

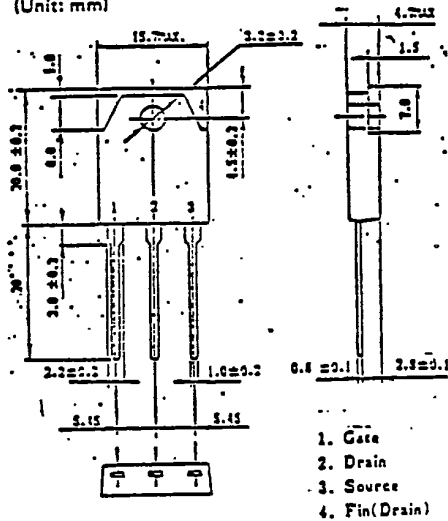


MOS FIELD EFFECT TRANSISTOR

2SK833

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

PACKAGE DIMENSIONS
 (Unit: mm)



Features

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

Absolute Maximum Ratings (Ta=25°C)

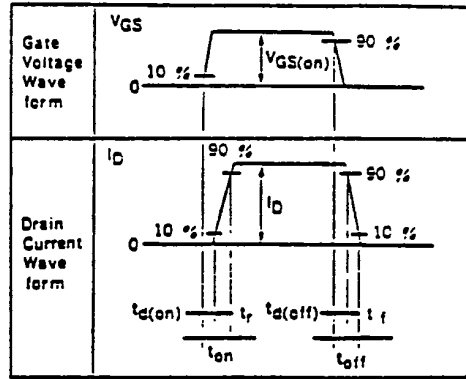
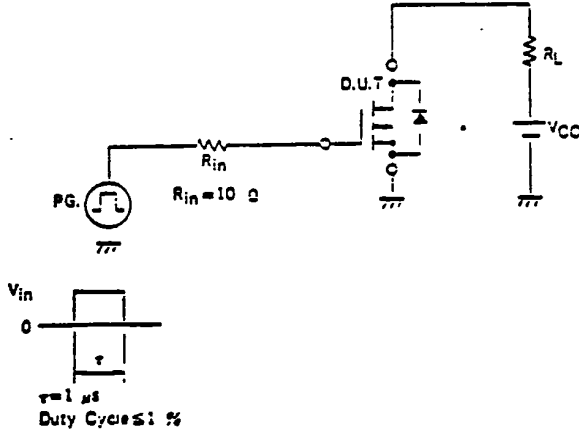
Drain to Source Voltage	VDS	900V
Gate to Source Voltage	VGS	± 20V
Continuous Drain Current	ID(DC)	± 5A
Pulse Drain Current	ID(pulse) *	± 20A
Total Power Dissipation	PT	3.0W
Total Power Dissipation	PT**	120%
Channel Temperature	Tch	150 °C
Storage Temperature	Tstg	-55to+150 °C

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

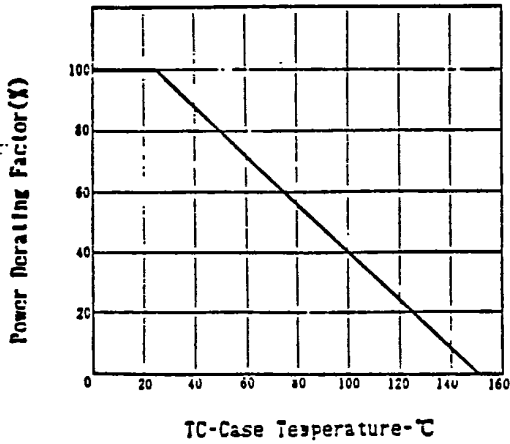
Electrical Characteristics (Ta=25 °C)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	IDSS			100	μA	VDS=900V, 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	1.0			S	VDS=20V, ID=3.0A
Drain to Source On-State Resistance	RDS(on)		3.2	4.0	Ω	VGS=10V, ID=3.0A
Resistance						
Input Capacitance	Ciss		950		pF	VDS= 10V,
Output Capacitance	Coss		170		pF	VGS=0,
Reverse Transfer Capacitance	Crss		65		pF	f=1.0MHz
Turn-On Delay Time	td(on)		15		ns	ID=3.0A
Rise Time	tr		40		ns	VGS(on)= 10V,
Turn-Off Delay Time	td(off)		80		ns	Vcc=150V,
Fall Time	tf		20		ns	RL= 50 Ω

