

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 2SK1585 is an N-channel vertical type MOSFET which can be driven by the 2.5 V power supply.

As the 2SK1585 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 need power saving.

FEATURES

- Directly driven by ICs having a 3 V power supply.

- Has low on-state resistance.

$R_{DS(on)1} = 1.2 \Omega \text{ MAX. (} V_{GS} = 2.5 \text{ V, } I_D = 0.5 \text{ A)}$

$R_{DS(on)2} = 1.0 \Omega \text{ MAX. (} V_{GS} = 4.0 \text{ V, } I_D = 0.5 \text{ A)}$

ORDERING INFORMATION

PART NUMBER	PACKAGE
2SK1585	SC-62 (Power Mini Mold)

Marking: NE

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

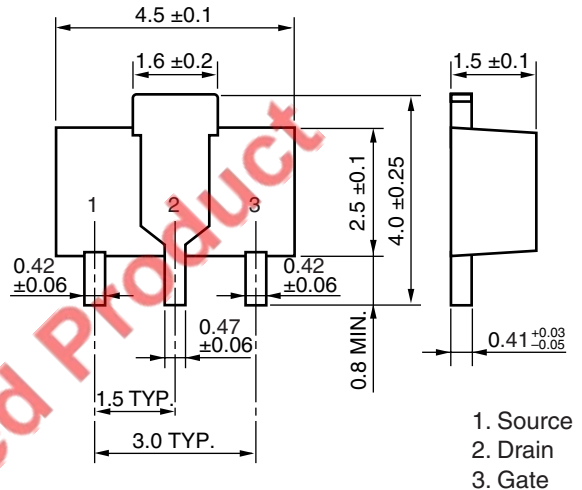
Drain to Source Voltage ($V_{GS} = 0 \text{ V}$)	V_{DSS}	16	V
Gate to Source Voltage ($V_{DS} = 0 \text{ V}$)	V_{GSS}	± 16	V
Drain Current (DC)	$I_{D(DC)}$	± 1.0	A
Drain Current (pulse) ^{Note 1}	$I_{D(pulse)}$	± 2.0	A
Total Power Dissipation ^{Note 2}	P_T	2.0	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes 1. $PW \leq 10 \text{ ms}$, Duty Cycle $\leq 50\%$

2. When using ceramic board of $16 \text{ cm}^2 \times 0.7 \text{ mm}$

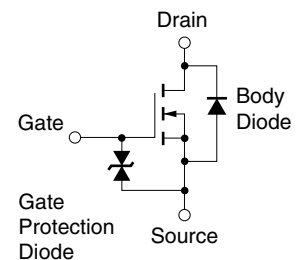
Remark The diode connected between the gate and source of the transistor serves as a protector against ESD. When this device actually used, an additional protection circuit is externally required if a voltage exceeding the rated voltage may be applied to this device.

PACKAGE DRAWING (Unit: mm)



1. Source
2. Drain
3. Gate

EQUIVALENT CIRCUIT



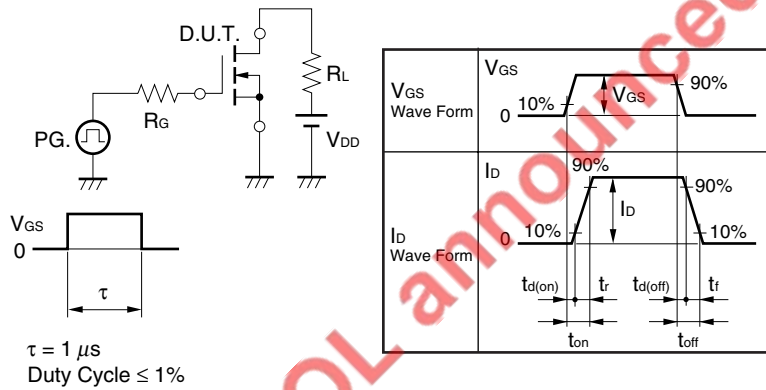
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ELECTRICAL CHARACTERISTICS (T_A = 25°C)

