

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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2SK1697

Silicon N-Channel MOS FET

REJ03G1373-0200
 (Previous: ADE-208-1313)
 Rev.2.00
 May 11, 2006

Application

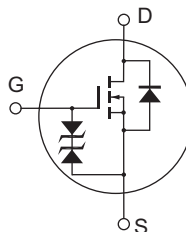
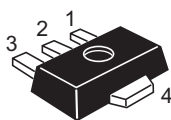
High speed power switching

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[®])



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

Note: Marking is "EY".

*UPAK is a trademark of Renesas Technology Corp.

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	0.5	A
Drain peak current	$I_{D(pulse)}^{*1}$	1.5	A
Body to drain diode reverse drain current	I_{DR}	0.5	A
Channel dissipation	P_{ch}^{*2}	1	W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

- Notes: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1\%$
 2. When using the alumina ceramic board (12.5 × 20 × 0.7 mm)

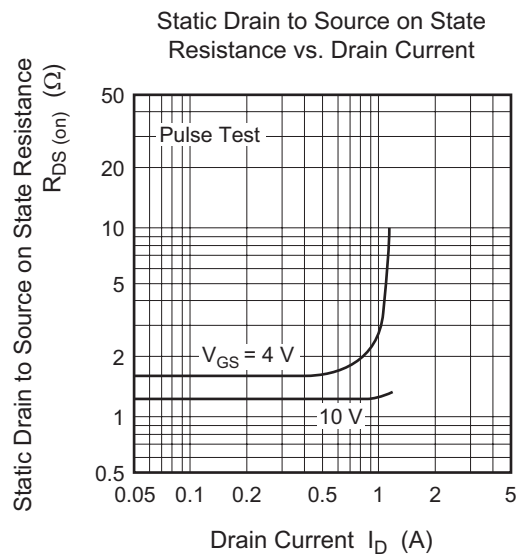
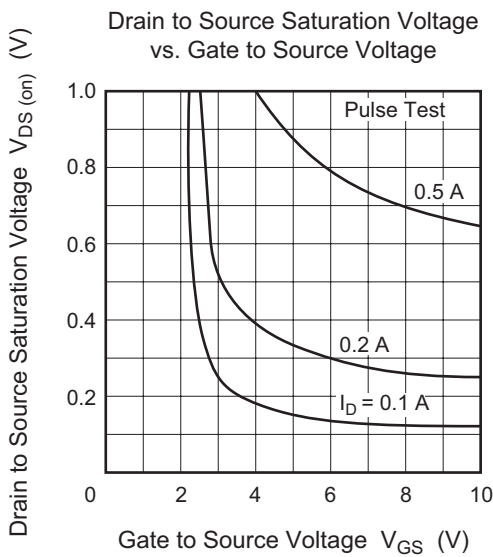
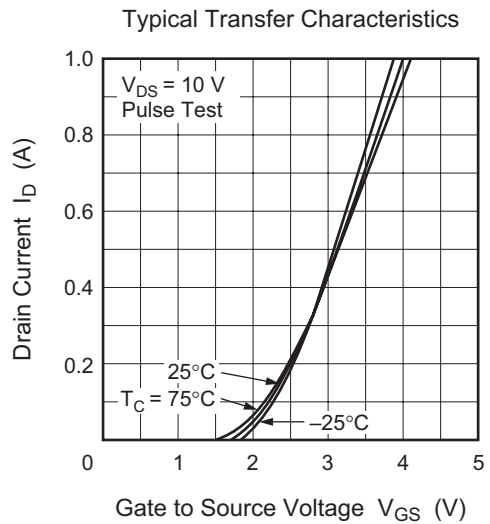
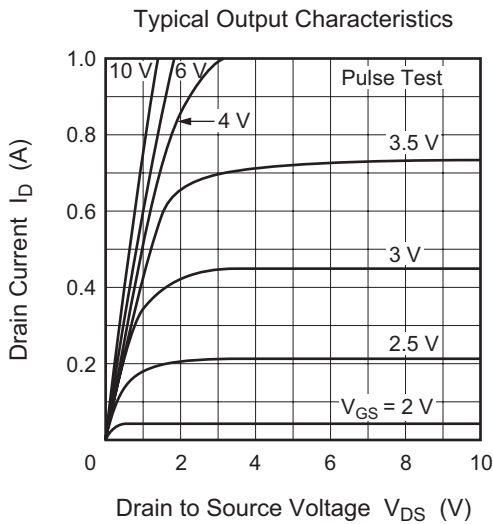
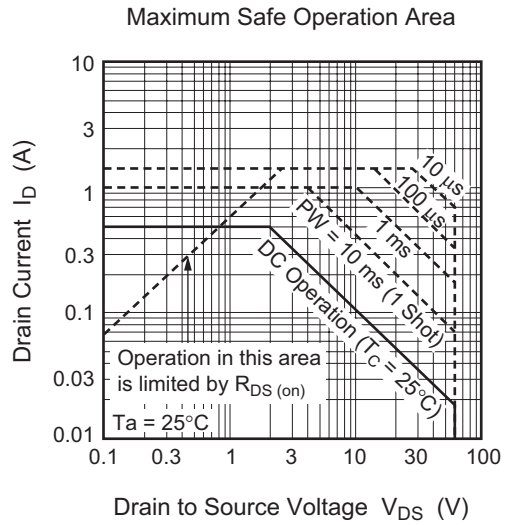
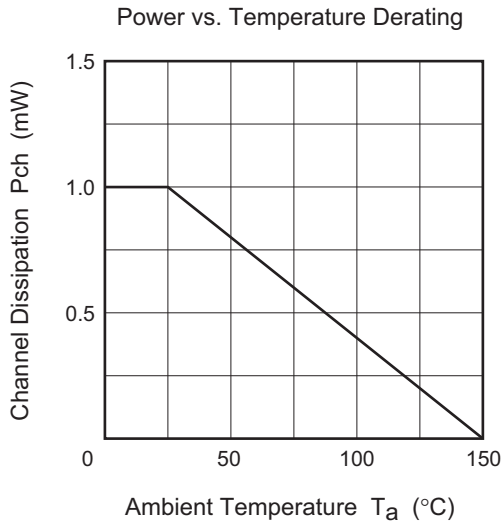
Electrical Characteristics

