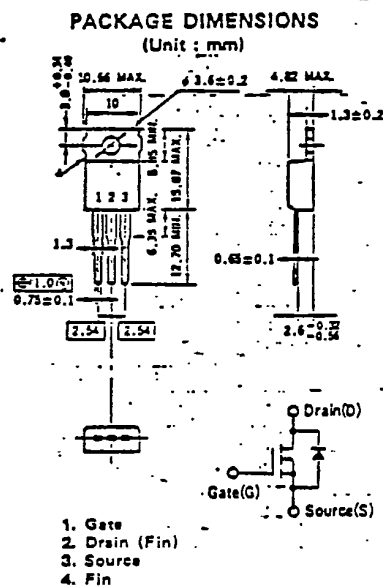


NEC
ELECTRON DEVICE

PRELIMINARY SPECIFICATION
MOS FIELD EFFECT TRANSISTOR

2SK786

FAST SWITCHING
N-CHANNEL SILICON POWER MOS FET



Features

Suitable for switching power supplies,
DC-DC converters and pulse circuits
Ultra High Voltage: $V_{DS} = 900V$
Low $R_{DS(on)}$
No second breakdown

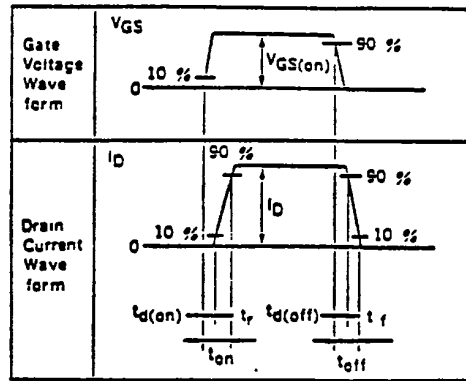
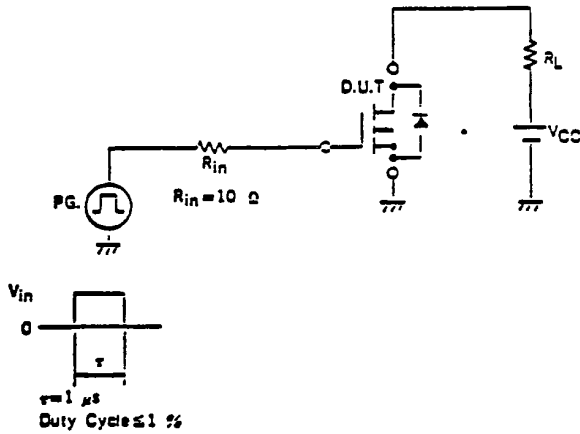
Absolute Maximum Ratings ($T_a = 25^\circ C$)

Drain to Source Voltage	V_{DS}	900V
Gate to Source Voltage	V_{GS}	$\pm 20V$
Continuous Drain Current	$I_D(DC)$	$\pm 3.0A$
Pulse Drain Current	$I_D(pulse)$	$\pm 6.0A$
Total Power Dissipation	PT	1.5W
Total Power Dissipation	PT**	50W
Channel Temperature	T_{ch}	150 °C
Storage Temperature	T_{stg}	-55 to +150 °C
* $PW \leq 100 \mu s, Duty Cycles \leq 2\%$		
** $T_c = 25^\circ C$		

