

2SK975

Silicon N Channel MOS FET

REJ03G0905-0200
(Previous: ADE-208-1243)
Rev.2.00
Sep 07, 2005

Application

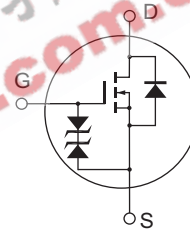
High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- 4 V gate drive device
 - Can be driven from 5 V source
- Suitable for motor drive, DC-DC converter, power switch and solenoid drive

Outline

RENESAS Package code: PRSS0003DC-A
(Package name: TO-92 Mod)



1. Source
2. Drain
3. Gate

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	60	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_D	1.5	A
Drain peak current	$I_{D(pulse)}^{*1}$	4.5	A
Body to drain diode reverse drain current	I_{DR}	1.5	A
Channel dissipation	Pch	900	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Note: 1. PW \leq 10 μ s, duty cycle \leq 1%

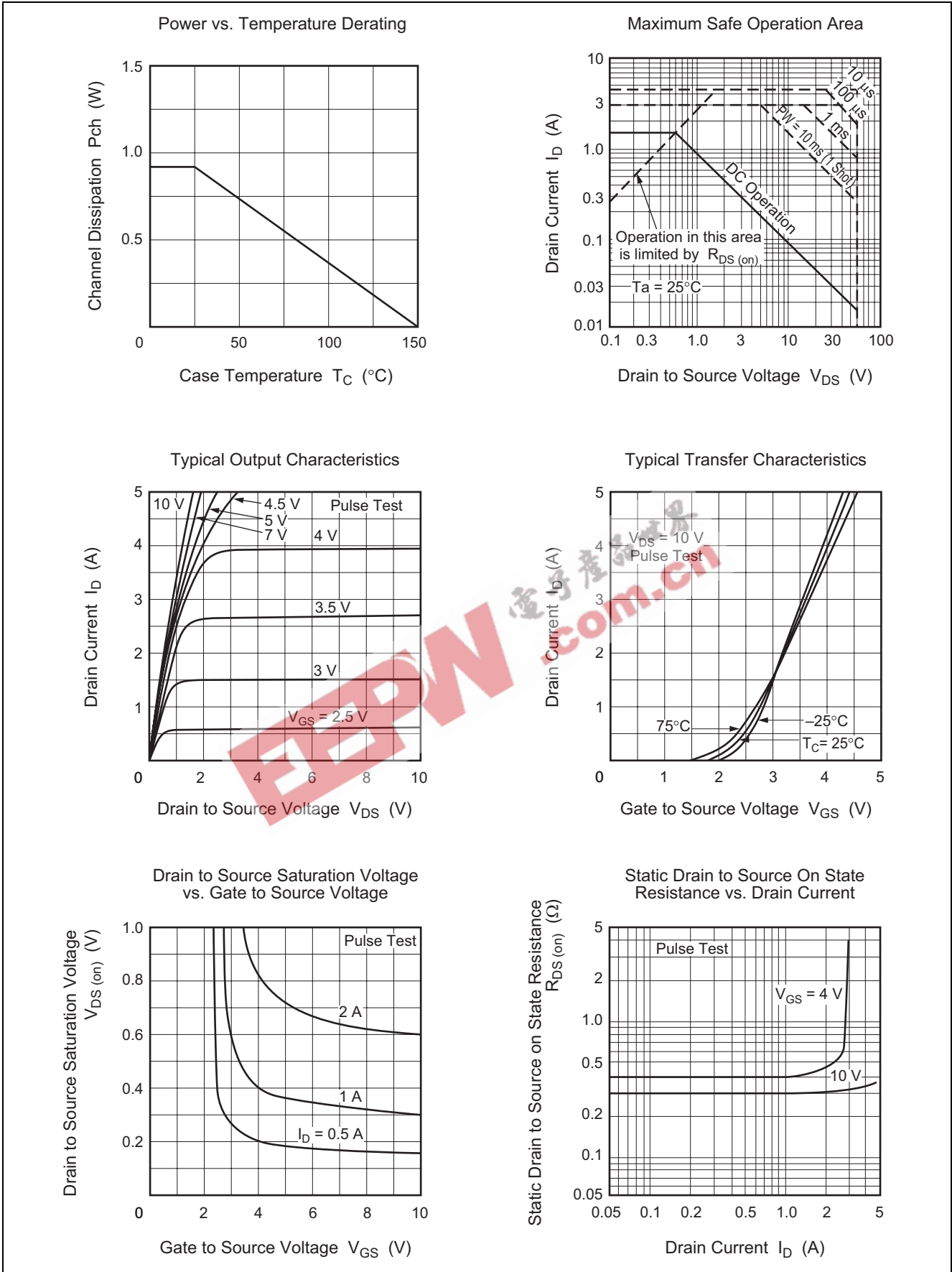
Electrical Characteristics

(Ta = 25°C)

