

NEC
ELECTRON DEVICE

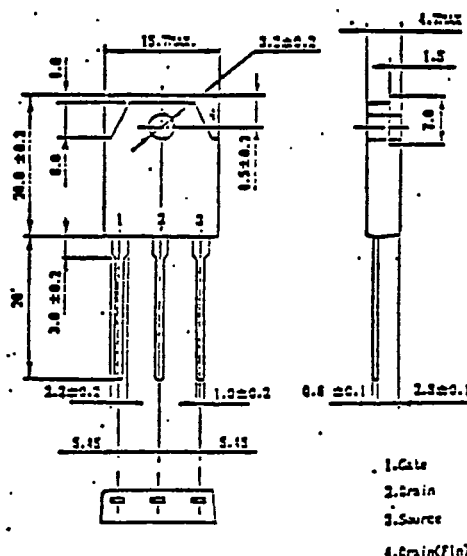
PRELIMINARY SPECIFICATION

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}	$\pm 20\text{V}$
Continuous Drain Current	$I_D(DC)$	$\pm 10\text{A}$
Pulse Drain Current	$I_D(\text{pulse})$	$\pm 30\text{A}$
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 $^\circ\text{C}$
* $P_W \leq 100 \mu\text{s}$, Duty Cycle $\leq 2\%$		
** $T_c = 25^\circ\text{C}$		

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

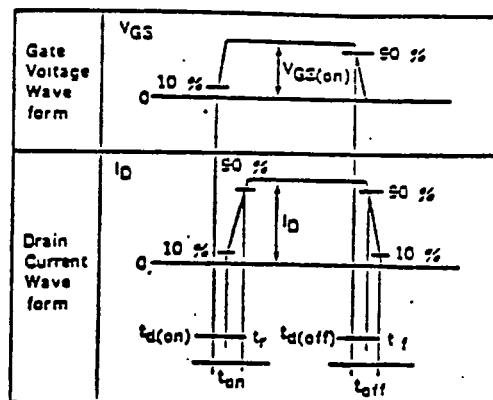
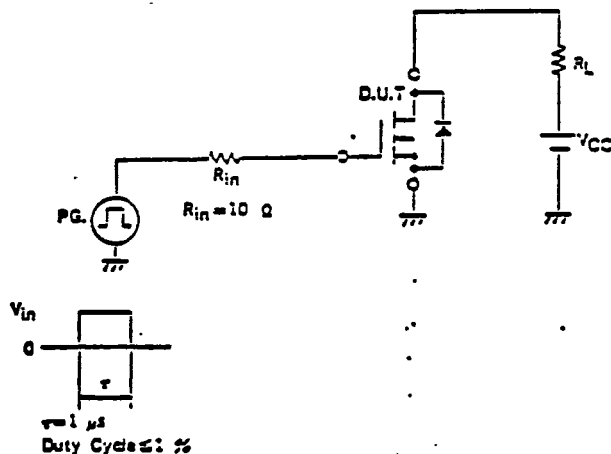
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	I_{DSS}			100	μA	$V_{DS} = 450\text{V}, V_{GS} = 0$
Gate to Source Leakage Current	I_{GSS}			± 100	nA	$V_{GS} = \pm 20\text{V}, V_{DS} = 0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	1.5		3.5	V	$V_{DS} = 10\text{V}, I_D = 1.0\text{mA}$
Forward Transfer Admittance	y_{fs}	3.0			S	$V_{DS} = 10\text{V}, I_D = 5.0\text{A}$
Drain to Source On-State Resistance	$R_{DS(on)}$		0.60	0.80	Ω	$V_{GS} = 10\text{V}, I_D = 5.0\text{A}$
Input Capacitance	C_{iss}		1270		pF	$V_{DS} = 10\text{V}, V_{GS} = 0$
Output Capacitance	C_{oss}		320		pF	$V_{GS} = 0$
Reverse Transfer Capacitance	C_{rss}		70		pF	$f = 1.0\text{MHz}$
Turn-On Delay Time	$t_d(on)$		15		ns	$I_D = 5.0\text{A}$
Rise Time	t_r		20		ns	$V_{GS(on)} = 10\text{V}$
Turn-Off Delay Time	$t_d(off)$		60		ns	$V_{CC} = 150\text{V}$
Fall Time	t_f		30		ns	$R_L = 30 \Omega$

6427525 N E C ELECTRONICS INC

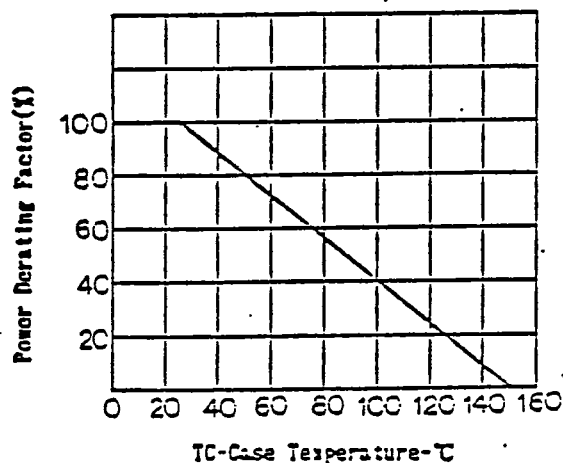
TURN-ON AND TURN-OFF TIME TEST CIRCUIT

98D 18906 D

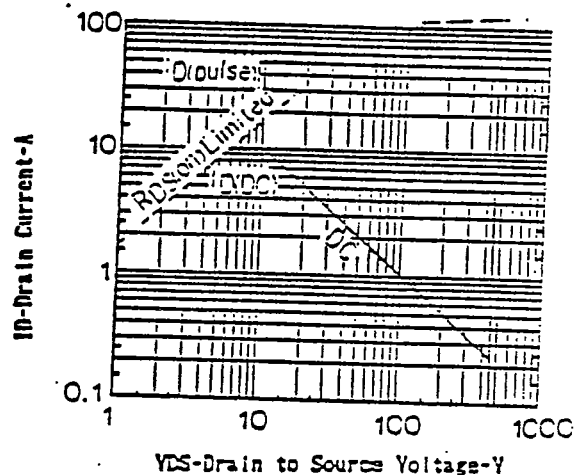
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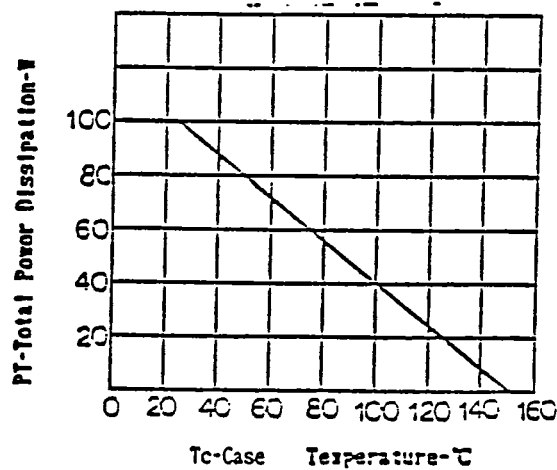
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



FORWARD BIAS SAFE OPERATING AREA



TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