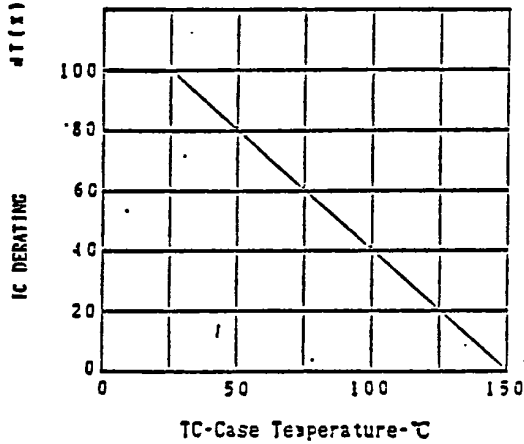
Electrical Characteristics ($T_a = 25^\circ C$)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	I_{DSS}			100	μA	$V_{DS} = 900V, V_{GS} = 0$
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} $	0.8			S	$V_{DS} = 20V, I_D = 2.0A$
Drain To Source On-State Resistance	$R_{DS(on)}$			7.0	Ω	$V_{GS} = 15V, I_D = 20A$
Input Capacitance	C_{iss}		470		pF	$V_{DS} = 10V$
Output Capacitance	C_{oss}		100		pF	$V_{GS} = 0$
Reverse Transfer Capacitance	C_{rss}		40		pF	$f = 1.0MHz$
Turn-On Delay Time	$t_d(on)$		10		ns	$I_D = 1.5A,$
Rise Time	t_r		40		ns	$V_{GS(on)} = 10V$
Turn-Off Delay Time	$t_d(off)$		45		ns	$V_{CC} = 150V$
Fall Time	t_f		15		ns	$R_L = 100\Omega$

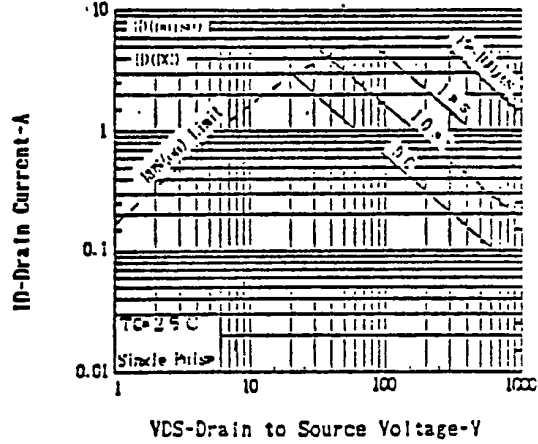
TURN-ON AND TURN-OFF TIME TEST CIRCUIT



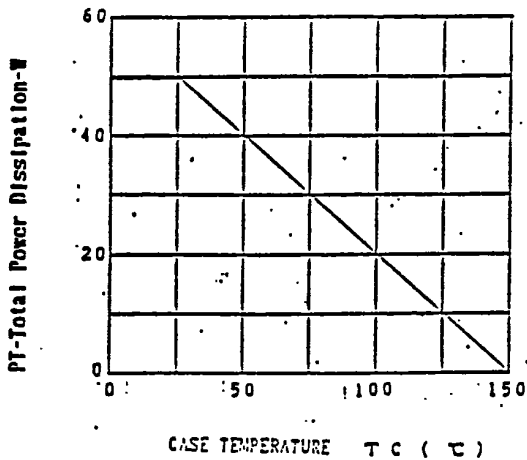
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



