

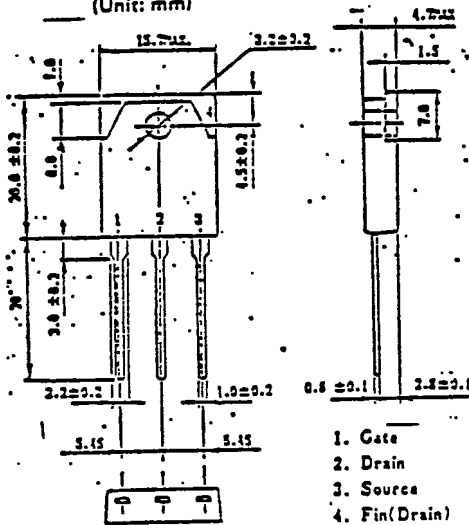
NEC
ELECTRON DEVICE

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 $R_{DS(on)}$

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Drain to Source Voltage	V_{DS}	450V
Gate to Source Voltage	V_{GS}	$\pm 20V$
Continuous Drain Current	$I_D(DC)$	$\pm 15A$
Pulse Drain Current	$I_D(pulse)$	$\pm 40A$
Total Power Dissipation	P_T	3.0W
Total Power Dissipation	P_{T*}	120W
Channel Temperature	T_{ch}	150 °C
Storage Temperature	T_{stg}	-55 to +150 °C

