



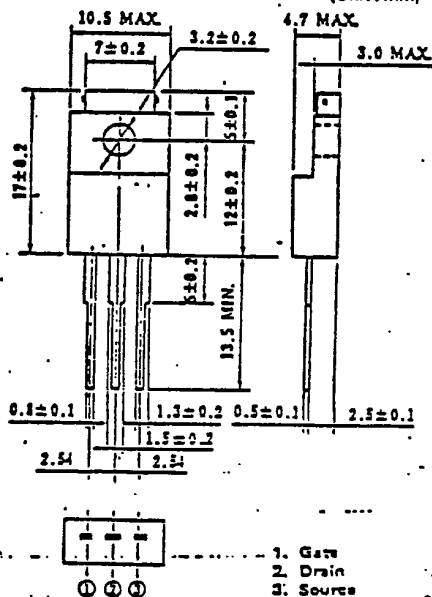
MOS FIELD EFFECT TRANSISTOR

2SJ143

FAST SWITCHING
P-CHANNEL SILICON POWER MOS FET

PACKAGE DIMENSIONS

(Unit: mm)



Features

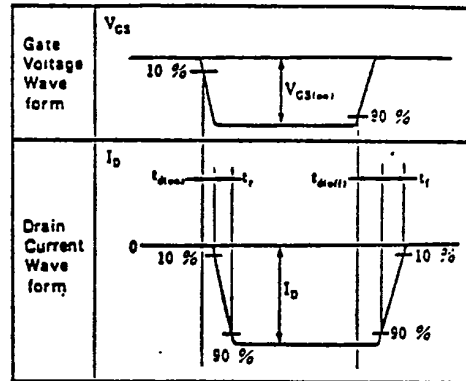
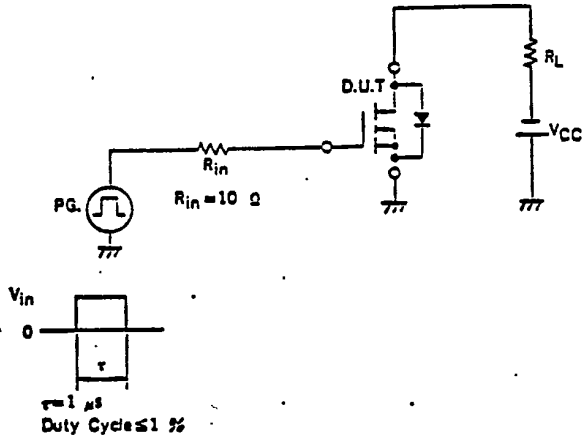
- Suitable for switching power supplies, actuator controls and pulse circuits
 - 4V Gate Drive — Logic Level —
 - Large current switching : $I_D(DC)=16A$
 - Low $R_{DS(on)}$
 - No Secondary Breakdown
- Absolute Maximum Ratings($T_a=25^\circ C$)
- | | | |
|--------------------------|--------------|--------------|
| Drain to Source Voltage | V_{DS} | - 60V |
| Gate to Source Voltage | V_{GS} | $\pm 20V$ |
| Continuous Drain Current | $I_D(DC)$ | $\pm 16A$ |
| Pulse Drain Current | $I_D(pulse)$ | * $\pm 64A$ |
| Total Power Dissipation | P_T | 2.0W |
| Total Power Dissipation | P_{T**} | 35W |
| Channel Temperature | T_{ch} | 150 °C |
| Storage Temperature | T_{stg} | -55to+150 °C |
- * $T_{ch} \leq 150^\circ C$
** $T_c=25^\circ C$

