

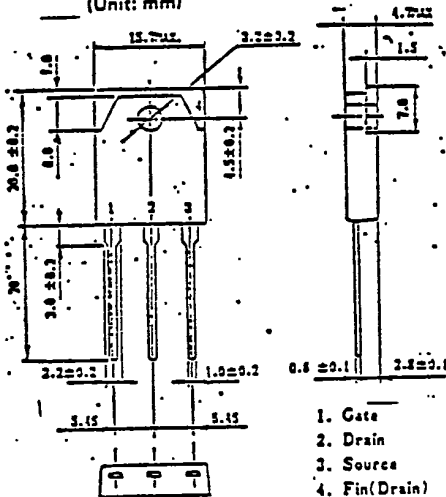


MOS FIELD EFFECT TRANSISTOR

**2SK825**

**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	450V
Gate to Source Voltage	VGS	± 20V
Continuous Drain Current	ID(DC)	± 15A
Pulse Drain Current	ID(pulse) *	± 40A
Total Power Dissipation	PT	3.0W
Total Power Dissipation	PT**	120W
Channel Temperature	Tch	150 °C
Storage Temperature	Tstg	-55to+150 °C

\* PW ≤ 300 us, Duty Cycle ≤ 2%

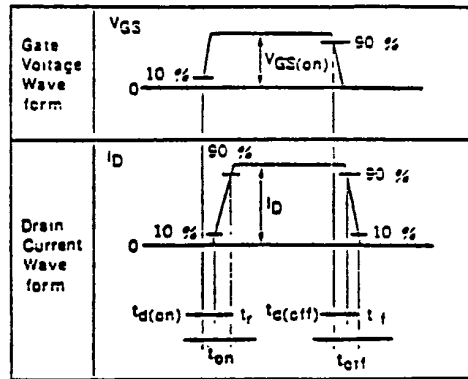
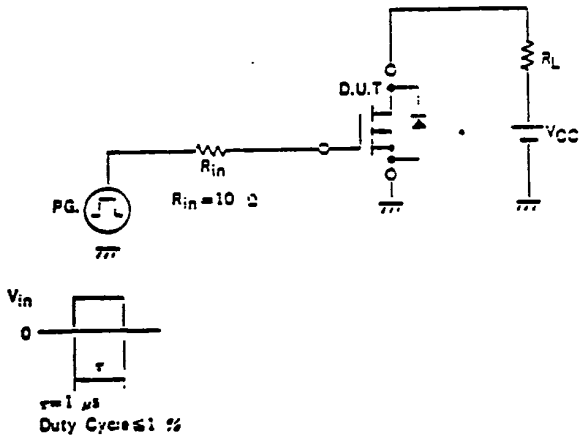
\*\* Tc=25 °C

Electrical Characteristics (Ta=25 °C)

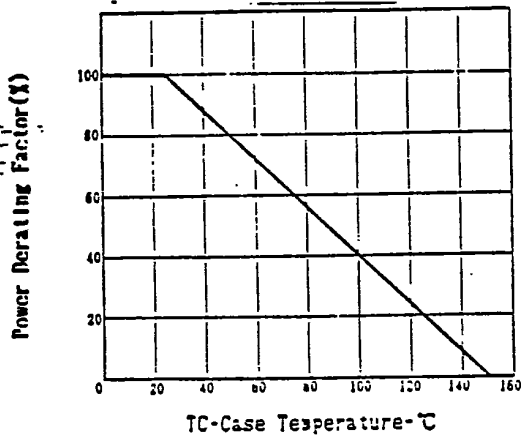
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	IDSS			100	μA	VDS=150V, VGS=0
Gate to Source Leakage Current	IGSS			±100	nA	VGS=±20V, VDS=0
Gate to Source Cutoff Voltage	VGS(off)	1.5		3.5	V	VDS=10V, ID=1.0mA
Forward Transfer Admittance	yfs	5.0			S	VDS=10V, ID=7.5A
Drain to Source On-State Resistance	RDS(on)		0.4	0.5	Ω	VGS=10V, ID=7.5A
Input Capacitance	Ciss		2000		pF	VDS= 10V,
Output Capacitance	Coss		500		pF	VGS=0,
Reverse Transfer Capacitance	Crss		140		pF	f=1.0MHz
Turn-On Delay Time	td(on)		20		ns	ID=7.5A
Rise Time	tr		35		ns	VGS(on)= 10V,
Turn-Off Delay Time	td(off)		100		ns	Vcc=150V,
Fall Time	tf		35		ns	RL= 20 Ω

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TURN-ON AND TURN-OFF TIME TEST CIRCUIT

