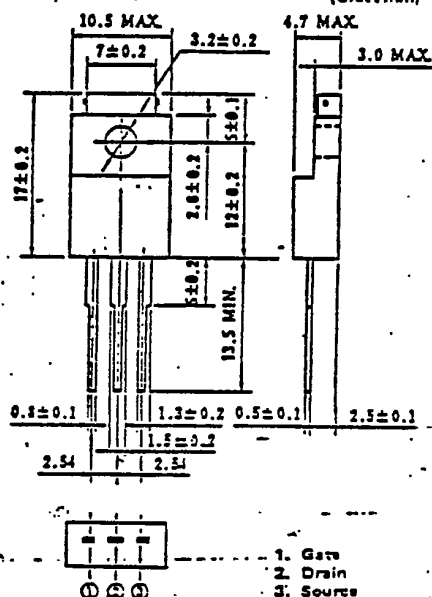


NEC
ELECTRON DEVICE

MOS FIELD EFFECT TRANSISTOR

2SJ135
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 : $ID(DC) = 5A$

Low $R_{DS(on)}$

No Secondary Breakdown

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

Drain to Source Voltage	V_{DS}	-100V
Gate to Source Voltage	V_{GS}	$\pm 20V$
Continuous Drain Current	$ID(DC)$	$\pm 5.0A$
Pulse Drain Current	$ID(pulse)$	$* \pm 20A$
Total Power Dissipation	PT	2.0W
Total Power Dissipation	PT**	30W
Channel Temperature	T_{ch}	150 °C
Storage Temperature	T_{stg}	-55 to +150 °C

* $T_{ch} \leq 150^\circ C$

** $T_c = 25^\circ C$

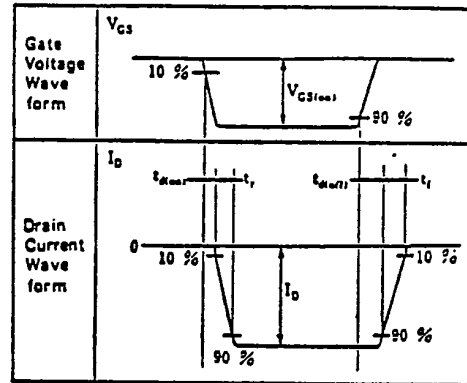
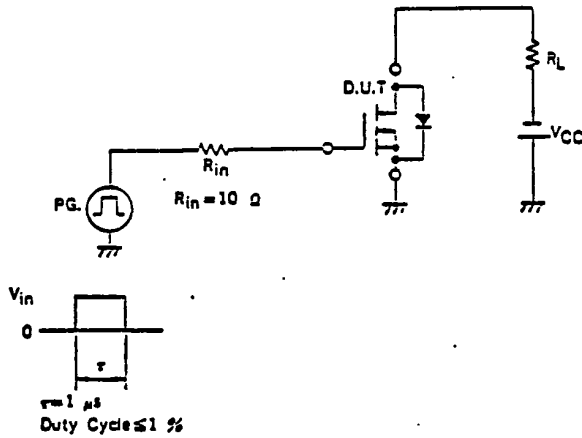
Electrical Characteristics ($T_a = 25^\circ C$)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	$IDSS$			- 10	μA	$V_{DS} = -100V, V_{GS} = 0$
Gate to Source Leakage Current	$IGSS$			100	nA	$V_{GS} = 20V, V_{DS} = 0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	-1.0		-3.0	V	$V_{DS} = -10V, ID = -1.0mA$
Forward Transfer Admittance	$ y_{fs} $	1.0			S	$V_{DS} = -10V, ID = -3.5A$
Drain to Source On-State Resistance	$R_{DS(on)}$			0.6	Ω	$V_{GS} = -10V, ID = -3.5A$
Drain to Source On-State Resistance	$R_{DS(on)}$			0.9	Ω	$V_{GS} = -4.0V, ID = -3.5A$
Input Capacitance	C_{iss}		1600		pF	$V_{DS} = -10V, V_{GS} = 0,$
Output Capacitance	C_{oss}		400		pF	$f = 1.0MHz$
Reverse Transfer Capacitance	C_{rss}		65		pF	$ID = -3.5A,$
Turn-On Delay Time	$t_{d(on)}$		9		ns	$V_{GS(on)} = -10V,$
Rise Time	t_r		35		ns	$V_{cc} = -50V,$
Turn-Off Delay Time	$t_{d(off)}$		55		ns	$R_L = 15 \Omega$
Fall Time	t_f		40		ns	

