

To our customers,

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## Old Company Name in Catalogs and Other Documents

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

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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

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## 2SK1772

### Silicon N Channel MOS FET

REJ03G0971-0200  
(Previous: ADE-208-1318)  
Rev.2.00  
Sep 07, 2005

#### Application

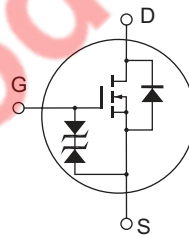
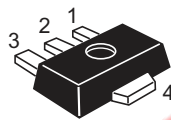
High speed power switching

#### Features

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

#### Outline

RENESAS Package code: PLZZ0004CA-A  
(Package name: UPAK<sup>®</sup>)



1. Gate
2. Drain
3. Source
4. Drain

Note: Marking is "HY".

\*UPAK is a trademark of Renesas Technology Corp.

## Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V <sub>DSS</sub>	30	V
Gate to source voltage	V <sub>GSS</sub>	±20	V
Drain current	I <sub>D</sub>	1	A
Drain peak current	I <sub>D(pulse)</sub> <sup>*1</sup>	2	A
Body to drain diode reverse drain current	I <sub>DR</sub>	1	A
Channel dissipation	P <sub>ch</sub> <sup>*2</sup>	1	W
Channel temperature	T <sub>ch</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1 %

2. When using the alumina ceramic board (12.5 · 20 · 0.7mm)

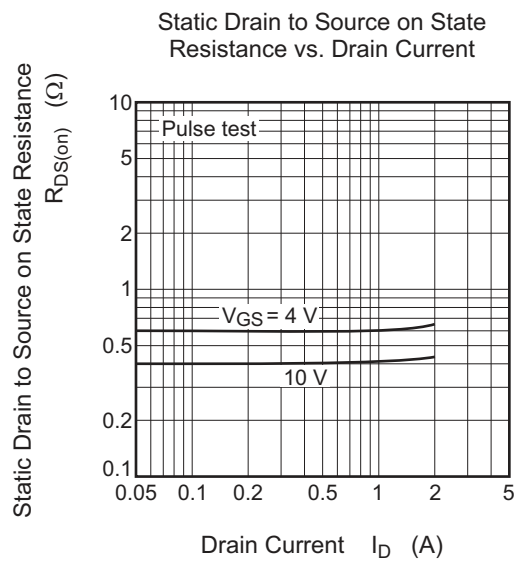
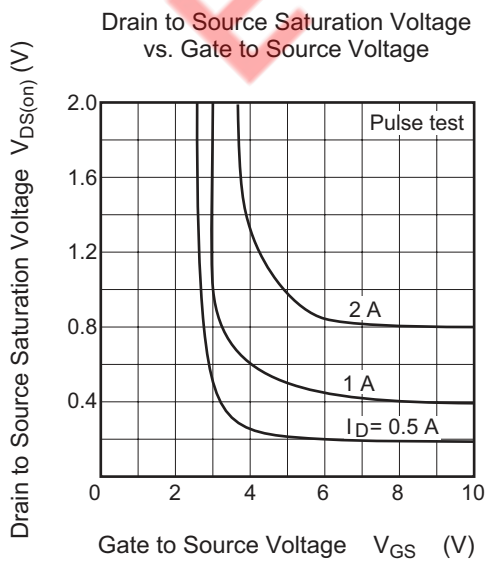
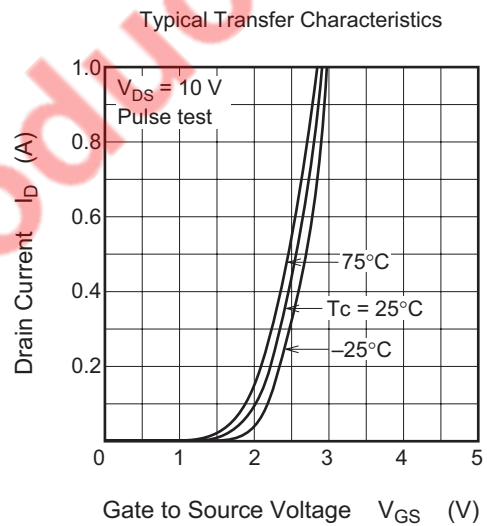
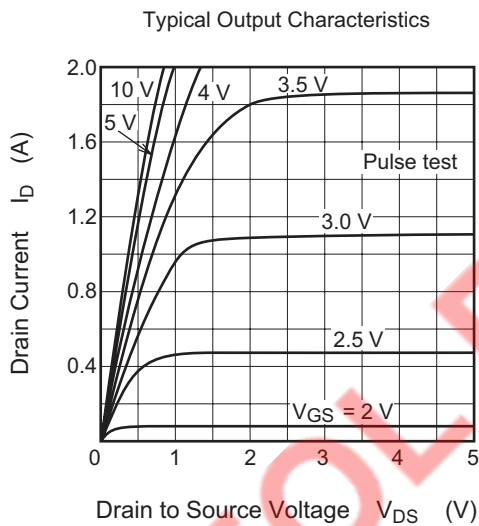
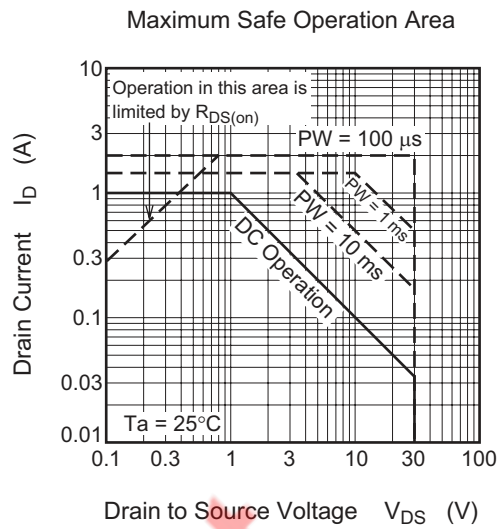
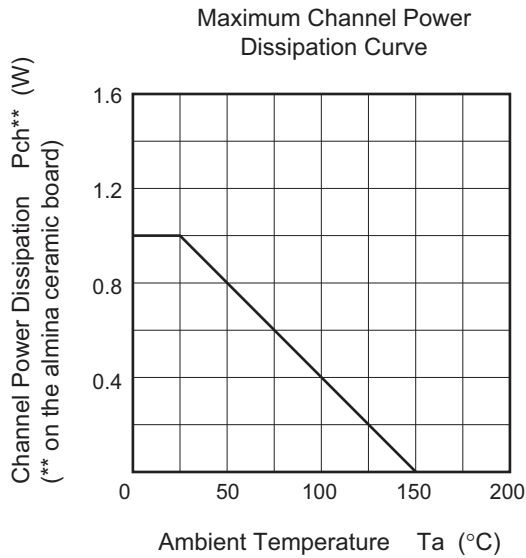
## Electrical Characteristics

