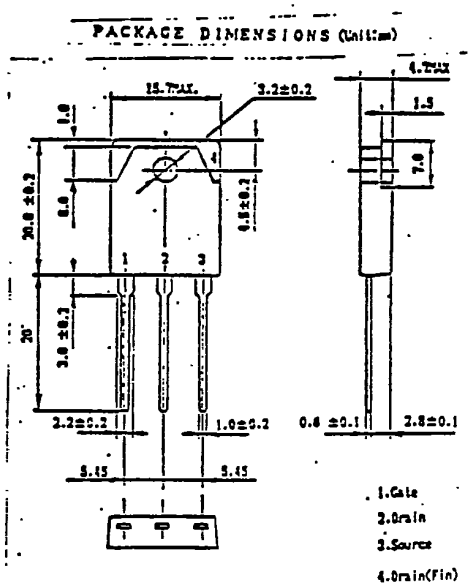
PRELIMINARY SPECIFICATION

NEC
ELECTRON DEVICE

MOS FIELD EFFECT POWER TRANSISTOR

2SK787

FAST SWITCHING
N-CHANNEL SILICON POWER MOS FET



FEATURES

- Suitable for switching power supplies, actuater controls,and pulse circuits
- Low RDS(on)
- No second breakdown

ABSOLUTE MAXIMUM RATINGS

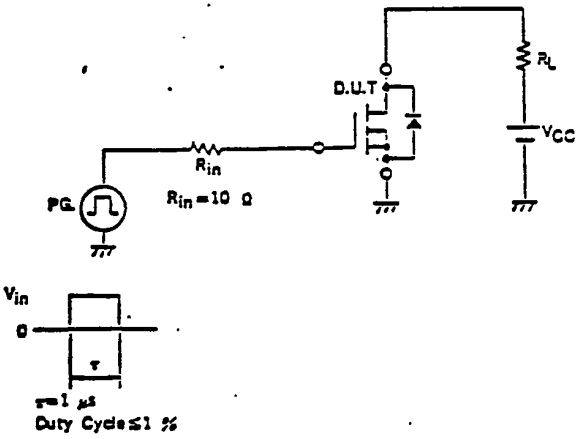
Drain to Source Voltage	VDSS	900V
Gate to Source Voltage	VGSS	±20V
Continuous Drain Current	ID(DC)	± 8A
Peak Drain Current	ID(pulse)*	±32A
Total Power Dissipation at Tc=25℃	PT	120W
Total Power Dissipation at Ta=25℃	PT	3.0W
Channel Temperature	Tch	150 ℃
Storage Temperature	Tstg	-55 to 150 ℃

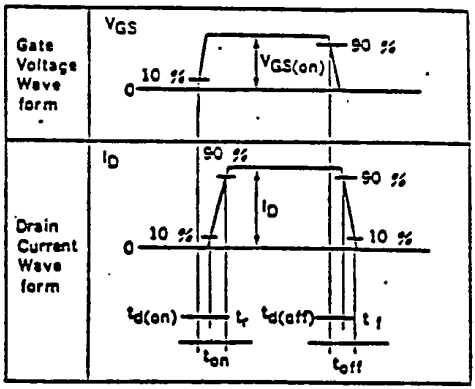
* Pulsed/PW≦100 μs , Duty Cycle≦2%

ELECTRICAL CHARACTERISTICS (Ta=25 ℃)

