PRELIMINARY SPECIFICATION

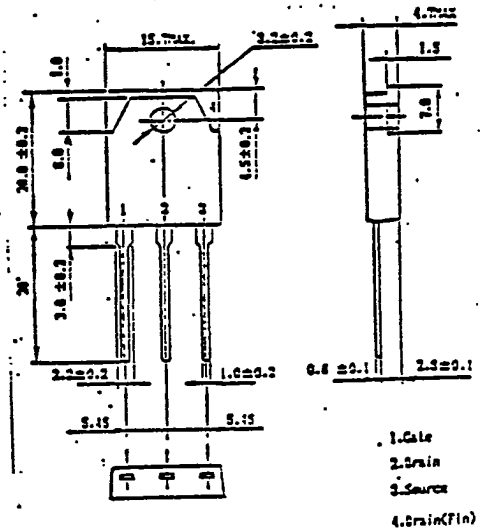
NEC
ELECTRON DEVICE

MOS FIELD EFFECT TRANSISTOR

2SK819

FAST SWITCHING . N-CHANNEL SILICON POWER MOS FET

PACKAGE DIMENSIONS (Unit:mm)



Features

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

Absolute Maximum Ratings(Ta=25℃)

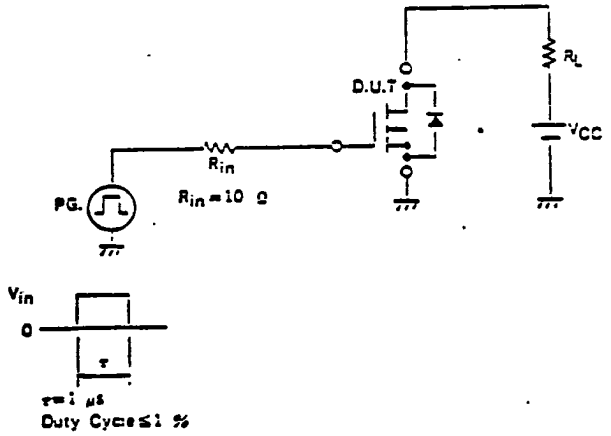
Drain to Source Voltage	VDSS	500V
Gate to Source Voltage	VGSS	± 20V
Continuous Drain Curre	ID(DC)	± 10A
Pulse Drain Current	ID(pulse)	*± 30A
Total Power Dissipation	PT	3.0W
Total Power Dissipation	PT**	100W
Channel Temperature	Tch	150 ℃
Storage Temperature	Tstg	-55to+150 ℃

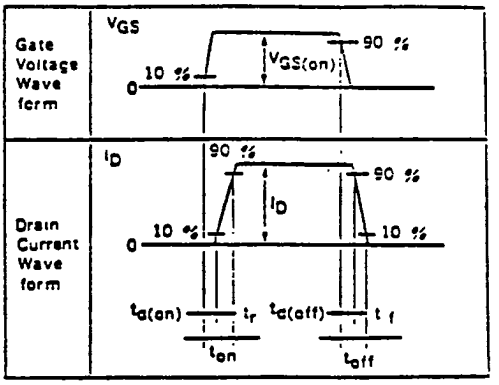
* PW ≦100 us, Duty Cycle≦2%
** Tc=25 ℃

Electrical Characteristics (Ta=25 ℃)

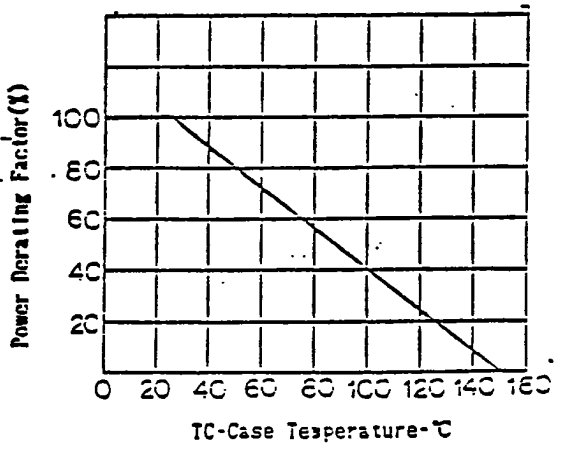
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	IDSS			100	μA	VDS=500V,VGS=0
Gate to Source Leakage Current	IGSS			±100	nA	VGS=±20V,VDS=0
Gate to Source Cutoff Voltage	VGS(off)	1.5		3.5	V	VDS=10V,ID=1.0mA
Forward Transfer Admittance	yfs	3.0			S	VDS=10V,ID=5.0A
Drain to Source On-State Resistance	RDS(on)		0.70	1.0	Ω	VGS=10V,ID=5.0A
Input Capacitance	Ciss		1270		pF	VDS= 10V,
Output Capacitance	Coss		320		pF	VGS=0,
Reverse Transfer Capacitance	Crss		70		pF	f=1.0MHz
Turn-On Delay Time	td(on)		15		ns	ID=5.0A,
Rise Time	tr		20		ns	VGS(on)= 10V,
Turn-Off Delay Time	td(off)		60		ns	Vcc=150V,
Fall Time	tf		30		ns	RL= 30 Ω

