

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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MOS FIELD EFFECT TRANSISTOR

2SK3107

N-CHANNEL MOS FIELD EFFECT TRANSISTOR FOR HIGH SPEED SWITCHING

DESCRIPTION

The 2SK3107 is a switching device which can be driven directly by a 2.5 V power source.

The 2SK3107 has excellent switching characteristics, and is suitable for use as a high-speed switching device in digital circuits.

FEATURES

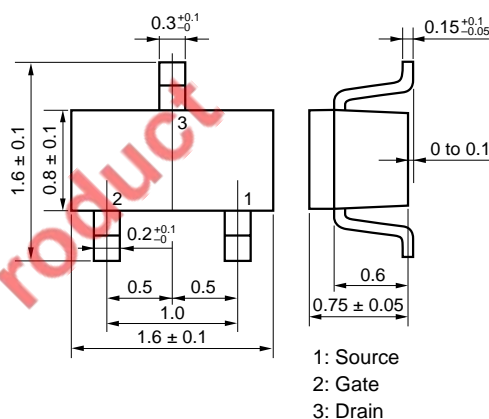
- Can be driven by a 2.5 V power source
- Low gate cut-off voltage

ORDERING INFORMATION

PART NUMBER	PACKAGE
2SK3107	SC-75 (USM)

Marking: D1

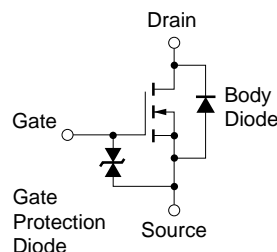
PACKAGE DRAWING (Unit: mm)



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Drain to Source Voltage	V _{DSS}	30	V
Gate to Source Voltage	V _{GSS}	±20	V
Drain Current (DC)	I _{D(DC)}	±0.1	A
Drain Current (pulse) ^{Note1}	I _{D(pulse)}	±0.4	A
Total Power Dissipation ^{Note2}	P _T	200	mW
Channel Temperature	T _{ch}	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

EQUIVALENT CIRCUIT



Notes 1. PW ≤ 10 μs, Duty Cycle ≤ 1%

2. Mounted on ceramic substrate of 3.0 cm² x 0.64 mm

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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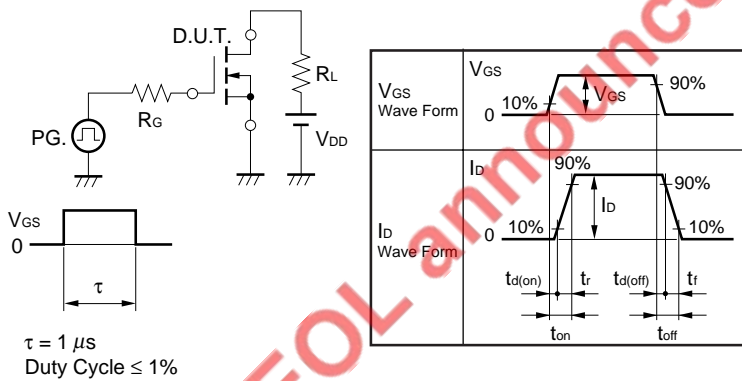
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ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

