



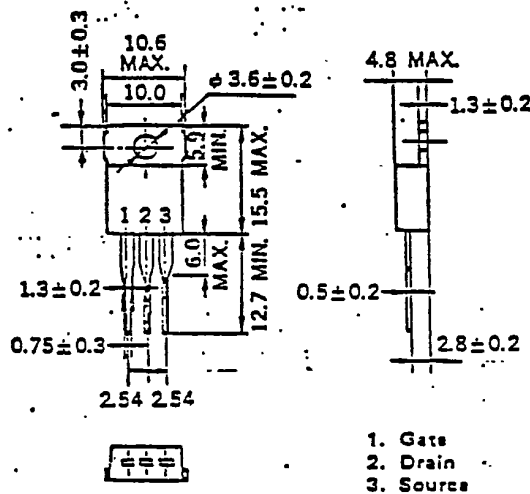
MOS FIELD EFFECT TRANSISTOR

2SJ138

FAST SWITCHING
P-CHANNEL SILICON POWER MOS FET

PACKAGE DIMENSIONS

(Unit: mm)



Features

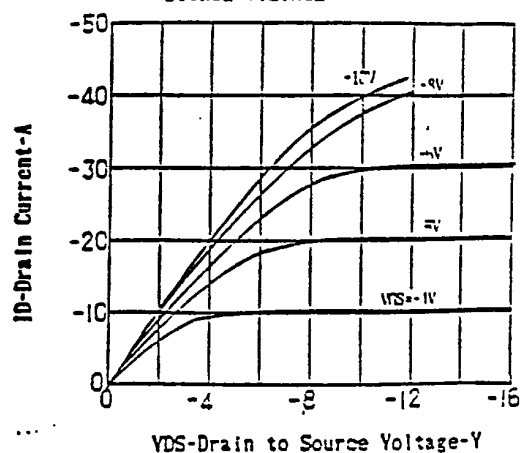
Suitable for switching power supplies,
actuator controls and pulse circuits
4V Gate Drive ——— Logic Level ———
Large current switching : $I_{D(DC)}=12A$
Low $R_{DS(on)}$
No Secondary Breakdown

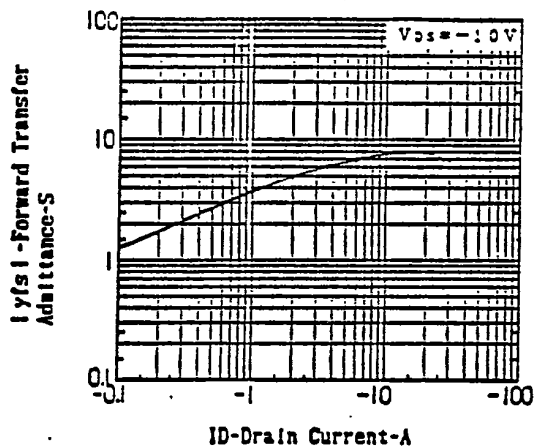
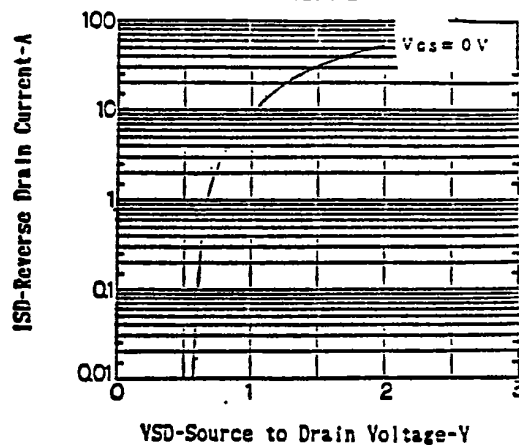
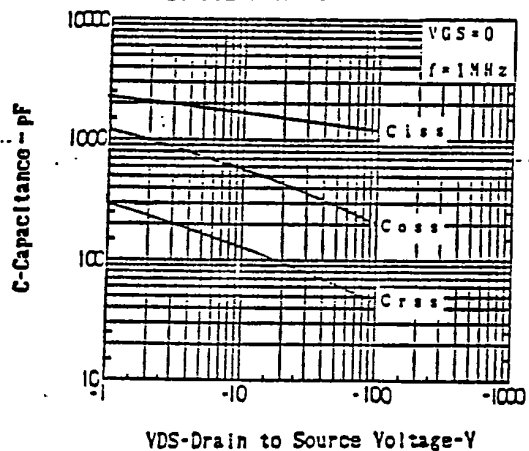
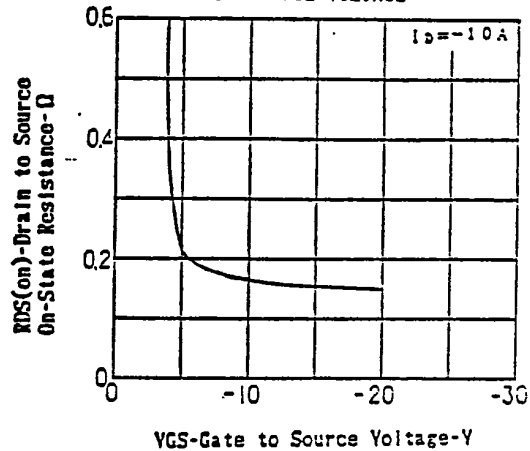
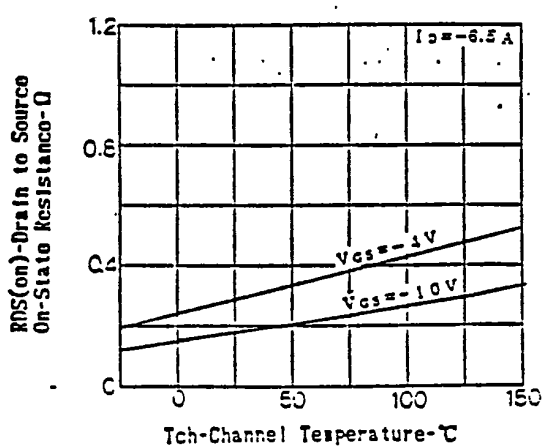
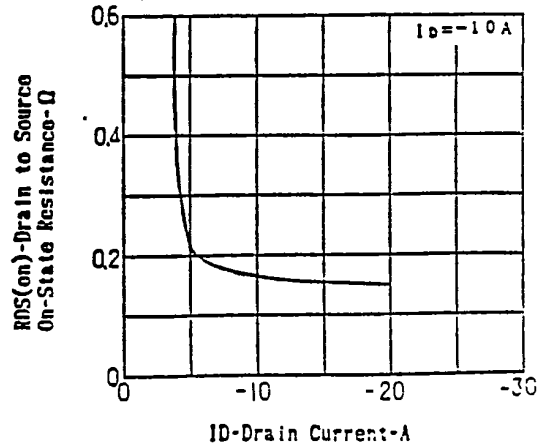
Absolute Maximum Ratings(Ta=25°C)

