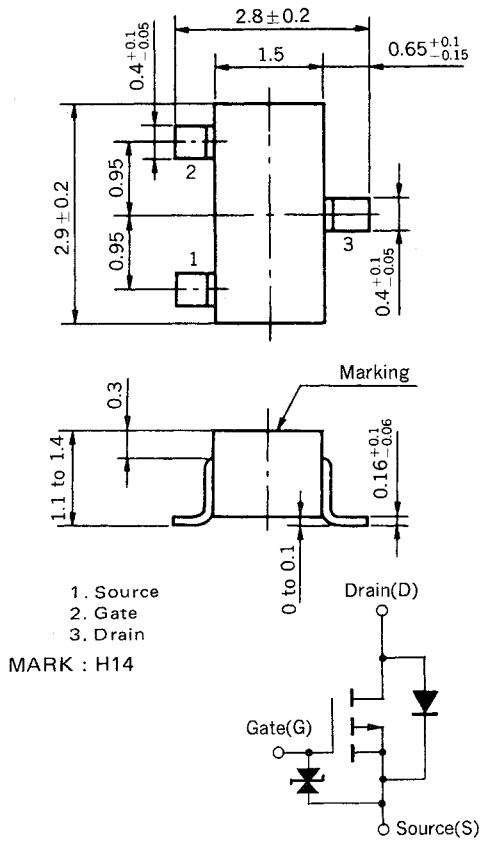
NEC

MOS FIELD EFFECT TRANSISTOR
2SJ203

P-CHANNEL MOS FET
FOR SWITCHING

PACKAGE DIMENSIONS (Unit : mm)



(Diode in the figure is the parasitic diode.)

The 2SJ203 is a P-channel vertical type MOS FET which can be driven by a 2.5 V power supply.

As the MOS FET is driven by low voltage and does not require consideration of driving current, it is suitable for appliances including VCR, cameras and headphone stereos which require power saving.

FEATURES

- Directly driven by the ICs having 3 V power supply.
- Not necessary to consider driving current thanks to high input impedance.
- Possible to reduce the number of parts by omitting the bias resistor.

QUALITY GRADE

Standard

Please refer to "Quality grade on NEC Semiconductor Devices" (Document number IEI-1209) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

CHARACTERISTIC	SYMBOL	CONDITIONS	RATINGS	UNIT
Drain to Source Voltage	V_{DSS}	V_{GS} = 0	−16	V
Gate to Source Voltage	V_{GSS}	V_{DS} = 0	∓7	V
Drain Current	$I_{D(DC)}$		∓200	mA
Drain Current	$I_{D(pulse)}$	PW ≦ 10 ms, Duty Cycle ≦ 50 %	∓400	mA
Total Power Dissipation	P_T		200	mW
Channel Temperature	T_{ch}		150	°C
Operating Temperature	T_{opt}		−55 to +80	°C
Storage Temperature	T_{stg}		−55 to +150	°C

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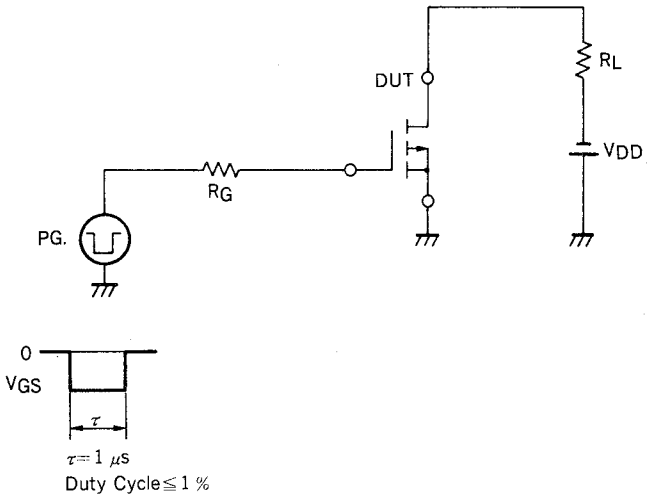
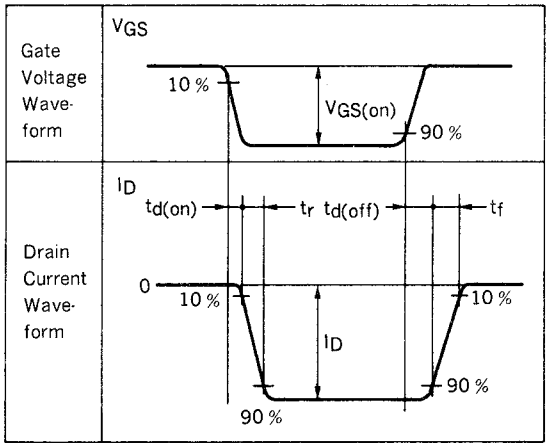
ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

