

N-CHANNEL MOS FIELD EFFECT POWER TRANSISTOR

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2SK800

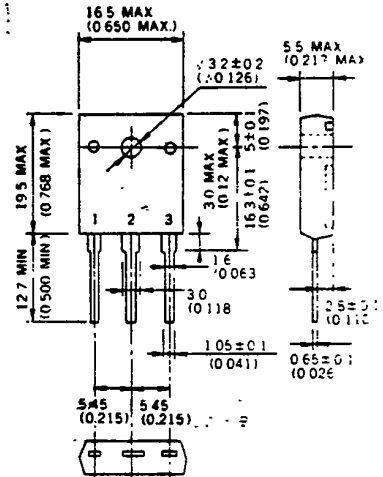
DESCRIPTION The 2SK800 is N-channel MOS Field Effect Power Transistor designed for converters.

FEATURES

- Suitable for switching power supplies, actuator controls, and pulse circuits
- Low $R_{DS(on)}$
- No second breakdown

ABSOLUTE MAXIMUM RATINGS**Maximum Temperatures**Storage Temperature -55 to $+150$ °CChannel Temperature 150 °C Maximum**Maximum Power Dissipation ($T_C = 25$ °C)**

Total Power Dissipation 120 W

Maximum Voltages and Currents ($T_a = 25$ °C) V_{DSS} Drain to Source Voltage 450 V V_{GSS} Gate to Source Voltage ± 20 V $I_{D(DC)}$ Drain Current (DC) ± 18 A $I_{D(pulse)}$ Drain Current (pulse)* ± 60 A* $PW \leq 100 \mu s$, Duty Cycle $\leq 2\%$ **PACKAGE DIMENSIONS**
in millimeters (inches)

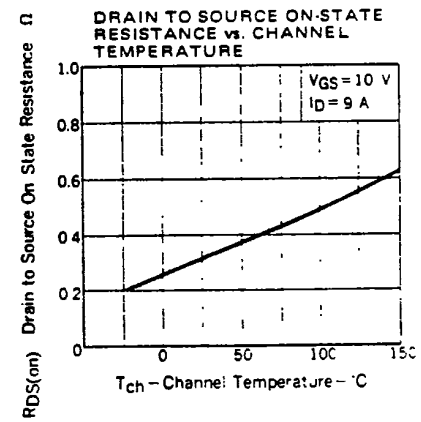
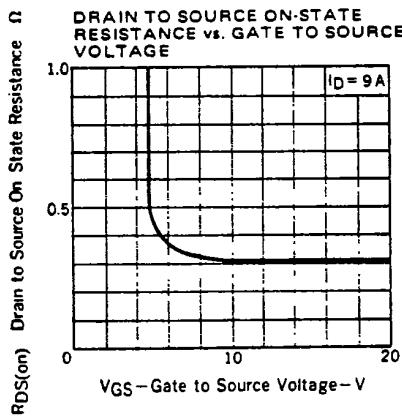
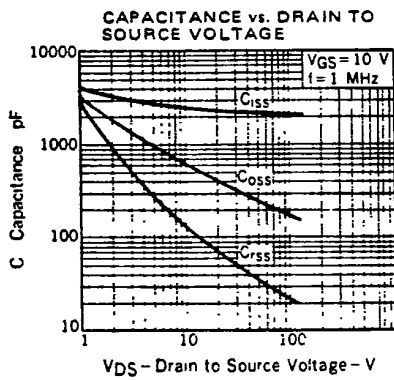
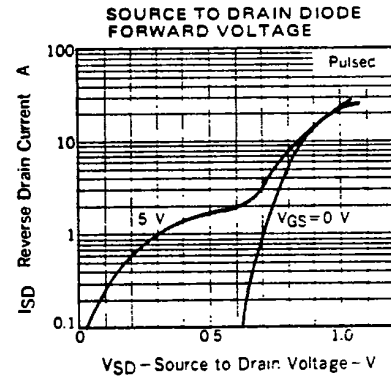
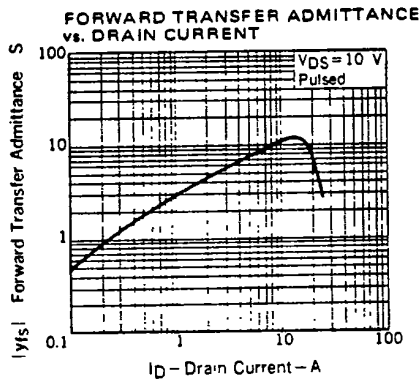
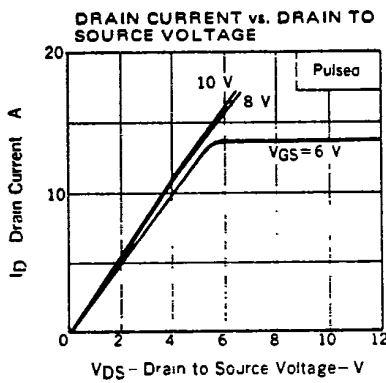
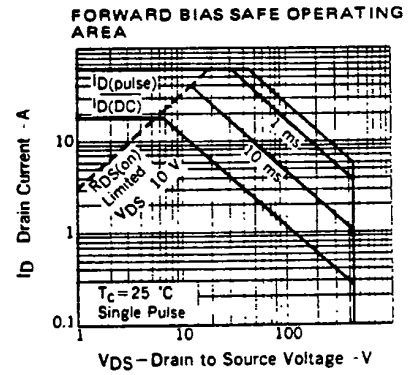
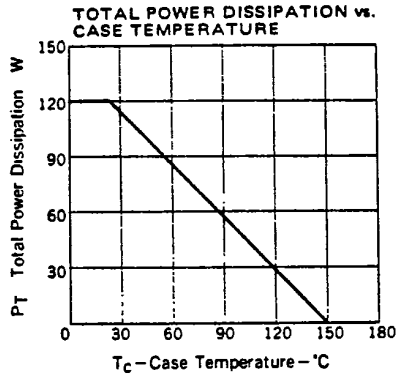
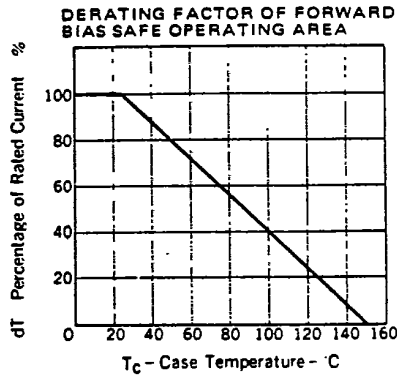
1. Gate
2. Drain (Fin)
3. Source

