To our customers,

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

April 1st, 2010
Renesas Electronics Corporation

Not recommend for new design

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Not recommend for new design

2SK1626, 2SK1627

Silicon N Channel MOS FET

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

Not recommend for new design

Application

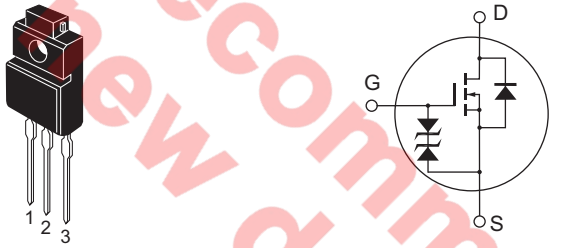
High speed power switching

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	2SK1626	V_{DSS}	450	V
	2SK1627		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		Pch*[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)

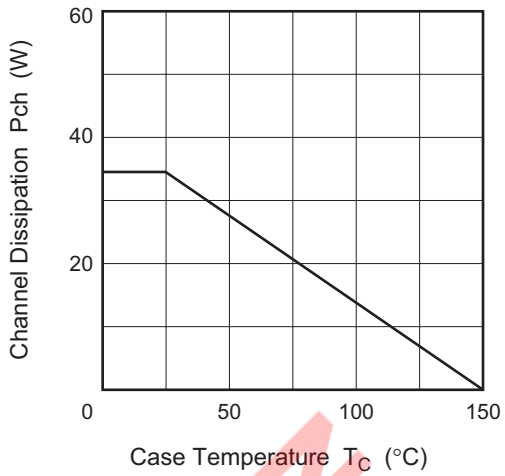
Item		Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1626	$V_{(BR)DSS}$	450	—	—	V	I_D = 10 mA, V_{GS} = 0
	2SK1627		500				
Gate to source breakdown voltage		$V_{(BR)GSS}$	±30	—	—	V	I_G = ±100 µA, V_{DS} = 0
Gate to source leak current		I_{GSS}	—	—	±10	µA	V_{GS} = ±25 V, V_{DS} = 0
Zero gate voltage drain current	2SK1626	I_{DSS}	—	—	250	µA	V_{DS} = 360 V, V_{GS} = 0
	2SK1627						V_{DS} = 400 V, V_{GS} = 0
Gate to source cutoff voltage		$V_{GS(off)}$	2.0	—	3.0	V	I_D = 1 mA, V_{DS} = 10 V
Static drain to source on state resistance	2SK1626	$R_{DS(on)}$	—	1.0	1.4	Ω	I_D = 2.5 A, V_{GS} = 10 V *[3]
	2SK1627		—	1.2	1.5		
Forward transfer admittance		|yfs|	2.5	4.0	—	S	I_D = 2.5 A, V_{DS} = 10 V *[3]
Input capacitance		Ciss	—	640	—	pF	V_{DS} = 10 V, V_{GS} = 0, f = 1 MHz
Output capacitance		Coss	—	160	—	pF	
Reverse transfer capacitance		Crss	—	20	—	pF	
Turn-on delay time		$t_{d(on)}$	—	10	—	ns	I_D = 2.5 A, V_{GS} = 10 V, R_L = 12 Ω
Rise time		t_r	—	25	—	ns	
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 A, V_{GS} = 0
Body to drain diode reverse recovery time		t_{rr}	—	300	—	ns	I_F = 5 A, V_{GS} = 0, di_F/dt = 100 A/µs

Note: 3. Pulse test

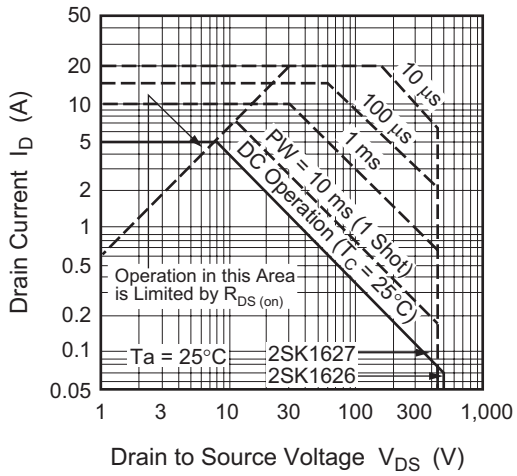
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Main Characteristics

