

**NEC**  
ELECTRON DEVICE

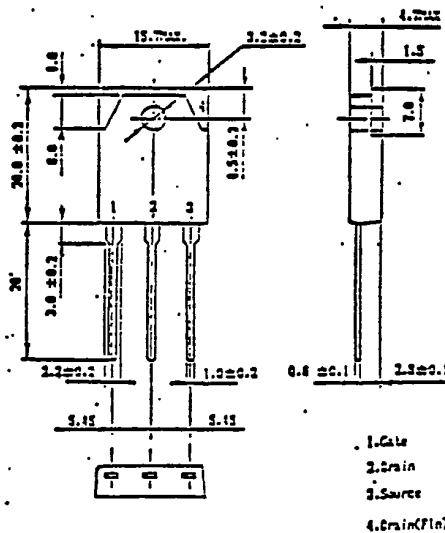
PRELIMINARY SPECIFICATION

MOS FIELD EFFECT TRANSISTOR

# 2SK735

## FAST SWITCHING N-CHANNEL SILICON POWER MOS FET

PACKAGE DIMENSIONS (Callouts)

**Features**

Suitable for switching power supplies,  
actuator controls and pulse circuits  
Low  $R_{DS(on)}$

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

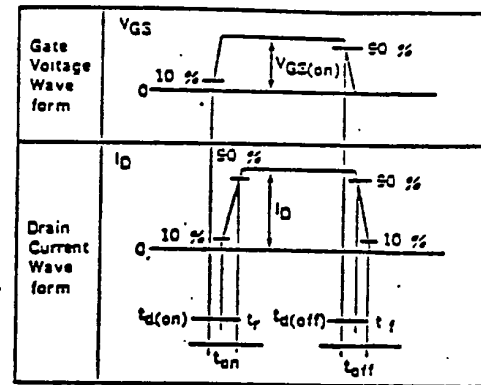
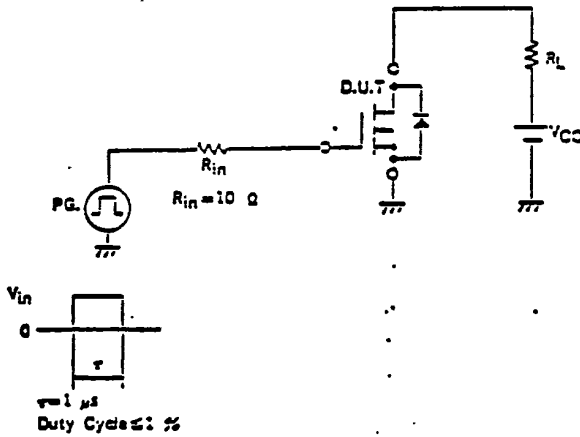
Drain to Source Voltage	$V_{DS}$	450V
Gate to Source Voltage	$V_{GS}$	$\pm 20V$
Continuous Drain Current	$I_{D(DC)}$	$\pm 10A$
Pulse Drain Current	$I_{D(pulse)}$	* $\pm 30A$
Total Power Dissipation	$P_T$	3.0W
Total Power Dissipation	$P_{T*}$	100W
Channel Temperature	$T_{ch}$	150 $^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150 $^\circ\text{C}$
* $PW \leq 100 \mu s$ , Duty Cycle $\leq 2\%$		
*# $T_c = 25^\circ\text{C}$		

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

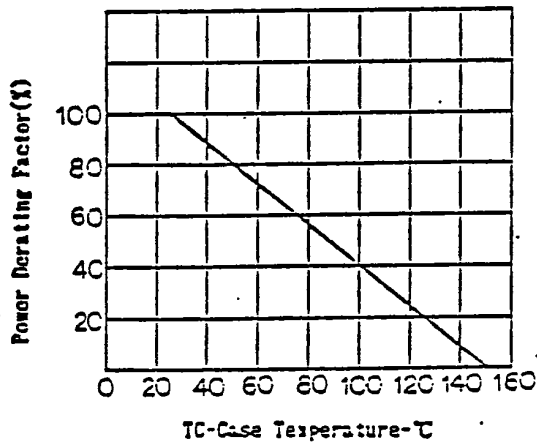
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	$I_{DSS}$			100	$\mu A$	$V_{DS}=450V, V_{GS}=0$
Gate to Source Leakage Current	$I_{GSS}$			$\pm 100$	nA	$V_{GS}=\pm 20V, V_{DS}=0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	1.5		3.5	V	$V_{DS}=10V, I_D=1.0mA$
Forward Transfer Admittance	$y_{fs}$	3.0			S	$V_{DS}=10V, I_D=5.0A$
Drain to Source On-State Resistance	$R_{DS(on)}$		0.60	0.90	$\Omega$	$V_{GS}=10V, I_D=5.0A$
Input Capacitance	$C_{iss}$		1270		pF	$V_{DS}=10V, V_{GS}=0$
Output Capacitance	$C_{oss}$		320		pF	$V_{GS}=0$
Reverse Transfer Capacitance	$C_{rss}$		70		pF	$f=1.0MHz$
Turn-On Delay Time	$t_{d(on)}$		15		ns	$I_D=5.0A$
Rise Time	$t_r$		20		ns	$V_{GS(on)}=10V$
Turn-Off Delay Time	$t_{d(off)}$		60		ns	$V_{GS}=150V$
Fall Time	$t_f$		30		ns	$R_L=30 \Omega$

6427525 N E C ELECTRONICS INC  
TURN-ON AND TURN-OFF TIME TEST CIRCUIT

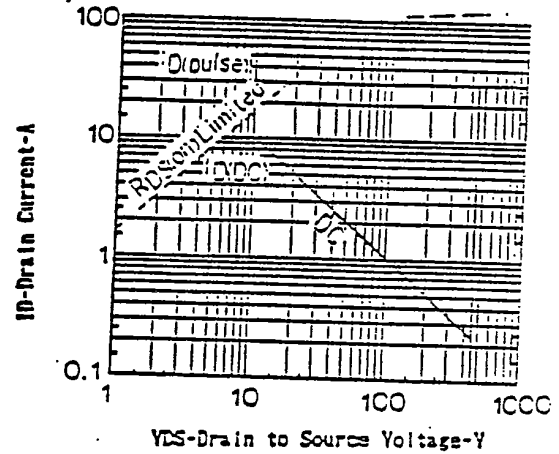
98D 18906 D T-39-13



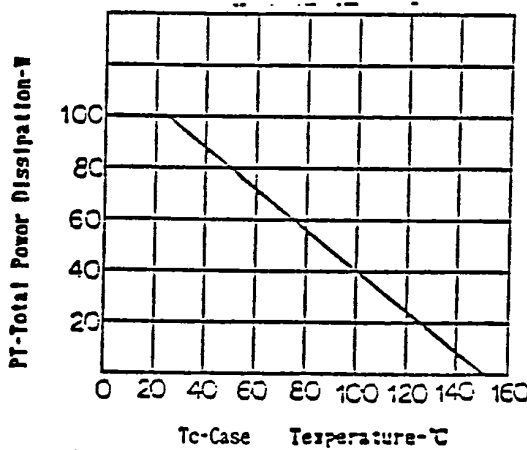
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



FORWARD BIAS SAFE OPERATING AREA



TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

