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April 1st, 2010
Renesas Electronics Corporation

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

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Not recommended
for new design

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2SK1626, 2SK1627

Silicon N Channel MOS FET

REJ03G0959-0200
(Previous: ADE-208-1302)
Rev.2.00
Sep 07, 2005

Application

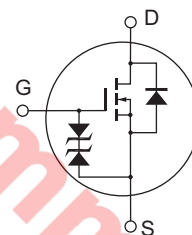
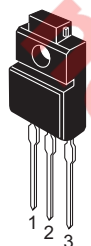
High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator and DC-DC converter

Outline

RENESAS Package code: PRSS0003AD-A
(Package name: TO-220FM)



1. Gate
2. Drain
3. Source

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	450	V
		500	
Gate to source voltage	V_{GSS}	±30	V
Drain current	I_D	5	A
Drain peak current	$I_{D(pulse)}^{*1}$	20	A
Body to drain diode reverse drain current	I_{DR}	5	A
Channel dissipation	P_{ch}^{*2}	35	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1%

2. Value at T_C = 25°C

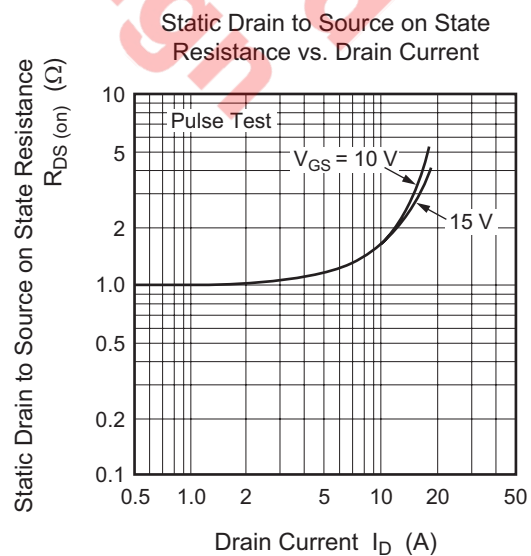
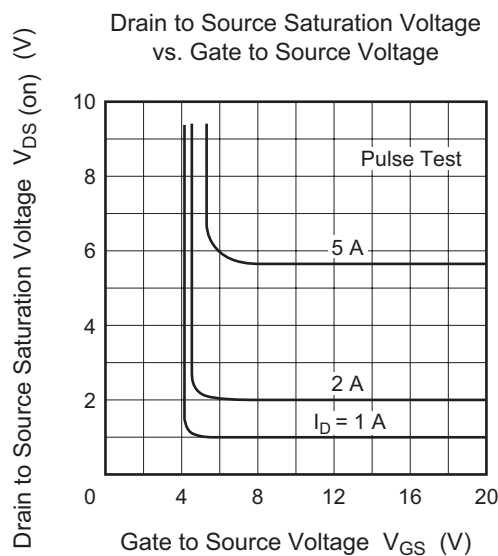
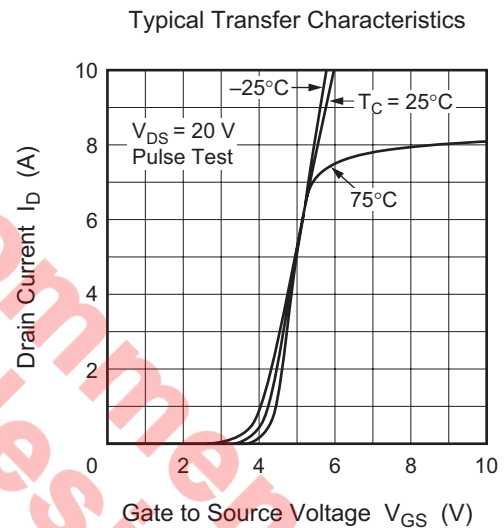
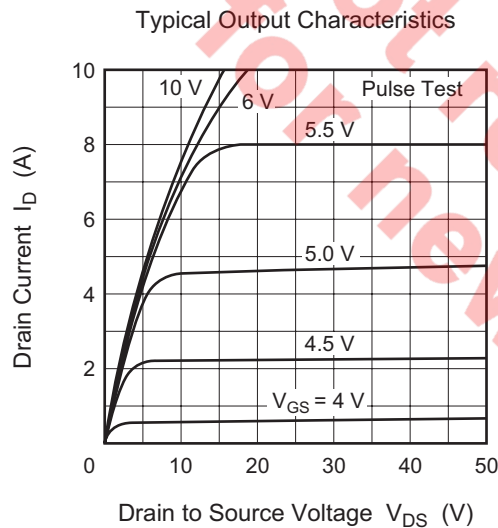
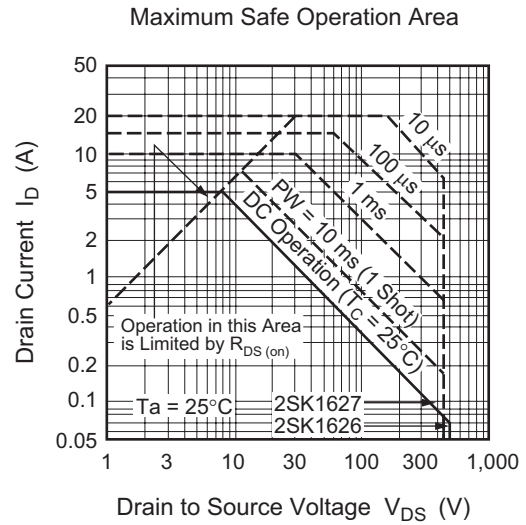
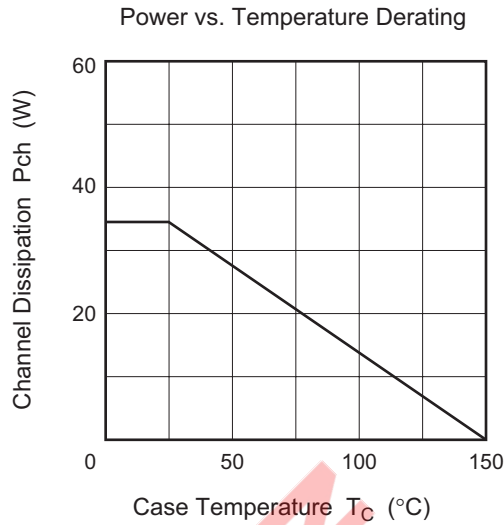
Electrical Characteristics