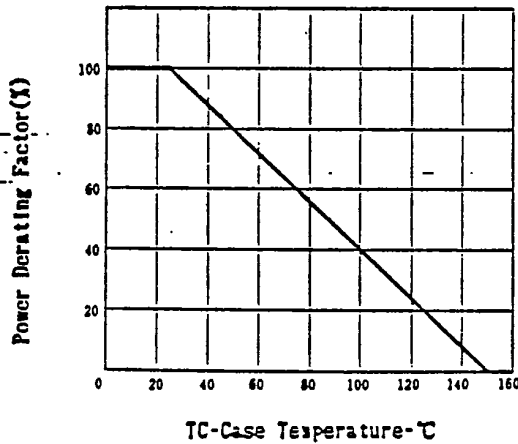
NEC cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement.

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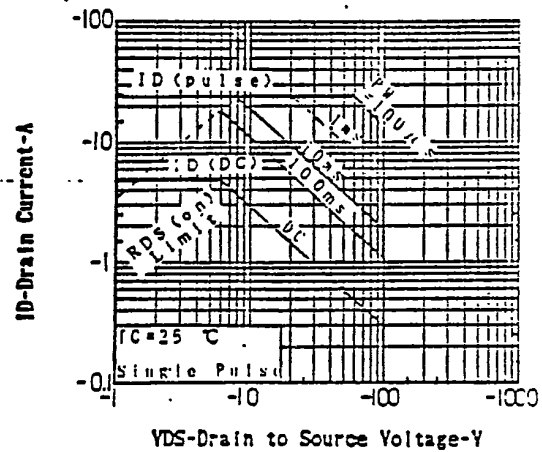
TURN-ON AND TURN-OFF TIME TEST CIRCUIT



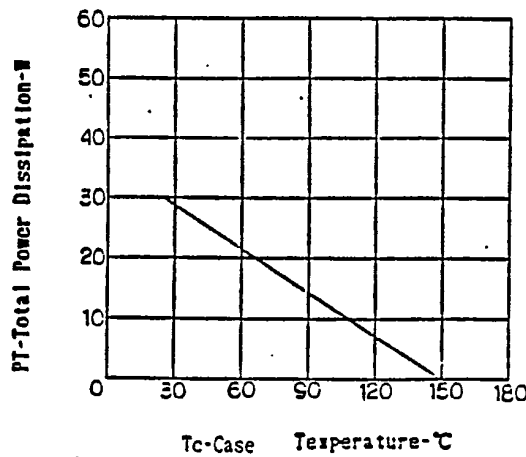
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



