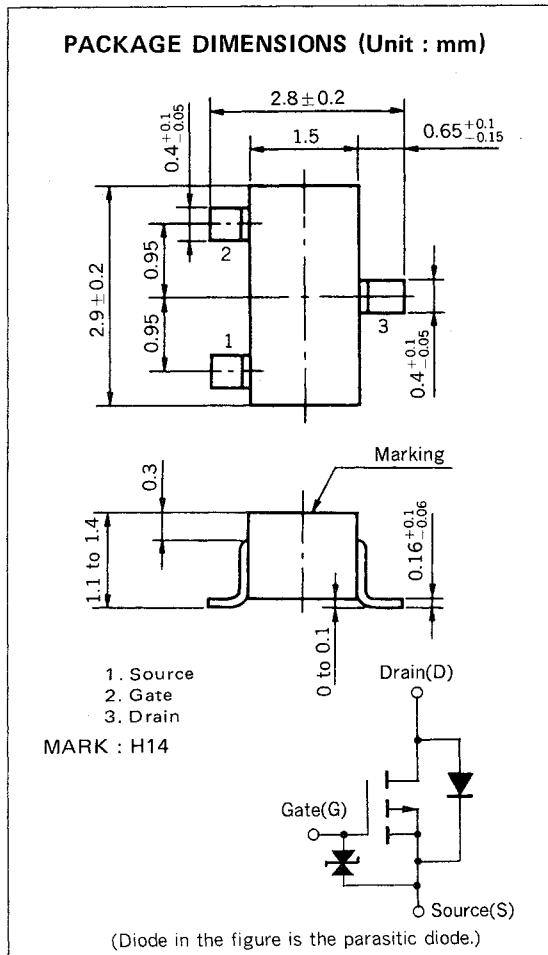


# P-CHANNEL MOS FET FOR SWITCHING

# 2SJ203



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

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 °C)

CHARACTERISTIC	SYMBOL	CONDITIONS	RATINGS	UNIT
Drain to Source Voltage	V <sub>DSS</sub>	V <sub>GS</sub> = 0	-16	V
Gate to Source Voltage	V <sub>GSS</sub>	V <sub>DS</sub> = 0	±7	V
Drain Current	I <sub>D(DC)</sub>		±200	mA
Drain Current	I <sub>D(pulse)</sub>	PW ≤ 10 ms, Duty Cycle ≤ 50 %	±400	mA
Total Power Dissipation	P <sub>T</sub>		200	mW
Channel Temperature	T <sub>ch</sub>		150	°C
Operating Temperature	T <sub>opt</sub>		-55 to +80	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

# 2SJ203

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Drain Cut-off Current	I <sub>DSS</sub>			-1.0	μA	V <sub>DS</sub> = -16 V, V <sub>GS</sub> = 0
Gate Leakage Current	I <sub>GSS</sub>			±10	μA	V <sub>GS</sub> = +3.0 V, V <sub>DS</sub> = 0
Gate Cut-off Voltage	V <sub>GS(off)</sub>	-1.2	-1.6	-2.2	V	V <sub>DS</sub> = -3.0 V, I <sub>D</sub> = 1 μA
Forward Transfer Admittance	y <sub>fs</sub>	20	48		mS	V <sub>DS</sub> = -3.0 V, I <sub>D</sub> = -10 mA
Drain to Source On-State Resistance	R <sub>DS(on)1</sub>		15	23	Ω	V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -1 mA
Drain to Source On-State Resistance	R <sub>DS(on)2</sub>		7	10	Ω	V <sub>GS</sub> = -4.0 V, I <sub>D</sub> = -1 mA
Input Capacitance	C <sub>iss</sub>		28		pF	V <sub>DS</sub> = -3.0 V, V <sub>GS</sub> = 0 f = 1 MHz
Output Capacitance	C <sub>oss</sub>		32		pF	
Feedback Capacitance	C <sub>rss</sub>		6		pF	
Turn-On Delay Time	t <sub>d(on)</sub>		180		ns	V <sub>GS(on)</sub> = -3.0 V, R <sub>G</sub> = 10 Ω, V <sub>DD</sub> = -3.0 V I <sub>D</sub> = -10 mA, R <sub>L</sub> = 300 Ω
Rise Time	t <sub>r</sub>		420		ns	
Turn-Off Delay Time	t <sub>d(off)</sub>		100		ns	
Fall Time	t <sub>f</sub>		200		ns	

## SWITCHING TIME MEASUREMENT CIRCUIT AND CONDITIONS