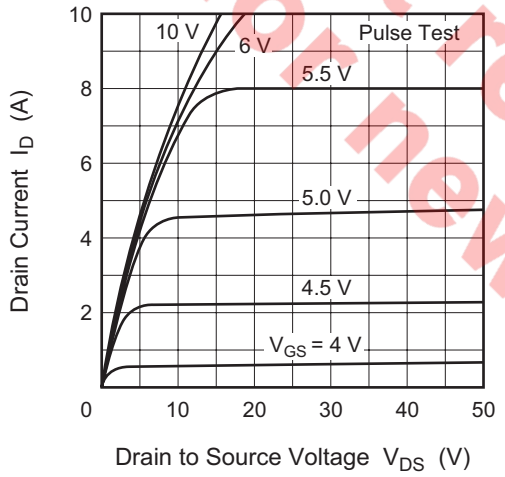
Power vs. Temperature Derating



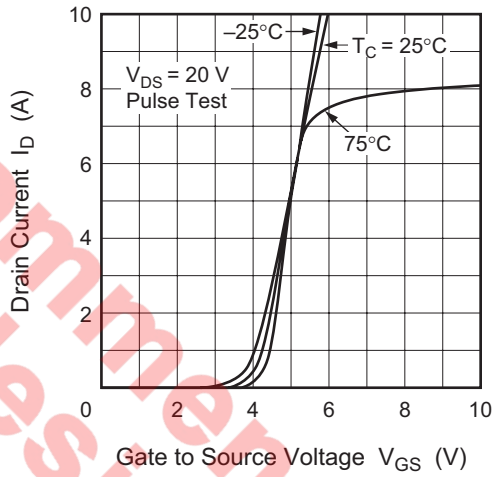
Maximum Safe Operation Area



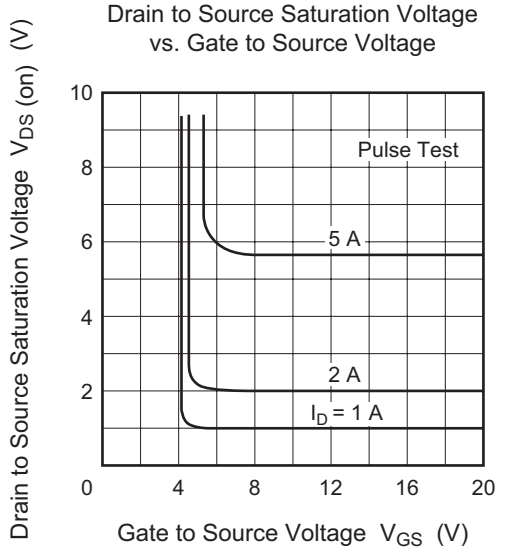
Typical Output Characteristics



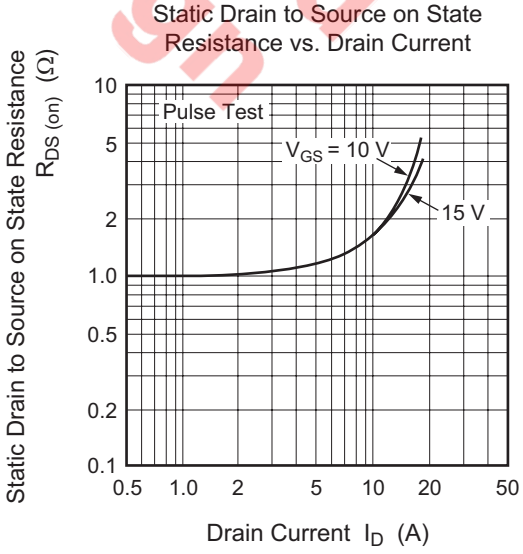
Typical Transfer Characteristics



Drain to Source Saturation Voltage vs. Gate to Source Voltage

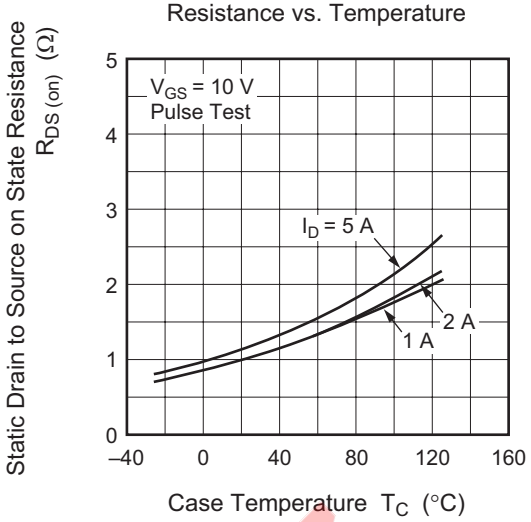


Static Drain to Source on State Resistance vs. Drain Current

