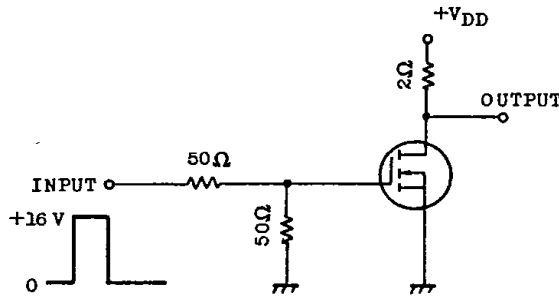
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SWITCHING TIME TEST CIRCUIT



RESPONSE WAVE FORM