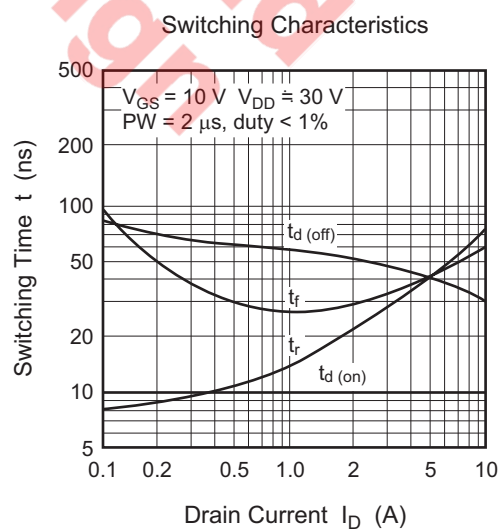
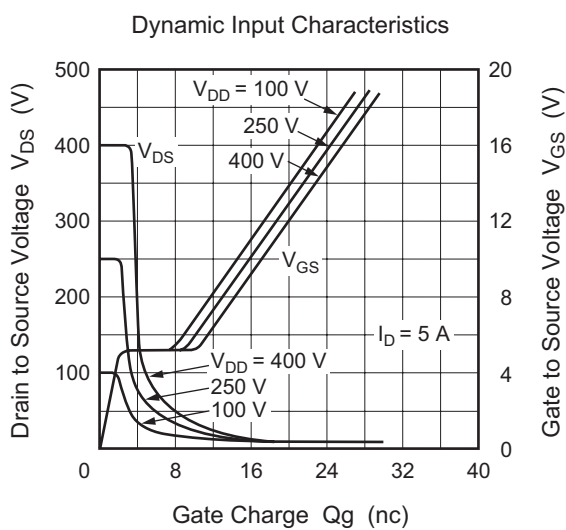
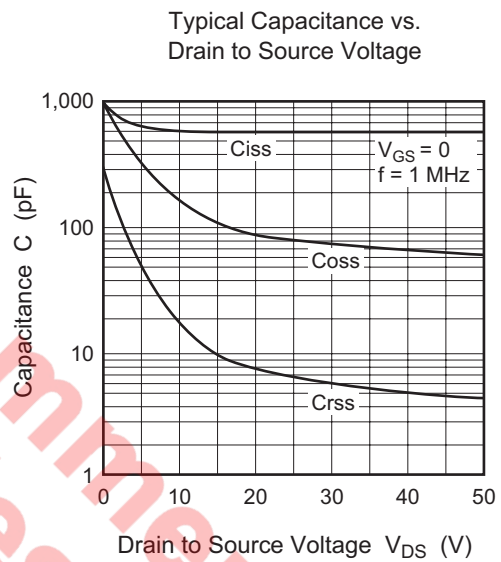
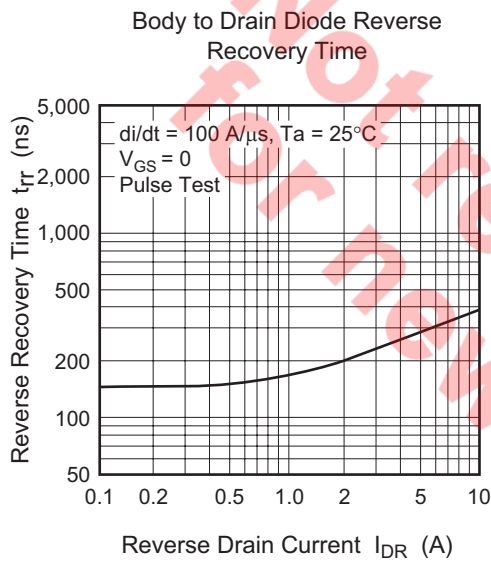
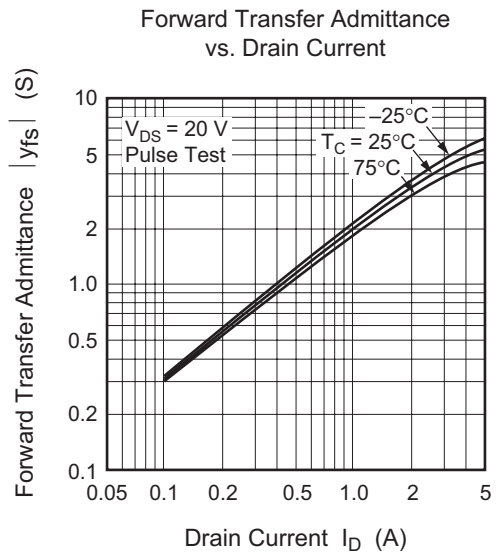
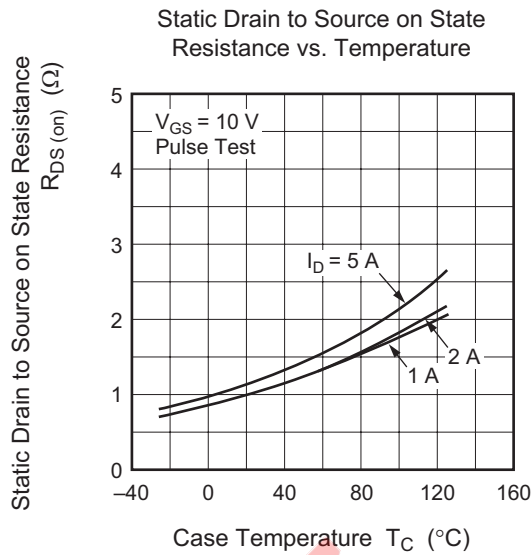
(Ta = 25°C)