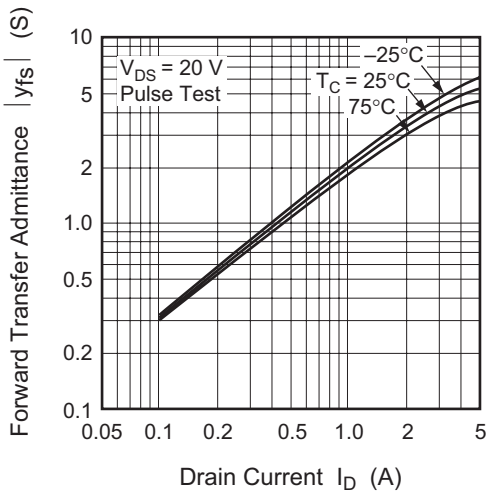


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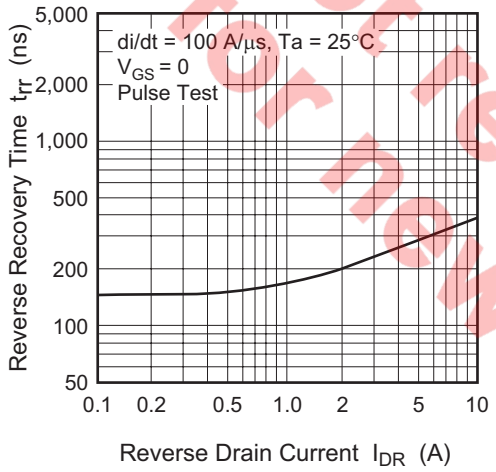
Static Drain to Source on State Resistance vs. Temperature



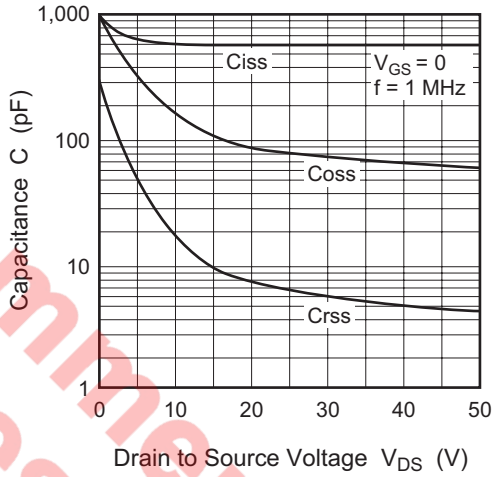
Forward Transfer Admittance vs. Drain Current



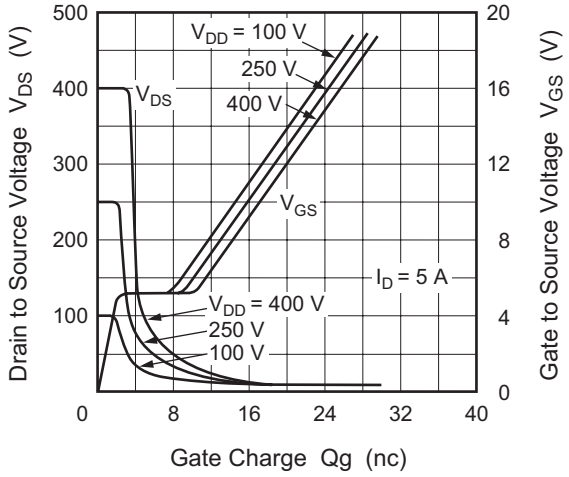
Body to Drain Diode Reverse Recovery Time



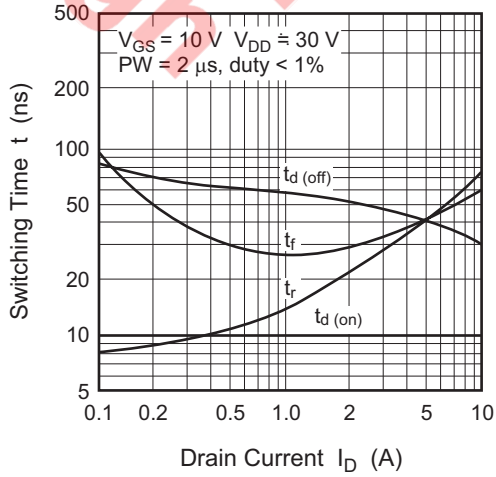
Typical Capacitance vs. Drain to Source Voltage



