



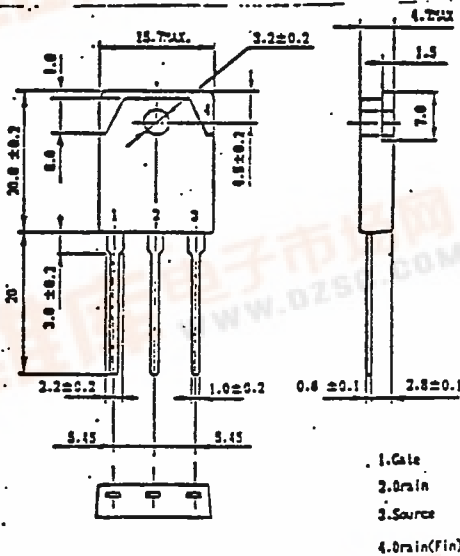
PRELIMINARY SPECIFICATION

MOS FIELD EFFECT POWER TRANSISTOR

2SK787

FAST SWITCHING
N-CHANNEL SILICON POWER MOS FET

PACKAGE DIMENSIONS (Unit:mm)



FEATURES

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

ABSOLUTE MAXIMUM RATINGS

Drain to Source Voltage	V_{DS}	900V
Gate to Source Voltage	V_{GS}	$\pm 20V$
Continuous Drain Current	$I_D(DC)$	$\pm 8A$
Peak Drain Current	$I_D(pulse)*$	$\pm 32A$
Total Power Dissipation	P_T	120W
at $T_c=25^\circ C$		
Total Power Dissipation	P_T	3.0W
at $T_a=25^\circ C$		
Channel Temperature	T_{ch}	150 °C
Storage Temperature	T_{stg}	-55 to 150 °C

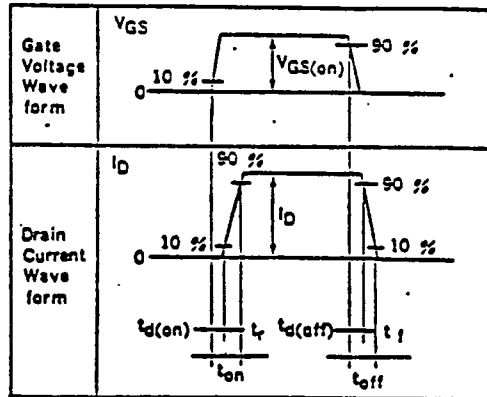
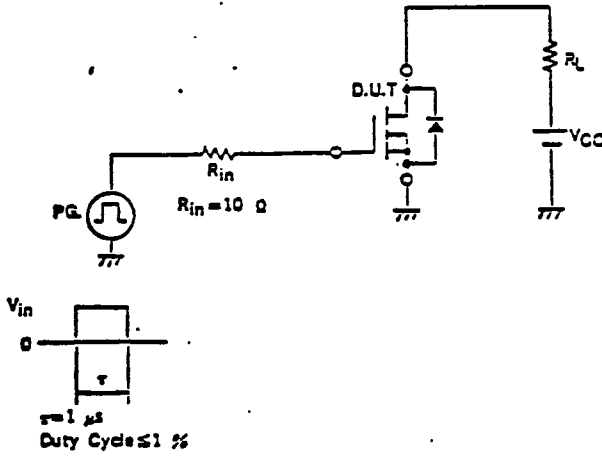
* Pulsed/ $PW \leq 100 \mu s$, Duty Cycle $\leq 2\%$