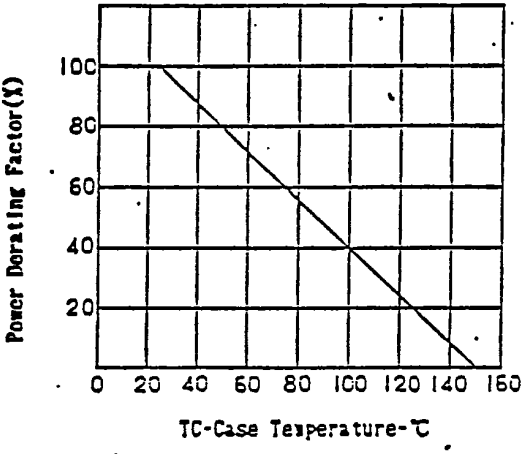
CHARACTERISTICS	SYBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain Leakage Current	IDSS			100	μA	VDS=900V,VGS=0
Gate to Source Leakage Current	IGSS			100	nA	VGS= 20V,VDS=0
Gate to Source Cutoff Voltage	VGS(off)	1.5		3.5	V	VDS=10V,ID=1mA
Forward Transfer Admittance	yfs	1.0			S	VDS=10V,ID=5A
Drain to Source On-State Resistance	RDS(on)		1.20	1.60		VGS=10V,ID=4A
Input Capacitance	Ciss		2400		pF	VDS=10V
Output Capacitance	Coss		350		pF	VGS=0
Reverse Transfer Capacitance	Crss		200		pF	f=1MHz
Turn-On Delay Time	td(on)		70		ns	ID=4A
Rise Time	tr		80		ns	VGS(on)=10V
Turn-Off Delay Time	td(off)		100		ns	VCC=150V
Fall Time	tf		80		ns	Rin=10Ω

TURN-ON AND TURN-OFF TIME TEST CIRCUIT

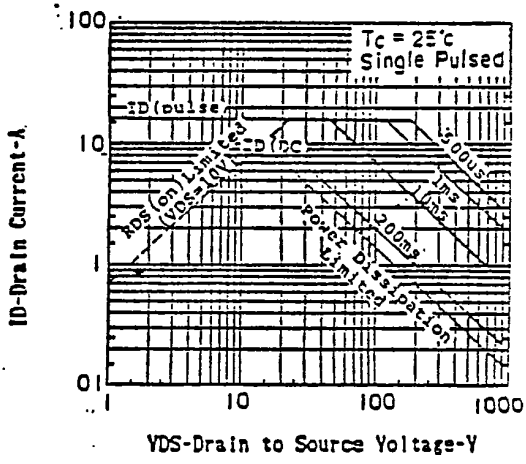




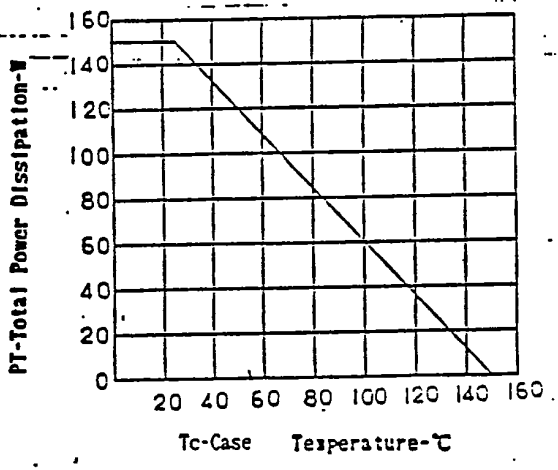
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



