

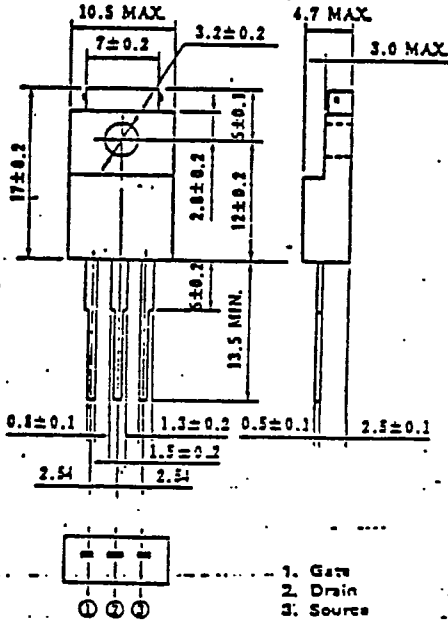


MOS FIELD EFFECT TRANSISTOR

# 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	PT	2.0W
Total Power Dissipation	PT**	35W
Channel Temperature	$T_{ch}$	150 °C
Storage Temperature	$T_{stg}$	-55to+150 °C

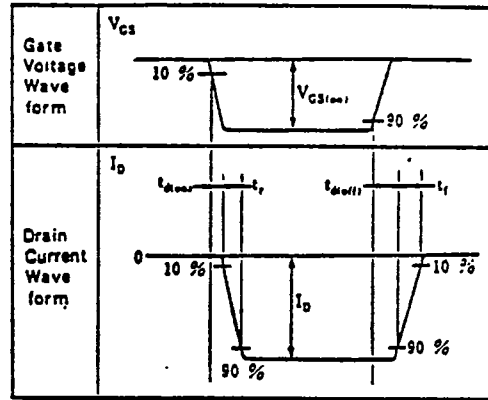
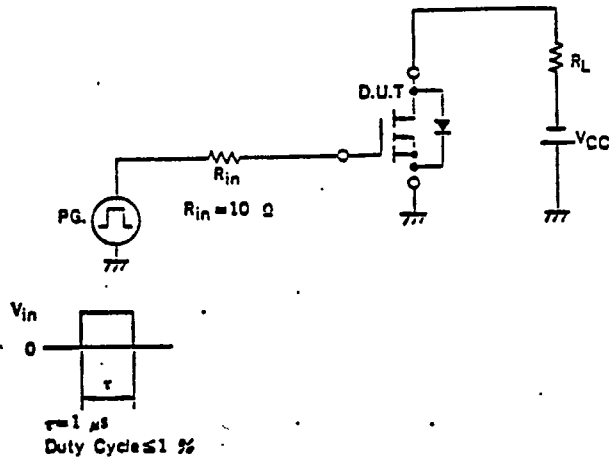
\*  $T_{ch} \leq 150^\circ C$   
\*\*  $T_c=25^\circ C$

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

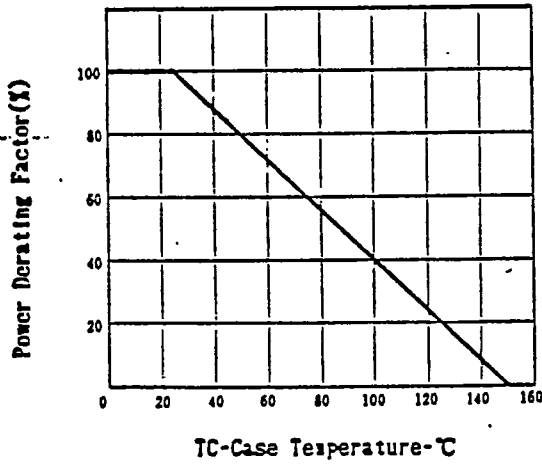
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	$I_{DSS}$			- 10	$\mu A$	$V_{DS}=-60V, V_{GS}=0$
Gate to Source Leakage Current	$I_{GSS}$			100	nA	$V_{GS}=20V, V_{DS}=0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	-1.0		-3.0	V	$V_{DS}=-10V, I_D=-1.0mA$
Forward Transfer Admittance	$ y_{fs} $	5.0			S	$V_{DS}=-10V, I_D=-10A$
Drain to Source On-State Resistance	$R_{DS(on)}$			0.15	$\Omega$	$V_{GS}=-10V, I_D=-10A$
Drain to Source On-State Resistance	$R_{DS(on)}$			0.25	$\Omega$	$V_{GS}=-4.0V, I_D=-10A$
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.