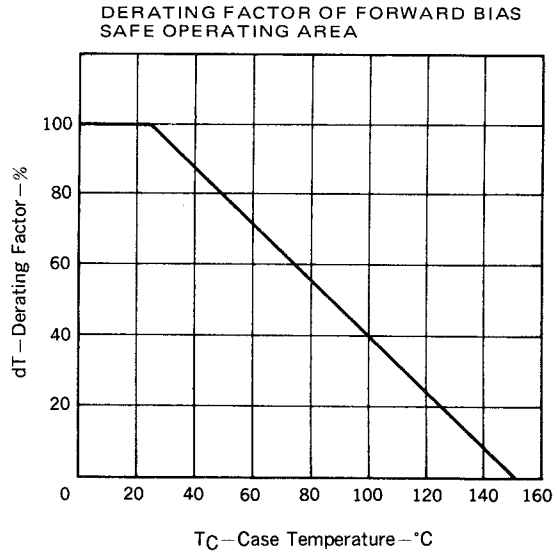
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Drain Cut-off Current	I_{DSS}			−1.0	μA	V_{DS} = −16 V, V_{GS} = 0
Gate Leakage Current	I_{GSS}			∓10	μA	V_{GS} = +3.0 V, V_{DS} = 0
Gate Cut-off Voltage	$V_{GS(off)}$	−1.2	−1.6	−2.2	V	V_{DS} = −3.0 V, I_D = 1 μA
Forward Transfer Admittance	$\|y_{fs}\|$	20	48		mS	V_{DS} = −3.0 V, I_D = −10 mA
Drain to Source On-State Resistance	$R_{DS(on)1}$		15	23	Ω	V_{GS} = −2.5 V, I_D = −1 mA
Drain to Source On-State Resistance	$R_{DS(on)2}$		7	10	Ω	V_{GS} = −4.0 V, I_D = −1 mA
Input Capacitance	C_{iss}		28		pF	V_{DS} = −3.0 V, V_{GS} = 0 f = 1 MHz
Output Capacitance	C_{oss}		32		pF	
Feedback Capacitance	C_{rss}		6		pF	
Turn-On Delay Time	$t_{d(on)}$		180		ns	$V_{GS(on)}$ = −3.0 V, R_G = 10 Ω, V_{DD} = −3.0 V I_D = −10 mA, R_L = 300 Ω
Rise Time	t_r		420		ns	
Turn-Off Delay Time	$t_{d(off)}$		100		ns	
Fall Time	t_f		200		ns	

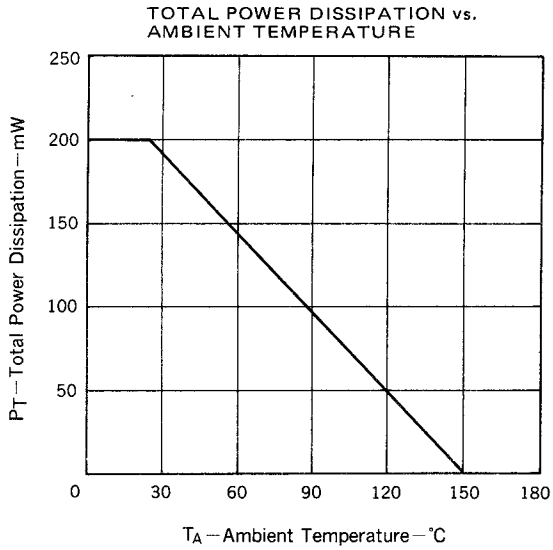
SWITCHING TIME MEASUREMENT CIRCUIT AND CONDITIONS



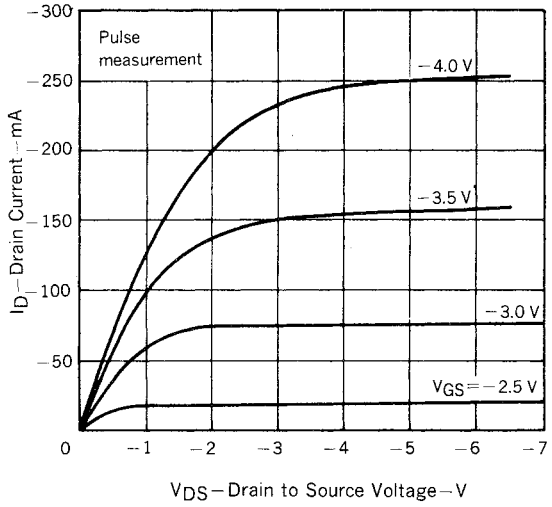


TYPICAL CHARACTERISTICS (T_A = 25 °C)