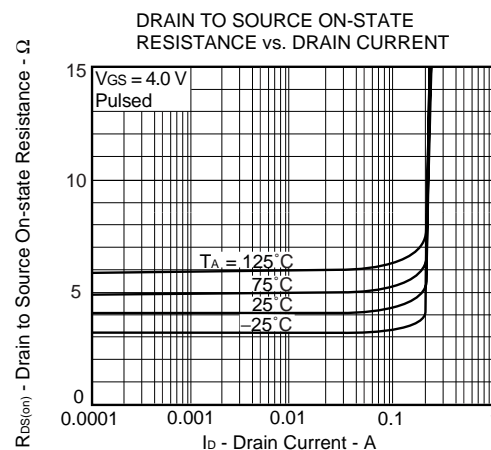
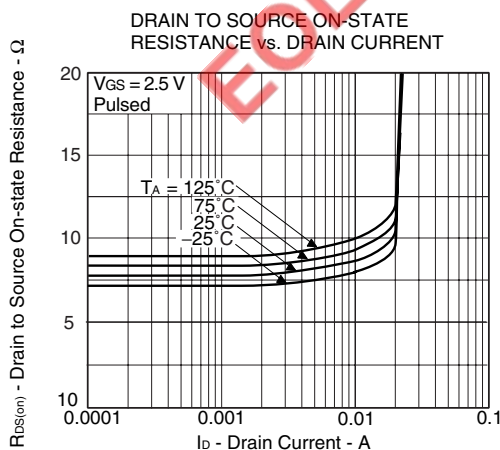
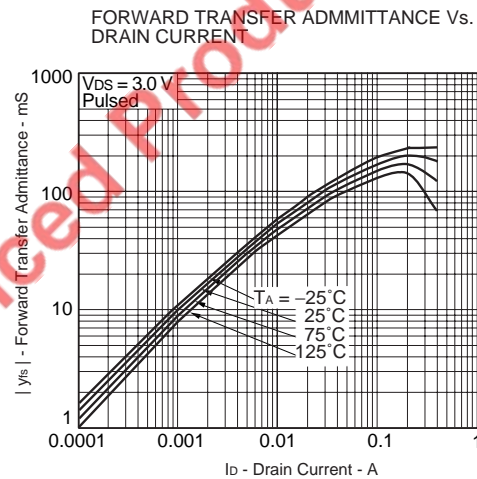
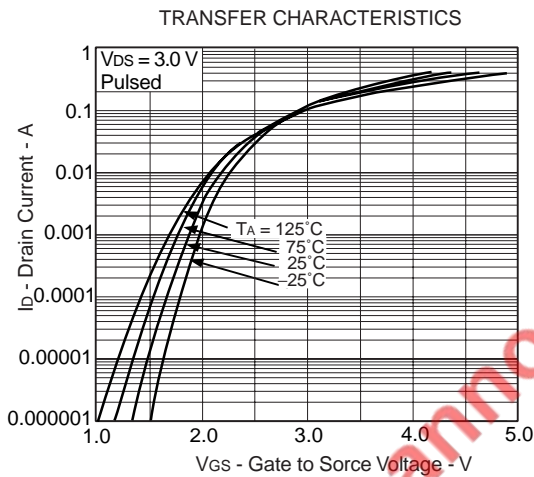
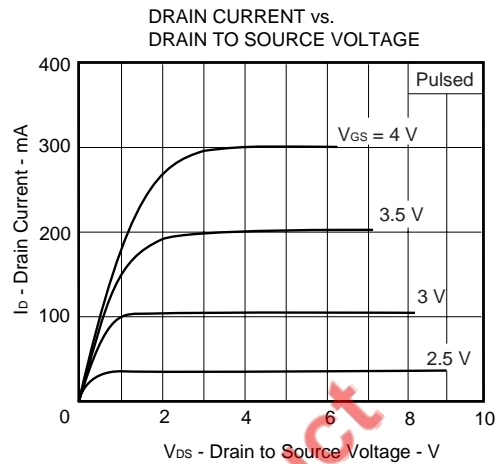
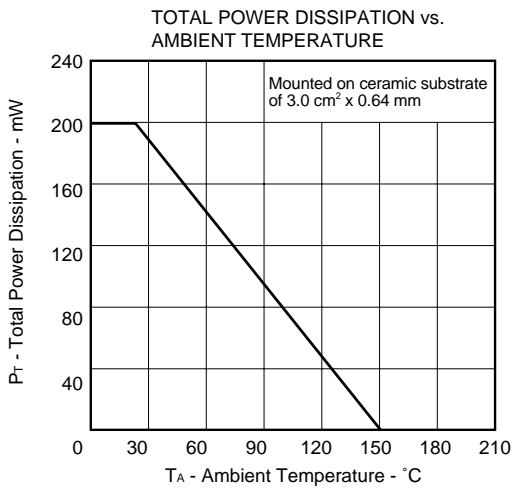
CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30 V, V _{GS} = 0 V			1.0	μA
Gate Leakage Current	I _{GSS}	V _{GS} = ±20 V, V _{DS} = 0 V			±10	μA
Gate Cut-off Voltage	V _{GS(off)}	V _{DS} = 3.0 V, I _D = 10 μA	1.0	1.4	1.8	V
Forward Transfer Admittance ^{Note}	y _{fs}	V _{DS} = 3.0 V, I _D = 10 mA	20			mS
Drain to Source On-state Resistance ^{Note}	R _{DS(on)1}	V _{GS} = 2.5 V, I _D = 1.0 mA		8.0	15	Ω
	R _{DS(on)2}	V _{GS} = 4.0 V, I _D = 10 mA		4.0	8.0	Ω
	R _{DS(on)3}	V _{GS} = 10 V, I _D = 10 mA		3.0	5.0	Ω
Input Capacitance	C _{iss}	V _{DS} = 3.0 V		9.0		pF
Output Capacitance	C _{oss}	V _{GS} = 0 V		12		pF
Reverse Transfer Capacitance	C _{rss}	f = 1 MHz		2.1		pF
Turn-on Delay Time	T _{d(on)}	V _{DD} = 3.0 V		40		ns
Rise Time	t _r	I _D = 10 mA		55		ns
Turn-off Delay Time	t _{d(off)}	V _{GS} = 4.0 V		68		ns
Fall Time	t _f	R _G = 10 Ω, R _L = 300 Ω		64		ns