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

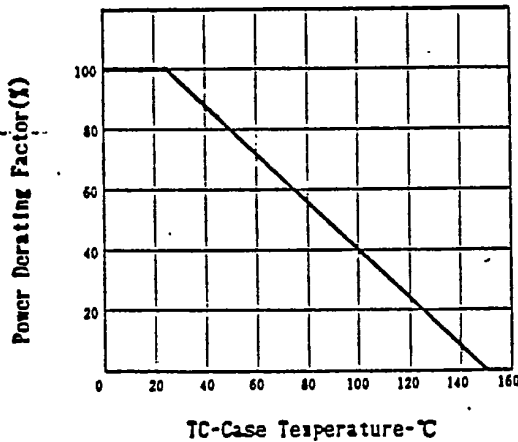
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	I_{DSS}			- 10	μA	$V_{DS}=-60V, V_{GS}=0$
Gate to Source Leakage Current	I_{GSS}			100	nA	$V_{GS}=20V, V_{DS}=0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	-1.0		-3.0	V	$V_{DS}=-10V, I_D=-1.0mA$
Forward Transfer Admittance	$ y_{fs} $	5.0			S	$V_{DS}=-10V, I_D=-10A$
Drain to Source On-State Resistance	$R_{DS(on)}$			0.15	Ω	$V_{GS}=-10V, I_D=-10A$
Drain to Source On-State Resistance	$R_{DS(on)}$			0.25	Ω	$V_{GS}=-4.0V, I_D=-10A$
Input Capacitance	C_{iss}		3100		pF	$V_{DS}=-10V, V_{GS}=0$
Output Capacitance	C_{oss}		750		pF	$V_{GS}=0$
Reverse Transfer Capacitance	C_{rss}		190		pF	$f=1.0MHz$
Turn-On Delay Time	$t_d(on)$		20		ns	$I_D=-10A$
Rise Time	t_r		170		ns	$V_{GS(on)}=-10V$
Turn-Off Delay Time	$t_d(off)$		90		ns	$V_{CC}=-30V$
Fall Time	t_f		90		ns	$R_L=3\Omega$

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

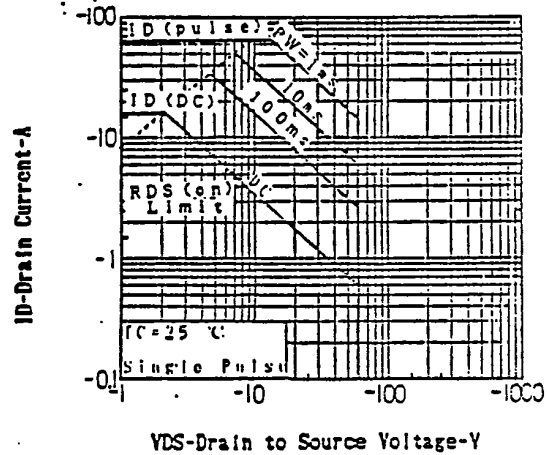
TURN-ON AND TURN-OFF TIME TEST CIRCUIT



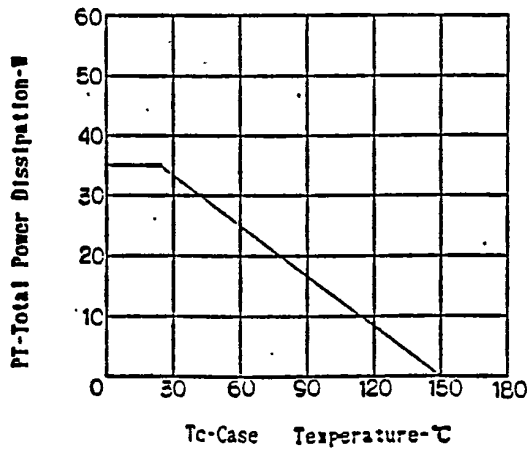
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