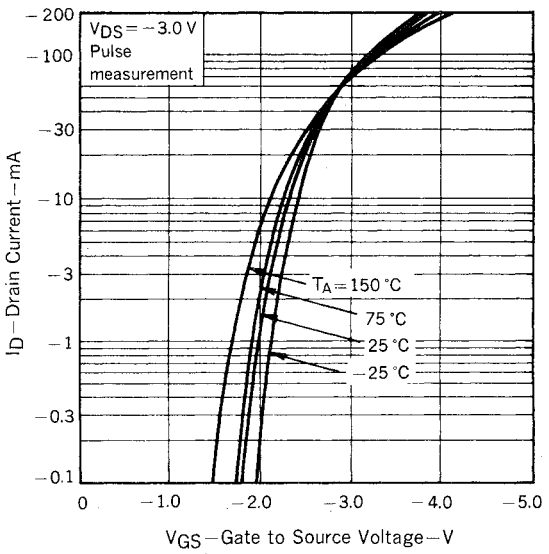




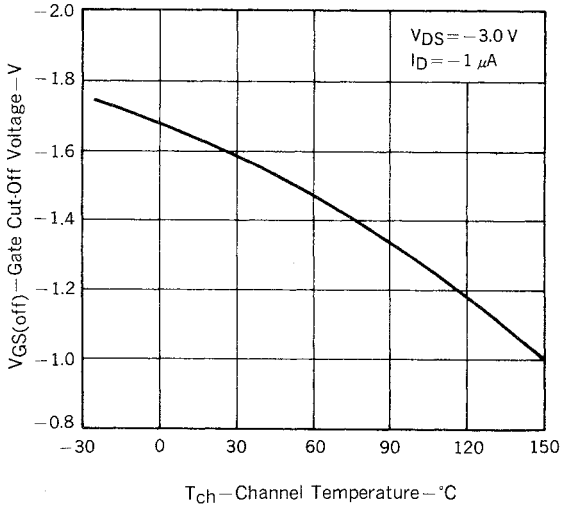
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



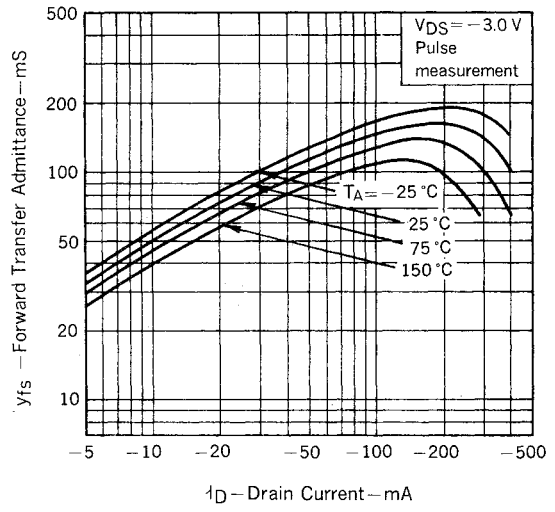
TRANSFER CHARACTERISTICS



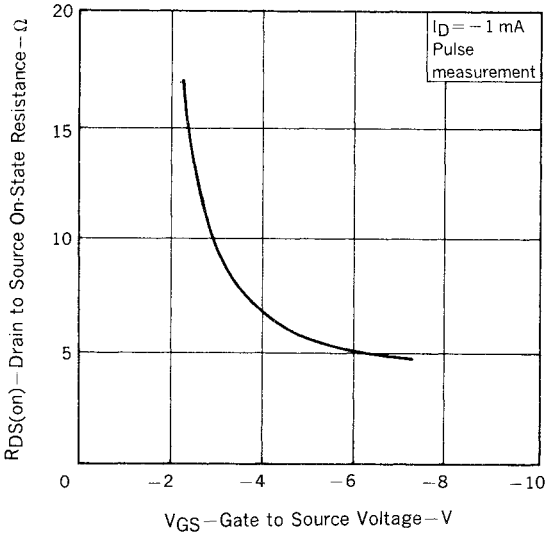
GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



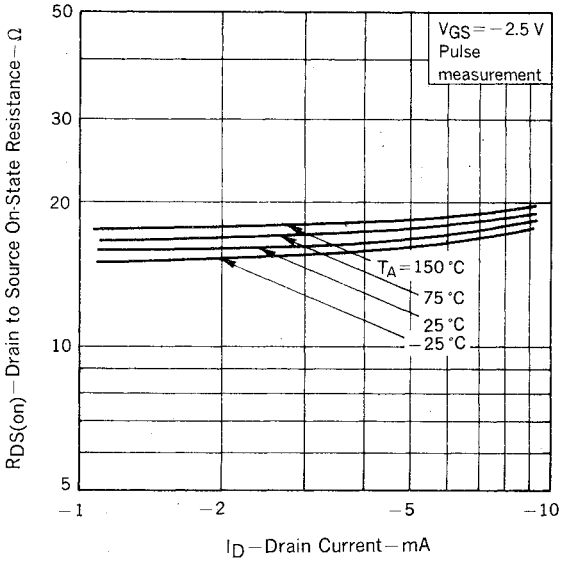
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