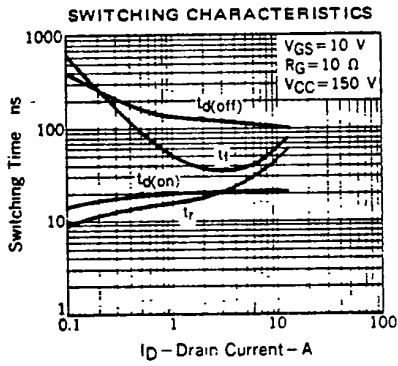
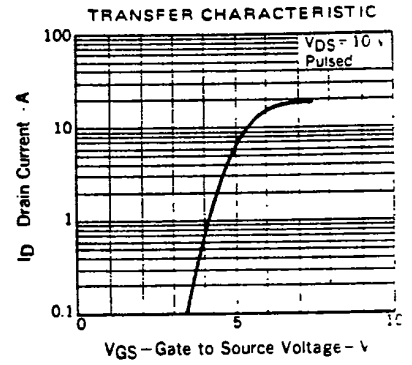
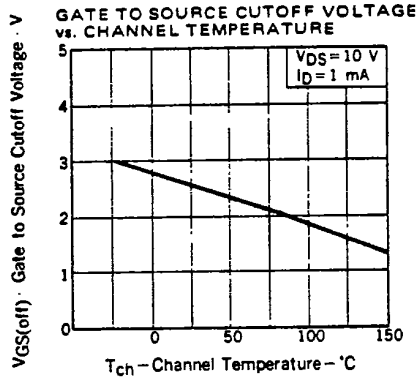
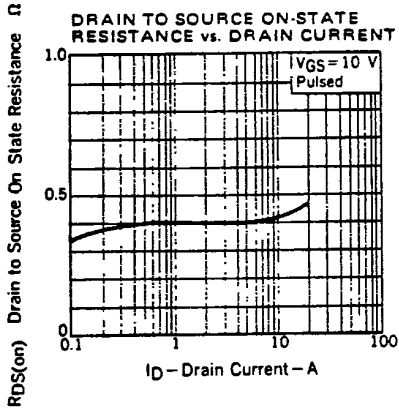
ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

| SYMBOL | CHARACTERISTIC | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS |
|---------------|-------------------------------------|------|------|-----------|----------|--|
| I_{DSS} | Drain Leakage Current | | | 100 | μA | $V_{DS} = 450 V, V_{GS} = 0$ |
| I_{GSS} | Gate to Source Leakage Current | | | ± 100 | nA | $V_{GS} = \pm 20 V, V_{DS} = 0$ |
| $V_{GS(off)}$ | Gate to Source Cutoff Voltage | 1.5 | | 3.5 | V | $V_{DS} = 10 V, I_D = 1 mA$ |
| $ y_{fs} $ | Forward Transfer Admittance | 8.0 | | | S | $V_{DS} = 10 V, I_D = 9 A$ |
| $R_{DS(on)}$ | Drain to Source On-State Resistance | | 0.32 | 0.38 | Ω | $V_{GS} = 10 V, I_D = 9 A$ |
| C_{iss} | Input Capacitance | | 2600 | | pF | |
| C_{oss} | Output Capacitance | | 610 | | pF | $V_{DS} = 10 V, V_{GS} = 0, f = 1 MHz$ |
| C_{rss} | Reverse Transfer Capacitance | | 140 | | pF | |
| $t_{d(on)}$ | Turn-On Delay Time | | 20 | | ns | |
| t_r | Rise Time | | 40 | | ns | $I_D = 9 A, V_{CC} = 150 V$ |
| $t_{d(off)}$ | Turn-Off Delay Time | | 120 | | ns | $V_{GS(on)} = 10 V$ |
| t_f | Fall Time | | 55 | | ns | $R_{in} = 10 \Omega$ |

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TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)





SWITCHING TIME TEST CIRCUIT