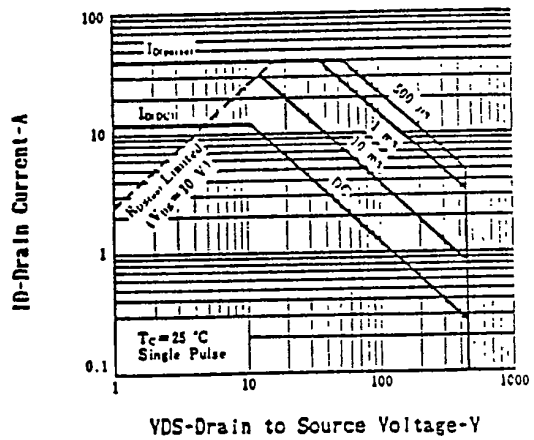
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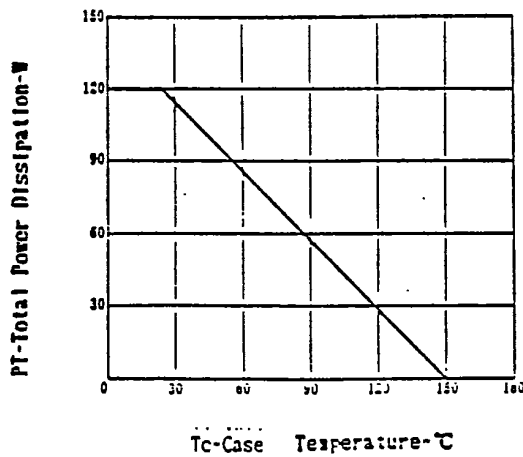
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



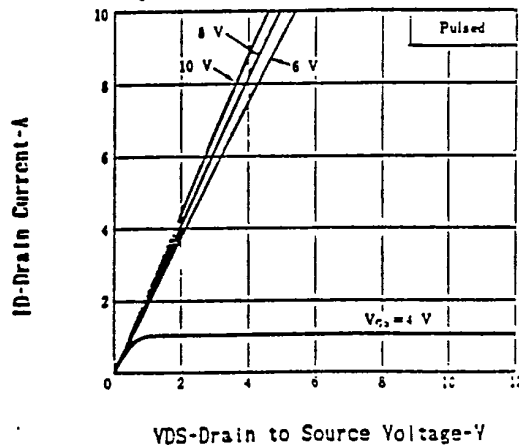
FORWARD BIAS SAFE OPERATING AREA



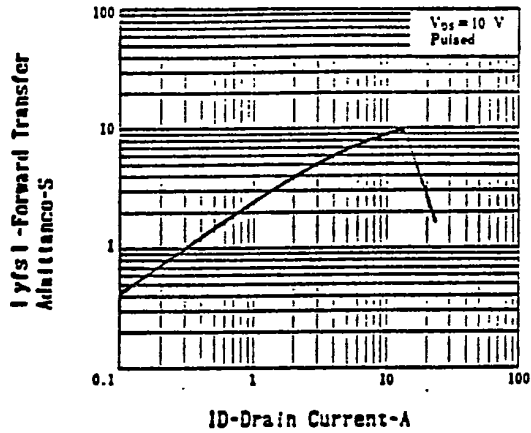
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



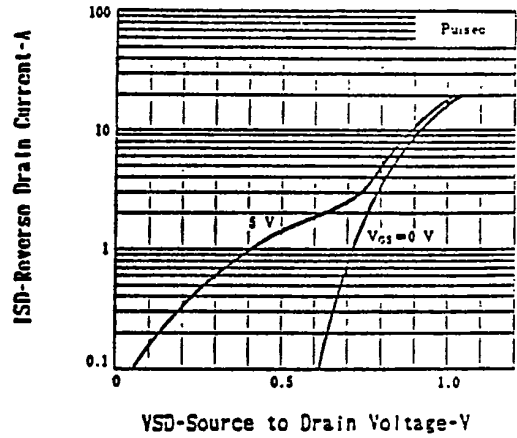
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



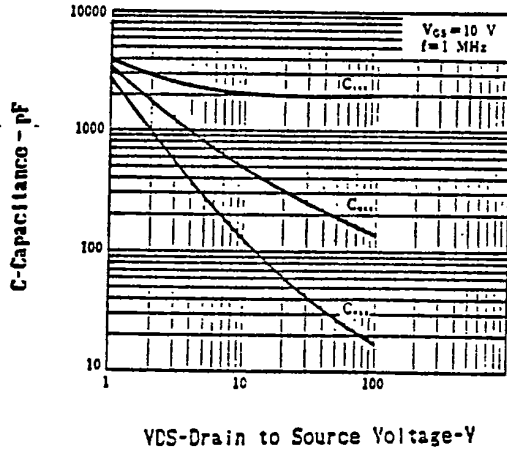
FORWARD TRANSFER ADMITTANCE  
 vs. DRAIN CURRENT