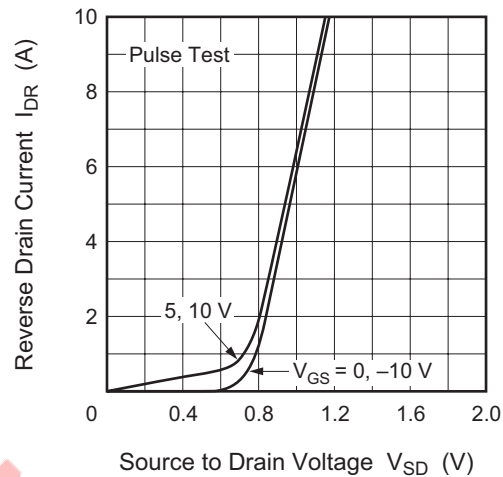
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	450	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
		500	—	—	V	
Gate to source breakdown voltage	$V_{(BR)GSS}$	±30	—	—	V	$I_G = \pm 100 \mu\text{A}$, $V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 25 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	250	μA	$V_{DS} = 360 \text{ V}$, $V_{GS} = 0$
		—	—	—	μA	$V_{DS} = 400 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	—	3.0	V	$I_D = 1 \text{ mA}$, $V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	1.0	1.4	Ω	$I_D = 2.5 \text{ A}$, $V_{GS} = 10 \text{ V}^{*3}$
		—	1.2	1.5	Ω	
Forward transfer admittance	y _{fs}	2.5	4.0	—	S	$I_D = 2.5 \text{ A}$, $V_{DS} = 10 \text{ V}^{*3}$
Input capacitance	Ciss	—	640	—	pF	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$,
Output capacitance	Coss	—	160	—	pF	f = 1 MHz
Reverse transfer capacitance	Crss	—	20	—	pF	
Turn-on delay time	t _{d(on)}	—	10	—	ns	$I_D = 2.5 \text{ A}$, $V_{GS} = 10 \text{ V}$,
Rise time	t _r	—	25	—	ns	R _L = 12 Ω
Turn-off delay time	t _{d(off)}	—	50	—	ns	
Fall time	t _f	—	30	—	ns	
Body to drain diode forward voltage	V_{DF}	—	0.95	—	V	$I_F = 5 \text{ A}$, $V_{GS} = 0$
Body to drain diode reverse recovery time	t _{rr}	—	300	—	ns	$I_F = 5 \text{ A}$, $V_{GS} = 0$, di _F /dt = 100 A/μs