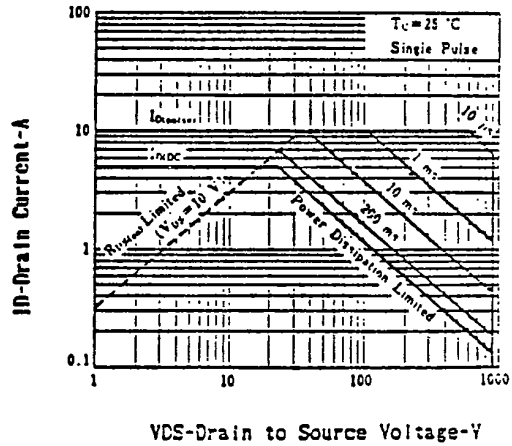
TURN-ON AND TURN-OFF TIME TEST CIRCUIT



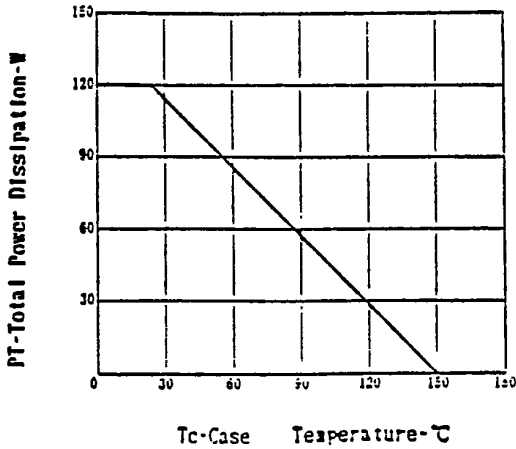
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



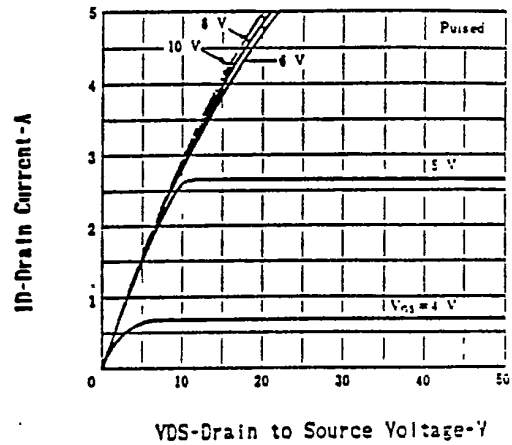
FORWARD BIAS SAFE OPERATING AREA



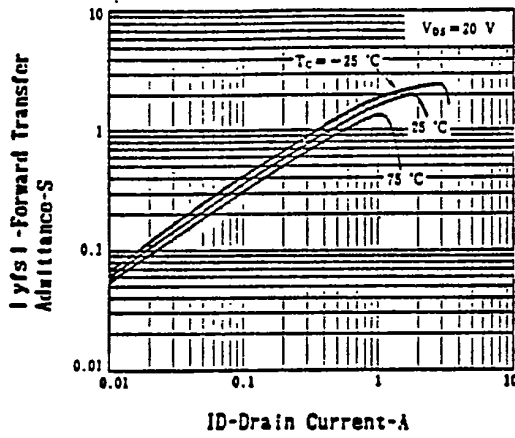
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



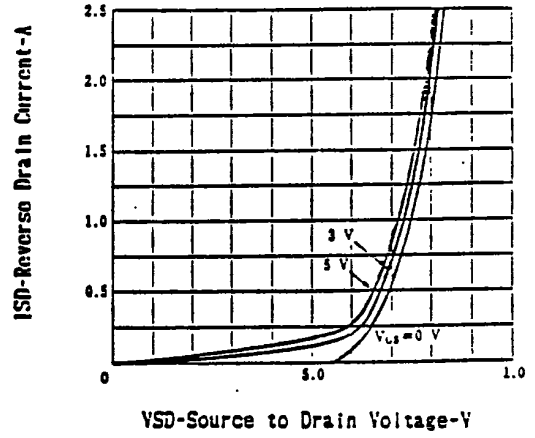
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



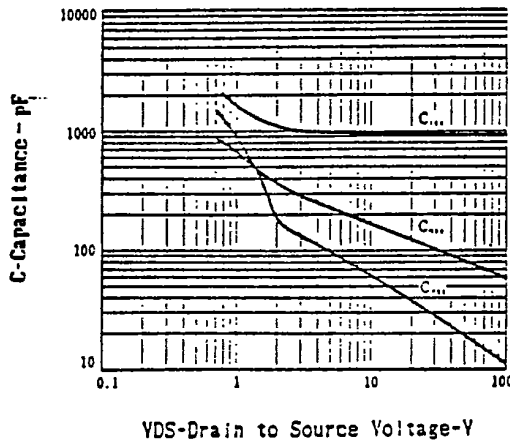
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