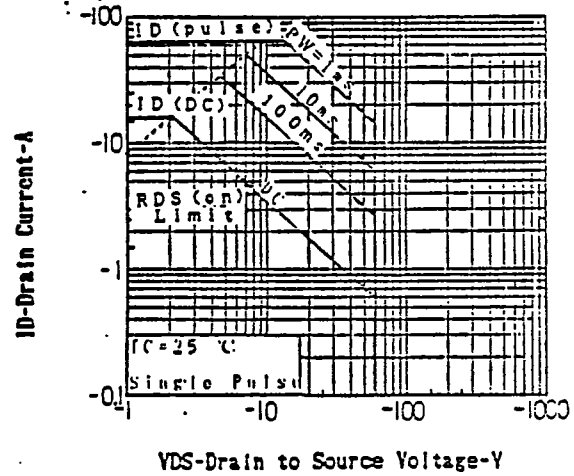
TURN-ON AND TURN-OFF TIME TEST CIRCUIT



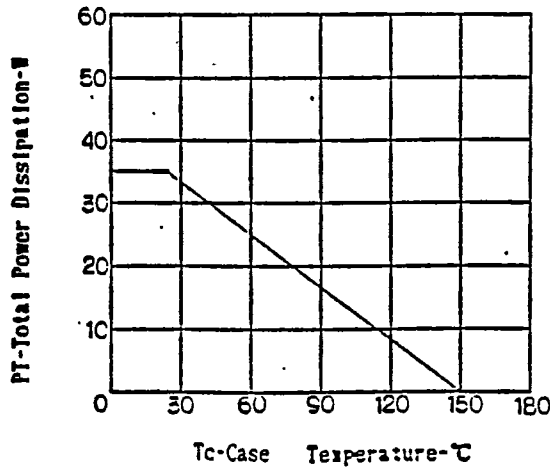
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



