

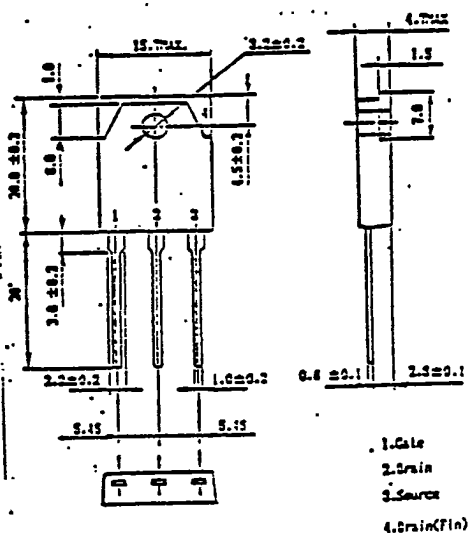


PRELIMINARY SPECIFICATION

MOS FIELD EFFECT TRANSISTOR

2SK819
FAST SWITCHING
N-CHANNEL SILICON POWER MOS FET

PACKAGE DIMENSIONS (Millim)



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	$I_D(DC)$	$\pm 10A$
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°C
Storage Temperature	T_{stg}	$-55\text{ to }+150^\circ\text{C}$
* $PW \leq 100 \mu s$, 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	$V_{DS} = 500V, V_{GS} = 0$
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	$R_{DS(on)}$		0.70	1.0	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	
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	$V_{cc} = 150V$
Fall Time	t_f		30		ns	$R_L = 30 \Omega$

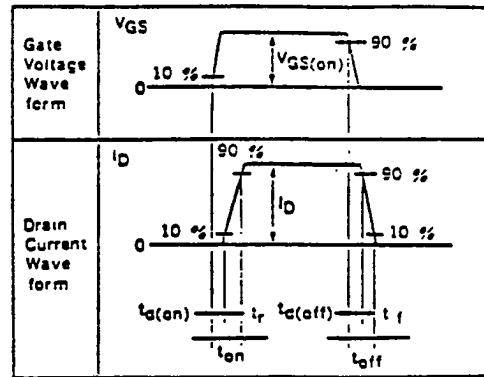
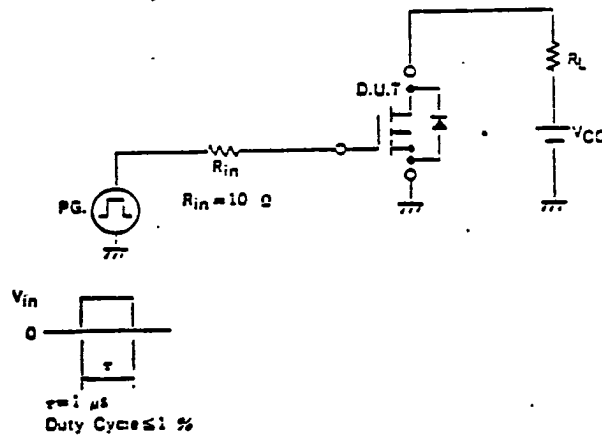
NEC cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement.

NEC Corporation

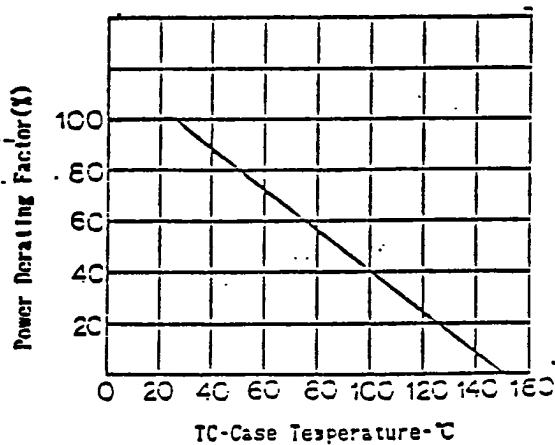
6427525 N E C ELECTRONICS INC
TURN-ON AND TURN-OFF TIME TEST CIRCUIT

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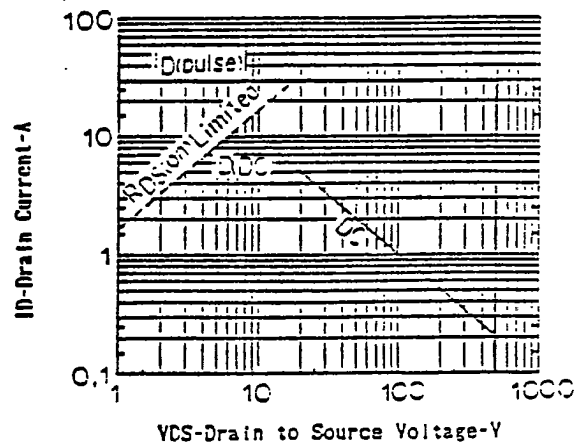
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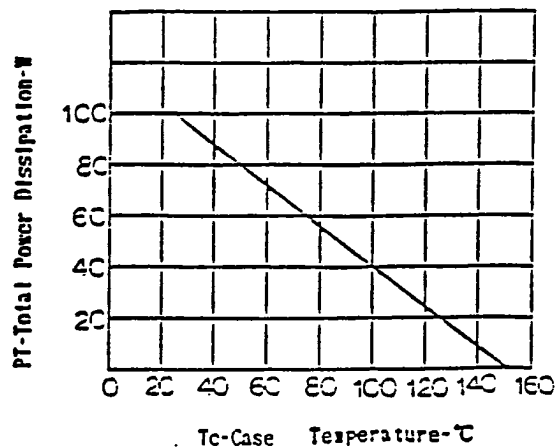
DERATING FACTOR OF FORWARD BIAS
SAFE OPERATING AREA



FORWARD BIAS SAFE OPERATING AREA



TOTAL POWER DISSIPATION vs.
CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO
SOURCE VOLTAGE