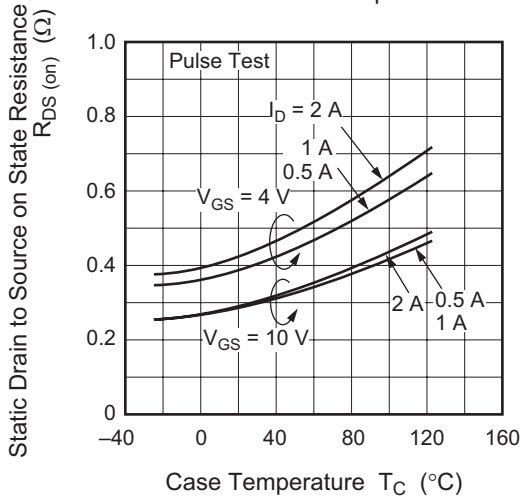
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10$ mA, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100$ μ A, $V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μ A	$V_{GS} = \pm 16$ V, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	100	μ A	$V_{DS} = 50$ V, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	$I_D = 1$ mA, $V_{DS} = 10$ V
Static drain to source on state resistance	$R_{DS(off)}$	—	0.3	0.4	Ω	$I_D = 1$ A, $V_{GS} = 10$ V ^{*2}
			0.4	0.55	Ω	$I_D = 1$ A, $V_{GS} = 4$ V ^{*2}
Forward transfer admittance	$ y_{fs} $	0.9	1.5	—	S	$I_D = 1$ A, $V_{DS} = 10$ V ^{*2}
Input capacitance	Ciss	—	140	—	pF	$V_{DS} = 10$ V, $V_{GS} = 0$, f = 1 MHz
Output capacitance	Coss	—	70	—	pF	
Reverse transfer capacitance	Crss	—	20	—	pF	
Turn-on delay time	$t_{d(on)}$	—	3	—	ns	$I_D = 1$ A, $V_{GS} = 10$ V, $R_L = 30$ Ω
Rise time	t_r	—	12	—	ns	
Turn-off delay time	$t_{d(off)}$	—	50	—	ns	
Fall time	t_f	—	30	—	ns	
Body to drain diode forward voltage	V_{DF}	—	0.9	—	V	$I_F = 1.5$ A, $V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	45	—	ns	$I_F = 1.5$ A, $V_{GS} = 0$, $di_F/dt = 50$ A/ μ s

Note: 2. Pulse test

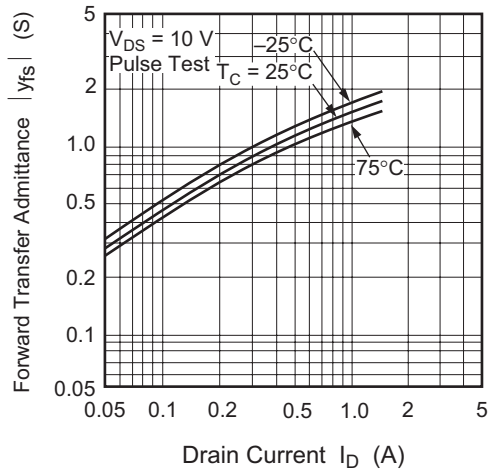
Main Characteristics



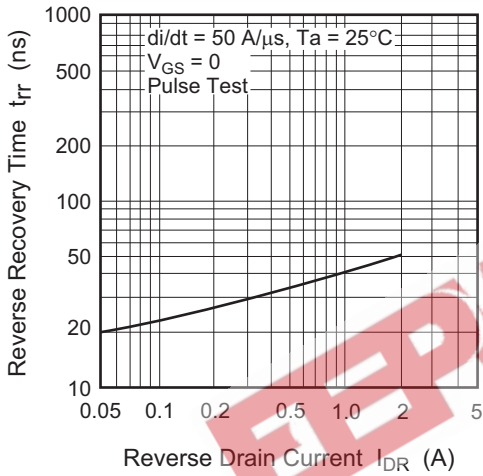
Static Drain to Source on State Resistance vs. Temperature



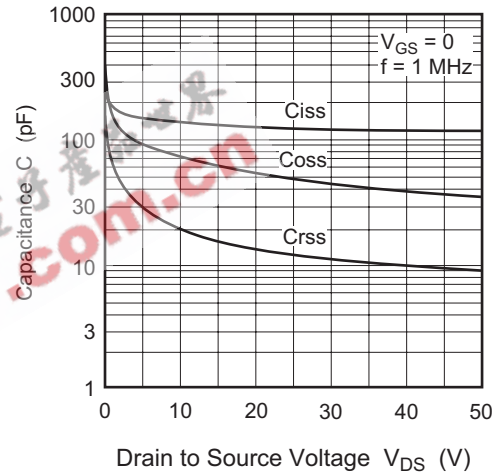
Forward Transfer Admittance vs. Drain Current