Note: 3. Pulse test

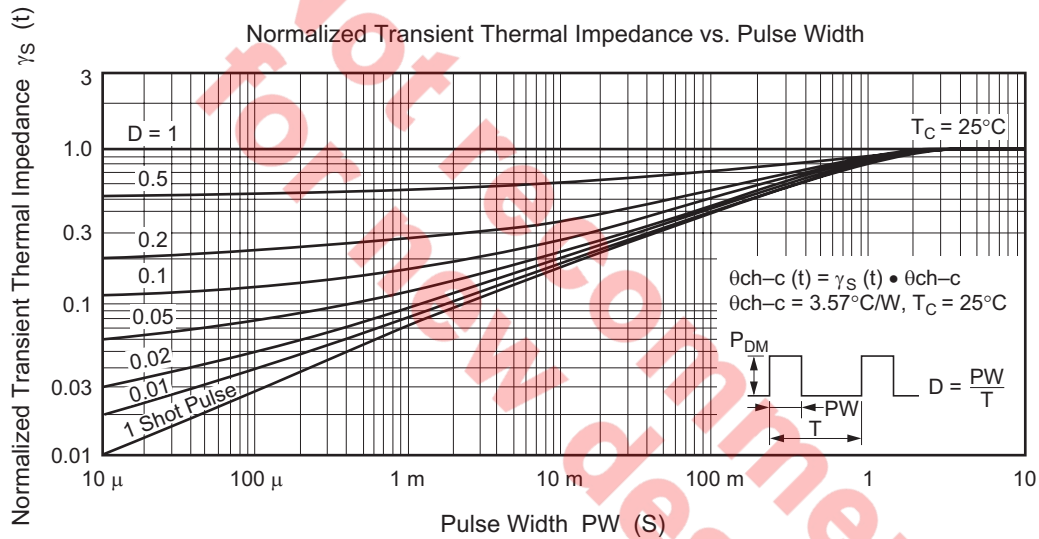
Main Characteristics



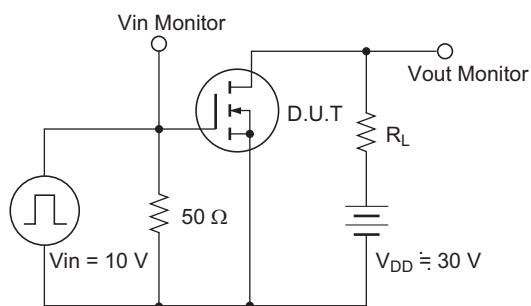


Reverse Drain Current vs.
Source to Drain Voltage

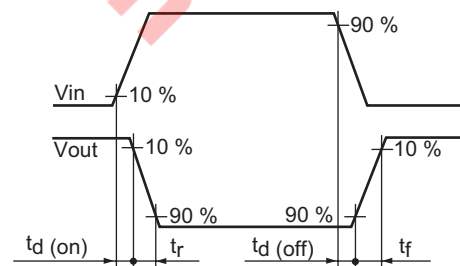
Normalized Transient Thermal Impedance vs. Pulse Width



