

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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EOL announced Product

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SWITCHING
N-CHANNEL MOSFET

DESCRIPTION

The 2SK1133, N-channel vertical type MOSFET, is a switching device which can be driven directly by the output of ICs having a 5 V power source.

The 2SK1133 has excellent switching characteristics and is suitable for use as a high-speed switching device in digital circuits.

FEATURES

- Directly driven by ICs having a 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.
- Can be used complementary with the 2SJ166.

ORDERING INFORMATION

PART NUMBER	PACKAGE
2SK1133	SC-59 (Mini Mold)

Marking: G11

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

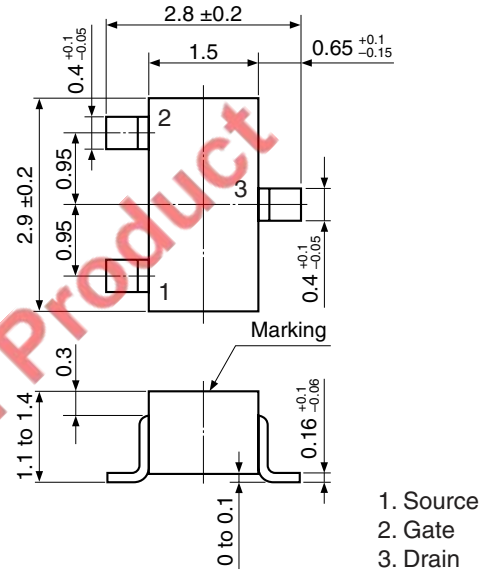
Drain to Source Voltage (V _{GS} = 0 V)	V _{DSS}	50	V
Gate to Source Voltage (V _{DS} = 0 V)	V _{GSS}	±7.0	V
Drain Current (DC)	I _{D(DC)}	±100	mA
Drain Current (pulse) ^{Note}	I _{D(pulse)}	±200	mA
Total Power Dissipation	P _T	200	mW
Channel Temperature	T _{ch}	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

Note PW ≤ 10 ms, Duty Cycle ≤ 50%

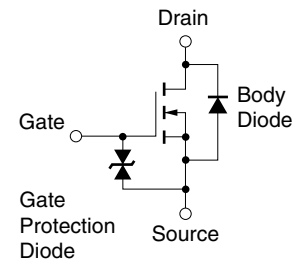
Remark The diode connected between the gate and source of the transistor serves as a protector against ESD. When this device actually used, an additional protection circuit is externally required if a voltage exceeding the rated voltage may be applied to this device.

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PACKAGE DRAWING (Unit: mm)