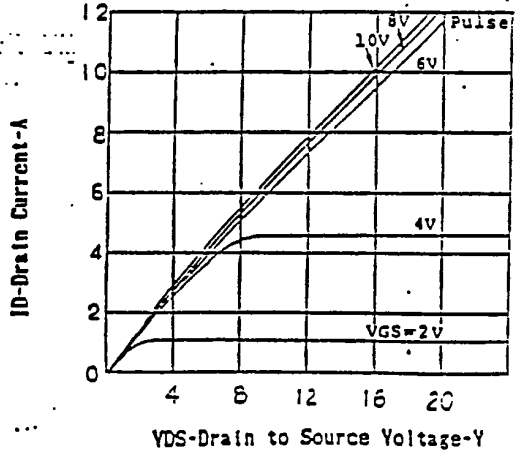
FORWARD BIAS SAFE OPERATING AREA



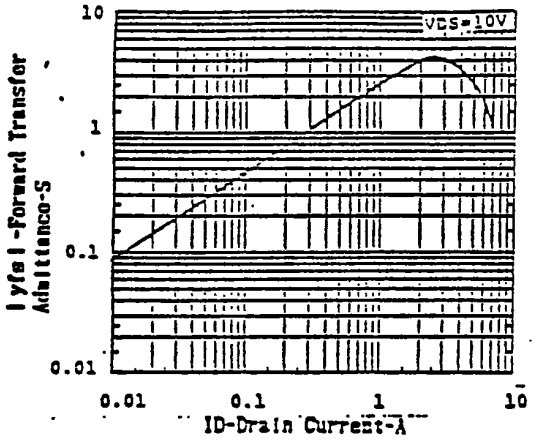
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



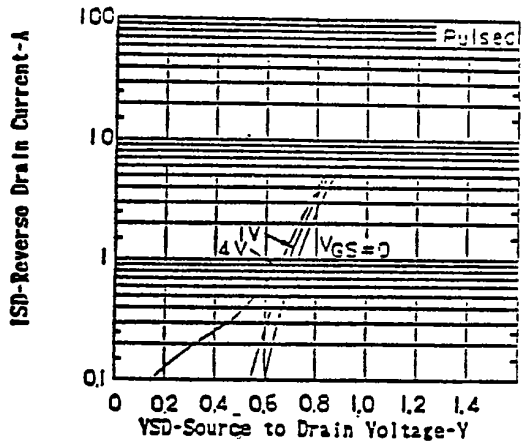
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



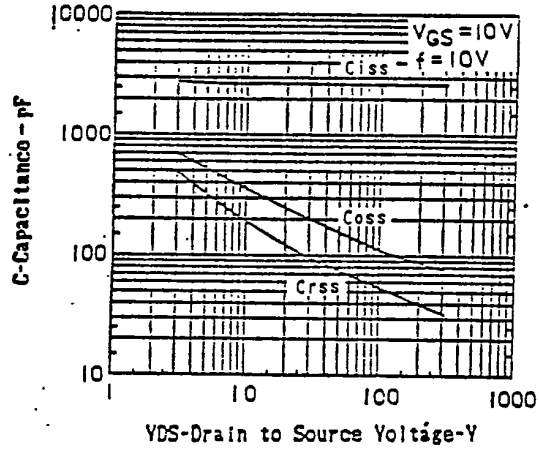
FORWARD TRANSFER ADMITTANCE
vs. DRAIN CURRENT