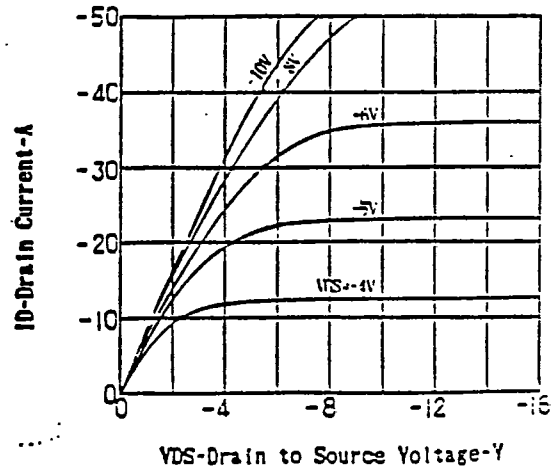
FORWARD BIAS SAFE OPERATING AREA

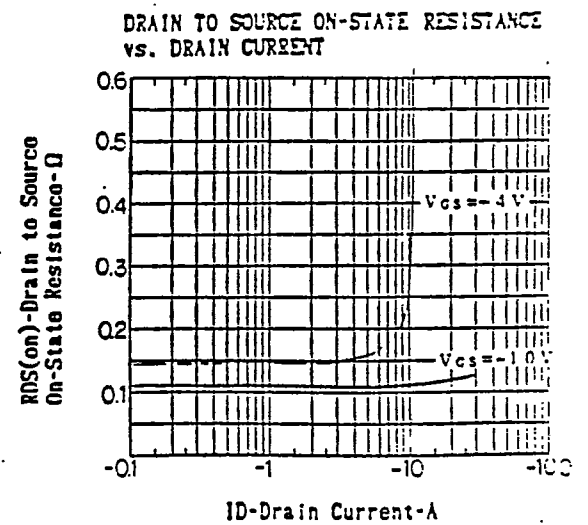
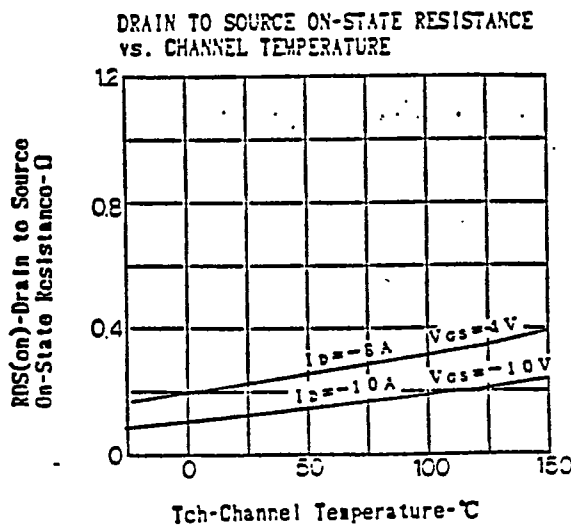
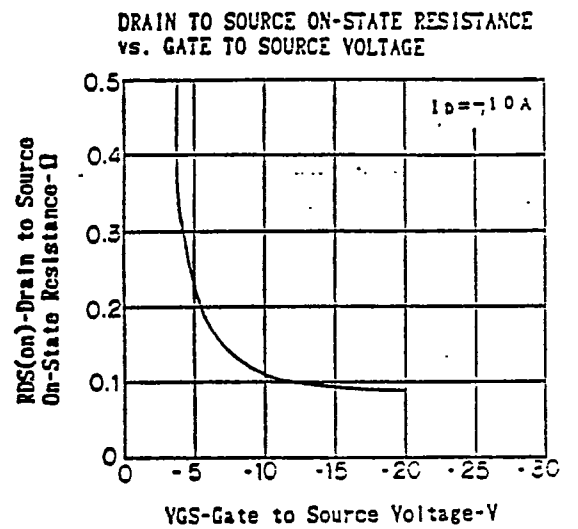
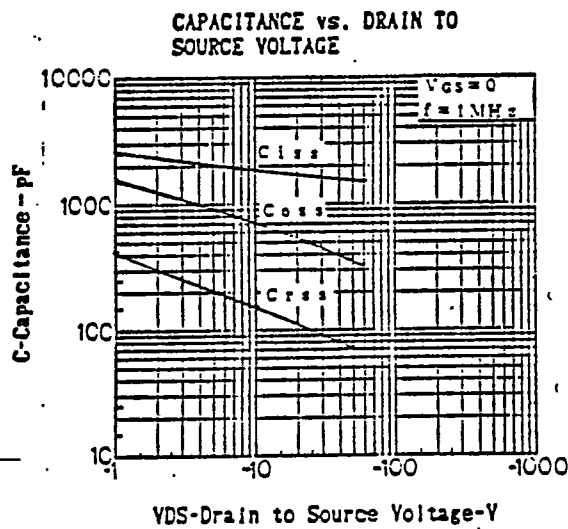
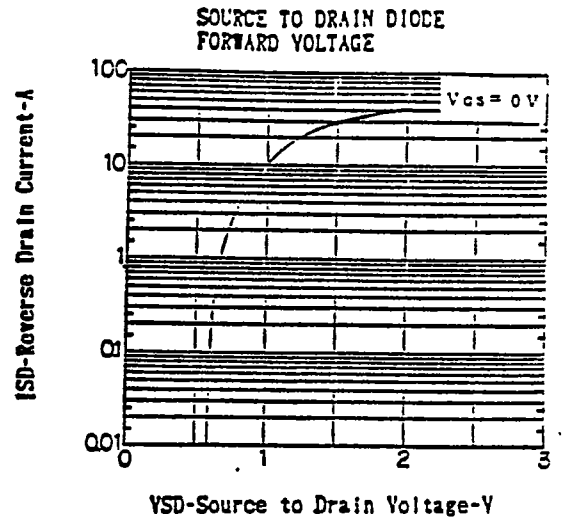
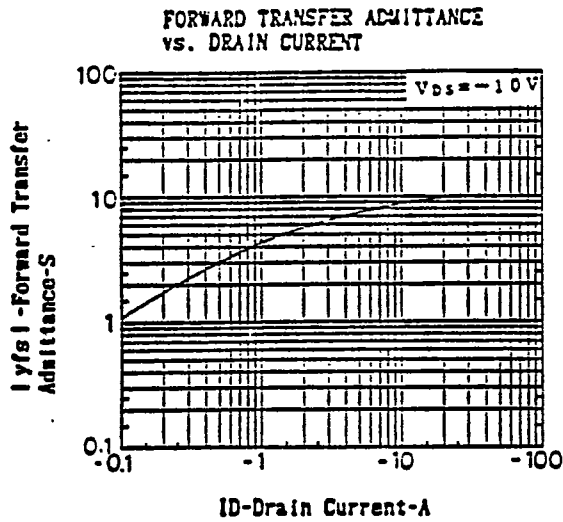