* $PW \leq 300 \mu s$, Duty Cycle $\leq 2\%$

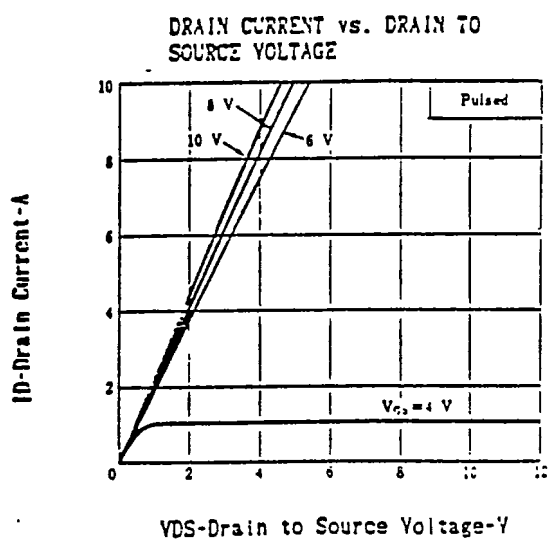
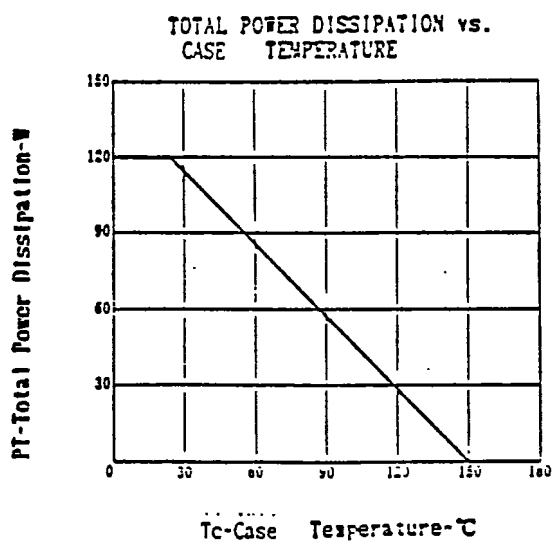
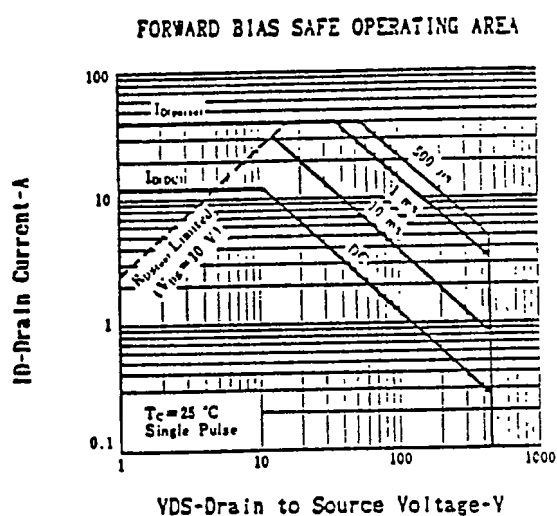
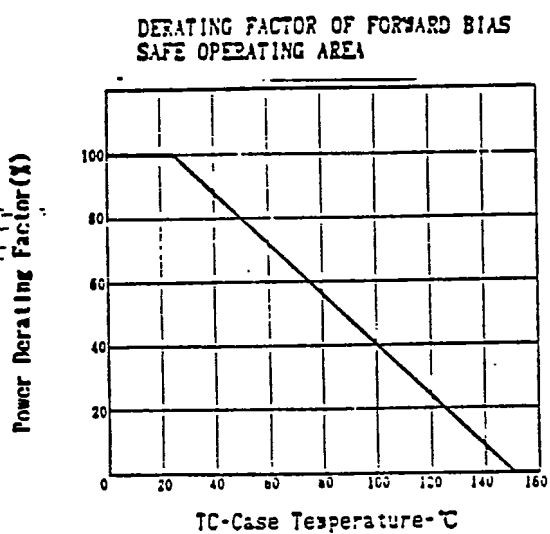
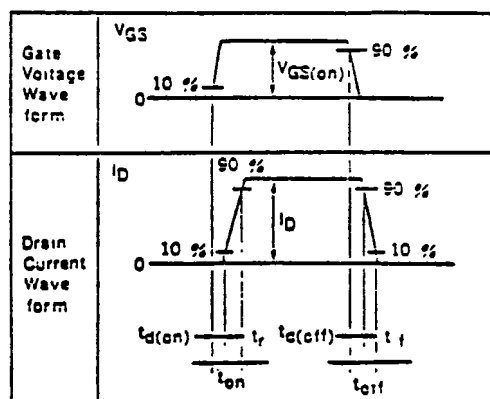
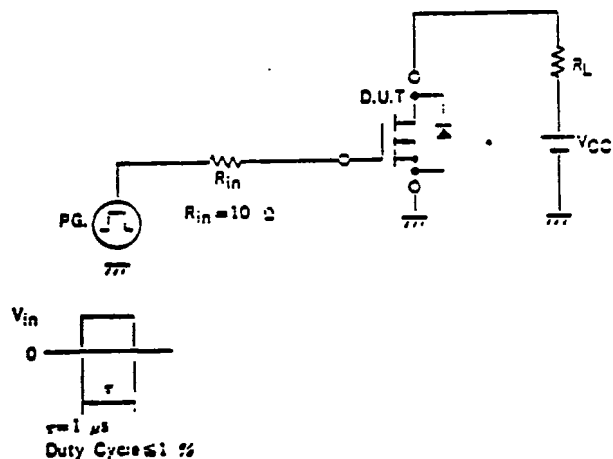
** $T_c=25^\circ\text{C}$

Electrical Characteristics ($T_a=25^\circ\text{C}$)

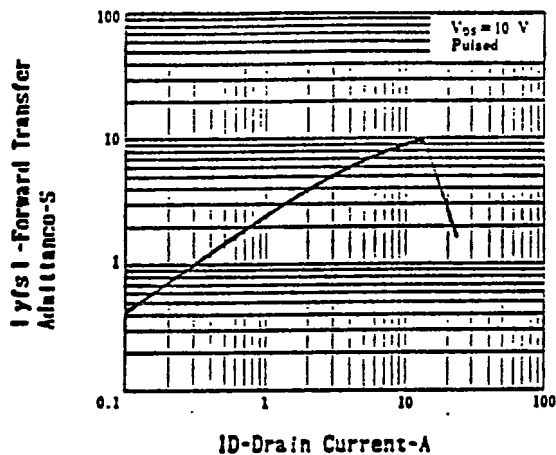
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	I_{DSS}			100	μA	$V_{DS}=150V, V_{GS}=0$
Gate to Source Leakage Current	I_{GSS}			± 100	nA	$V_{GS}=\pm 20V, V_{DS}=0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	1.5		3.5	V	$V_{DS}=10V, I_D=1.0mA$
Forward Transfer Admittance	y_{fs}	5.0			S	$V_{DS}=10V, I_D=7.5A$
Drain to Source On-State Resistance	$R_{DS(on)}$		0.4	0.5	Ω	$V_{GS}=10V, I_D=7.5A$
Input Capacitance	C_{iss}		2000		pF	$V_{DS}=10V, V_{GS}=0$
Output Capacitance	C_{oss}		500		pF	$f=1.0MHz$
Reverse Transfer Capacitance	C_{rss}		140		pF	$I_D=7.5A$
Turn-On Delay Time	$t_d(on)$		20		ns	$V_{GS(on)}=10V$
Rise Time	t_r		35		ns	$V_{cc}=150V$
Turn-Off Delay Time	$t_d(off)$		100		ns	$RL=20 \Omega$
Fall Time	t_f		35		ns	