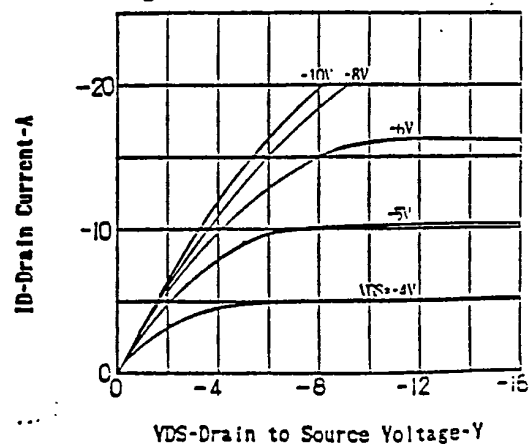
FORWARD BIAS SAFE OPERATING AREA

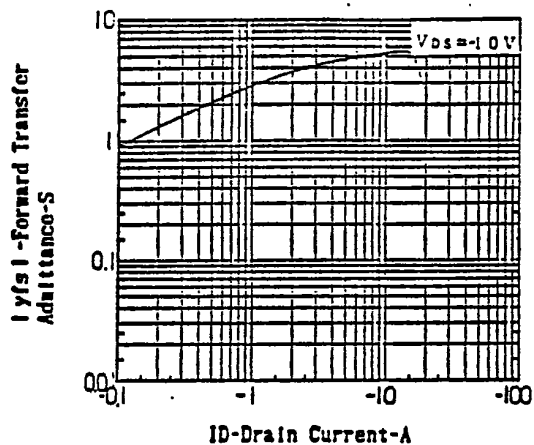
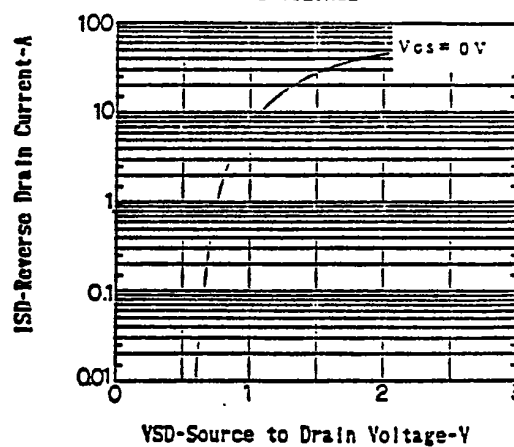
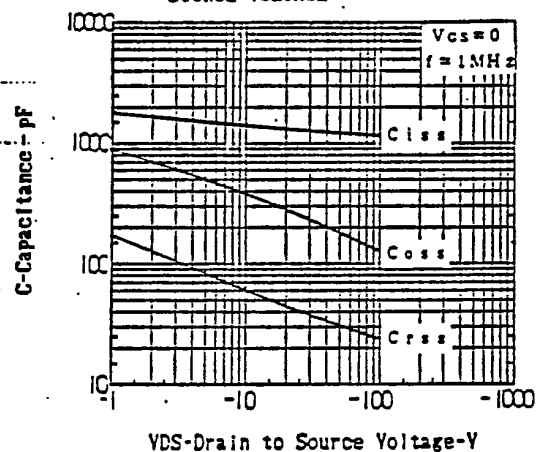
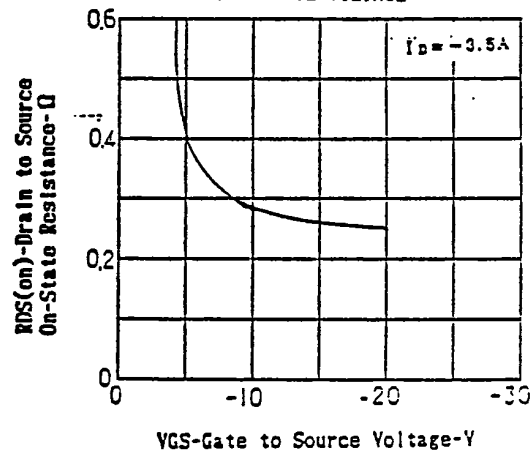
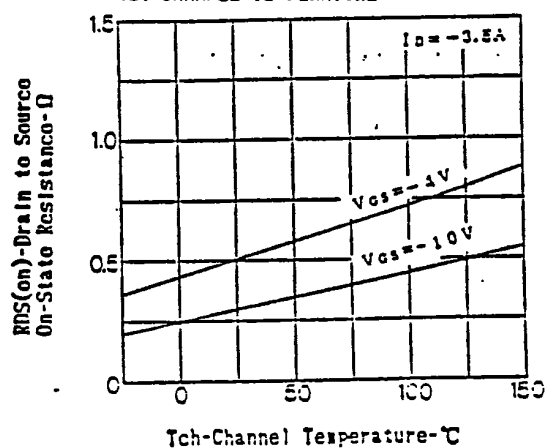
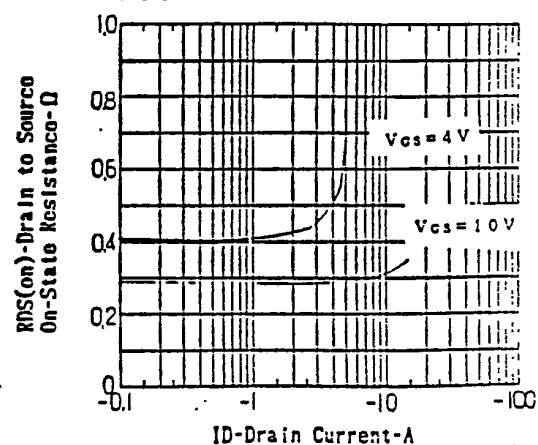


TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



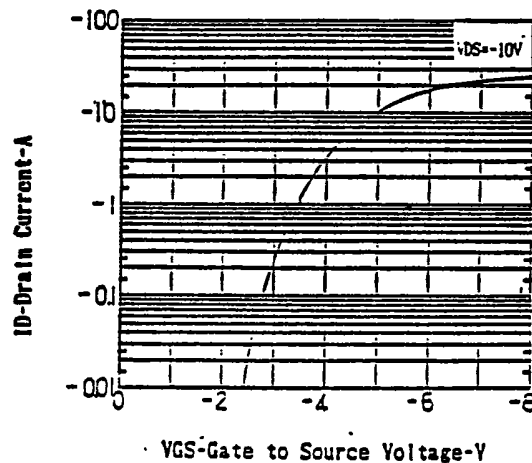
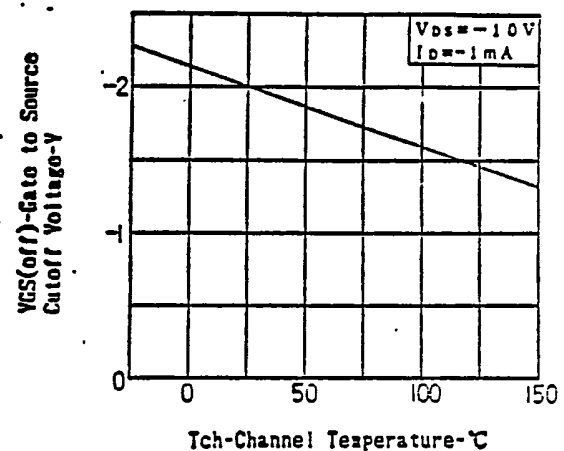
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



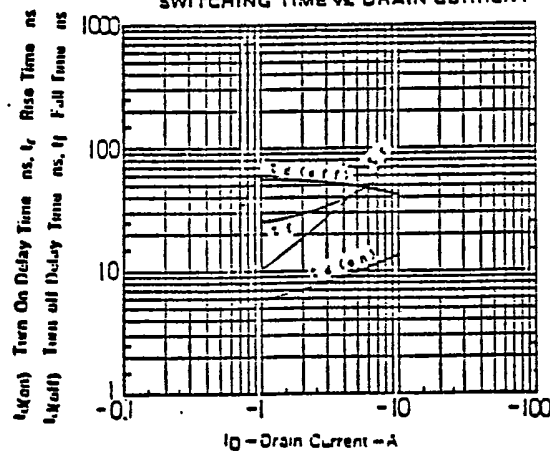
FORWARD TRANSFER ADMITTANCE
vs. DRAIN CURRENTSOURCE TO DRAIN DIODE
FORWARD VOLTAGECAPACITANCE vs. DRAIN TO
SOURCE VOLTAGEDRAIN TO SOURCE ON-STATE RESISTANCE
vs. GATE TO SOURCE VOLTAGEDRAIN TO SOURCE ON-STATE RESISTANCE
vs. CHANNEL TEMPERATUREDRAIN TO SOURCE ON-STATE RESISTANCE
vs. DRAIN CURRENT

NEC ELECTRON DEVICE

TRANSFER CHARACTERISTICS

GATE TO SOURCE CUTOFF VOLTAGE
vs. CHANNEL TEMPERATURE

SWITCHING TIME vs. DRAIN CURRENT



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