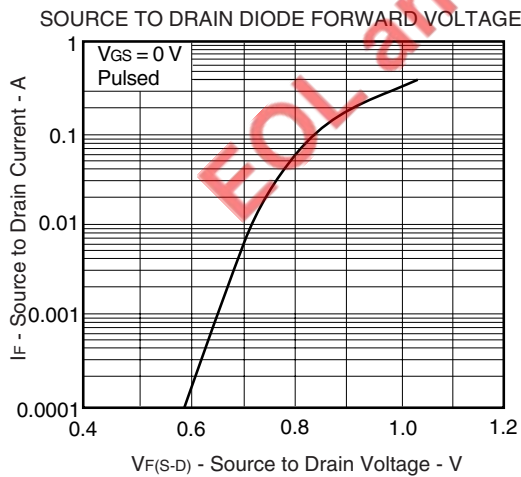
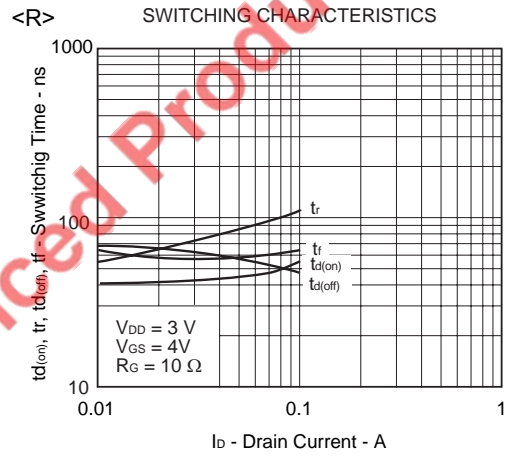
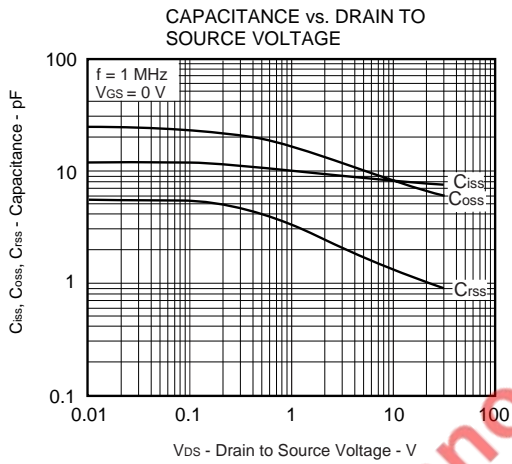
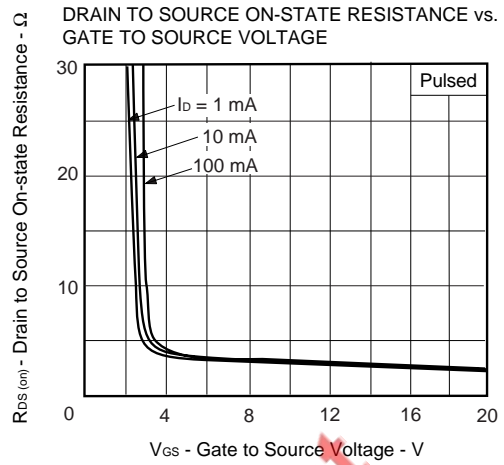
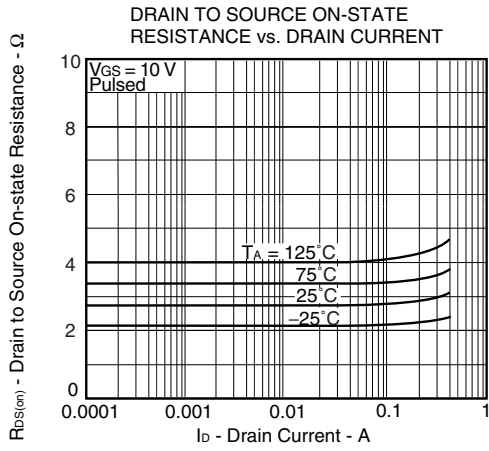
Note Pulsed

TEST CIRCUIT SWITCHING TIME



TYPICAL CHARACTERISTICS (T_A = 25 °C)





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