NEC cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement.

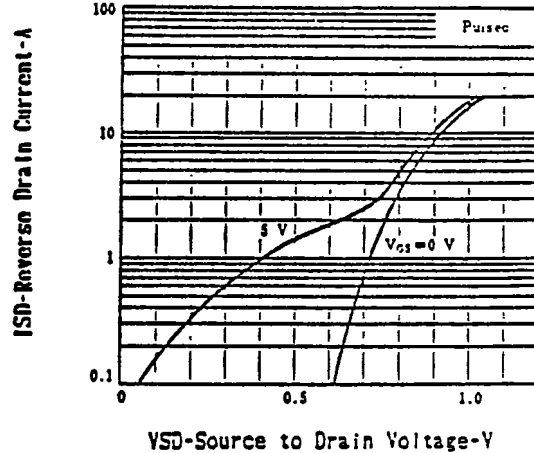
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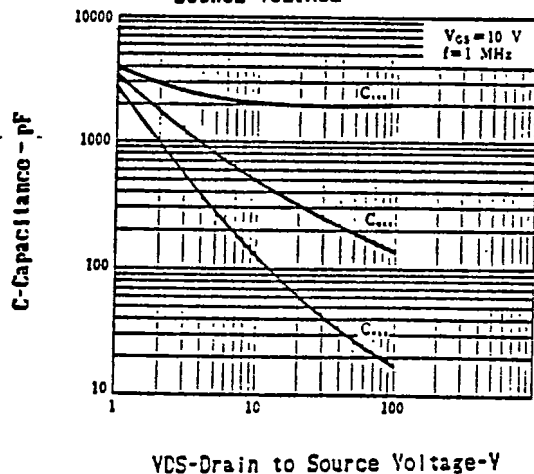
FORWARD TRANSFER ADMITTANCE
vs. DRAIN CURRENT



