

NEC
ELECTRON DEVICE

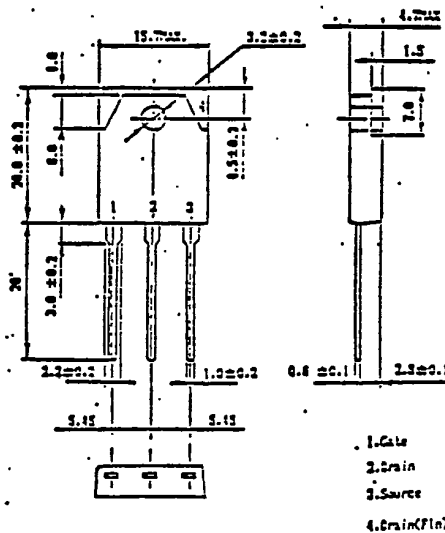
PRELIMINARY SPECIFICATION

MOS FIELD EFFECT TRANSISTOR

2SK735

FAST SWITCHING N-CHANNEL SILICON POWER MOS FET

PACKAGE DIMENSIONS (mm)



Features

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

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

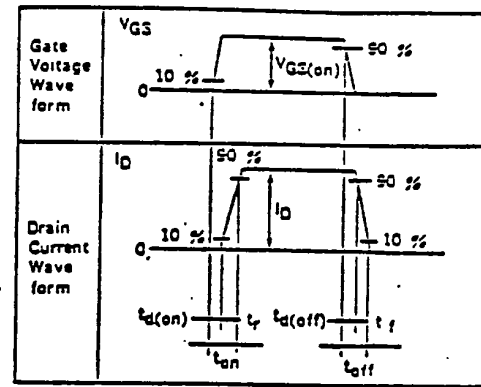
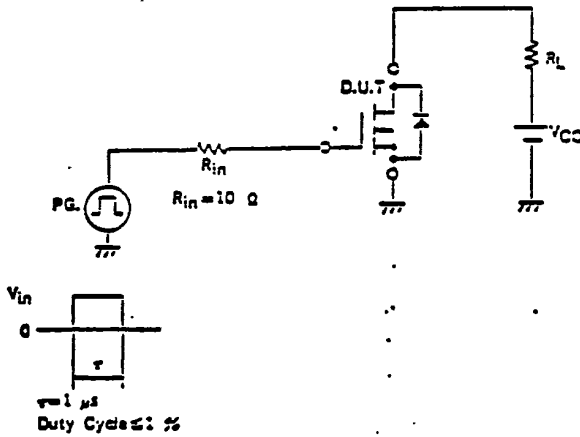
Drain to Source Voltage	V_{DS}	450V
Gate to Source Voltage	V_{GS}	$\pm 20V$
Continuous Drain Current	$I_{D(DC)}$	$\pm 10A$
Pulse Drain Current	$I_{D(pulse)}$	* $\pm 30A$
Total Power Dissipation	P_T	3.0W
Total Power Dissipation	$P_{T\ddagger}$	100W
Channel Temperature	T_{ch}	150 $^\circ\text{C}$
Storage 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 ($T_a=25^\circ\text{C}$)

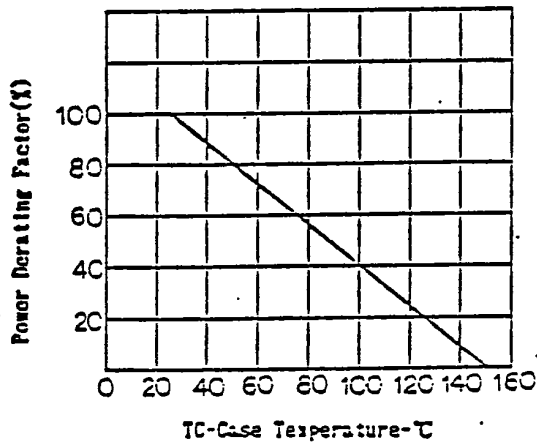
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	I_{DSS}			100	μA	$V_{DS}=450V, V_{GS}=0$
Gate to Source Leakage Current	I_{GSS}			± 100	nA	$V_{GS}=\pm 20V, V_{DS}=0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	1.5		3.5	V	$V_{DS}=10V, I_D=1.0mA$
Forward Transfer Admittance	y_{fs}	3.0			S	$V_{DS}=10V, I_D=5.0A$
Drain to Source On-State Resistance	$R_{DS(on)}$		0.60	0.90	Ω	$V_{GS}=10V, I_D=5.0A$
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

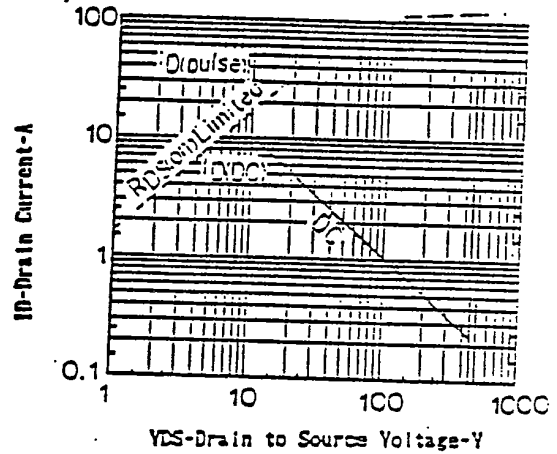
98D 18906 D T-39-13



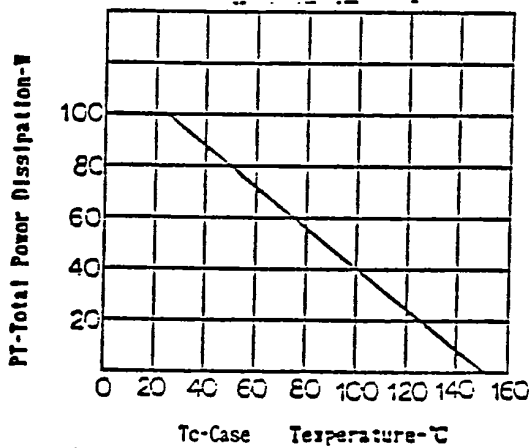
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



FORWARD BIAS SAFE OPERATING AREA



TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

