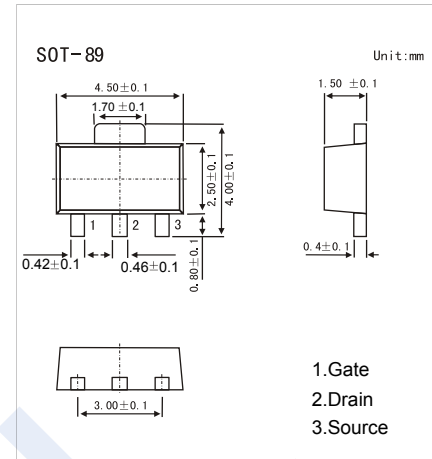
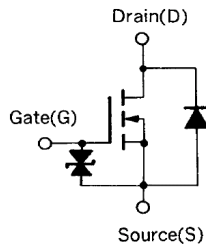


## N-Channel MOSFET

### 2SK1587-HF

#### ■ Features

- $V_{DS} (V) = 16V$
- $I_D = 2 A$
- $R_{DS(ON)} < 0.5 \Omega$  ( $V_{GS} = 4V$ )
- $R_{DS(ON)} < 0.8 \Omega$  ( $V_{GS} = 2.5V$ )
- Pb-Free Package May be Available.  
The G-Suffix Denotes a Pb-Free Lead Finish



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

| Parameter                     | Symbol    | Rating     | Unit       |
|-------------------------------|-----------|------------|------------|
| Drain-Source Voltage          | $V_{DS}$  | 16         | V          |
| Gate-Source Voltage           | $V_{GS}$  | $\pm 16$   |            |
| Continuous Drain Current      | $I_D$     | 2          | A          |
| Pulsed Drain Current (Note.1) | $I_{DM}$  | 4          |            |
| Power Dissipation             | $P_D$     | 2          | W          |
| Junction Temperature          | $T_J$     | 150        | $^\circ C$ |
| Storage Temperature Range     | $T_{stg}$ | -55 to 150 |            |

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

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

| Parameter                         | Symbol        | Test Conditions  | Min | Typ | Max     | Unit     |
|-----------------------------------|---------------|--|-----|-----|---------|----------|
| Drain-Source Breakdown Voltage    | $V_{DSS}$     | $I_D=250 \mu A$ , $V_{GS}=0V$  | 16  |     |         | V        |
| Zero Gate Voltage Drain Current   | $I_{DSS}$     | $V_{DS}=16V$ , $V_{GS}=0V$   |     |     | 1       | $\mu A$  |
| Gate-Body Leakage Current         | $I_{GSS}$     | $V_{DS}=0V$ , $V_{GS}=\pm 16V$   |     |     | $\pm 5$ | $\mu A$  |
| Gate Cutt-off Voltage             | $V_{GS(off)}$ | $V_{DS}=10V$ , $I_D=1mA$   | 0.8 |     | 1.6     | V        |
| Static Drain-Source On-Resistance | $R_{DS(on)}$  | $V_{GS}=4V$ , $I_D=1A$   |     |     | 0.5     | $\Omega$ |
|                                   |               | $V_{GS}=2.5V$ , $I_D=0.5A$   |     |     | 0.8     |          |
| Forward Transconductance          | $g_{FS}$      | $V_{DS}=5V$ , $I_D=1A$   | 0.4 |     |         | S        |
| Input Capacitance                 | $C_{iss}$     | $V_{GS}=0V$ , $V_{DS}=5V$ , $f=1MHz$   |     | 180 |         | pF       |
| Output Capacitance                | $C_{oss}$     |  |     | 160 |         |          |
| Reverse Transfer Capacitance      | $C_{rss}$     |  |     | 55  |         |          |
| Turn-On DelayTime                 | $t_{d(on)}$   | $V_{GS(on)}=3V$ , $V_{DS}=10V$ ,<br>$I_D=1A$ , $R_L=10 \Omega$ , $R_G=10 \Omega$ |     | 100 |         | ns       |
| Turn-On Rise Time                 | $t_r$         |  |     | 700 |         |          |
| Turn-Off DelayTime                | $t_{d(off)}$  |  |     | 150 |         |          |
| Turn-Off Fall Time                | $t_f$         |  |     | 200 |         |          |