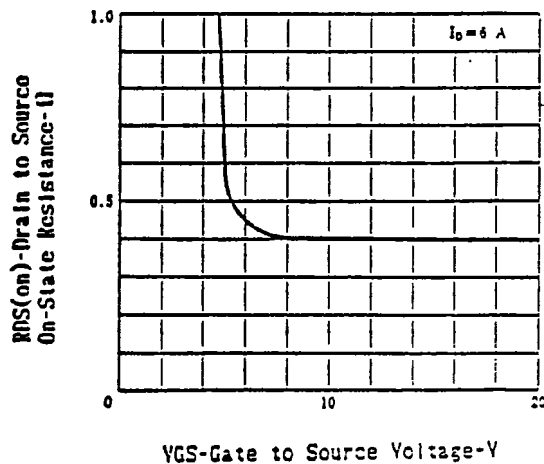
SOURCE TO DRAIN DIODE
FORWARD VOLTAGE



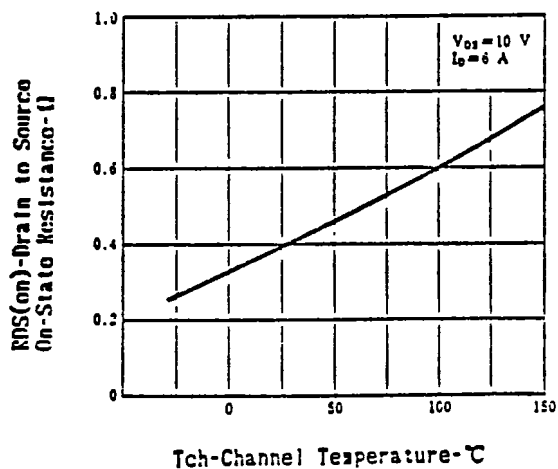
CAPACITANCE vs. DRAIN TO
SOURCE VOLTAGE



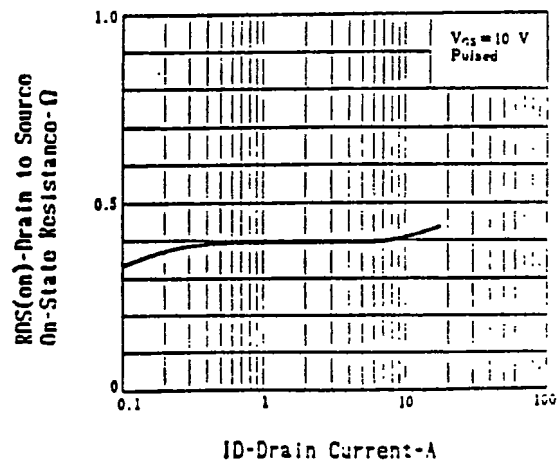
DRAIN TO SOURCE ON-STATE RESISTANCE
vs. GATE TO SOURCE VOLTAGE

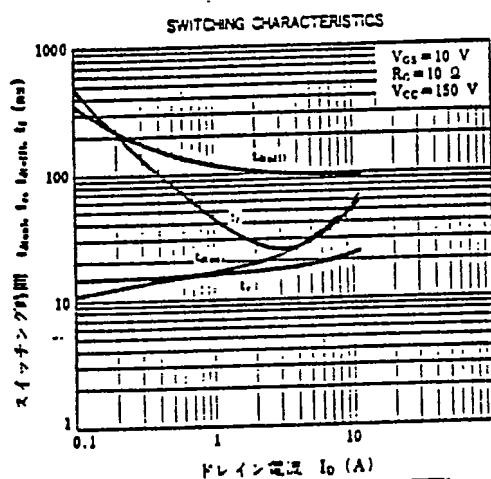
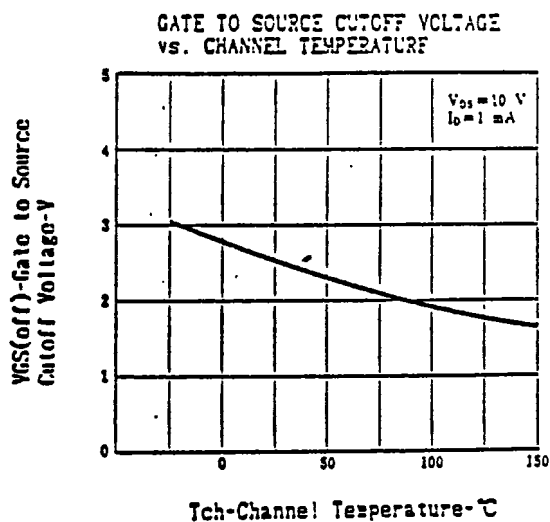
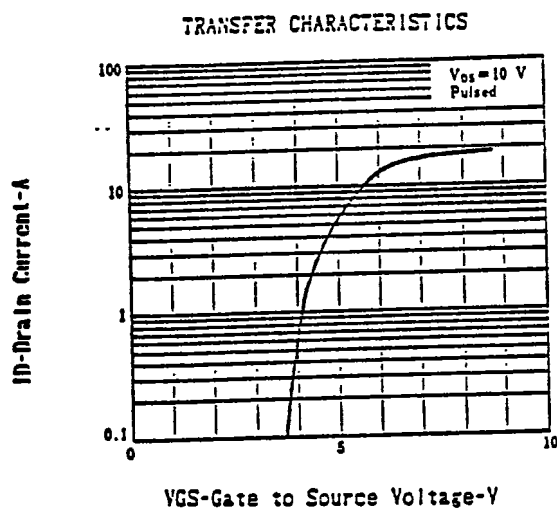


DRAIN TO SOURCE ON-STATE RESISTANCE
vs. CHANNEL TEMPERATURE



DRAIN TO SOURCE ON-STATE RESISTANCE
vs. DRAIN CURRENT





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