TURN-ON AND TURN-OFF TIME TEST CIRCUIT

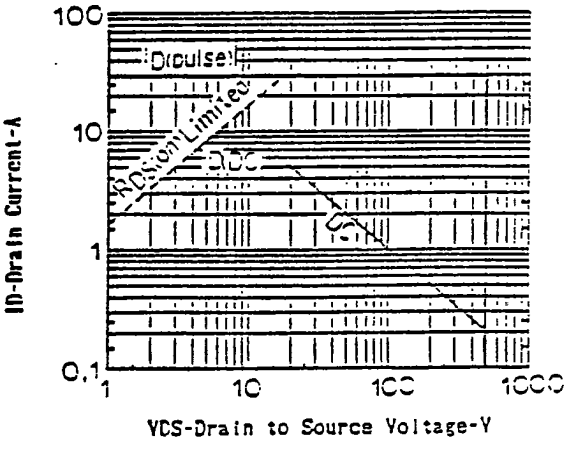




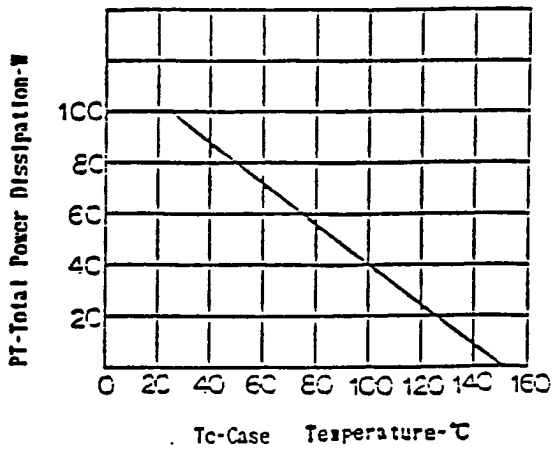
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



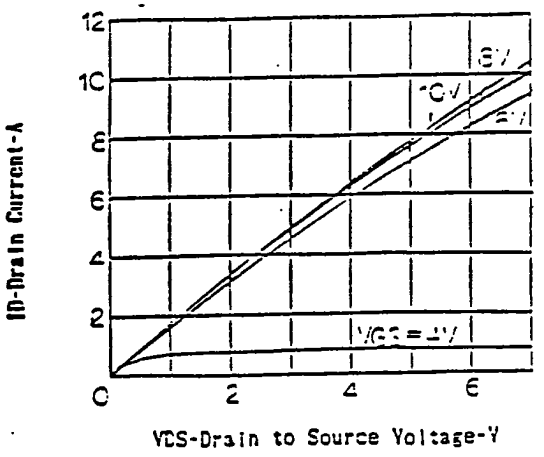
FORWARD BIAS SAFE OPERATING AREA



TOTAL POWER DISSIPATION vs. CASE TEMPERATURE

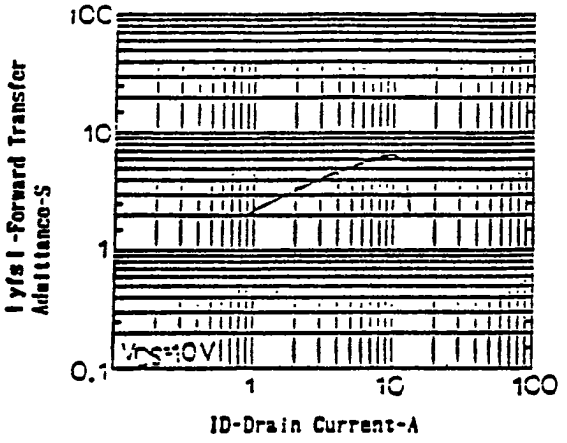


DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

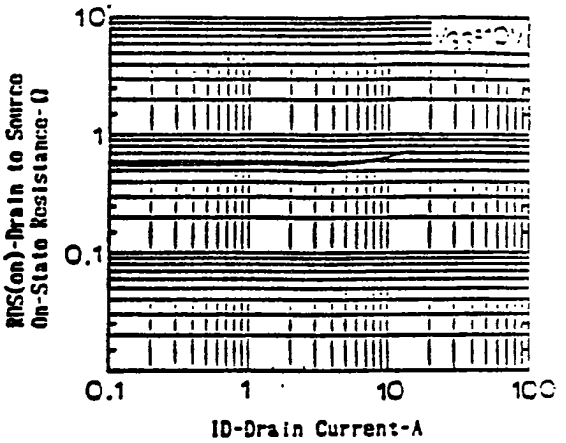


2

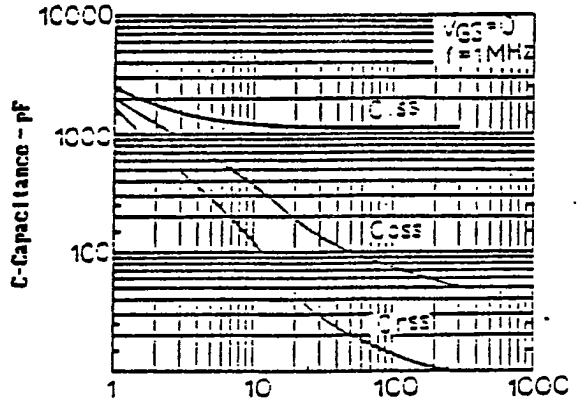
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



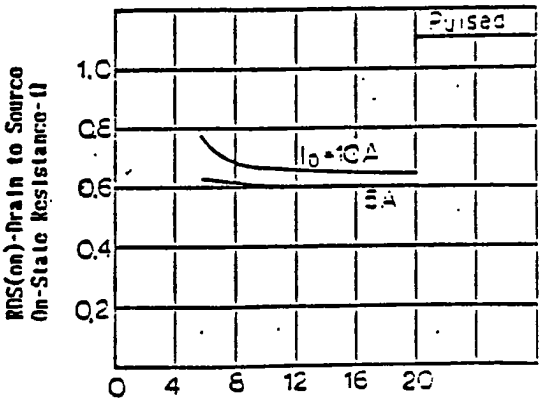
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE



TURN-ON AND TURN-OFF TIME