EQUIVALENT CIRCUIT

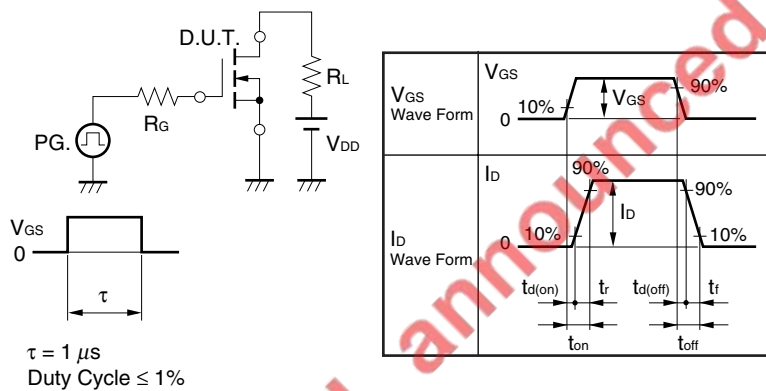


<R> **ELECTRICAL CHARACTERISTICS (T_A = 25°C)**

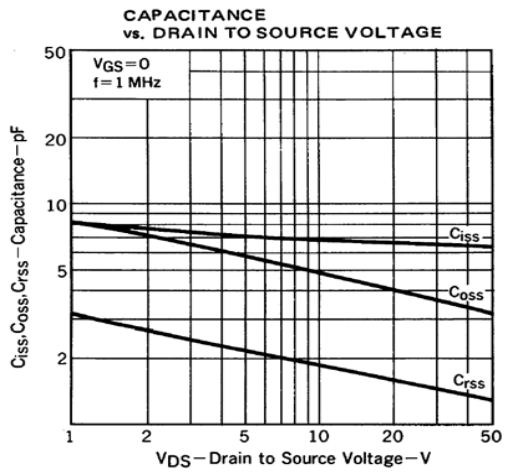
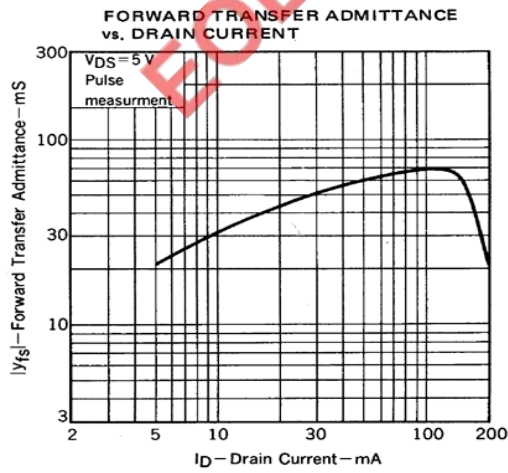
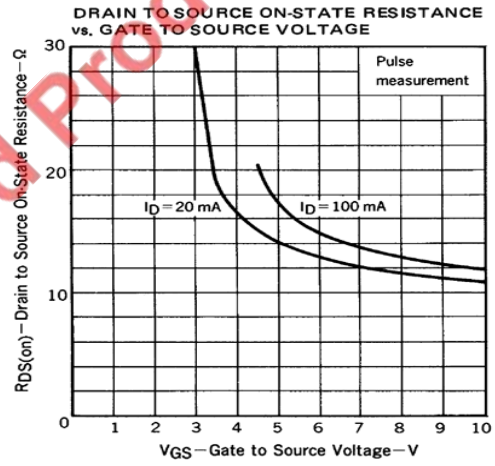
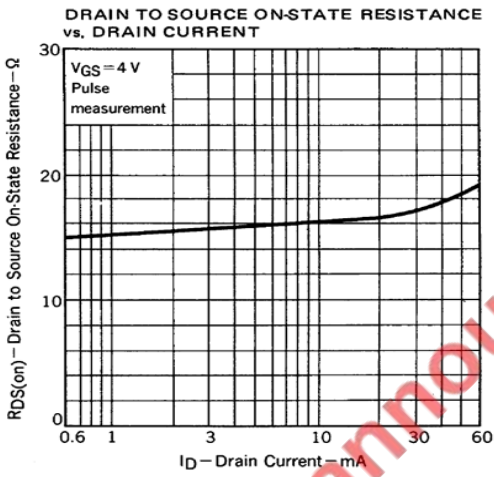
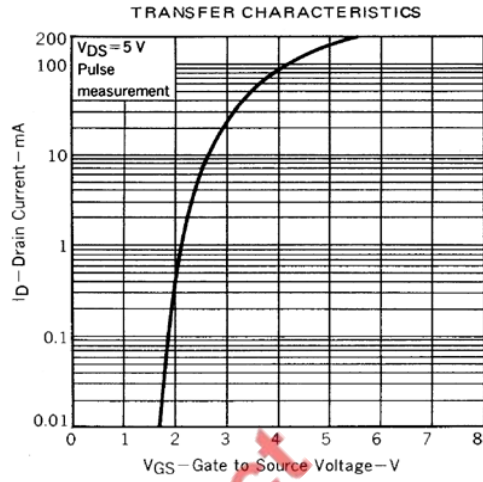
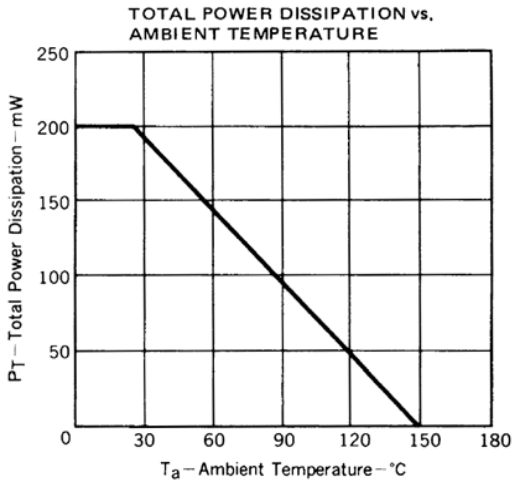
CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 50 V, V _{GS} = 0 V			10	μA
Gate Leakage Current	I _{GSS}	V _{GS} = ±7.0 V, V _{DS} = 0 V			±10	μA
Gate Cut-off Voltage	V _{GS(off)}	V _{DS} = 5.0 V, I _D = 1.0 μA	1.0	1.7	2.0	V
Forward Transfer Admittance Note	y _{fs}	V _{DS} = 5.0 V, I _D = 20 mA	20	40		mS
Drain to Source On-state Resistance Note	R _{DS(on)}	V _{GS} = 4.0 V, I _D = 20 mA		16	50	Ω
Input Capacitance	C _{iss}	V _{DS} = 5.0 V		7.0		pF
Output Capacitance	C _{oss}	V _{GS} = 0 V		6.0		pF
Reverse Transfer Capacitance	C _{rss}	f = 1 MHz		2.0		pF
Turn-on Delay Time	t _{d(on)}	V _{DD} = 5.0 V, I _D = 20 mA		6.0		ns
Rise Time	t _r	V _{GS} = 5.0 V		25		ns
Turn-off Delay Time	t _{d(off)}	R _G = 10 Ω		36		ns
Fall Time	t _f			35		ns