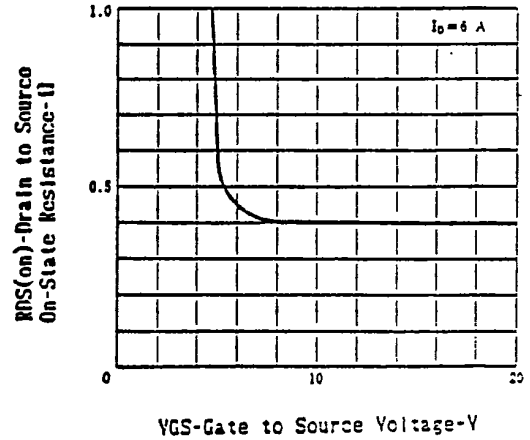
SOURCE TO DRAIN DIODE  
 FORWARD VOLTAGE



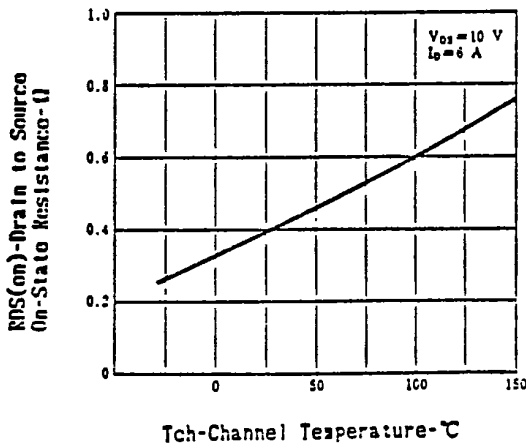
CAPACITANCE vs. DRAIN TO  
 SOURCE VOLTAGE



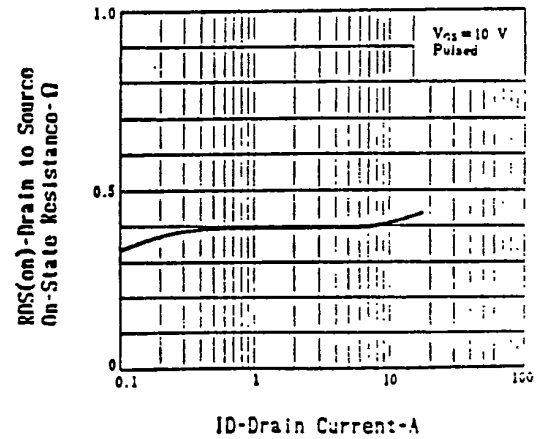
DRAIN TO SOURCE ON-STATE RESISTANCE  
 vs. GATE TO SOURCE VOLTAGE



DRAIN TO SOURCE ON-STATE RESISTANCE  
 vs. CHANNEL TEMPERATURE



DRAIN TO SOURCE ON-STATE RESISTANCE  
 vs. DRAIN CURRENT

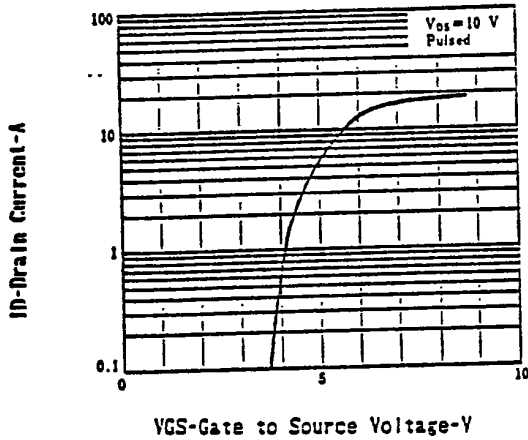


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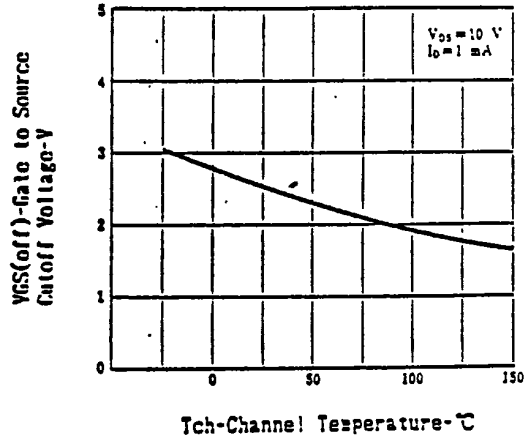
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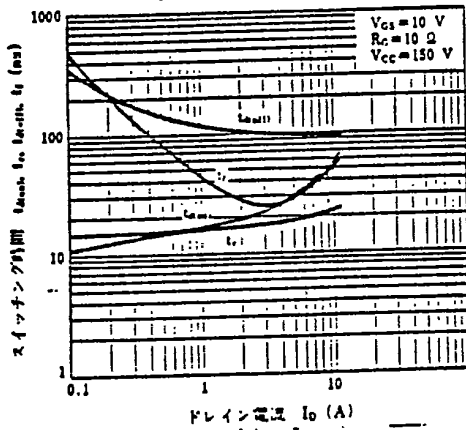
TRANSFER CHARACTERISTICS



GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



SWITCHING CHARACTERISTICS



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Printed in Japan