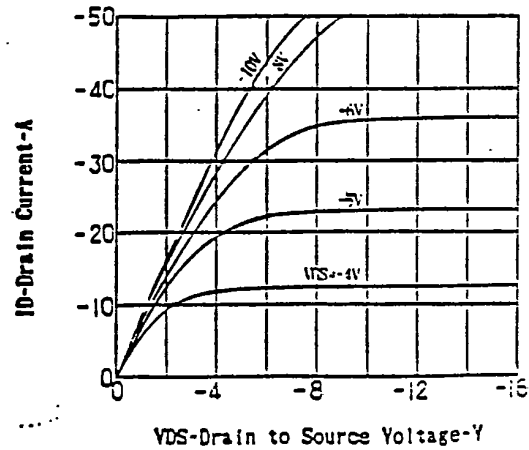
FORWARD BIAS SAFE OPERATING AREA

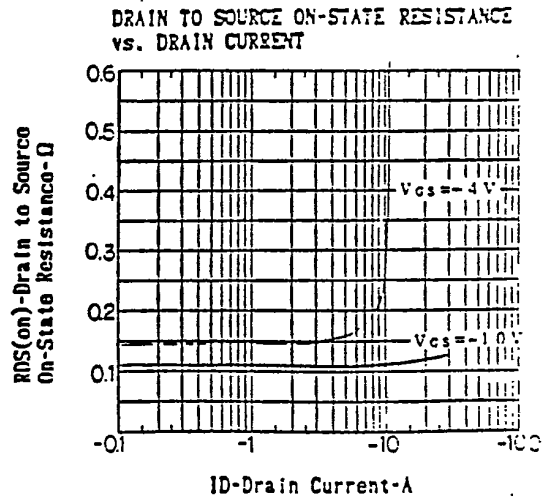
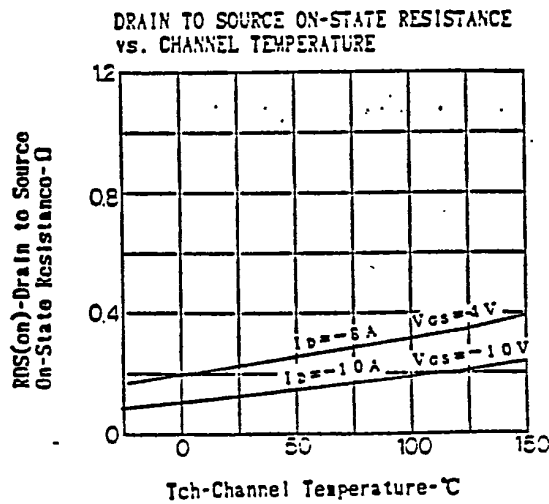
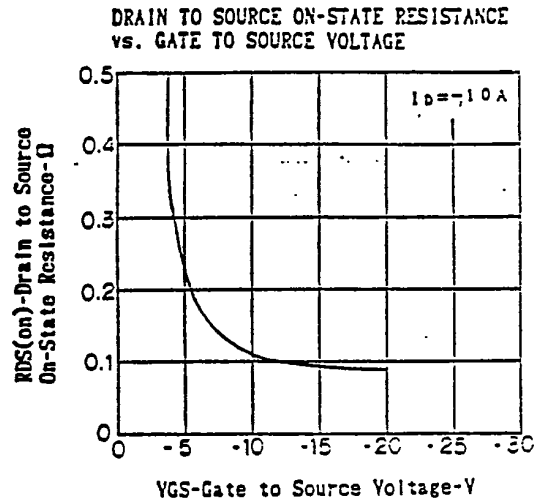
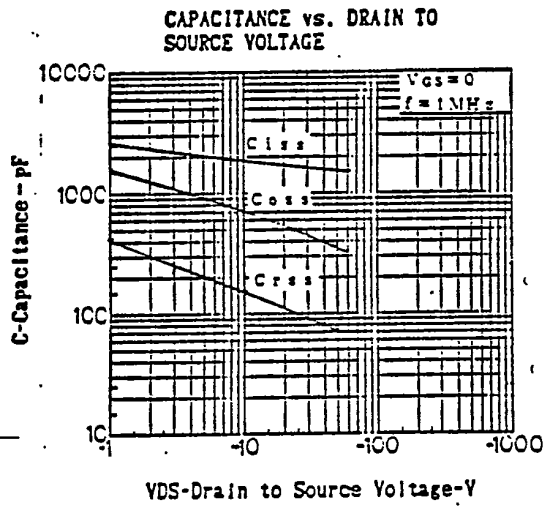
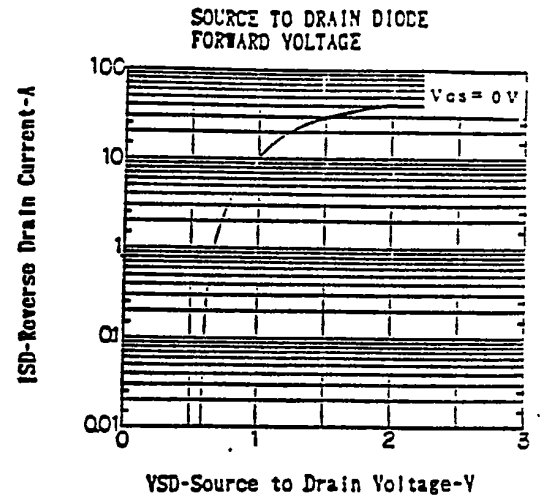
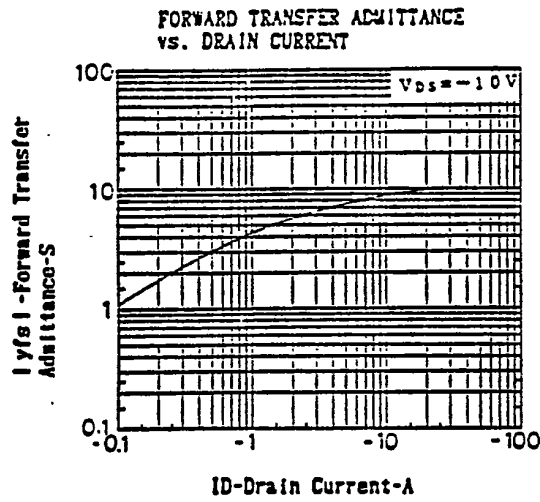


