

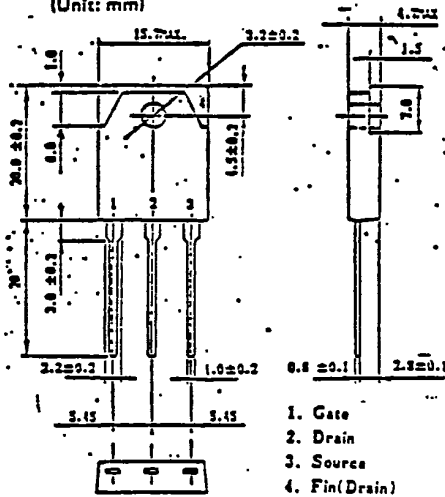


MOS FIELD EFFECT TRANSISTOR

2SK831

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	500V
Gate to Source Voltage	VGS	± 20V
Continuous Drain Current	ID(DC)	± 18A
Pulse Drain Current	ID(pulse) *	± 60A
Total Power Dissipation	PT	3.0W
Total Power Dissipation	PT**	120W
Channel Temperature	Tch	150 °C
Storage Temperature	Tstg	-55 to +150 °C

* PW ≤ 300 us, Duty Cycle ≤ 2%

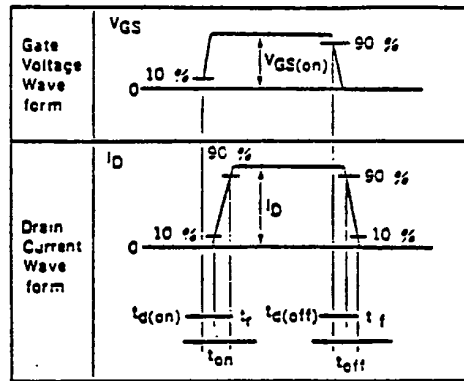
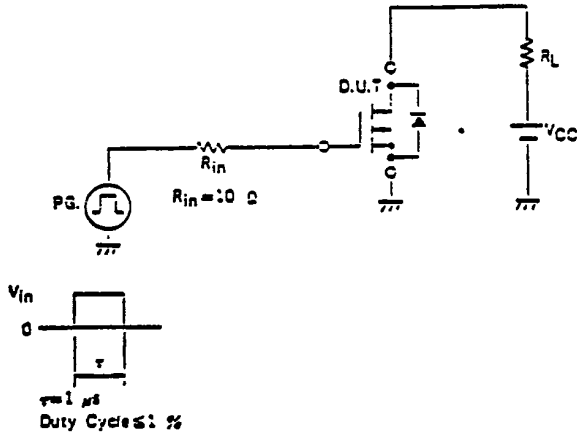
** Tc=25 °C

Electrical Characteristics (Ta=25 °C)

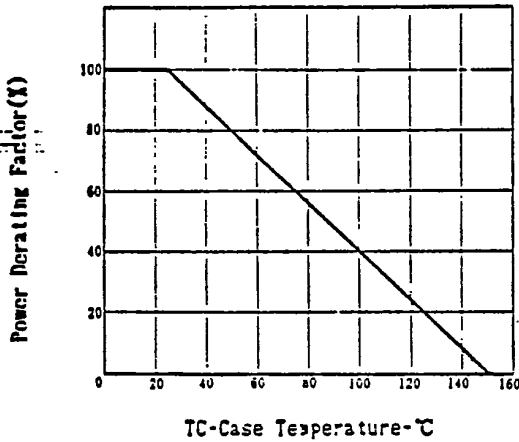
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	IDSS			100	μA	VDS=500V, VGS=0
Gate to Source Leakage Current	IGSS			±100	nA	VGS=±20V, VDS=0
Gate to Source Cutoff Voltage	VGS(off)	1.5		3.5	V	VDS=10V, ID=1.0mA
Forward Transfer Admittance	yfs	8.0			S	VDS=10V, ID=0.0A
Drain to Source On-State Resistance	RDS(on)		0.35	0.45	Ω	VGS=10V, ID=0.0A
Resistance						
Input Capacitance	Ciss		2600		pF	VDS= 10V,
Output Capacitance	Coss		620		pF	VGS=0,
Reverse Transfer Capacitance	Crss		170		pF	f=1.0MHz
Turn-On Delay Time	td(on)		35		ns	ID=0.0A
Rise Time	tr		55		ns	VGS(on)= 10V,
Turn-Off Delay Time	td(off)		150		ns	Vcc=150V,
Fall Time	tf		55		ns	RL= 16 Ω

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TURN-ON AND TURN-OFF TIME TEST CIRCUIT