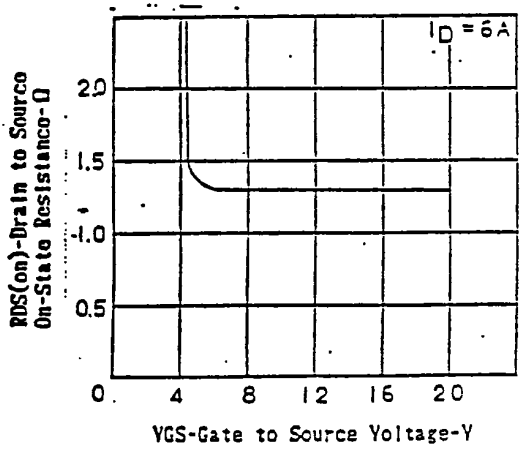
SOURCE TO DRAIN DIODE
FORWARD VOLTAGE



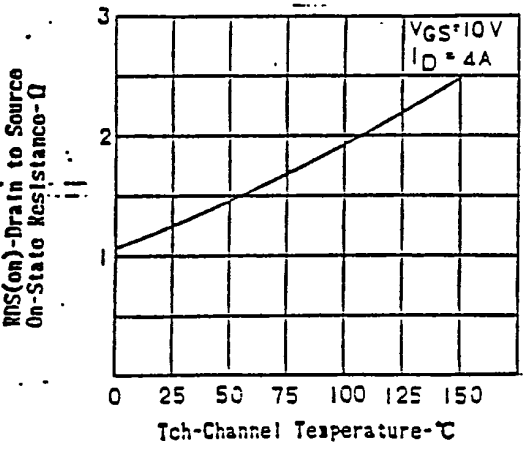
CAPACITANCE vs. DRAIN TO
SOURCE VOLTAGE



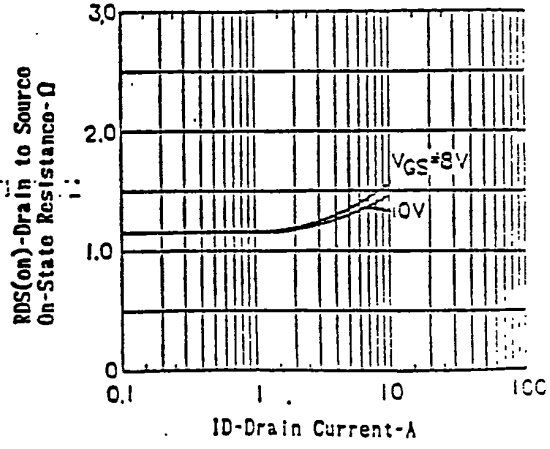
DRAIN TO SOURCE ON-STATE RESISTANCE
vs. GATE TO SOURCE VOLTAGE



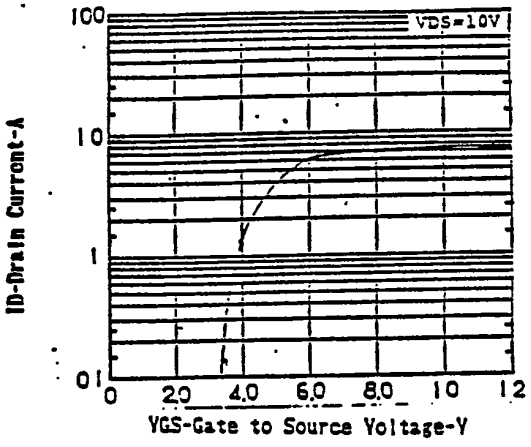
DRAIN TO SOURCE ON-STATE RESISTANCE
vs. CHANNEL TEMPERATURE



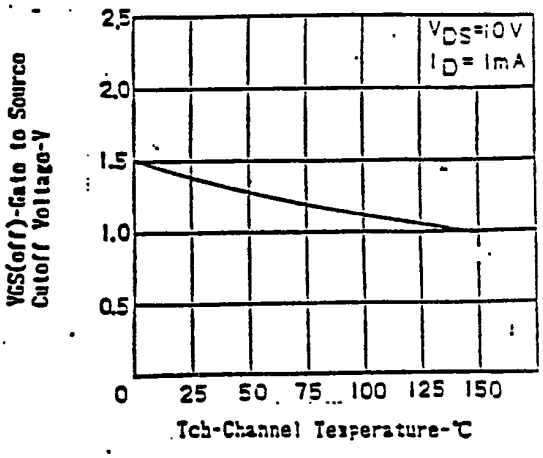
DRAIN TO SOURCE ON-STATE RESISTANCE
vs. DRAIN CURRENT



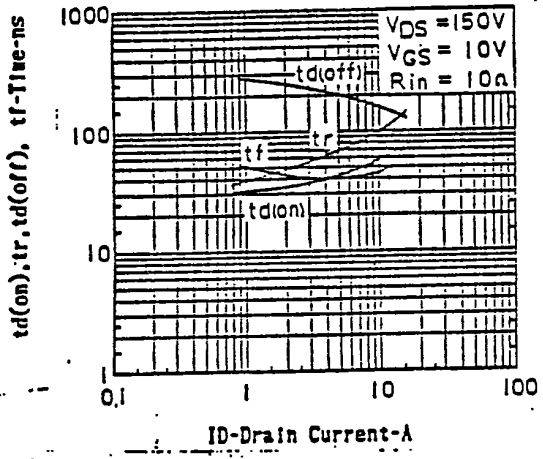
TRANSFER CHARACTERISTICS



GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



TURN-ON AND TURN-OFF TIME



NORMALIZED TRANSIENT THERMAL IMPEDANCE vs. PULSE WIDTH.