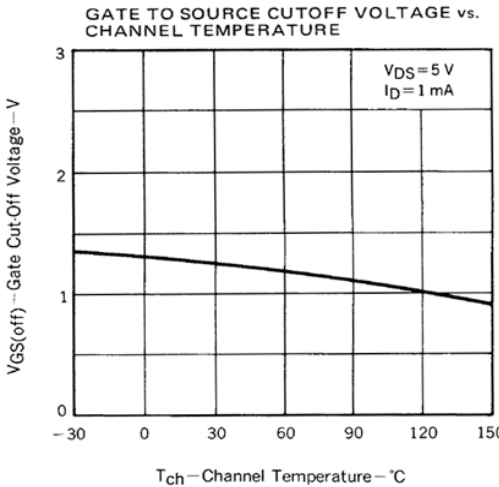
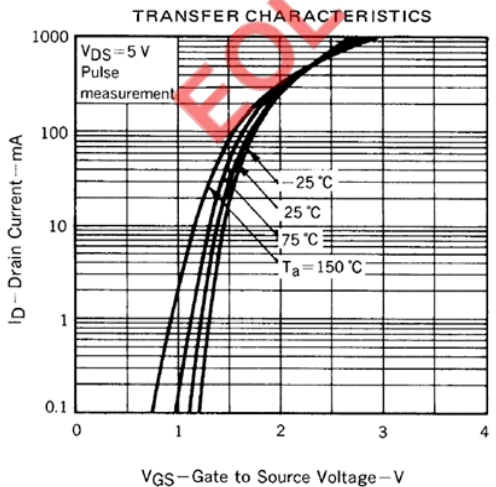
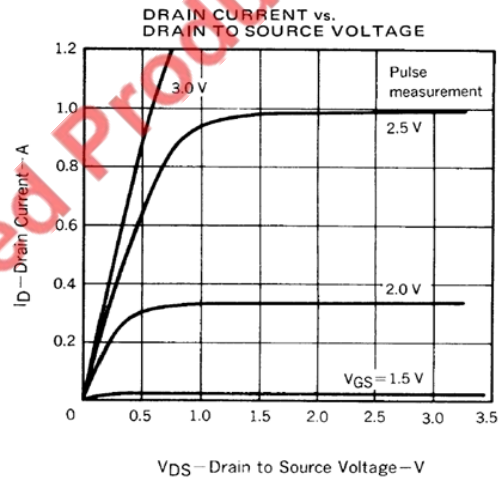
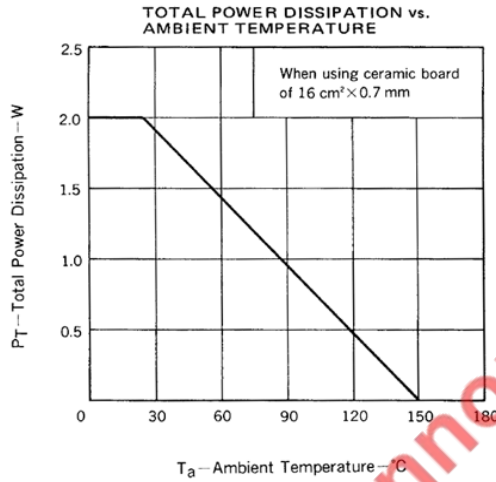
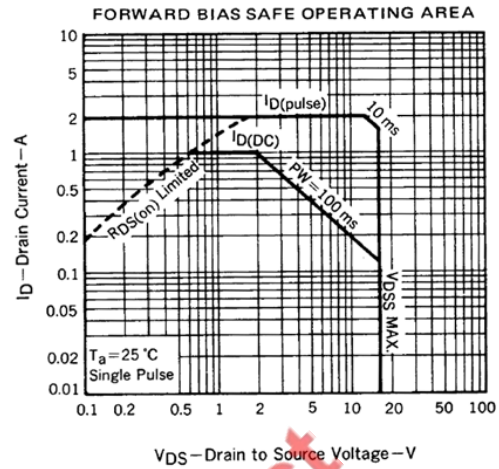
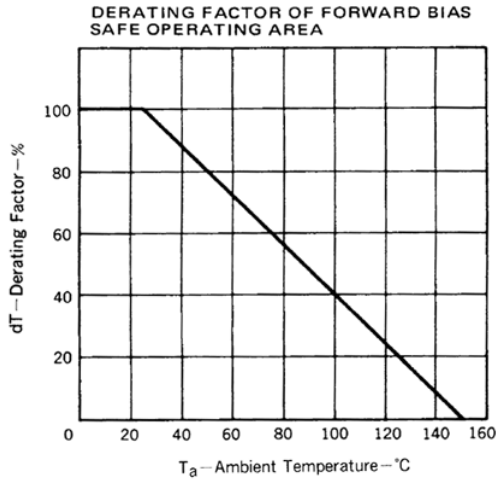
CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V			1.0	μA
Gate Leakage Current	I _{GSS}	V _{GS} = ±16 V, V _{DS} = 0 V			±5.0	μA
Gate Cut-off Voltage	V _{GS(off)}	V _{DS} = 5.0 V, I _D = 1.0 mA	0.8	1.2	1.6	V
Forward Transfer Admittance Note	y _{fs}	V _{DS} = 5.0 V, I _D = 0.5 A	0.4	1.0		S
Drain to Source On-state Resistance Note	R _{DS(on)1}	V _{GS} = 2.5 V, I _D = 0.5 A		0.6	1.2	Ω
	R _{DS(on)2}	V _{GS} = 4.0 V, I _D = 0.5 A		0.3	1.0	Ω
Input Capacitance	C _{iss}	V _{DS} = 3.0 V		116		pF
Output Capacitance	C _{oss}	V _{GS} = 0 V		107		pF
Reverse Transfer Capacitance	C _{rss}	f = 1 MHz		27		pF
Turn-on Delay Time	t _{d(on)}	V _{DD} = 3.0 V, I _D = 0.5 A		80		ns
Rise Time	t _r	V _{GS} = 3.0 V		260		ns
Turn-off Delay Time	t _{d(off)}	R _G = 10 Ω		145		ns
Fall Time	t _f			140		ns

