



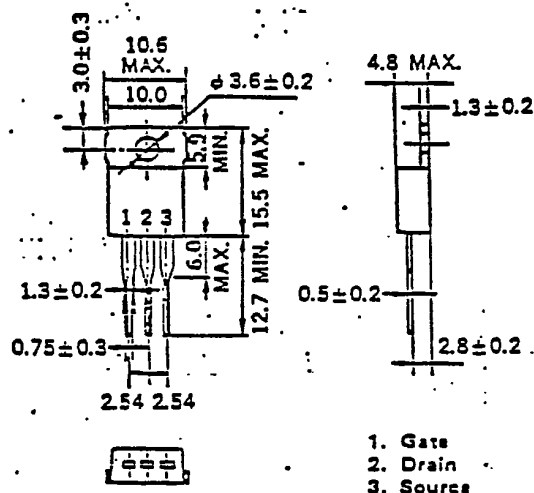
MOS FIELD EFFECT TRANSISTORS

2SJ140

FAST SWITCHING
P-CHANNEL SILICON POWER MOS FET

PACKAGE DIMENSIONS

(Unit: mm)



Features

Suitable for switching power supplies,
actuator controls and pulse circuits

4V Gate Drive ——— Logic Level ———

Large current switching : $I_D(DC)=19A$

Low RDS(on)

No Secondary Breakdown

Absolute Maximum Ratings(Ta=25°C)

Drain to Source Voltage V_{DSS} - 60V

Gate to Source Voltage	VGSS	$\pm 20V$
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Continuous Drain Current $I_D(DC)$ $\pm 10\%$

Pulse Drain Current	$I_D(\text{pulse}) * \pm 764$
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Total Power Dissipation	PT	1.5W
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Total Power Dissipation PT** 60

Channel Temperature Tch 150 °C

Storage Temperature	Tstg	-55 to +150 °C
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* $T_{ch} \leq 150^{\circ}\text{C}$

** $T_c = 25\text{ }^\circ\text{C}$

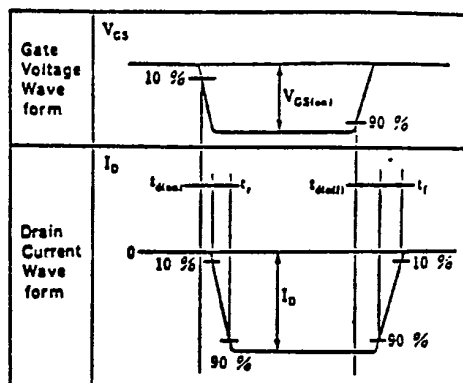
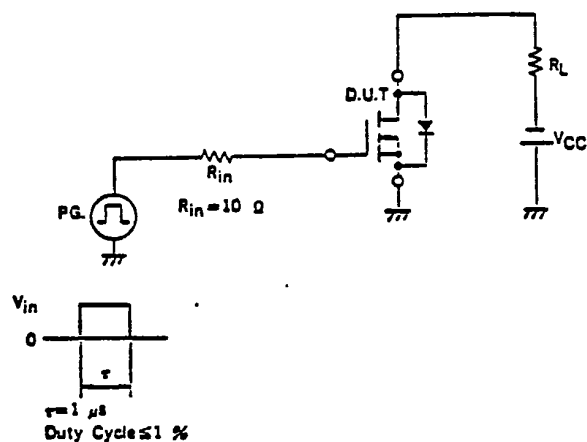
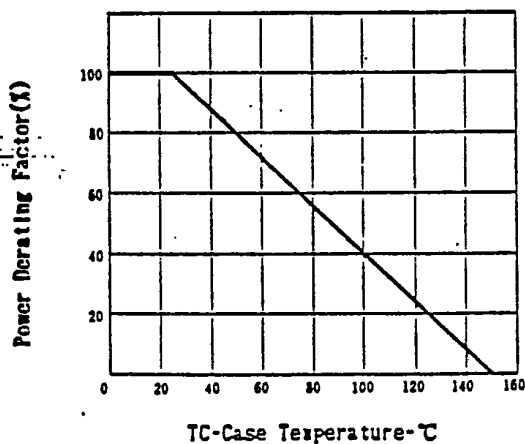
Electrical Characteristics (Ta=25 °C)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	IDSS			- 10	μA	VDS=- 60V, VGS=0
Gate to Source Leakage Current	IGSS			100	nA	VGS= 20V, VDS=0
Gate to Source Cutoff Voltage	VGS(off)	-1.0		-3.0	V	VDS=-10V, ID=-1.0mA
Forward Transfer Admittance	yfs	5.0			S	VDS=-10V, ID=-10 A
Drain to Source On-State Resistance	RDS(on)			0.2	Ω	VGS=-10V, ID=-10 A
Drain to Source On-State Resistance	RDS(on)			0.4	Ω	VGS=-4.0V, ID=-2.0-
Input Capacitance	Ciss		2600		pF	VDS=-10V,
Output Capacitance	Coss		630		pF	VGS=0,
Reverse Transfer Capacitance	Crss		130		pF	f=1.0MHz
Turn-On Delay Time	td(on)		20		ns	ID=-10 A,
Rise Time	tr		160		ns	VGS(on)=-10V.
Turn-Off Delay Time	td(off)		80		ns	Vcc=-30V,
Fall Time	tf		90		ns	RL=2 Ω