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

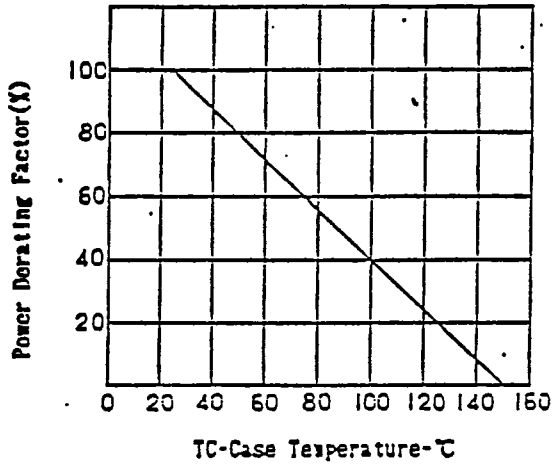
CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain Leakage Current	I_{DSS}			100	μA	$V_{DS}=900V, V_{GS}=0$
Gate to Source Leakage Current	I_{GSS}			100	n A	$V_{GS}=20V, V_{DS}=0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	1.5		3.5	V	$V_{DS}=10V, I_D=1mA$
Forward Transfer Admittance	yfs	1.0			S	$V_{DS}=10V, I_D=5A$
Drain to Source On-State Resistance	$R_{DS(on)}$		1.20	1.60		$V_{GS}=10V, I_D=4A$
Input Capacitance	C_{iss}		2400		p F	$V_{DS}=10V$
Output Capacitance	C_{oss}		350		p F	$V_{GS}=0$
Reverse Transfer Capacitance	C_{rss}		200		p F	$f=1MHz$
Turn-On Delay Time	$t_d(on)$		70		n s	$I_D=4A$
Rise Time	t_r		80		n s	$V_{GS(on)}=10V$
Turn-Off Delay Time	$t_d(off)$		100		n s	$V_{CC}=150V$
Fall Time	t_f		80		n s	$R_{in}=10\Omega$



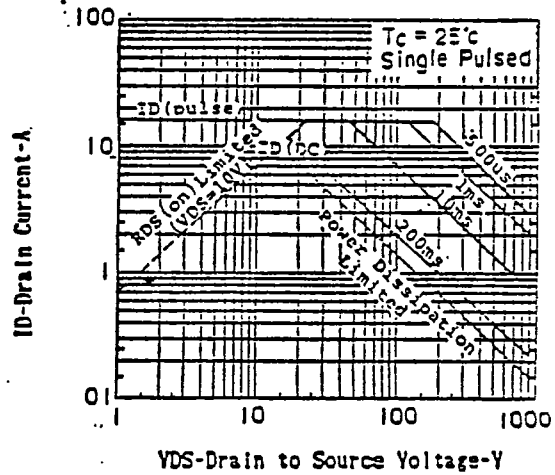
TURN-ON AND TURN-OFF TIME TEST CIRCUIT



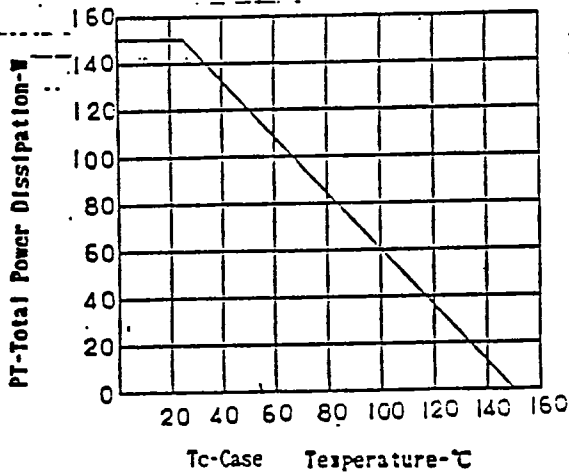
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