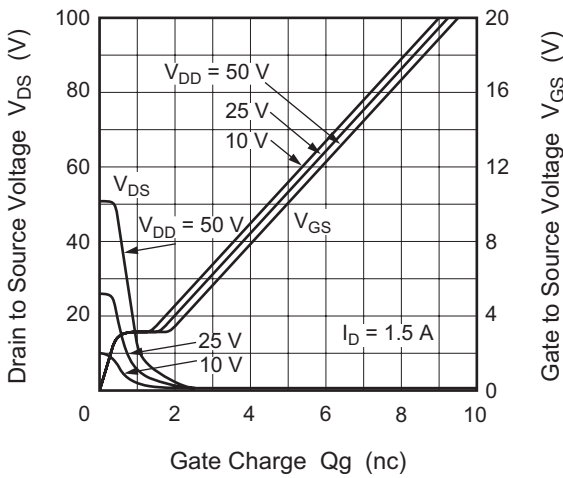
Body to Drain Diode Reverse Recovery Time



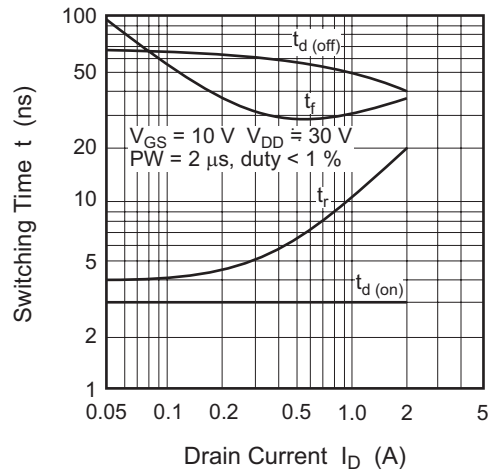
Typical Capacitance vs. Drain to Source Voltage