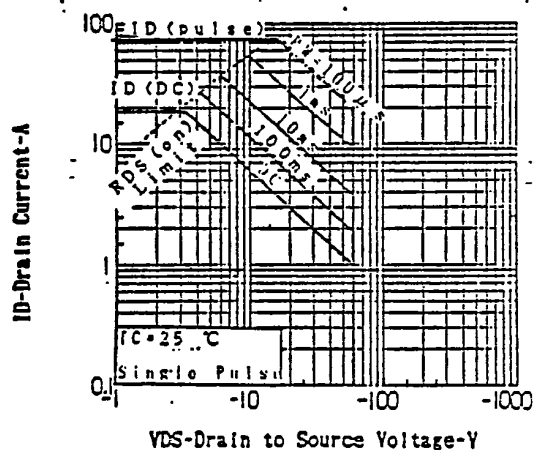
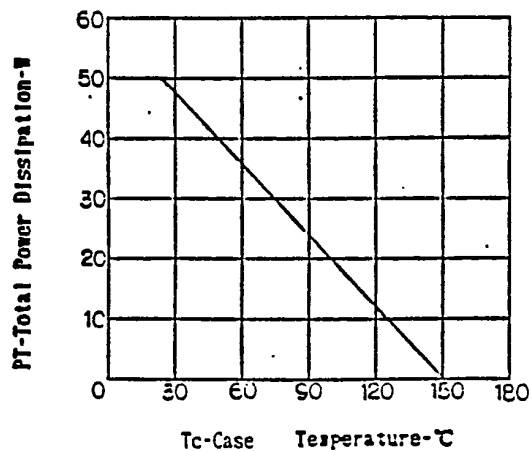
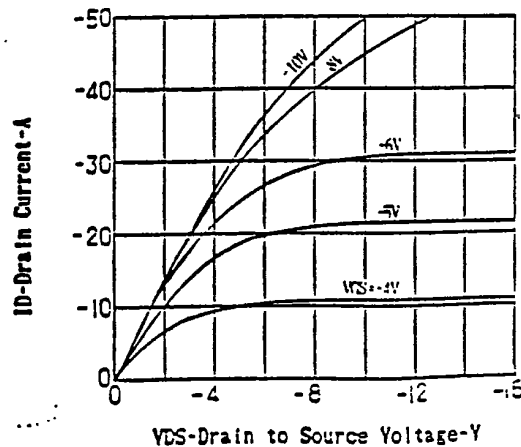
NEC cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement.