Drain to Source Voltage	V _{DS}	-100V
Gate to Source Voltage	V _{GS}	± 20V
Continuous Drain Current	I _D (DC)	± 12A
Pulse Drain Current	I _D (pulse)	* ± 48A
Total Power Dissipation	P _T	1.5W
Total Power Dissipation	P _T **	60W
Channel Temperature	T _{ch}	150 °C
Storage Temperature	T _{stg}	-55to+150 °C
* T _{ch} ≤ 150 °C		
** T _c =25 °C		

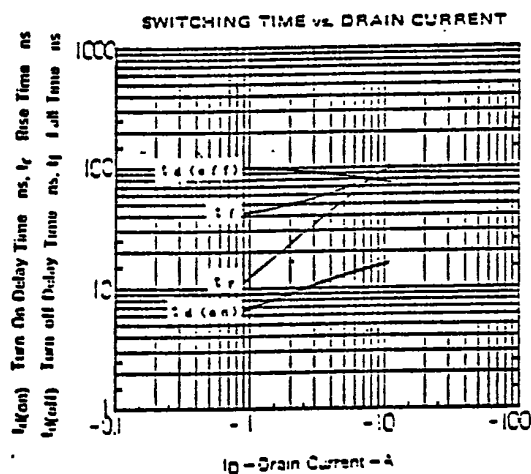
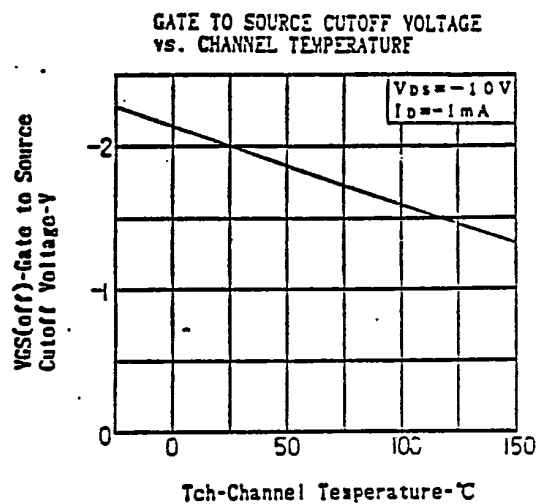
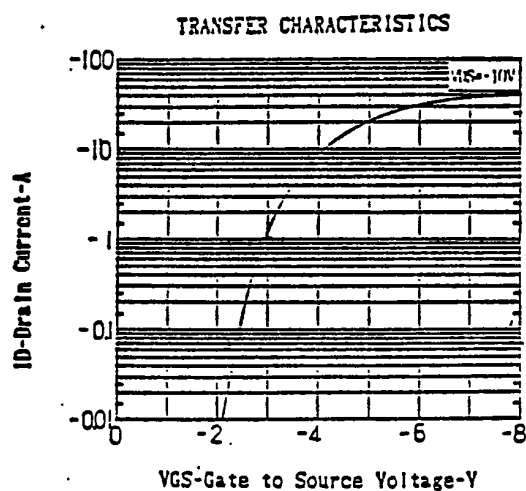
Electrical Characteristics (Ta=25. °C)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	IDSS			- 10	μ A	VDS=-100V, 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	2.0			S	VDS=-10V, ID=-6.5A
Drain to Source On-State Resistance	RDS(on)			0.3	Ω	VGS=-10V, ID=-6.5A
Drain to Source On-State Resistance	RDS(on)			0.45	Ω	VGS=-10V, ID=-6.5A
Input Capacitance	Ciss		2700		pF	VDS=-10V,
Output Capacitance	Coss		600		pF	VGS=0,
Reverse Transfer Capacitance	Crss		110		pF	f=1.0MHz
Turn-On Delay Time	td(on)		15		ns	ID=-6.5A,
Rise Time	tr		70		ns	VGS(on)=-10V.
Turn-Off Delay Time	td(off)		85		ns	VCC=-50V.
Fall Time	tf		70		ns	RL=8 Ω



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



NEC Corporation

INTERNATIONAL ELECTRON DEVICES DIV.
NEC Building, 33-1, Shiba Gochome
Minato-ku, Tokyo 108, Japan
Tel: Tokyo 454-1111
Telex Address: NECTOK J22586
Cable Address: MICROPHONE TOKYO