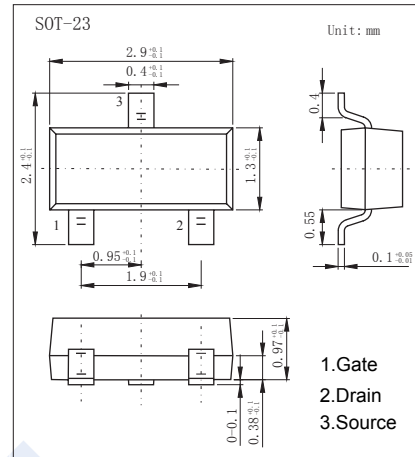
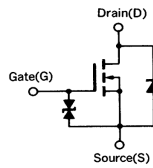


## N-Channel MOSFET

### 2SK1133

#### ■ Features

- $V_{DS} (V) = 50V$
- $I_D = 100\text{ mA}$
- $R_{DS(ON)} < 50\ \Omega$  ( $V_{GS} = 4V$ )
- Compliments the 2SJ166



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                     | Symbol    | Rating     | Unit             |
|-------------------------------|-----------|------------|------------------|
| Drain-Source Voltage          | $V_{DS}$  | 50         | V                |
| Gate-Source Voltage           | $V_{GS}$  | $\pm 7$    |                  |
| Continuous Drain Current      | $I_D$     | 100        | mA               |
| Pulsed Drain Current (Note.1) | $I_{DM}$  | 200        |                  |
| Power Dissipation             | $P_D$     | 200        | mW               |
| Junction Temperature          | $T_J$     | 150        | $^\circ\text{C}$ |
| Channel Temperature           | $T_{ch}$  | 150        |                  |
| Storage Temperature Range     | $T_{stg}$ | -55 to 150 |                  |

Note.1:  $PW \leq 10\text{ms}$ , Duty Cycle  $\leq 50\%$

#### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter                         | Symbol        | Test Conditions   | Min | Typ | Max      | Unit          |
|-----------------------------------|---------------|---|-----|-----|----------|---------------|
| Drain-Source Breakdown Voltage    | $V_{DSS}$     | $I_D = 250\ \mu\text{A}$ , $V_{GS} = 0V$  | 50  |     |          | V             |
| Zero Gate Voltage Drain Current   | $I_{DSS}$     | $V_{DS} = 50V$ , $V_{GS} = 0V$  |     |     | 10       | $\mu\text{A}$ |
| Gate-Body Leakage Current         | $I_{GSS}$     | $V_{DS} = 0V$ , $V_{GS} = \pm 7V$   |     |     | $\pm 10$ | $\mu\text{A}$ |
| Gate Cut-off Voltage              | $V_{GS(off)}$ | $V_{DS} = 5V$ , $I_D = 1\ \mu\text{A}$  | 1   |     | 2        | V             |
| Static Drain-Source On-Resistance | $R_{DS(on)}$  | $V_{GS} = 4V$ , $I_D = 20\text{mA}$   |     |     | 50       | $\Omega$      |
| Forward Transconductance          | $g_{FS}$      | $V_{DS} = 5V$ , $I_D = 20\text{mA}$   | 20  | 40  |          | ms            |
| Input Capacitance                 | $C_{iss}$     | $V_{GS} = 0V$ , $V_{DS} = 5V$ , $f = 1\text{MHz}$   |     | 7   |          | pF            |
| Output Capacitance                | $C_{oss}$     |   |     | 6   |          |               |
| Reverse Transfer Capacitance      | $C_{rss}$     |   |     | 2   |          |               |
| Turn-On DelayTime                 | $t_{d(on)}$   | $V_{GS} = 5V$ , $V_{DS} = 5V$ , $I_D = 20\text{mA}$ ,<br>$R_L = 250\ \Omega$ , $R_G = 10\ \Omega$ |     | 6   |          | ns            |
| Turn-On Rise Time                 | $t_r$         |   |     | 25  |          |               |
| Turn-Off DelayTime                | $t_{d(off)}$  |   |     | 36  |          |               |
| Turn-Off Fall Time                | $t_f$         |   |     | 35  |          |               |

