

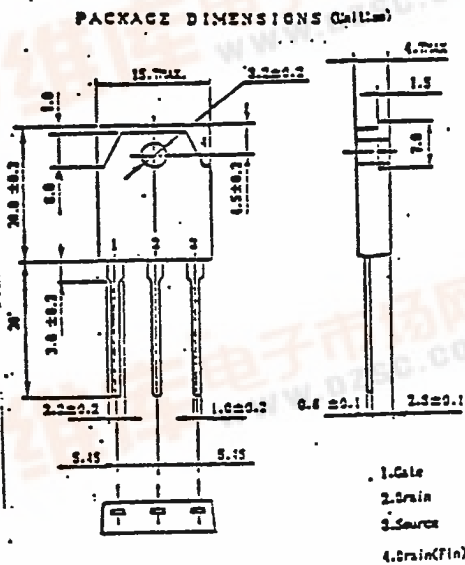


PRELIMINARY SPECIFICATION

MOS FIELD EFFECT TRANSISTOR

**2SK819**

FAST SWITCHING  
 N-CHANNEL SILICON POWER MOS FET



Features

- Suitable for switching power supplies, actuator controls and pulse circuits
- Low RDS(on)

Absolute Maximum Ratings(Ta=25°C)

Drain to Source Voltage	V <sub>DSS</sub>	500V
Gate to Source Voltage	V <sub>GSS</sub>	± 20V
Continuous Drain Current	I <sub>D</sub> (DC)	± 10A
Pulse Drain Current	I <sub>D</sub> (pulse) *	± 30A
Total Power Dissipation	P <sub>T</sub>	3.0W
Total Power Dissipation	P <sub>T</sub> **	100W
Channel Temperature	T <sub>ch</sub>	150 °C
Storage Temperature	T <sub>stg</sub>	-55to+150 °C

\* PW ≤ 100 us, Duty Cycle ≤ 2%  
 \*\* Tc=25 °C

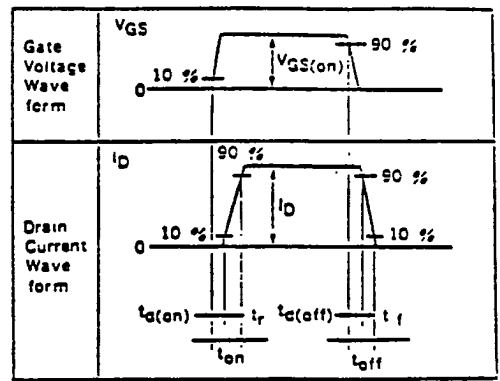
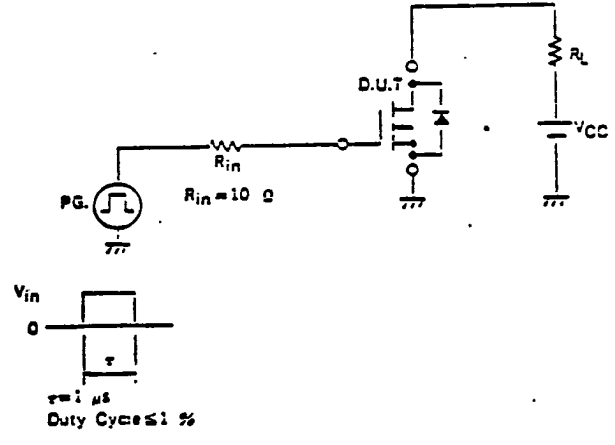
Electrical Characteristics (Ta=25 °C)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	I <sub>DSS</sub>			100	μA	V <sub>D</sub> =500V, V <sub>G</sub> =0
Gate to Source Leakage Current	I <sub>GSS</sub>			±100	nA	V <sub>G</sub> =±20V, V <sub>D</sub> =0
Gate to Source Cutoff Voltage	V <sub>GS(off)</sub>	1.5		3.5	V	V <sub>D</sub> =10V, I <sub>D</sub> =1.0mA
Forward Transfer Admittance	y <sub>fs</sub>	3.0			S	V <sub>D</sub> =10V, I <sub>D</sub> =5.0A
Drain to Source On-State Resistance	R <sub>DS(on)</sub>		0.70	1.0	Ω	V <sub>G</sub> =10V, I <sub>D</sub> =5.0A
Input Capacitance	C <sub>iss</sub>		1270		pF	V <sub>D</sub> = 10V, V <sub>G</sub> =0.
Output Capacitance	C <sub>oss</sub>		320		pF	
Reverse Transfer Capacitance	C <sub>rss</sub>		70		pF	f=1.0MHz
Turn-On Delay Time	t <sub>d(on)</sub>		15		ns	I <sub>D</sub> =5.0A,
Rise Time	t <sub>r</sub>		20		ns	V <sub>G</sub> (on)= 10V,
Turn-Off Delay Time	t <sub>d(off)</sub>		60		ns	V <sub>cc</sub> =150V,
Fall Time	t <sub>f</sub>		30		ns	RL= 30 Ω