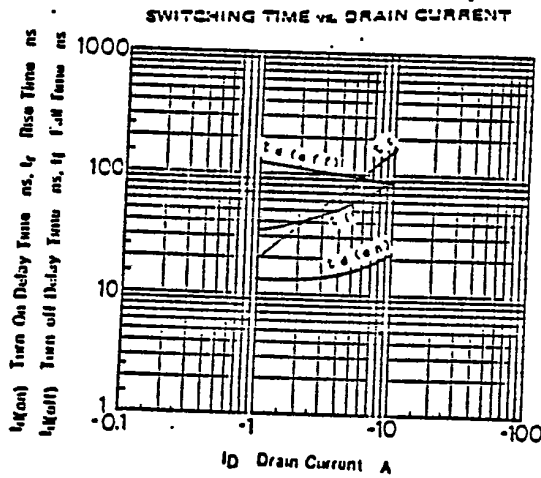
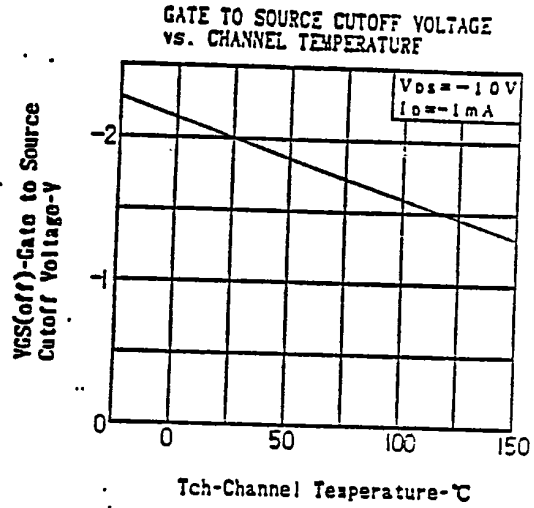
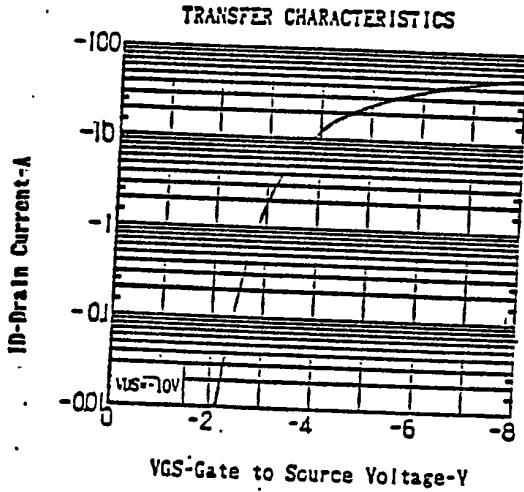
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE







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