

To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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Phase-out/Discontinued

**P-CHANNEL MOS FIELD EFFECT TRANSISTOR
FOR HIGH SPEED SWITCHING**

DESCRIPTION

The 2SJ463 is a switching device which can be driven directly by a 2.5 V power source.

The MOS FET has excellent switching characteristics and is suitable for use as a high-speed switching device in digital circuits.

FEATURES

- Low $V_{GS(off)}$ but high V_{DS} .
- Can be driven by a 2.5 V power source.
- Not necessary to consider driving current because of its high input impedance.
- Possible to reduce the number of parts by omitting the bias resistor.

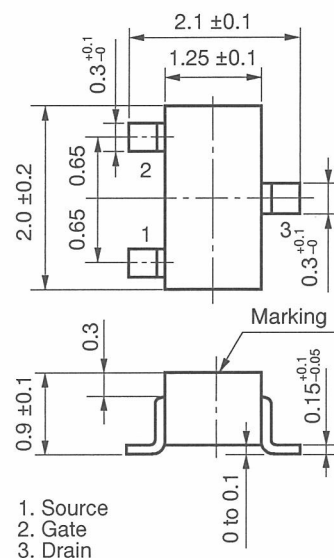
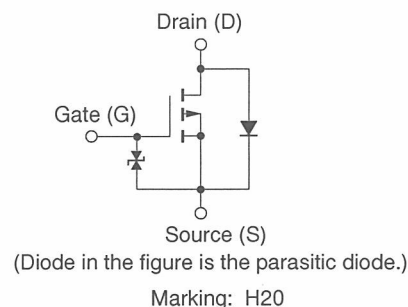
ABSOLUTE MAXIMUM RATINGS ($T_A = +25\text{ }^\circ\text{C}$)

Drain to Source Voltage	V_{DS}	-30	V
Gate to Source Voltage	V_{GS}	-16/+8	V
Drain Current (DC)	$I_{D(DC)}$	∓ 0.1	A
Drain Current (pulse)	$I_{D(pulse)}$	$\mp 0.2^*$	A
Total Power Dissipation	P_T	150	mW
Channel Temperature	T_{CH}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW \leq 10\text{ ms}$, Duty Cycle $\leq 1\%$

PACKAGE DRAWINGS

(Unit: mm)

