



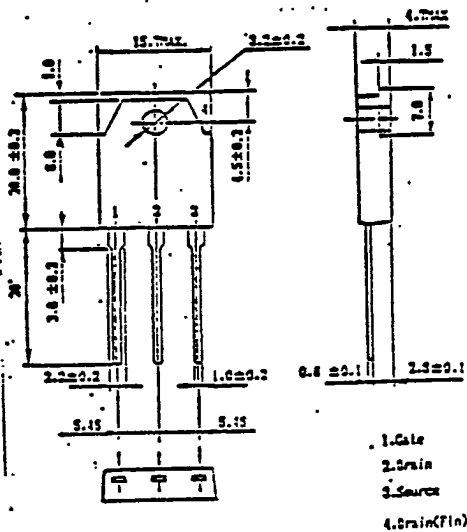
PRELIMINARY SPECIFICATION

MOS FIELD EFFECT TRANSISTOR

2SK819

**FAST SWITCHING
N-CHANNEL SILICON POWER MOS FET**

PACKAGE DIMENSIONS (mm)



Features

Suitable for switching power supplies, actuator controls and pulse circuits
Low RDS(on)

Absolute Maximum Ratings (Ta=25°C)

| | | |
|--------------------------|-------------|--------------|
| Drain to Source Voltage | VDS | 500V |
| Gate to Source Voltage | VGS | ± 20V |
| Continuous Drain Current | ID(DC) | ± 10A |
| Pulse Drain Current | ID(pulse) * | ± 30A |
| Total Power Dissipation | PT | 3.0W |
| Total Power Dissipation | PT** | 100W |
| Channel Temperature | Tch | 150 °C |
| Storage Temperature | Tstg | -55to+150 °C |

* PW ≤ 100 us, Duty Cycle ≤ 2%
** Tc=25 °C

Electrical Characteristics (Ta=25 °C)

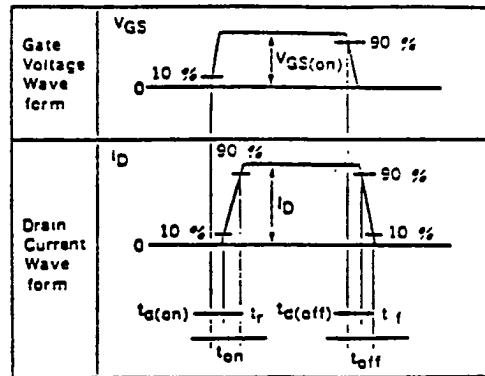
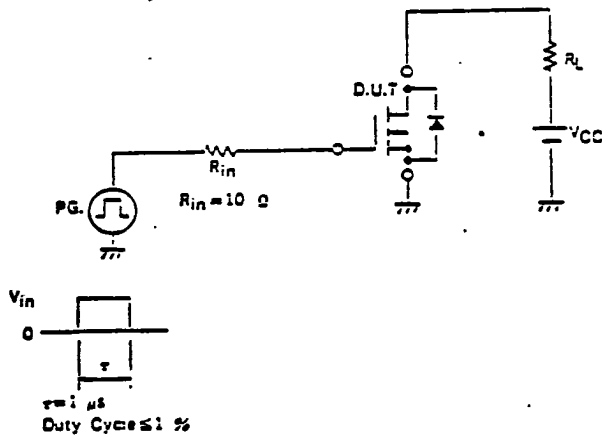
| Characteristics | Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|-------------------------------------|----------|------|------|------|------|-------------------|
| Drain Leakage Current | IDSS | | | 100 | μA | VDS=500V, VGS=0 |
| Gate to Source Leakage Current | IGSS | | | ±100 | nA | VGS=±20V, VDS=0 |
| Gate to Source Cutoff Voltage | VGS(off) | 1.5 | | 3.5 | V | VDS=10V, ID=1.0mA |
| Forward Transfer Admittance | yfs | 3.0 | | | S | VDS=10V, ID=5.0A |
| Drain to Source On-State Resistance | RDS(on) | | 0.70 | 1.0 | Ω | VGS=10V, ID=5.0A |
| Input Capacitance | Ciss | | 1270 | | pF | VDS= 10V, VGS=0. |
| Output Capacitance | Coss | | 320 | | pF | |
| Reverse Transfer Capacitance | Crss | | 70 | | pF | f=1.0MHz |
| Turn-On Delay Time | td(on) | | 15 | | ns | ID=5.0A, |
| Rise Time | tr | | 20 | | ns | VGS(on)= 10V, |
| Turn-Off Delay Time | td(off) | | 60 | | ns | Vcc=150V, |
| Fall Time | tf | | 30 | | ns | RL= 30 Ω |

NEC cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement.

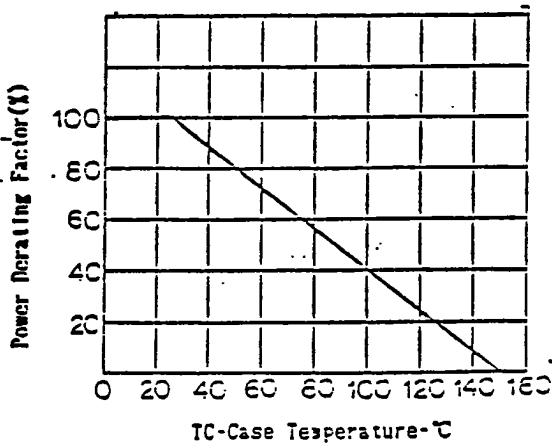
NEC Corporation

6427525 N E C ELECTRONICS INC
TURN-ON AND TURN-OFF TIME TEST CIRCUIT

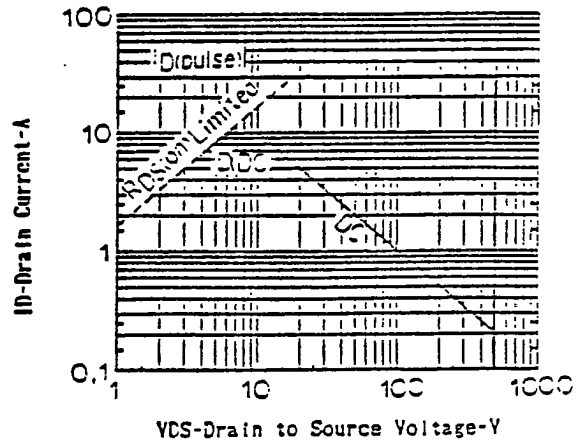
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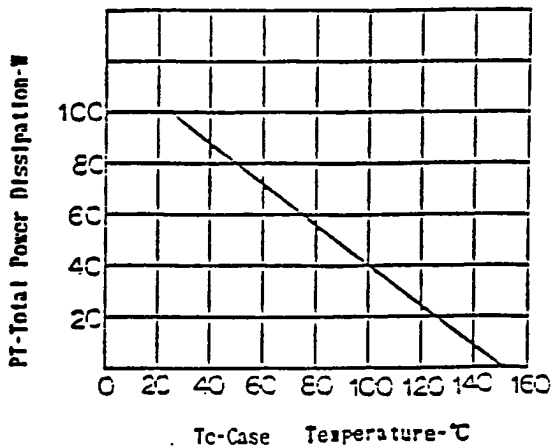
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



FORWARD BIAS SAFE OPERATING AREA



TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