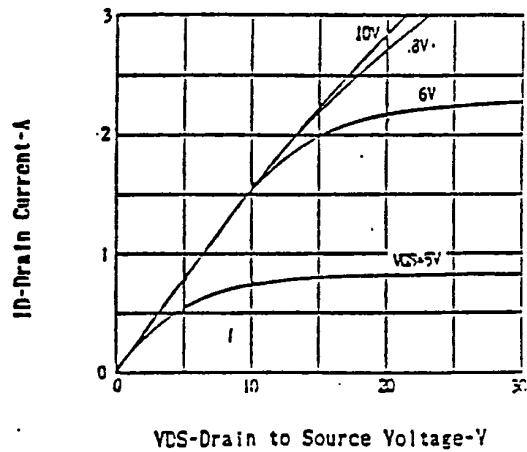
FORWARD BIAS SAFE OPERATING AREA

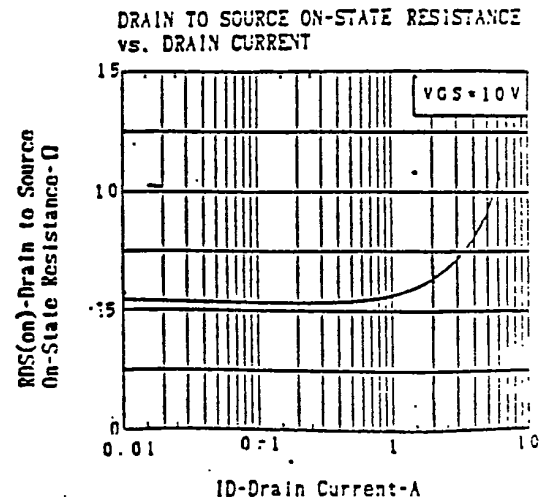
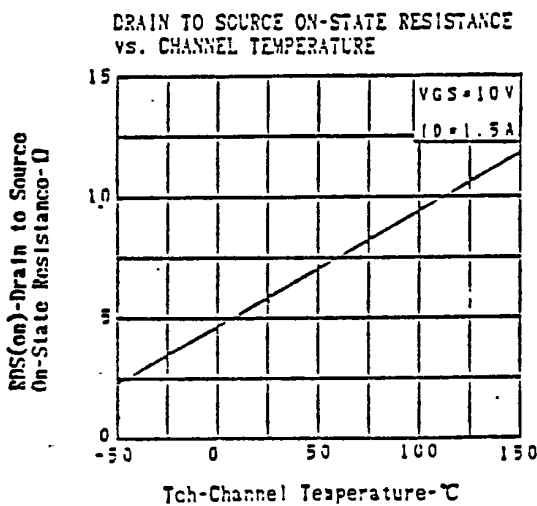
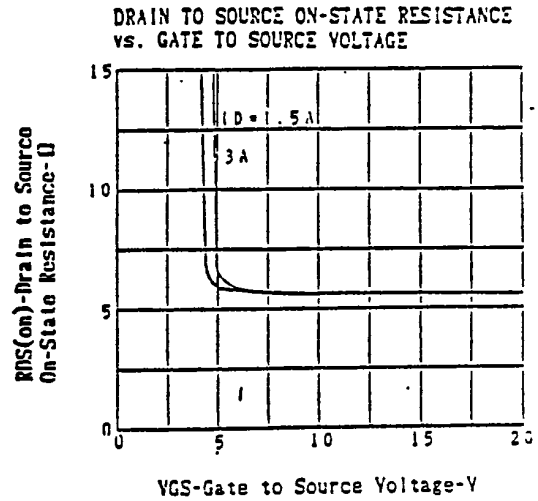
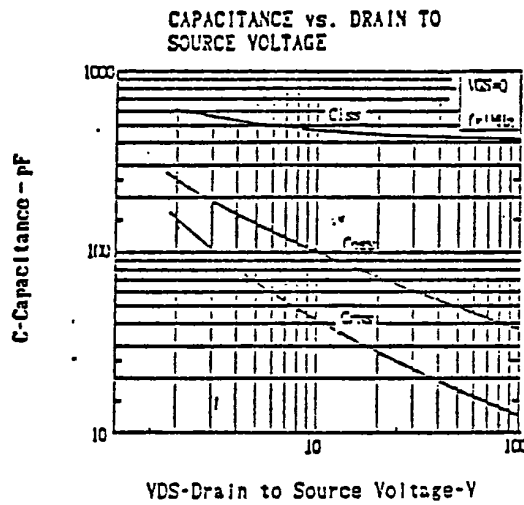
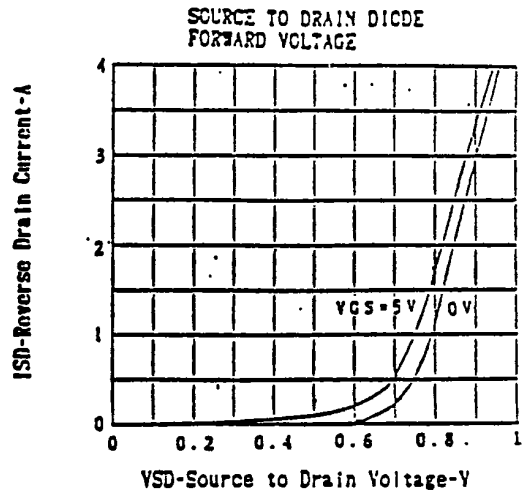
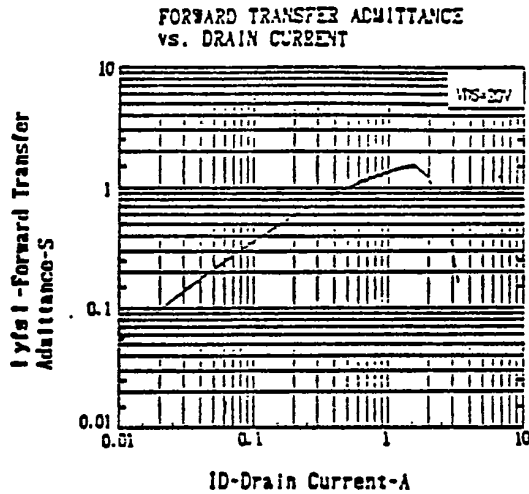