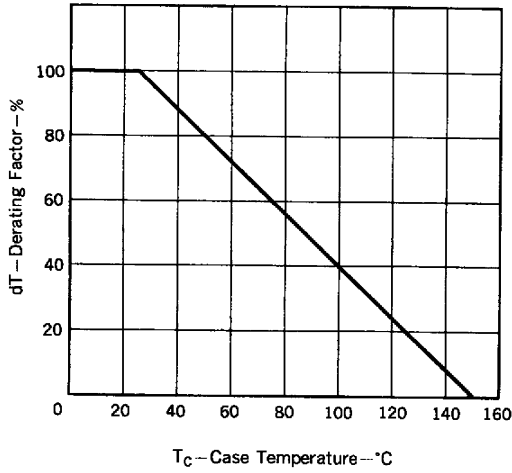
#### ■ Marking

|         |      |
|---------|------|
| Marking | NF F |
|---------|------|

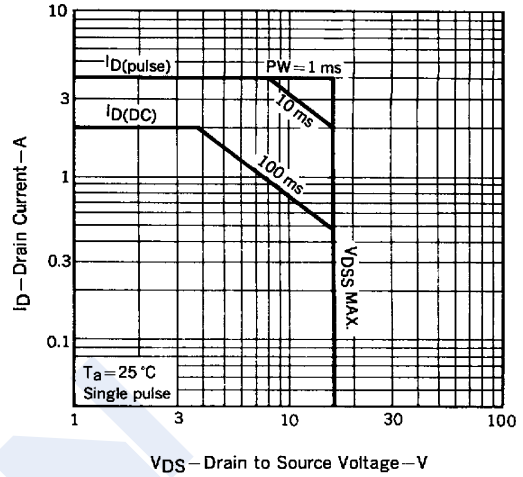
## N-Channel MOSFET 2SK1587-HF

■ Typical Characteristics

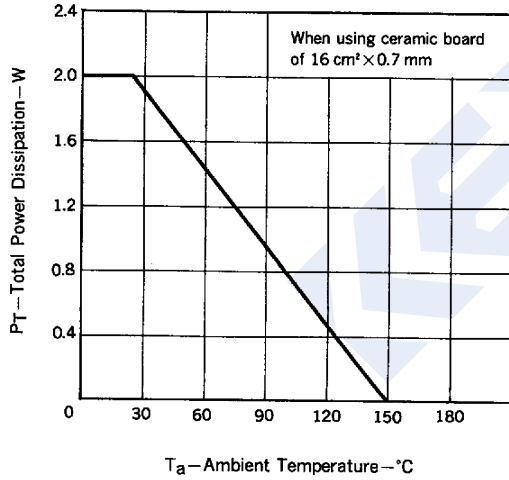
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



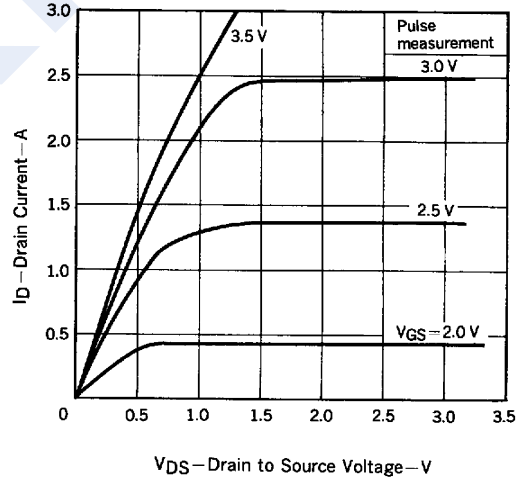
FORWARD BIAS SAFE OPERATING AREA



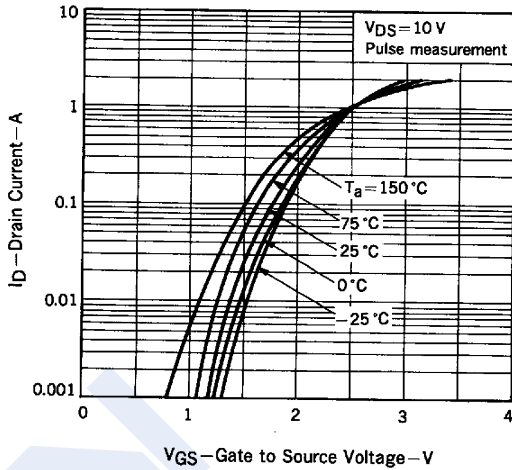
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



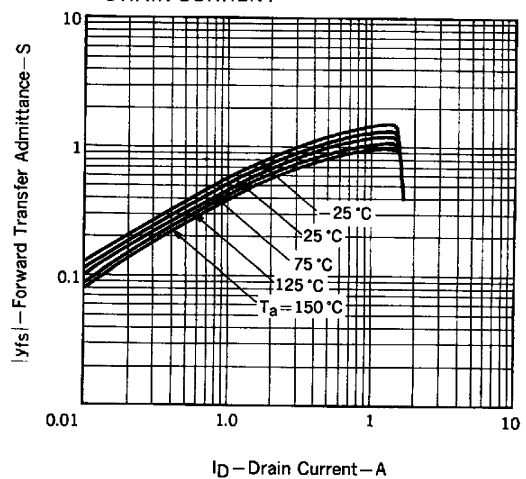
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



TRANSFER CHARACTERISTICS



FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



## N-Channel MOSFET 2SK1587-HF

■ Typical Characteristics