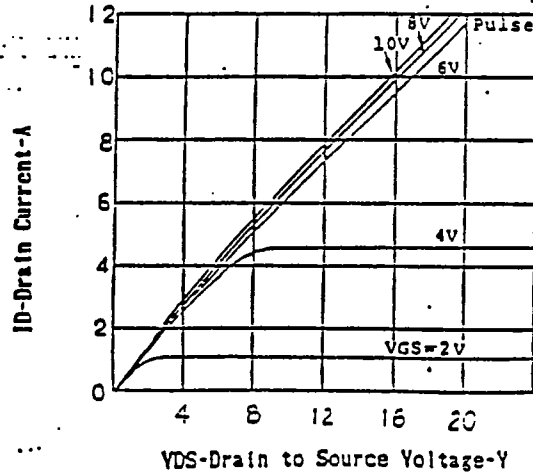
FORWARD BIAS SAFE OPERATING AREA



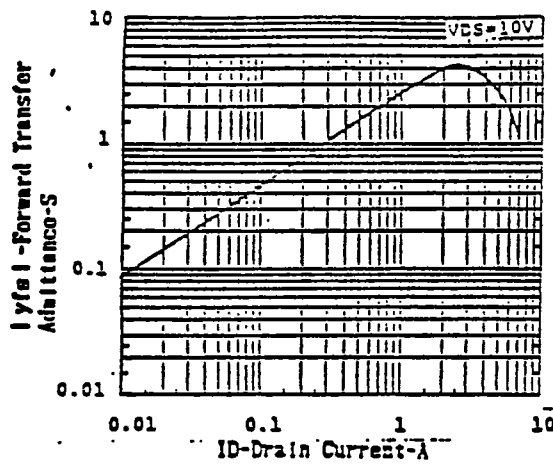
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



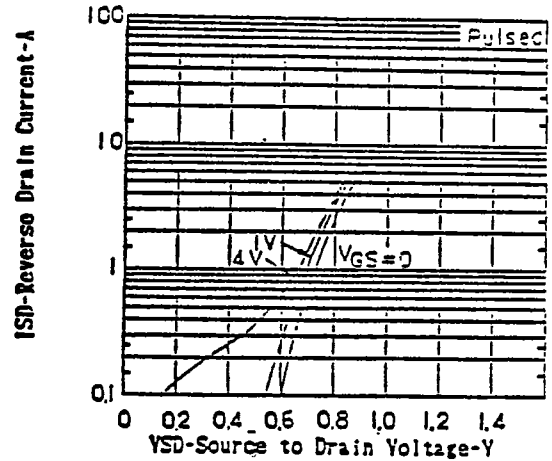
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



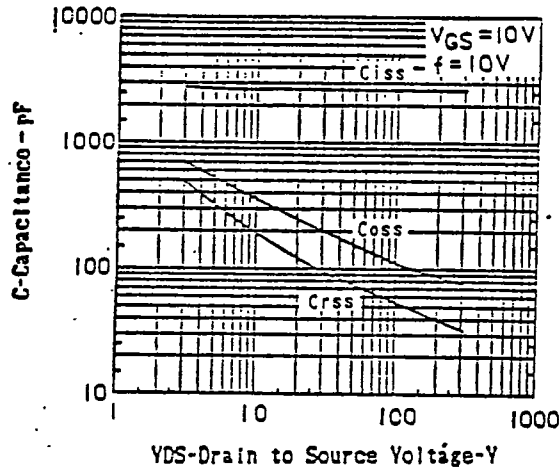
FORWARD TRANSFER ADMITTANCE
vs. DRAIN CURRENT