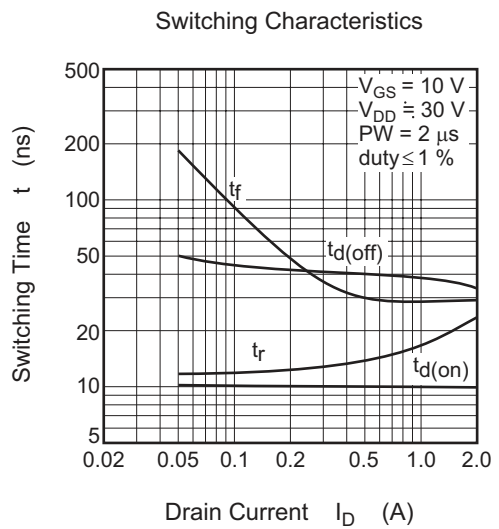
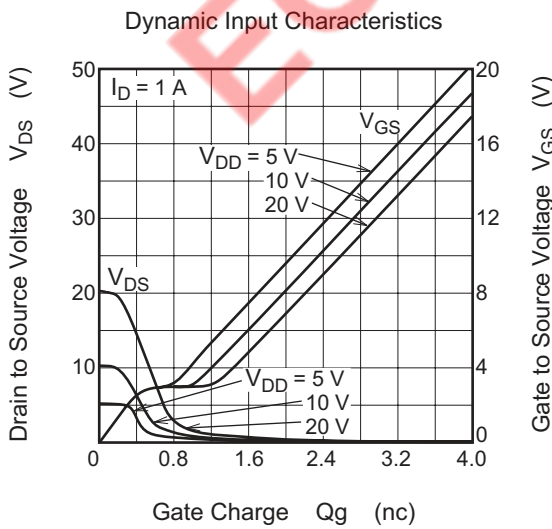
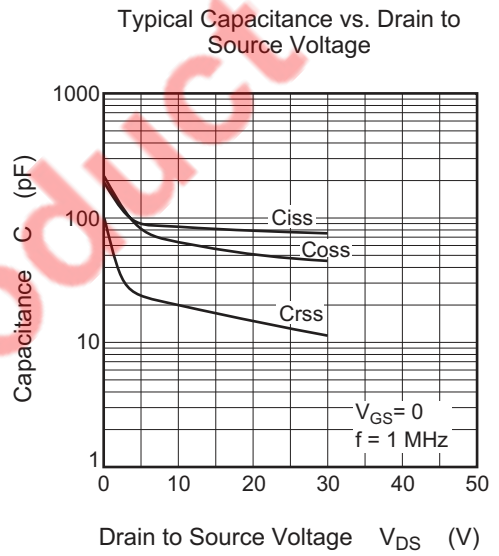
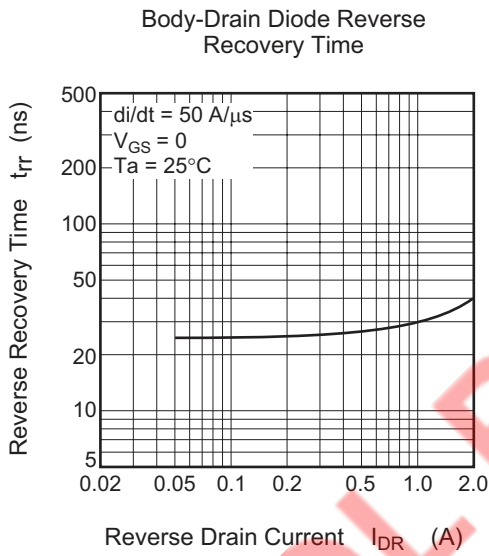
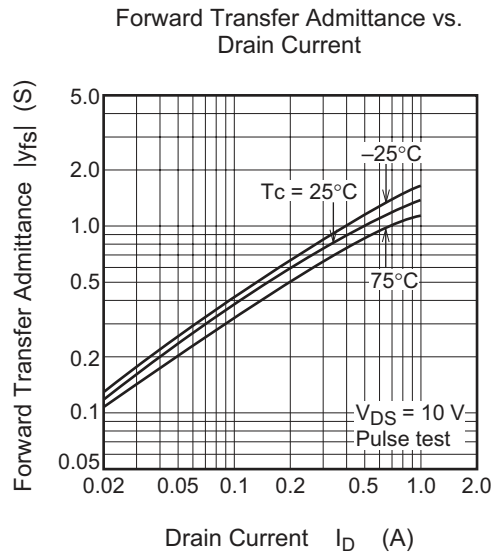
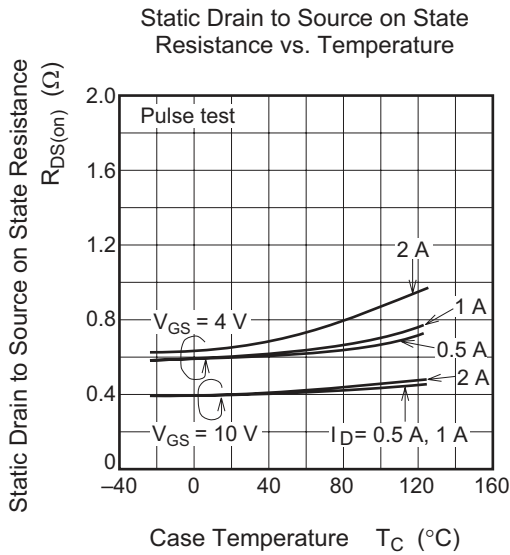
(Ta = 25°C)