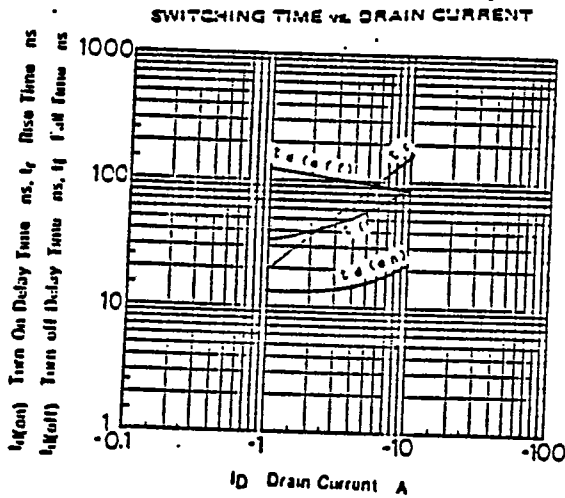
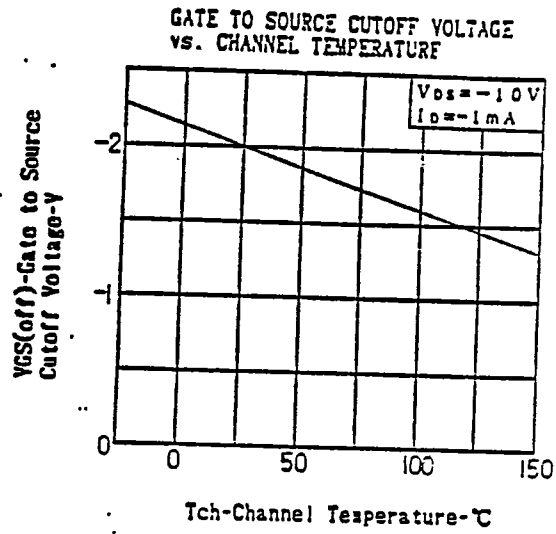
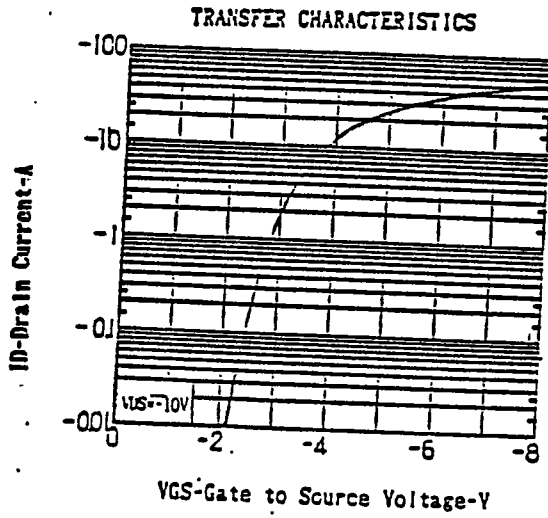
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE







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