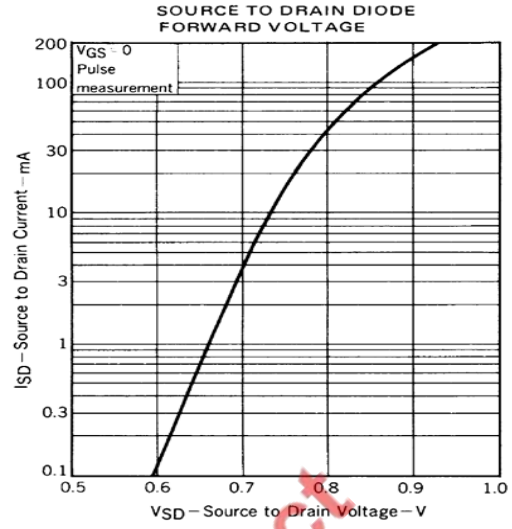
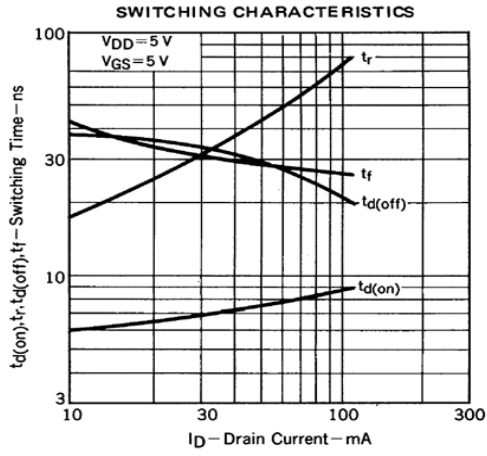
Note Pulsed

TEST CIRCUIT SWITCHING TIME



TYPICAL CHARACTERISTICS (T_A = 25°C)





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