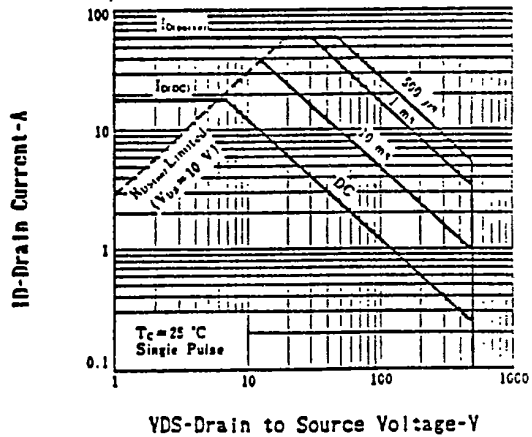
98D 19010 D T-39-13



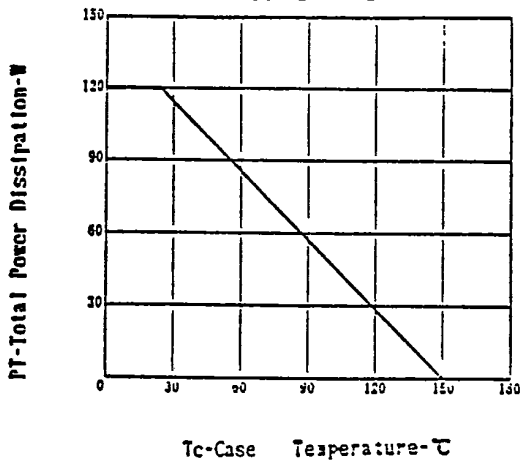
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



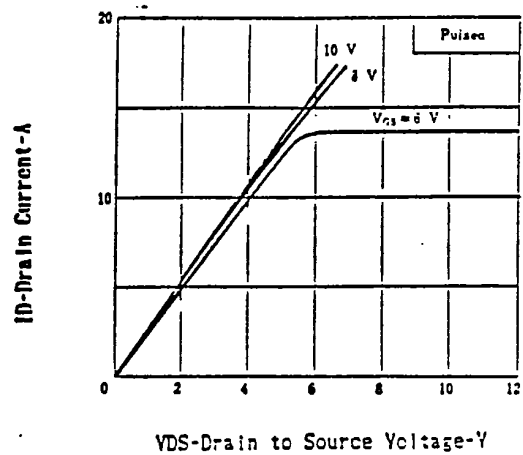
FORWARD BIAS SAFE OPERATING AREA



TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

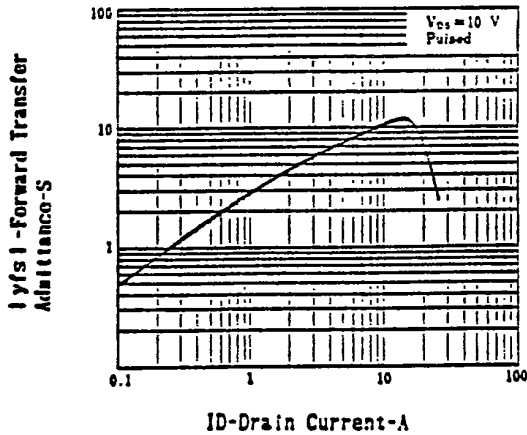


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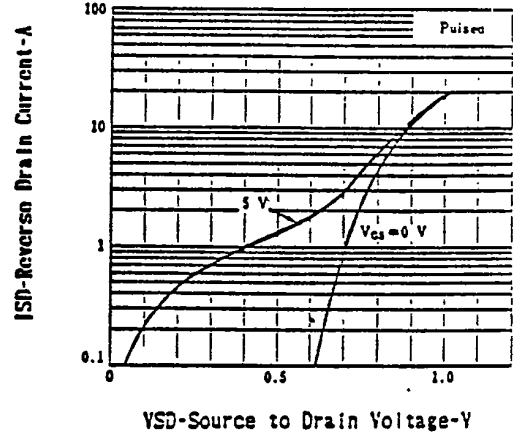
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T-39-13

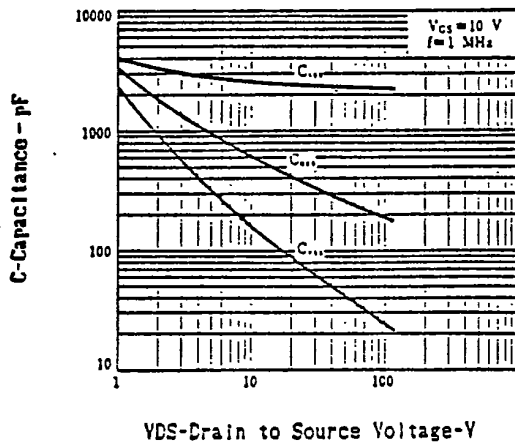
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