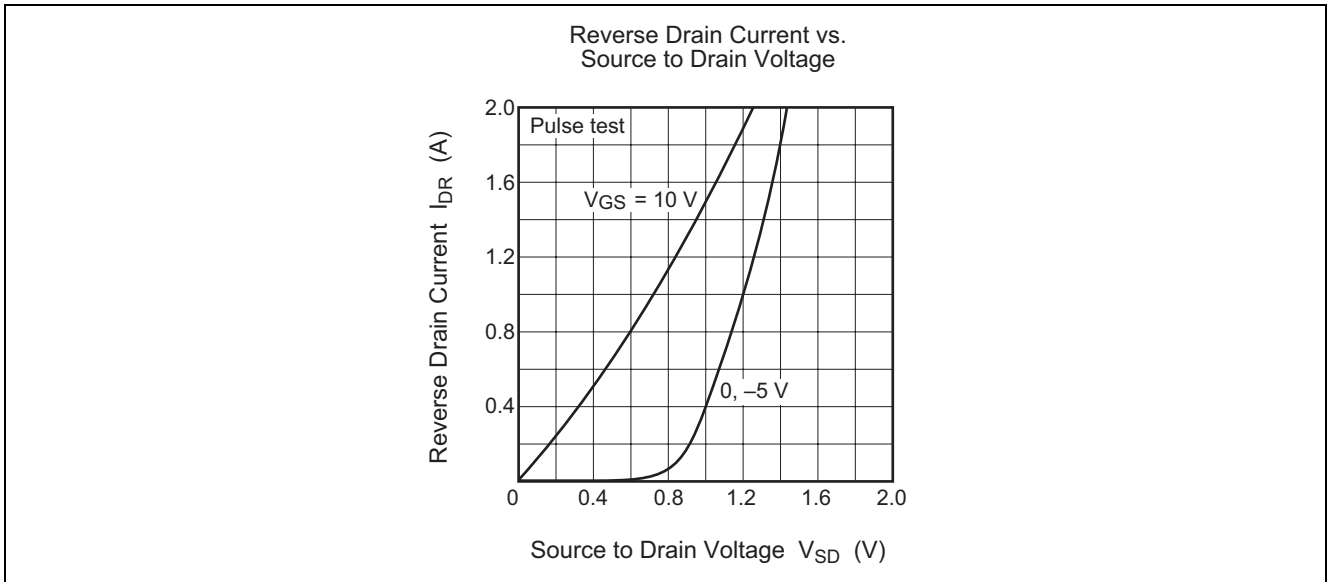
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V <sub>(BR)DSS</sub>	30	—	—	V	I <sub>D</sub> = 10 mA, V <sub>GS</sub> = 0
Gate to source breakdown voltage	V <sub>(BR)GSS</sub>	±20	—	—	V	I <sub>G</sub> = ±100 μA, V <sub>DS</sub> = 0
Gate to source leak current	I <sub>GSS</sub>	—	—	±10	μA	V <sub>GS</sub> = ±16 V, V <sub>DS</sub> = 0
Zero gate voltage drain current	I <sub>DSS</sub>	—	—	50	μA	V <sub>DS</sub> = 25 V, V <sub>GS</sub> = 0
Gate to source cutoff voltage	V <sub>GS(off)</sub>	1.0	—	2.0	V	I <sub>D</sub> = 1 mA, V <sub>DS</sub> = 10 V
Static drain to source on state resistance	R <sub>DS(on)</sub>	—	0.4	0.6	Ω	I <sub>D</sub> = 0.5 A, V <sub>GS</sub> = 10 V <sup>*3</sup>
		—	0.6	0.85	Ω	I <sub>D</sub> = 0.5 A, V <sub>GS</sub> = 4 V <sup>*3</sup>
Forward transfer admittance	y <sub>fs</sub>	0.6	1.0	—	S	I <sub>D</sub> = 0.5 A, V <sub>DS</sub> = 10 V <sup>*3</sup>
Input capacitance	C <sub>iss</sub>	—	85	—	pF	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0, f = 1 MHz
Output capacitance	C <sub>oss</sub>	—	65	—	pF	
Reverse transfer capacitance	C <sub>rss</sub>	—	20	—	pF	
Turn-on delay time	t <sub>d(on)</sub>	—	10	—	ns	I <sub>D</sub> = 0.5 A, V <sub>GS</sub> = 10 V, R <sub>L</sub> = 60 Ω <sup>*3</sup>
Rise time	t <sub>r</sub>	—	15	—	ns	
Turn-off delay time	t <sub>d(off)</sub>	—	40	—	ns	
Fall time	t <sub>f</sub>	—	30	—	ns	
Body to drain diode forward voltage	V <sub>DF</sub>	—	1.2	—	V	I <sub>F</sub> = 1 A, V <sub>GS</sub> = 0 <sup>*3</sup>
Body to drain diode reverse recovery time	t <sub>rr</sub>	—	30	—	ns	I <sub>F</sub> = 1 A, V <sub>GS</sub> = 0, di <sub>F</sub> /dt = 50 A/μs <sup>*3</sup>