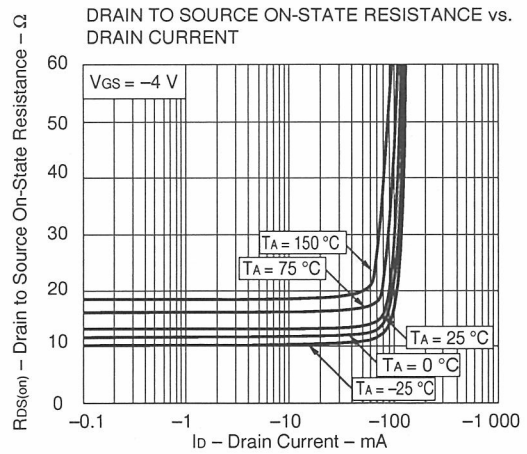
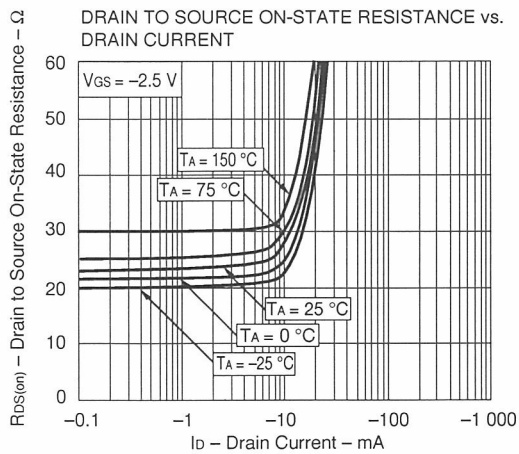
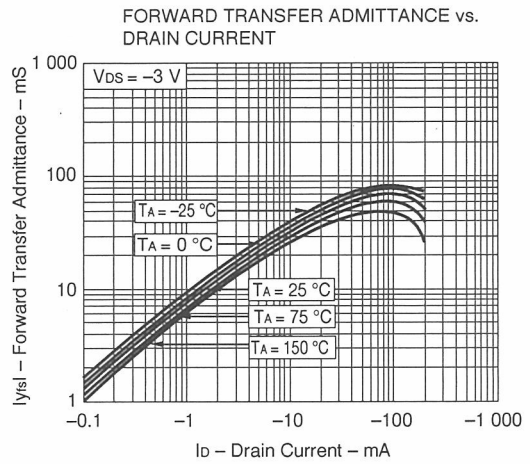
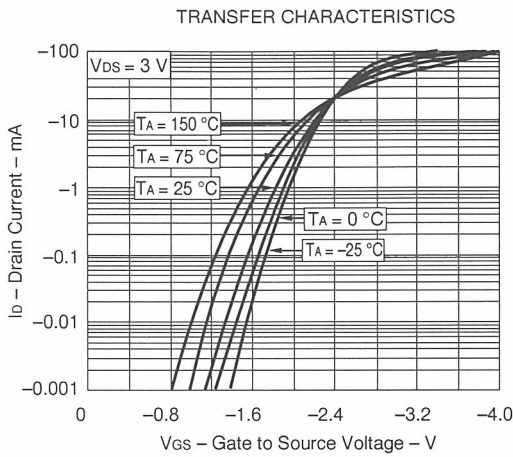
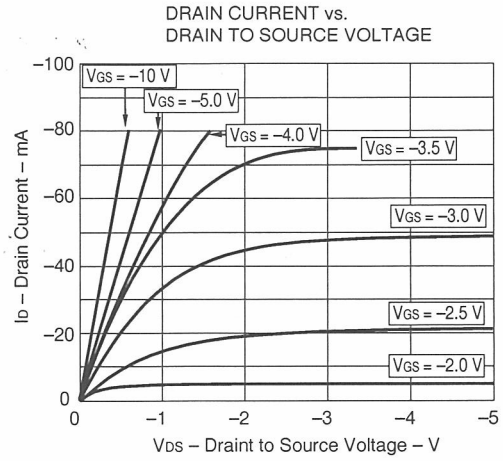
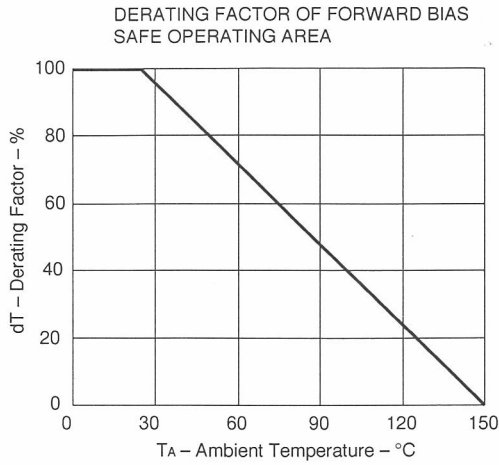
**EQUIVALENT CIRCUIT**