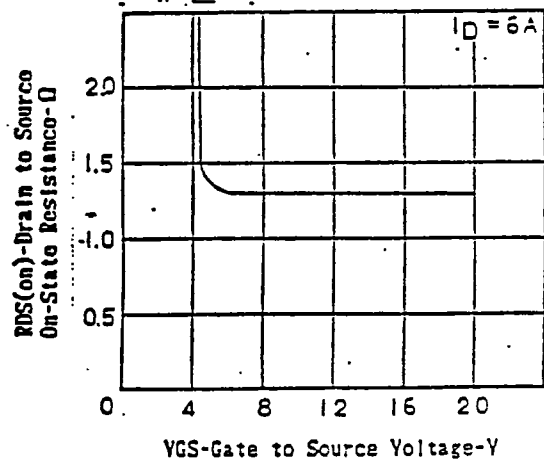
SOURCE TO DRAIN DIODE
FORWARD VOLTAGE



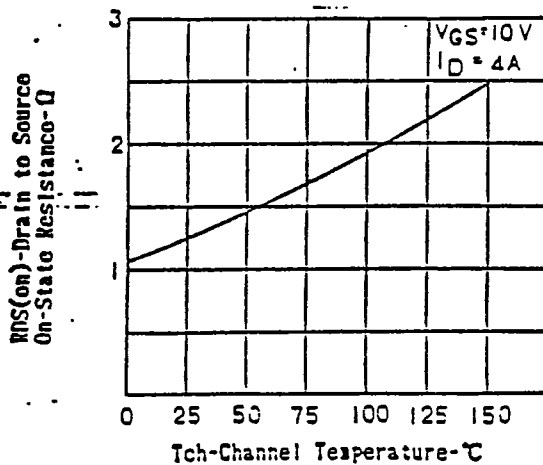
CAPACITANCE vs. DRAIN TO
SOURCE VOLTAGE



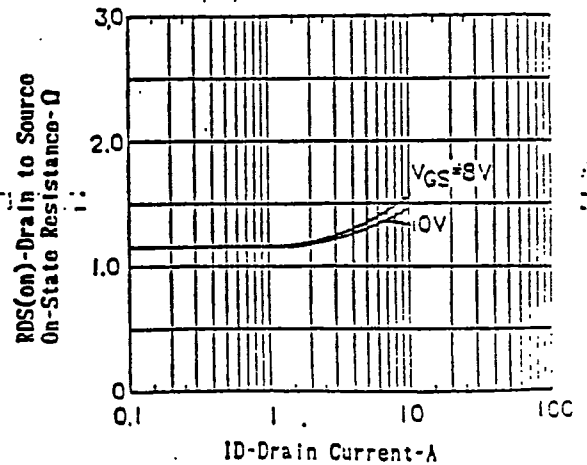
DRAIN TO SOURCE ON-STATE RESISTANCE
vs. GATE TO SOURCE VOLTAGE



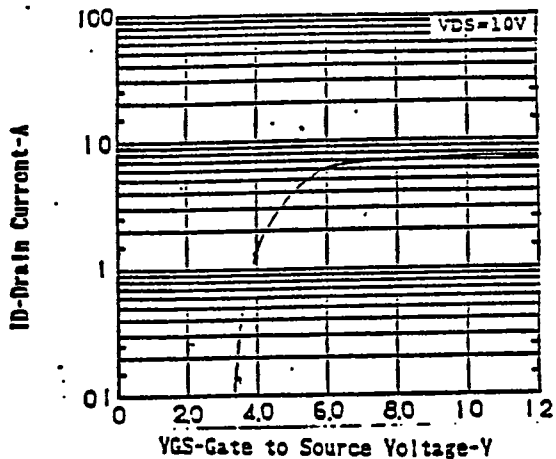
DRAIN TO SOURCE ON-STATE RESISTANCE
vs. CHANNEL TEMPERATURE



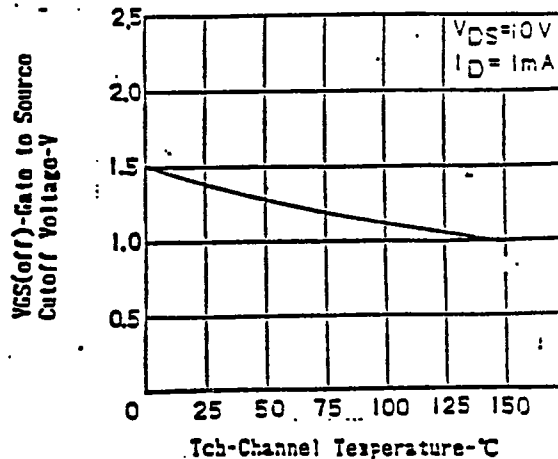
DRAIN TO SOURCE ON-STATE RESISTANCE
vs. DRAIN CURRENT



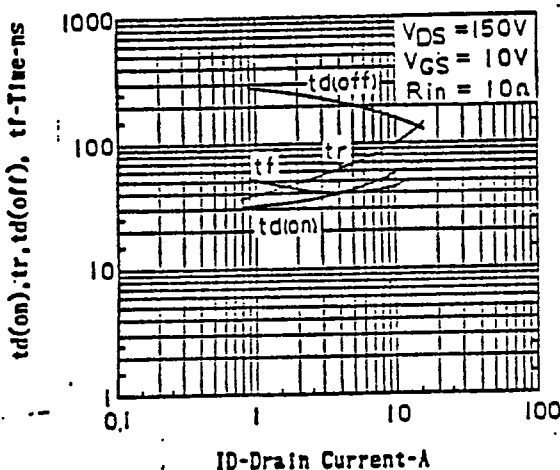
TRANSFER CHARACTERISTICS



GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



TURN-ON AND TURN-OFF TIME



NORMALIZED TRANSIENT THERMAL IMPEDANCE vs. PULSE WIDTH.