TOTAL POWER DISSIPATION vs. CASE TEMPERATURE

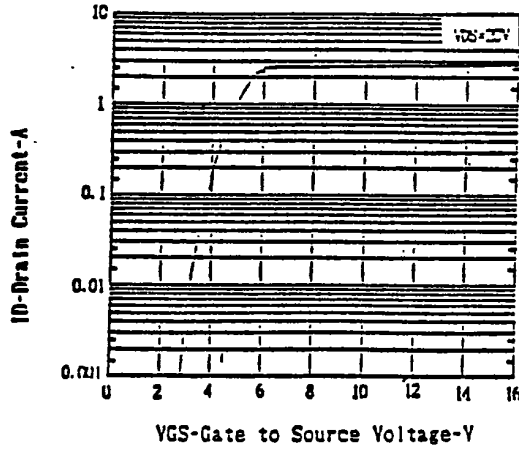


DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

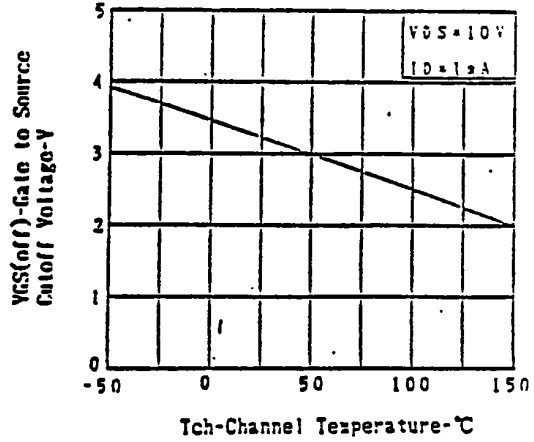




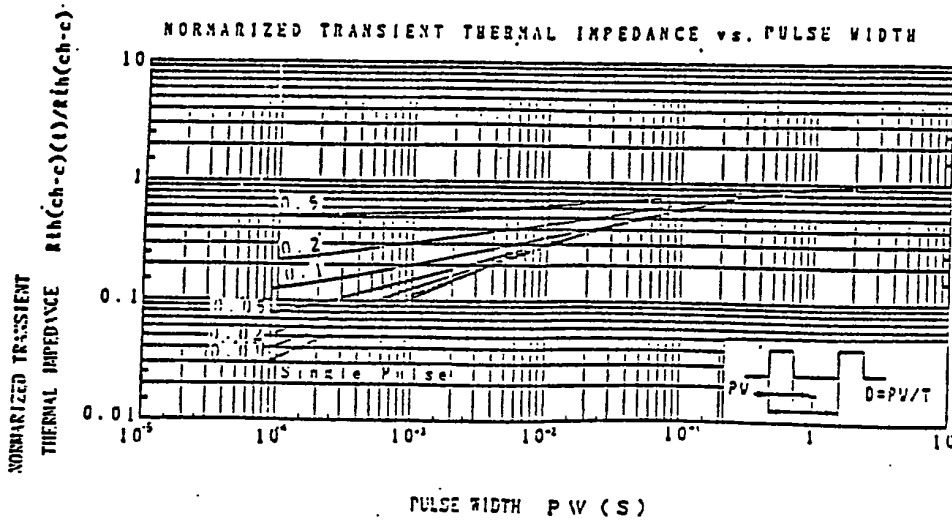
TRANSFER CHARACTERISTICS



GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



NORMALIZED TRANSIENT THERMAL IMPEDANCE vs. PULSE WIDTH



SWITCHING CHARACTERISTICS