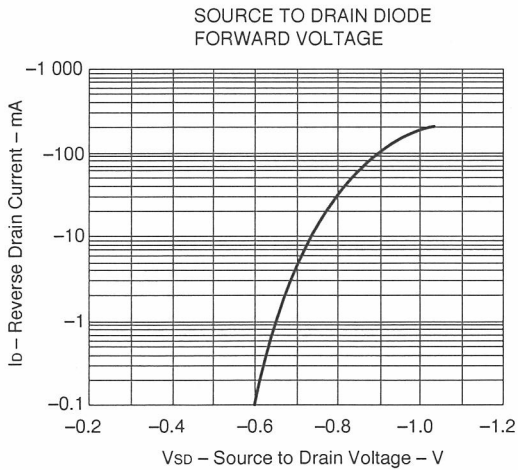
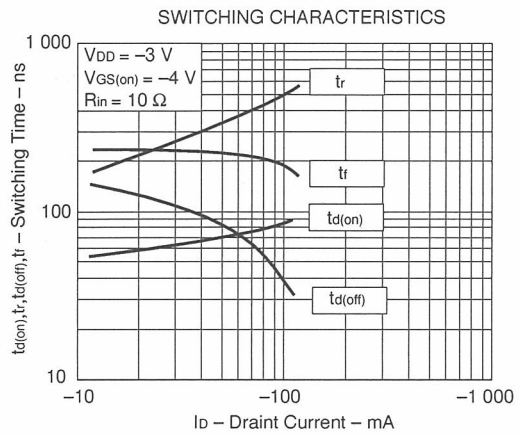
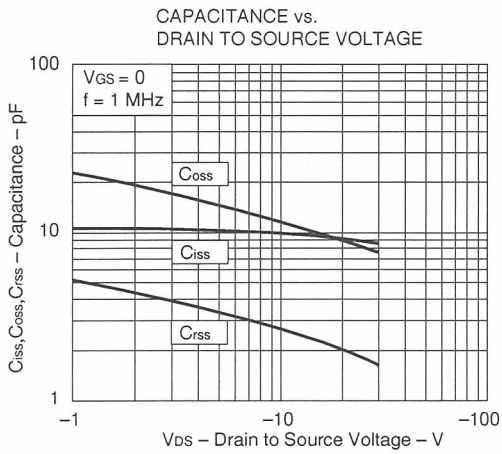
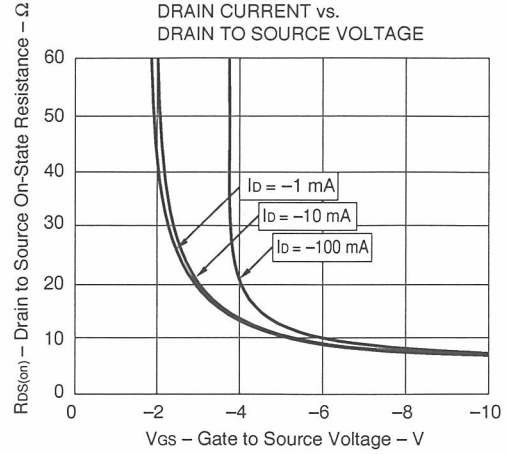
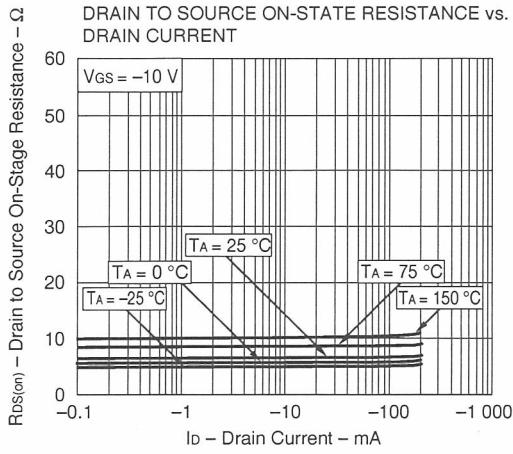
The diode connected between the gate and source of the transistor serves as a protector against ESD. When this device is actually used, an additional protection circuit is externally required if a voltage exceeding the rated voltage may be applied to this device.

Phase-out/Discontinued**ELECTRICAL CHARACTERISTICS (T_A = 25 °C)**

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain Cut-off Current	I _{DSS}			-1.0	μA	V _{DS} = -30 V, V _{GS} = 0
Gate Leakage Current	I _{GSS}			±10	μA	V _{GS} = -16/+8 V, V _{DS} = 0
Gate Cut-off Voltage	V _{GS(off)}	-1.0	-1.3	-1.7	V	V _{DS} = -3.0 V, I _D = -10 μA
Forward Transfer Admittance	y _{fs}	20			mS	V _{DS} = -3.0 V, I _D = -10 mA
Drain to Source On-State Resistance	R _{DS(on)1}		23	60	Ω	V _{GS} = -2.5 V, I _D = -1 mA
Drain to Source On-State Resistance	R _{DS(on)2}		13	23	Ω	V _{GS} = -4.0 V, I _D = -10 mA
Drain to Source On-State Resistance	R _{DS(on)3}		7	13	Ω	V _{GS} = -10 V, I _D = -10 mA
Input Capacitance	C _{iss}		10		pF	V _{DS} = -3.0 V, V _{GS} = 0 f = 1.0 MHz
Output Capacitance	C _{oss}		16		pF	
Reverse Transfer Capacitance	C _{res}		3.8		pF	
Turn-On Delay Time	t _{d(on)}		57		ns	V _{DD} = -3.0 V, I _D = -10 mA V _{GS(on)} = -4.0 V, R _G = 10 Ω R _L = 300 Ω
Rise Time	t _r		184		ns	
Turn-Off Delay Time	t _{d(off)}		169		ns	
Fall Time	t _f		236		ns	

TYPICAL CHARACTERISTICS (TA = 25 °C)





Phase-out/Discontinued

REFERENCE

Document Name	Document No.
NEC semiconductor device reliability/quality control system	TEI-1202
Quality grade on NEC semiconductor devices	IEI-1209
Semiconductor device mounting technology manual	IEI-1207
Guide to quality assurance for semiconductor devices	MEI-1202
Semiconductor selection guide	MF-1134

[MEMO]

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Standard: Computers, office equipment, communications equipment, test and measurement equipment, audio and visual equipment, home electronic appliances, machine tools, personal electronic equipment and industrial robots

Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

Specific: Aircrafts, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems or medical equipment for life support, etc.

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Anti-radioactive design is not implemented in this product.