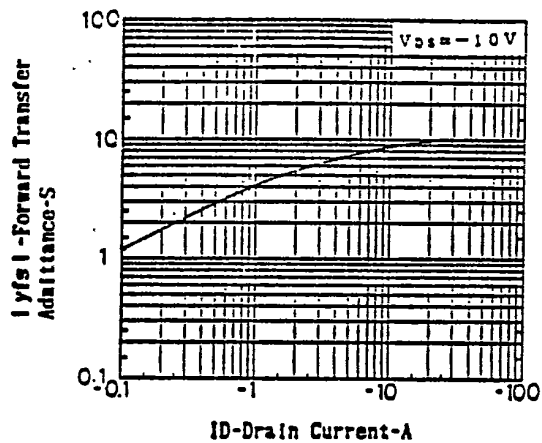
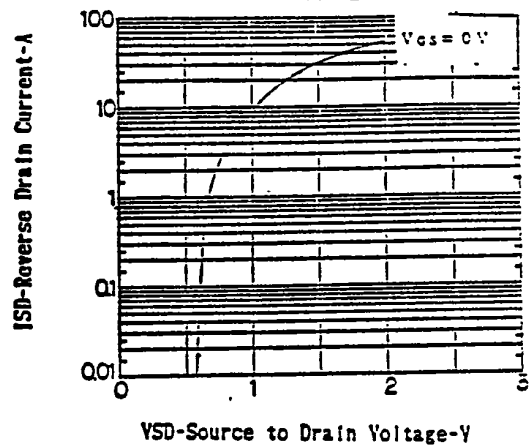
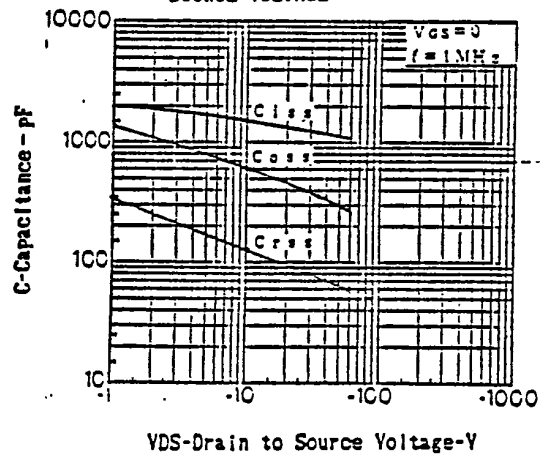
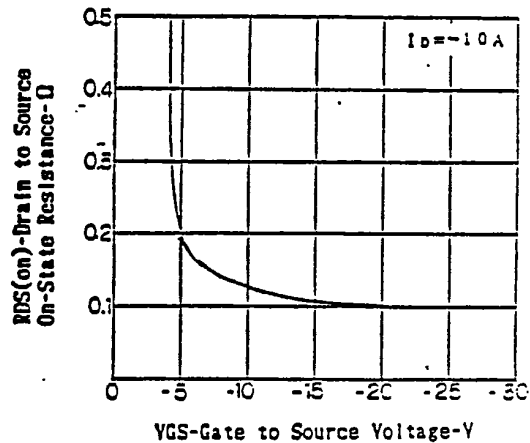
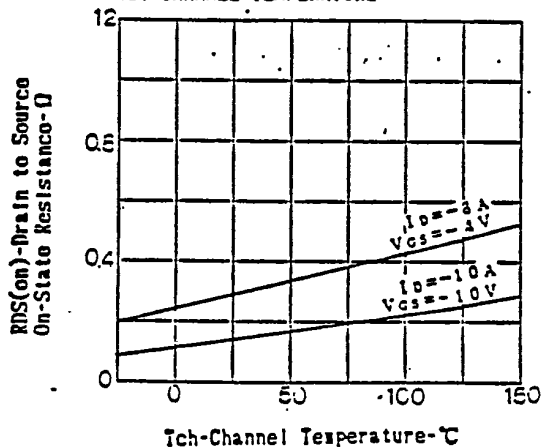
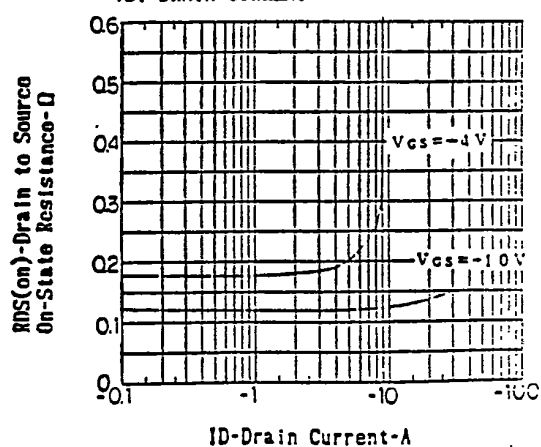
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TURN-ON AND TURN-OFF TIME TEST CIRCUIT