Note: 3. Pulse Test

### Main Characteristics

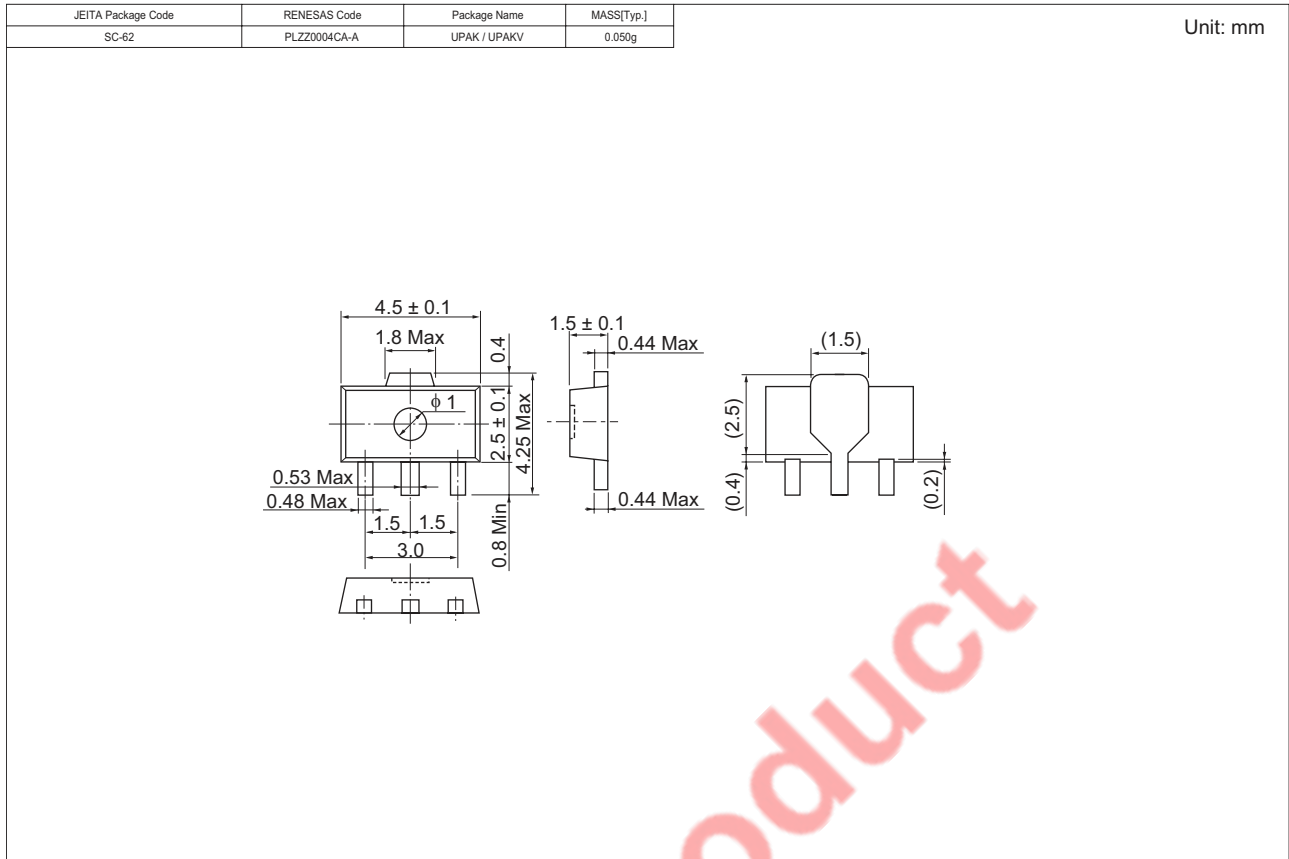






EOL Product

## Package Dimensions



## Ordering Information

Part Name	Quantity	Shipping Container
2SK1772HYTR-E	3000 pcs	Taping, $\phi 178$ mm Reel

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.



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