Dynamic Input Characteristics

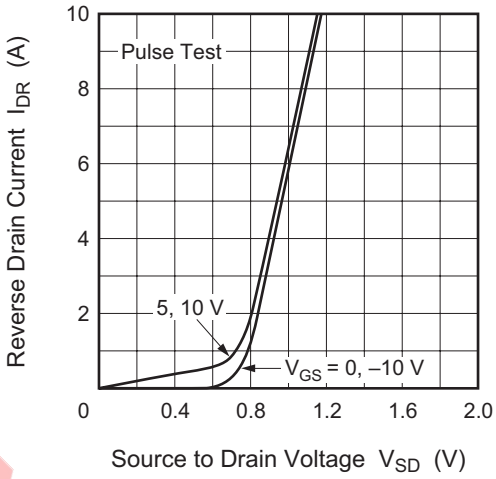


Switching Characteristics

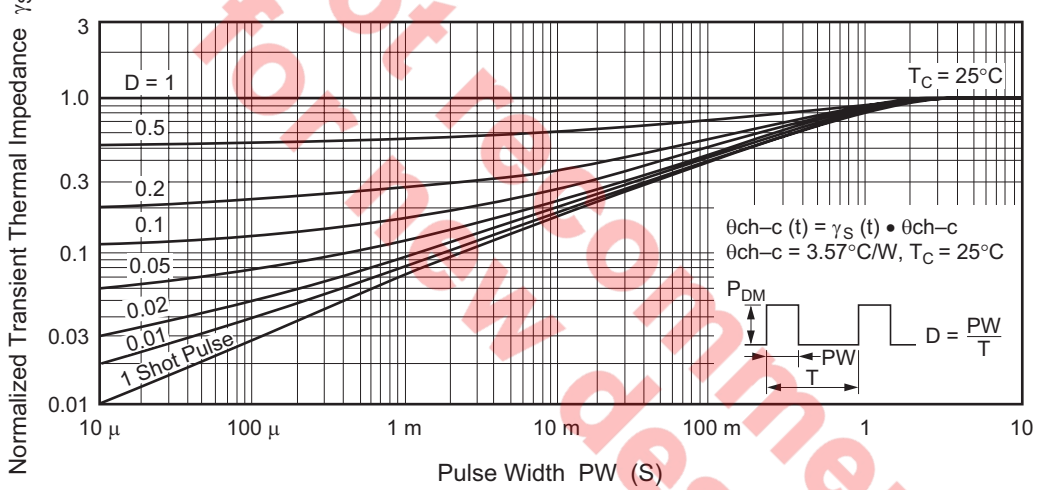


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Reverse Drain Current vs.
Source to Drain Voltage

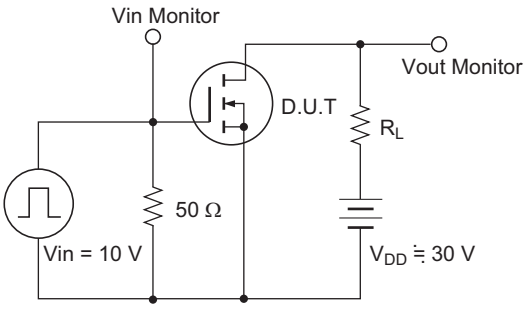


Normalized Transient Thermal Impedance vs. Pulse Width

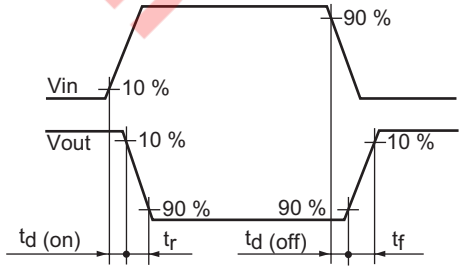


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Switching Time Test Circuit



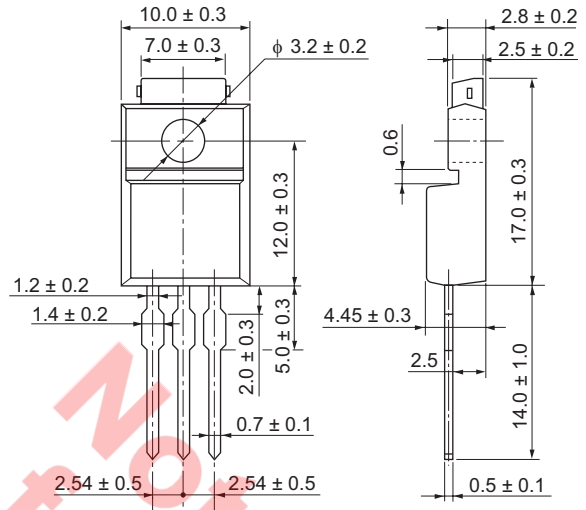
Waveforms



Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
SC-67	PRSS0003AD-A	TO-220FM / TO-220FMV	1.8g

Unit: mm



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Ordering Information

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

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