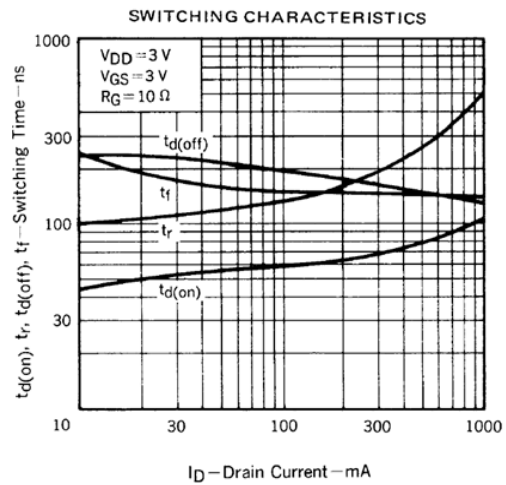
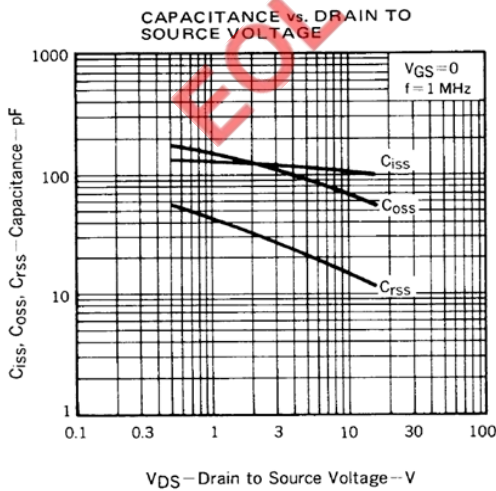
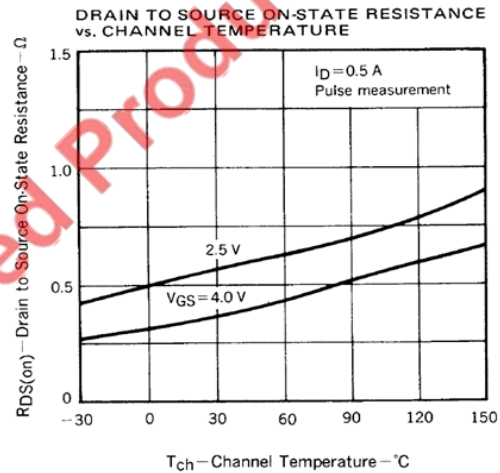
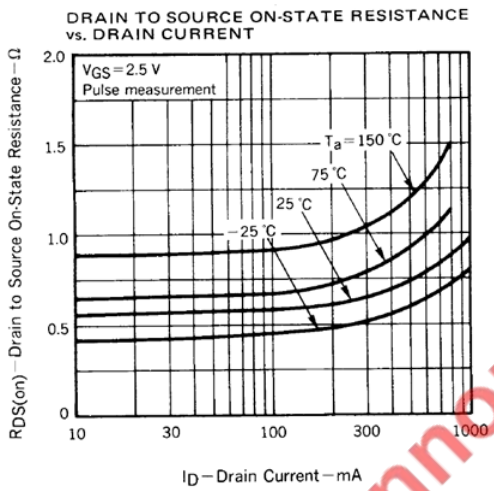
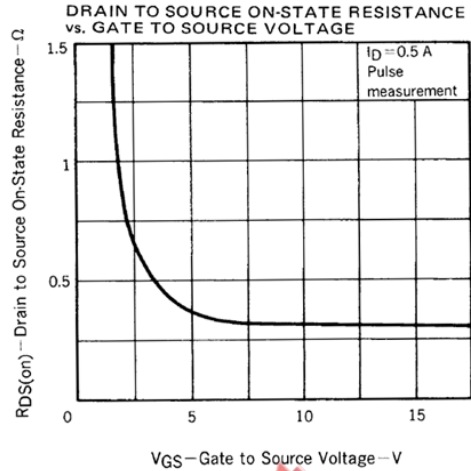
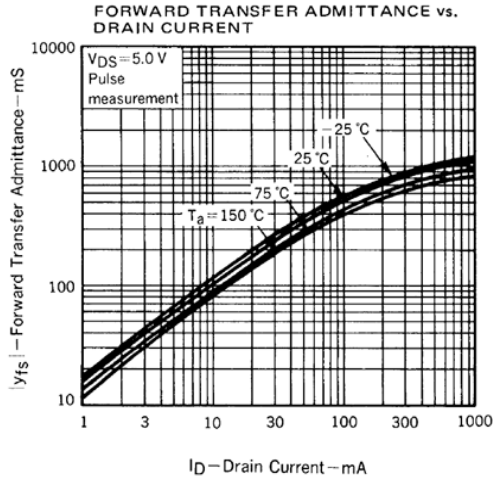
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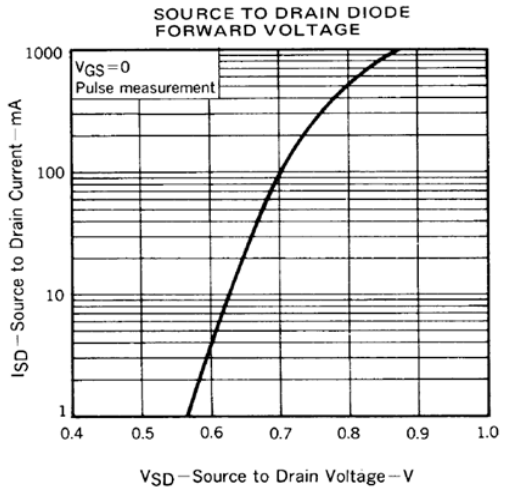
TEST CIRCUIT SWITCHING TIME



TYPICAL CHARACTERISTICS (T_A = 25°C)







EOL announced Product

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