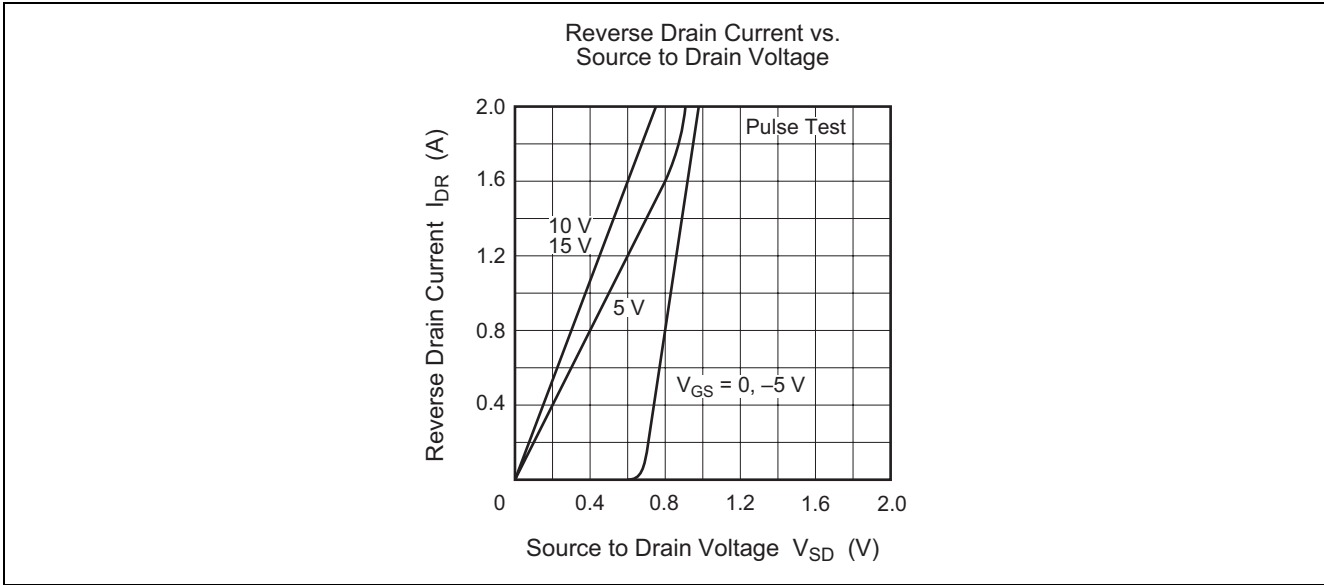


Dynamic Input Characteristics



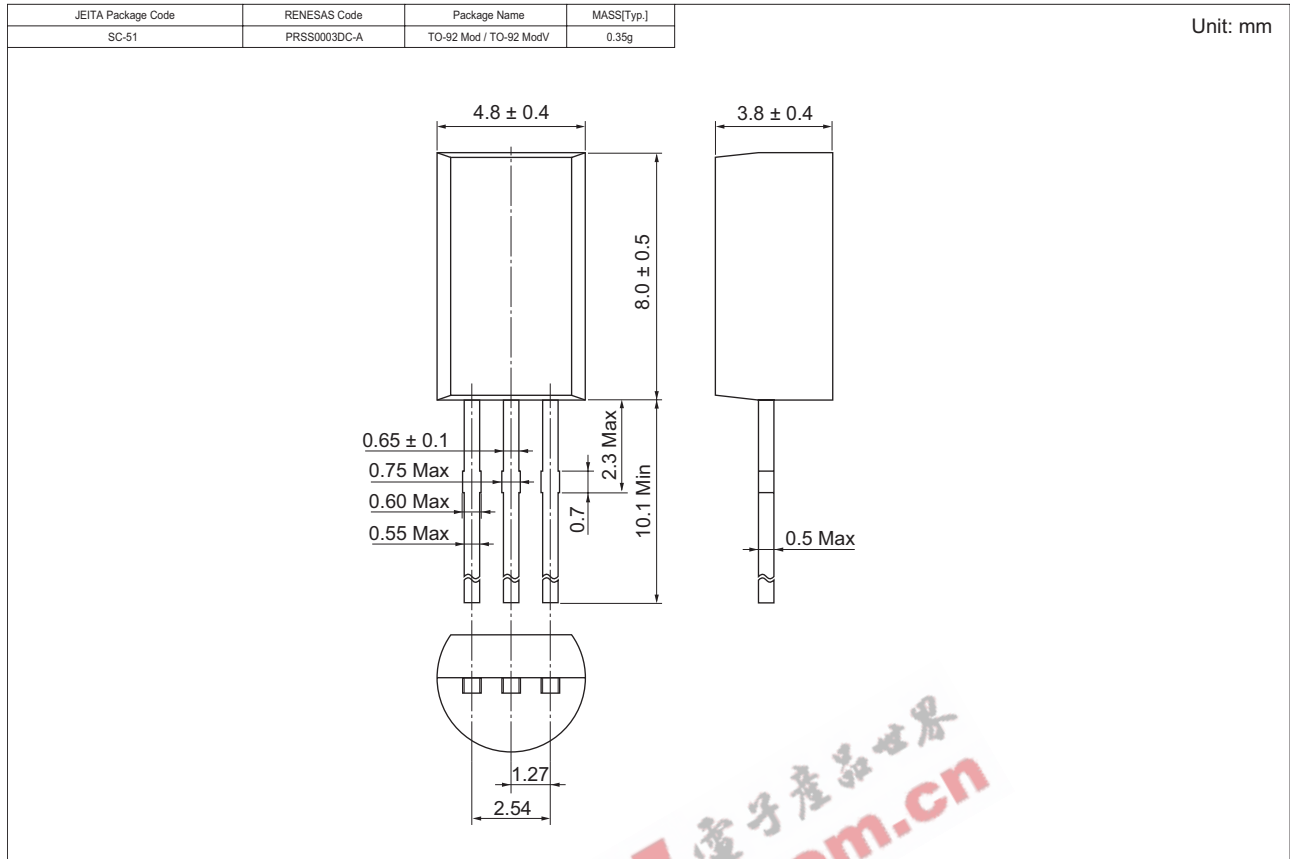
Switching Characteristics





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Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK975TZ-E	2500 pcs	Hold Box, Radial Taping

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450 Holger Way, San Jose, CA 95134-1368, U.S.A
Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

Renesas Technology Europe Limited

Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

Renesas Technology Hong Kong Ltd.

7th Floor, North Tower, World Finance Centre, Harbour City, 1 Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2730-6071

Renesas Technology Taiwan Co., Ltd.

10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

Renesas Technology (Shanghai) Co., Ltd.

Unit2607 Ruijing Building, No.205 Maoming Road (S), Shanghai 200020, China
Tel: <86> (21) 6472-1001, Fax: <86> (21) 6415-2952

Renesas Technology Singapore Pte. Ltd.

1 Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: <65> 6213-0200, Fax: <65> 6278-8001

Renesas Technology Korea Co., Ltd.

Kukje Center Bldg. 18th Fl., 191, 2-ka, Hangang-ro, Yongsan-ku, Seoul 140-702, Korea
Tel: <82> 2-796-3115, Fax: <82> 2-796-2145

Renesas Technology Malaysia Sdn. Bhd.

Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No.18, Jalan Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: <603> 7955-9390, Fax: <603> 7955-9510