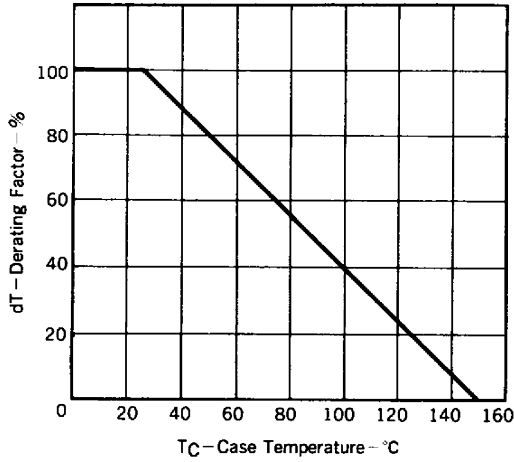
#### ■ Marking

|         |     |
|---------|-----|
| Marking | G11 |
|---------|-----|

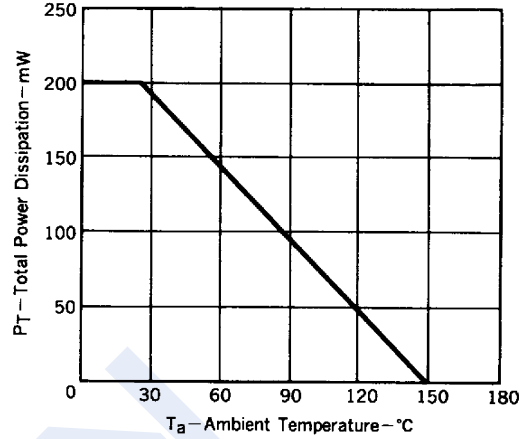
## N-Channel MOSFET 2SK1133

■ Typical Characteristics

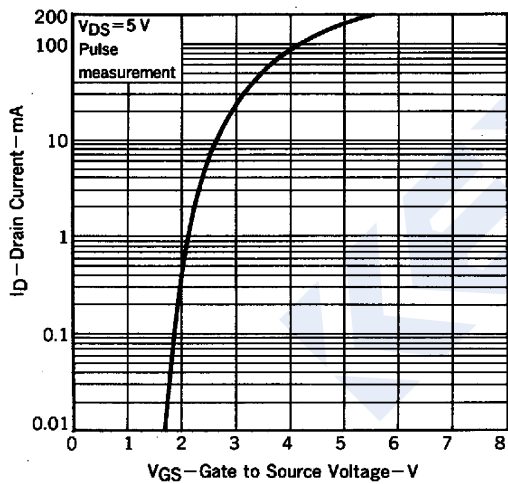
DERATING FACTOR OF FORWARD BIAS  
SAFE OPERATING AREA



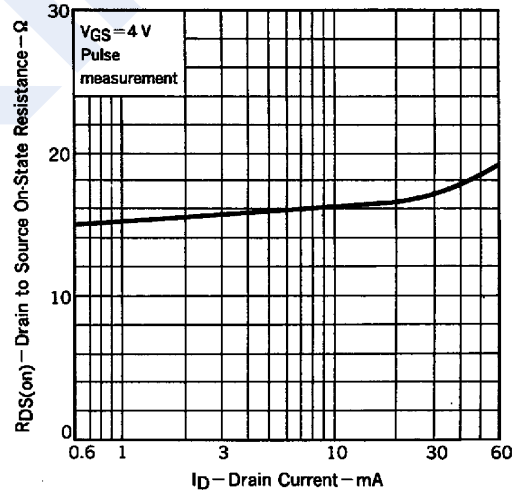
TOTAL POWER DISSIPATION vs.  
AMBIENT TEMPERATURE



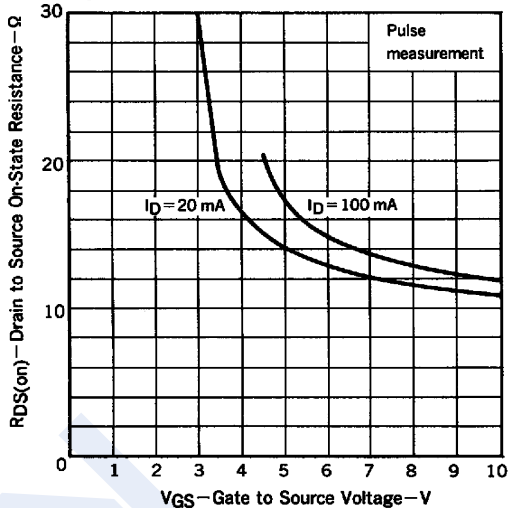
TRANSFER CHARACTERISTICS



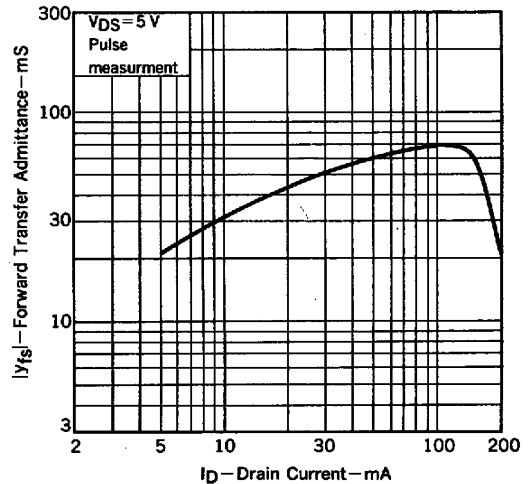
DRAIN TO SOURCE ON-STATE RESISTANCE  
vs. DRAIN CURRENT



DRAIN TO SOURCE ON-STATE RESISTANCE  
vs. GATE TO SOURCE VOLTAGE



FORWARD TRANSFER ADMITTANCE  
vs. DRAIN CURRENT



## N-Channel MOSFET

### 2SK1133

#### Typical Characteristics