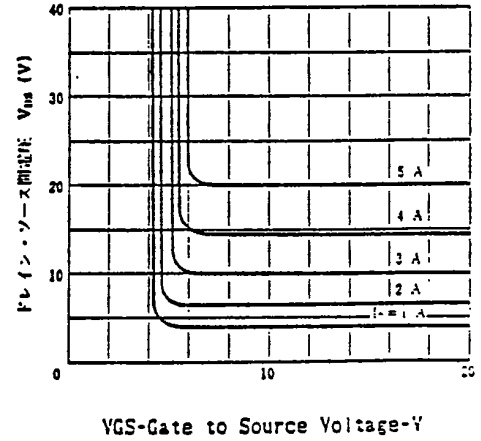
SOURCE TO DRAIN DIODE FORWARD VOLTAGE



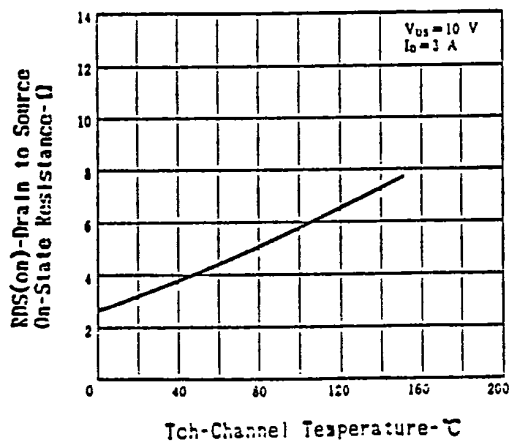
CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



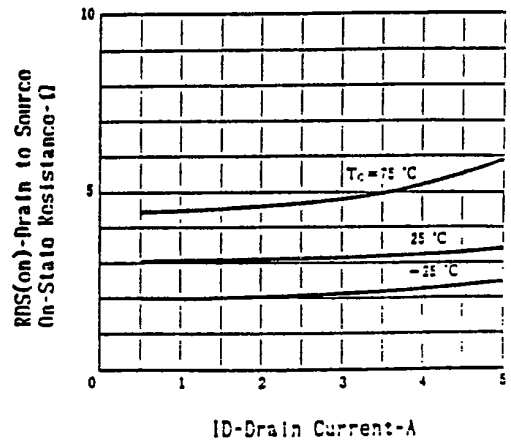
DRAIN TO SOURCE SATURATION VOLTAGE vs. GATE TO SOURCE VOLTAGE



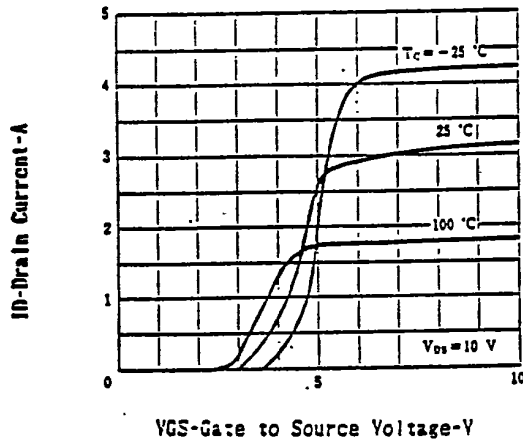
DRAIN TO SOURCE ON-STATE RESISTANCE vs. CHANNEL TEMPERATURE



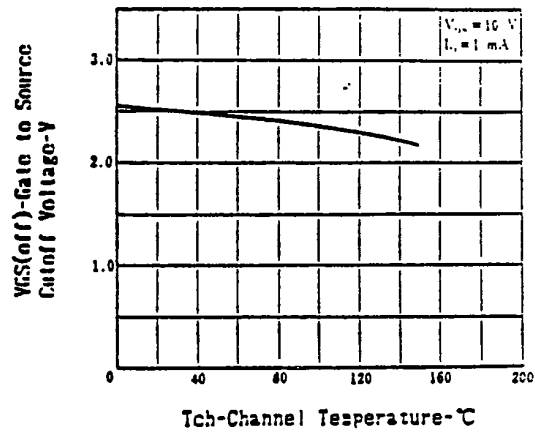
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



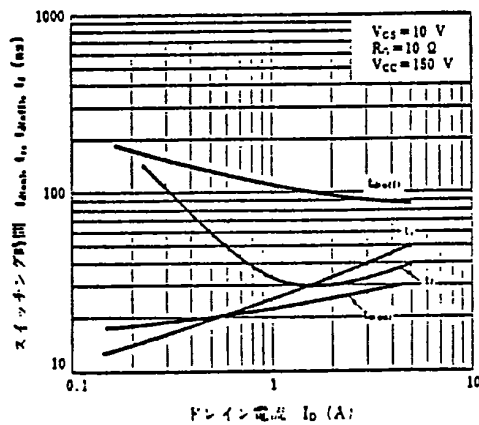
TRANSFER CHARACTERISTICS



GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



SWITCHING CHARACTERISTICS



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