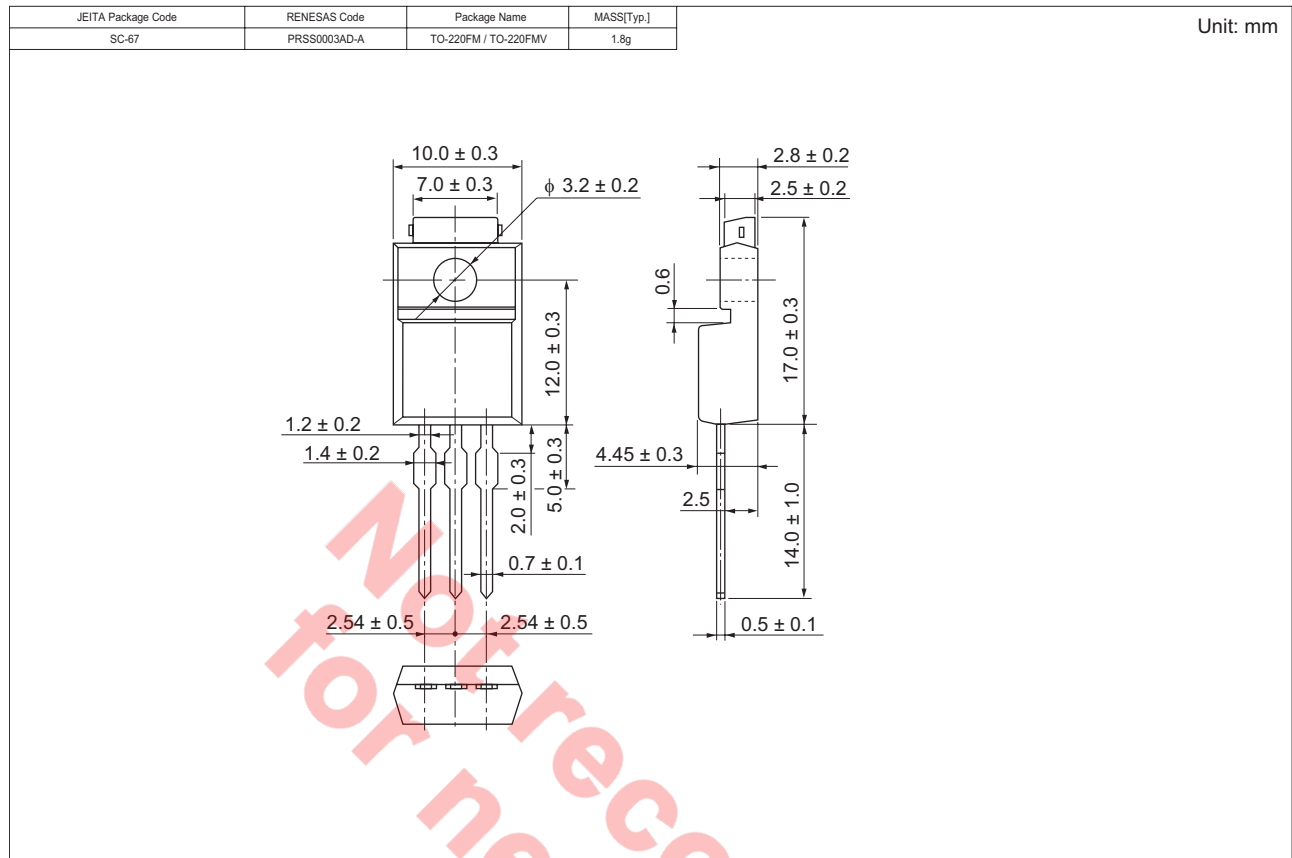
Switching Time Test Circuit



Waveforms



Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK1626-E	500 pcs	Box (Sack)
2SK1627-E	500 pcs	Box (Sack)

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