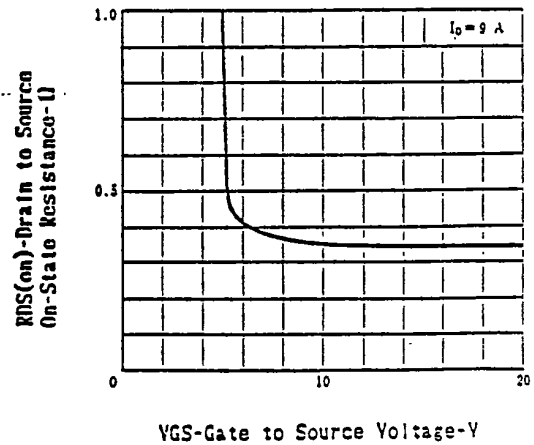
SOURCE TO DRAIN DIODE FORWARD VOLTAGE



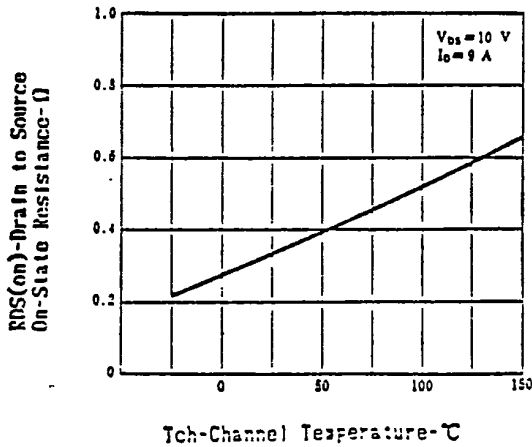
CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



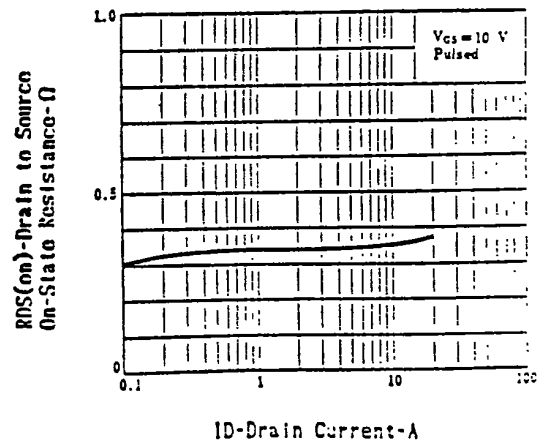
DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE



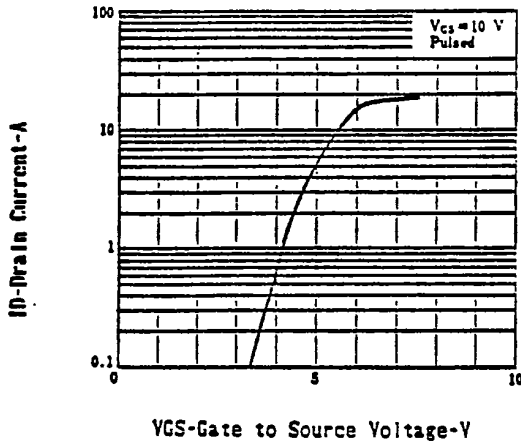
DRAIN TO SOURCE ON-STATE RESISTANCE vs. CHANNEL TEMPERATURE



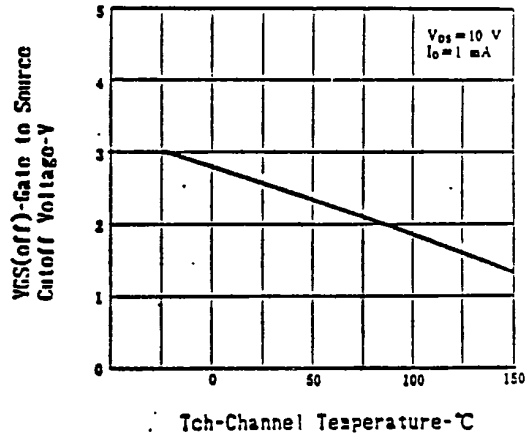
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



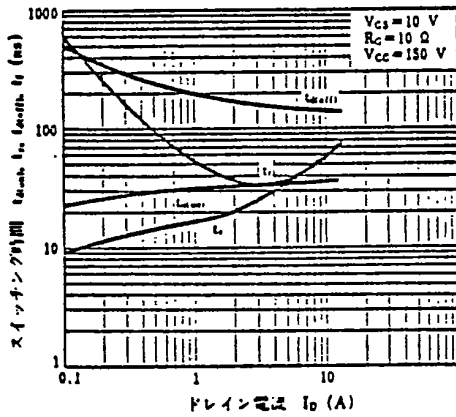
TRANSFER CHARACTERISTICS



GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



SWITCHING CHARACTERISTICS



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