DERATING FACTOR OF FORWARD BIAS
SAFE OPERATING AREA

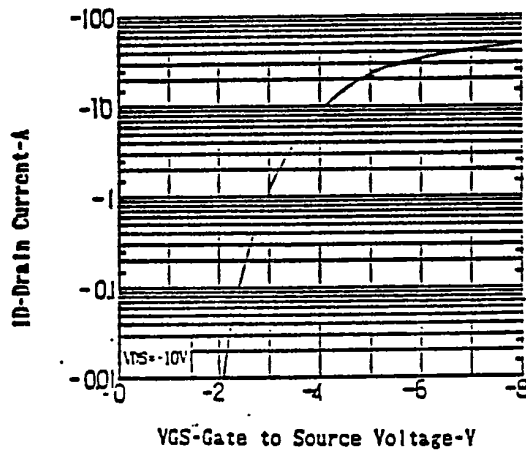
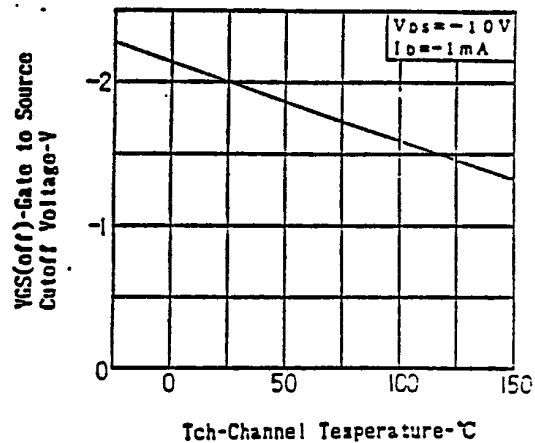
FORWARD BIAS SAFE OPERATING AREA

TOTAL POWER DISSIPATION vs.
CASE TEMPERATUREDRAIN CURRENT vs. DRAIN TO
SOURCE VOLTAGE

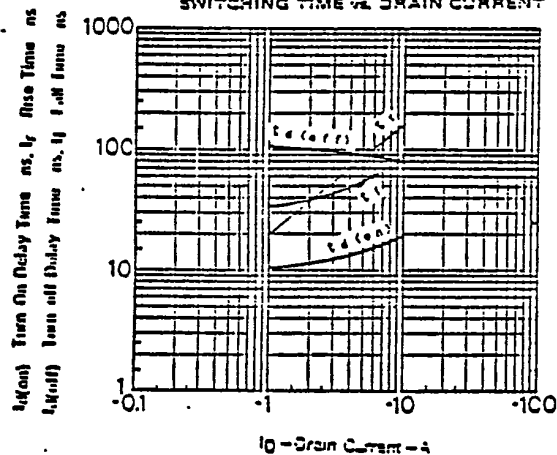
FORWARD TRANSFER ADMITTANCE
vs. DRAIN CURRENTSOURCE TO DRAIN DIODE
FORWARD VOLTAGECAPACITANCE vs. DRAIN TO
SOURCE VOLTAGEDRAIN TO SOURCE ON-STATE RESISTANCE
vs. GATE TO SOURCE VOLTAGEDRAIN TO SOURCE ON-STATE RESISTANCE
vs. CHANNEL TEMPERATUREDRAIN TO SOURCE ON-STATE RESISTANCE
vs. DRAIN CURRENT

NEC ELECTRON DEVICE

TRANSFER CHARACTERISTICS

GATE TO SOURCE CUTOFF VOLTAGE
vs. CHANNEL TEMPERATURE

SWITCHING TIME vs. DRAIN CURRENT



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