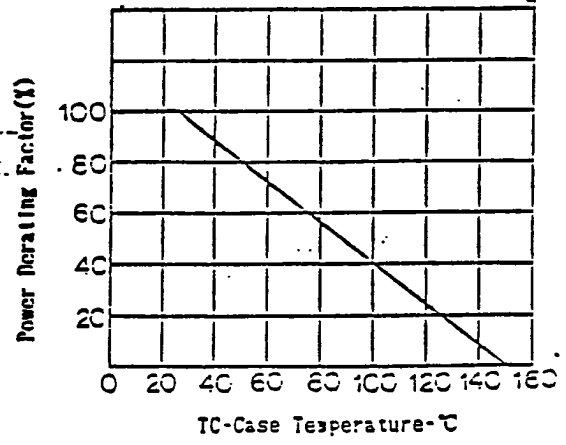


6427525 N E C ELECTRONICS INC  
TURN-ON AND TURN-OFF TIME TEST CIRCUIT

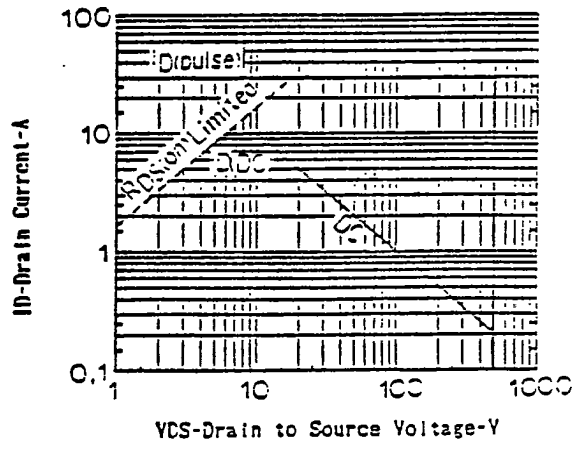
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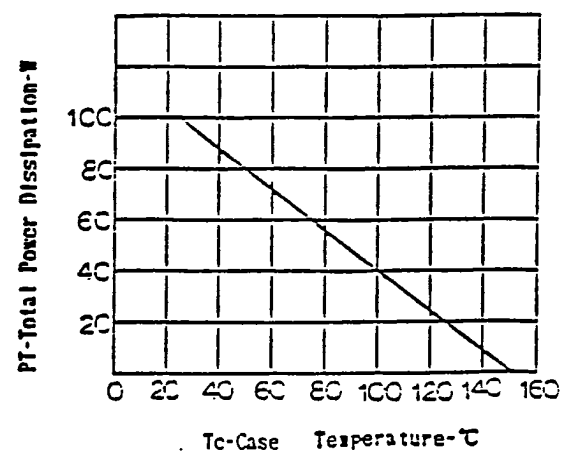
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



FORWARD BIAS SAFE OPERATING AREA



TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

