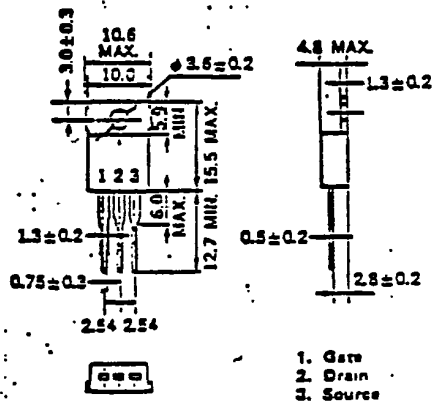


PRELIMINARY SPECIFICATION

**NEC**  
ELECTRON DEVICE

MOS FIELD EFFECT TRANSISTOR

# 2SK855

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

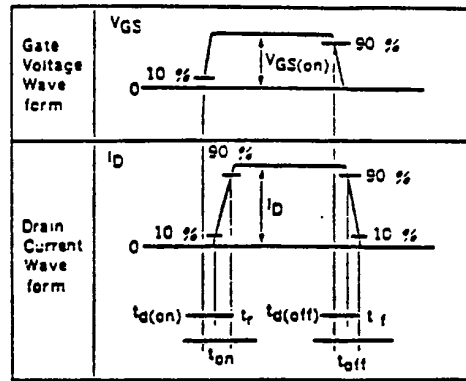
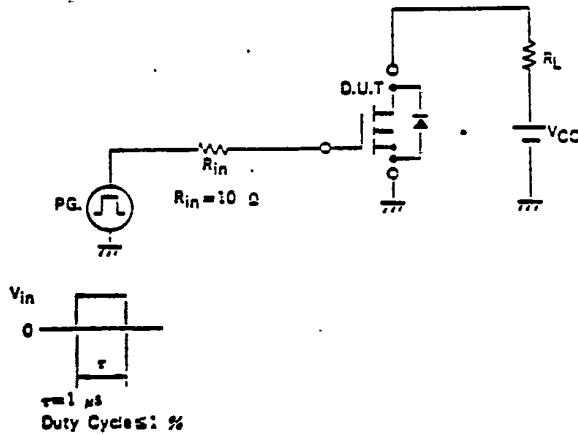
Drain to Source Voltage	$V_{DS}$	500V
Gate to Source Voltage	$V_{GS}$	$\pm 20V$
Continuous Drain Current	$I_D(DC)$	$\pm 5A$
Pulse Drain Current	$I_D(\text{pulse})$	* $\pm 20A$
Total Power Dissipation	PT	1.5W
Total Power Dissipation	PT#	50W
Channel Temperature	$T_{ch}$	150 $^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150 $^\circ\text{C}$

\*  $PW \leq 100 \mu\text{s}$ , Duty Cycle  $\leq 2\%$   
#  $T_c=25^\circ\text{C}$

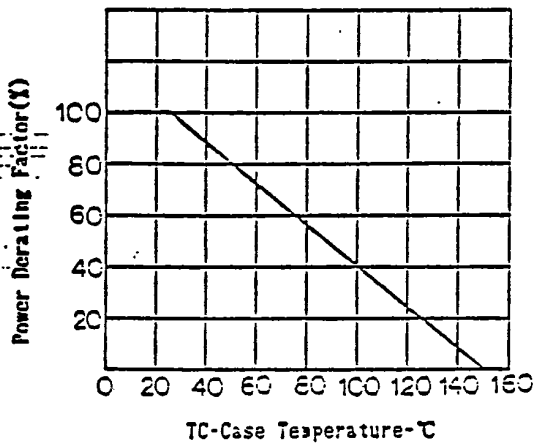
**Electrical Characteristics ( $T_a=25^\circ\text{C}$ )**

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	$I_{DSS}$			100	$\mu\text{A}$	$V_{DS}=500V, V_{GS}=0$
Gate to Source Leakage Current	$I_{GSS}$			$\pm 100$	nA	$V_{GS}=\pm 20V, V_{DS}=0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	1.5		3.5	V	$V_{DS}=10V, I_D=1.0\text{mA}$
Forward Transfer Admittance	yfs	2.5			S	$V_{DS}=10V, I_D=2.5A$
Drain to Source On-State Resistance	$R_{DS(on)}$			1.5	$\Omega$	$V_{GS}=10V, I_D=2.5A$
Resistance						
Input Capacitance	$C_{iss}$		700		pF	$V_{DS}=10V,$
Output Capacitance	$C_{oss}$		175		pF	$V_{GS}=0,$
Reverse Transfer Capacitance	$C_{rss}$		40		pF	$f=1.0\text{MHz}$
Turn-On Delay Time	$t_d(on)$		10		ns	$I_D=2.5A,$
Rise Time	$t_r$		15		ns	$V_{GS(on)}=10V,$
Turn-Off Delay Time	$t_d(off)$		40		ns	$V_{CC}=150V,$
Fall Time	$t_f$		15		ns	$RL=60\Omega$

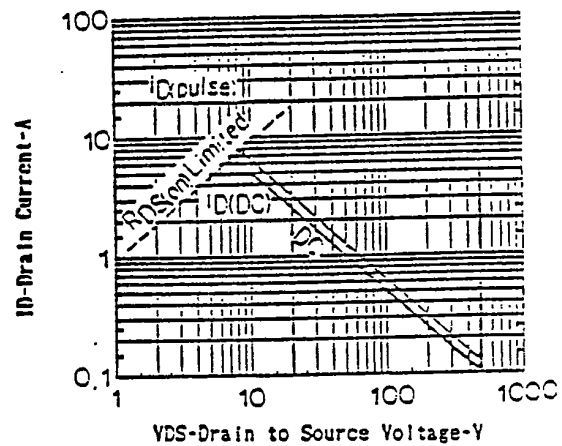
TURN-ON AND TURN-OFF TIME TEST CIRCUIT



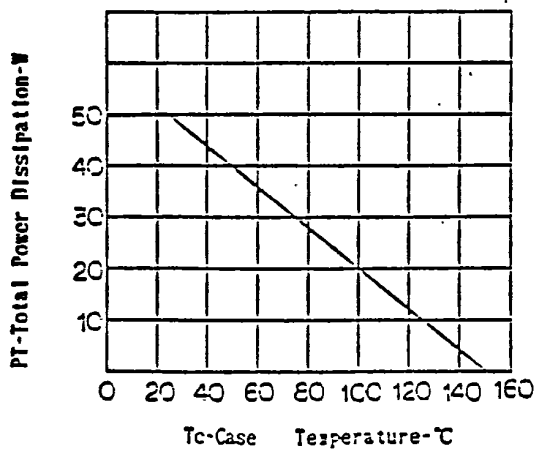
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



FORWARD BIAS SAFE OPERATING AREA



TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