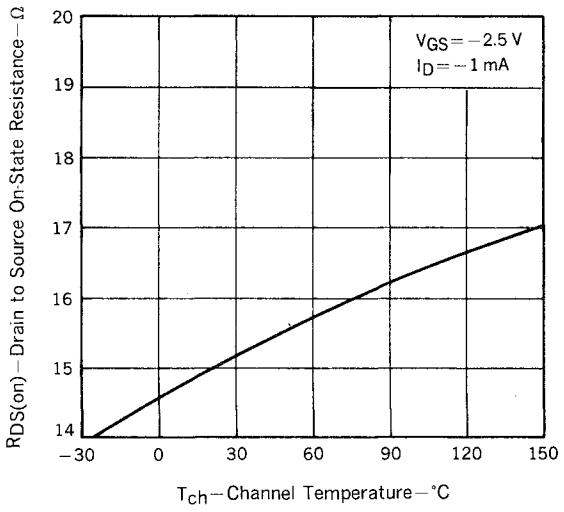
DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE



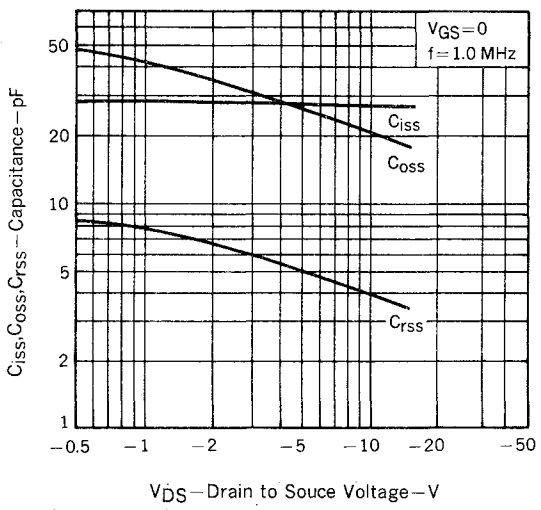
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



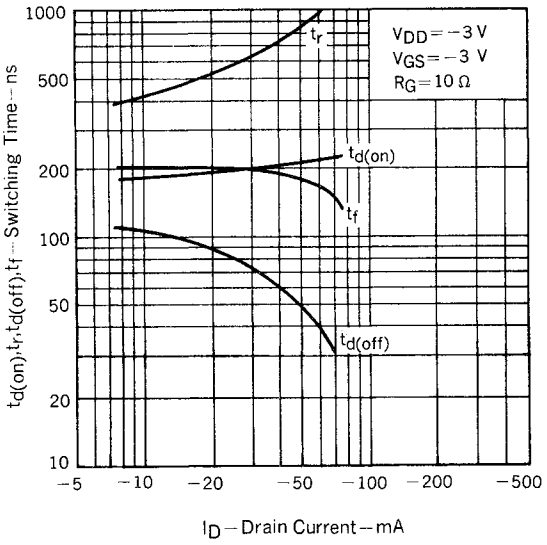
DRAIN TO SOURCE ON-STATE RESISTANCE vs. CHANNEL TEMPERATURE



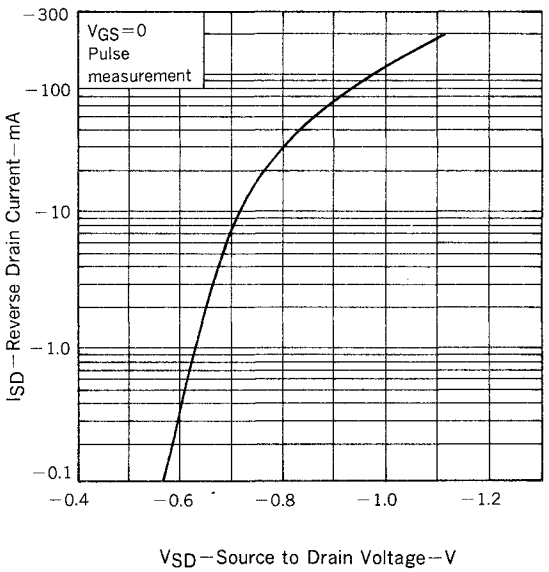
CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



SWITCHING CHARACTERISTICS



SOURCE TO DRAIN DIODE FORWARD VOLTAGE



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