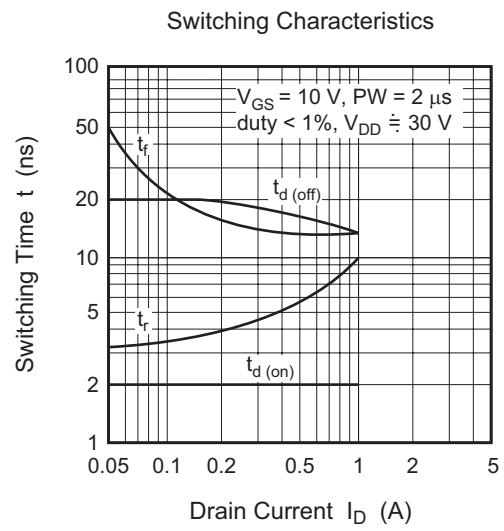
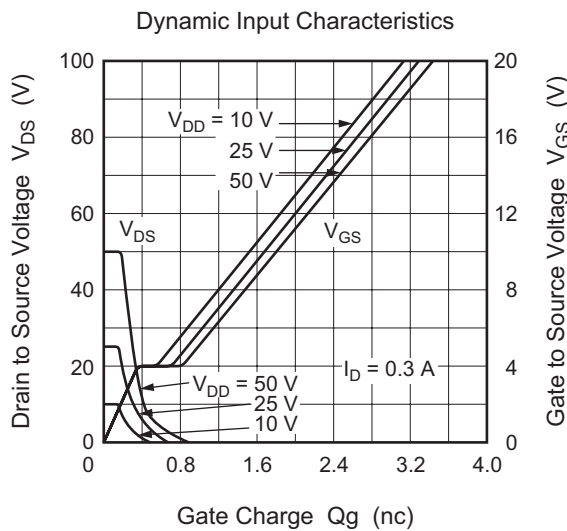
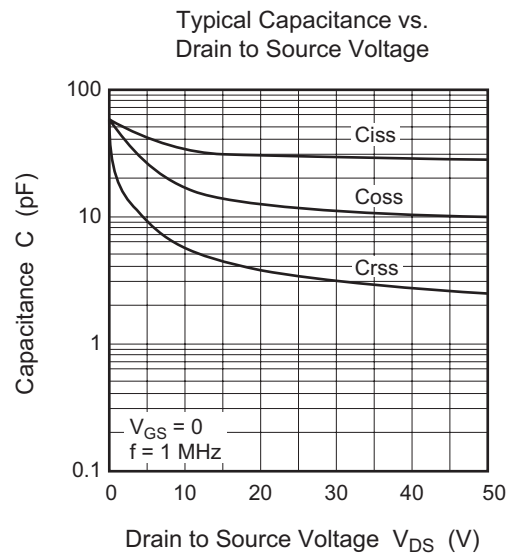
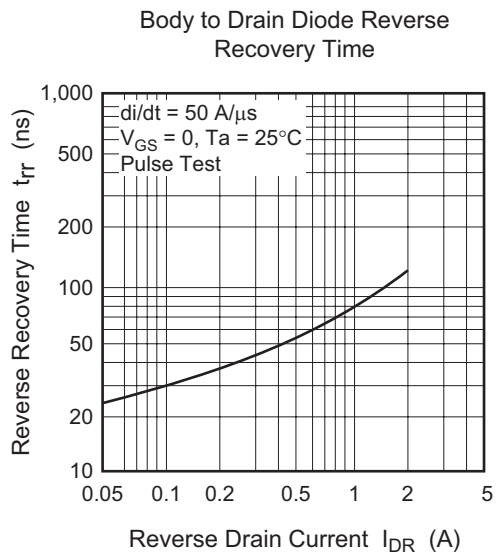
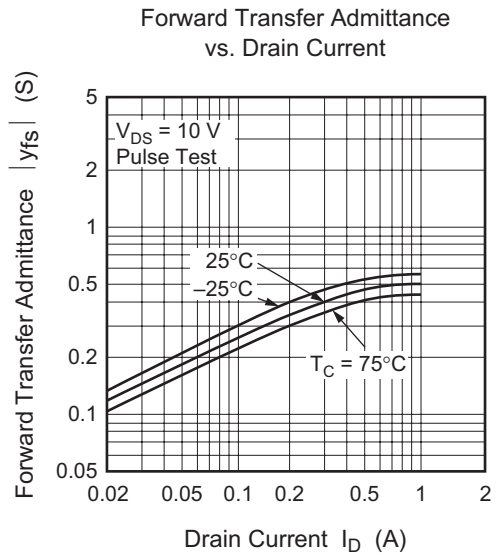
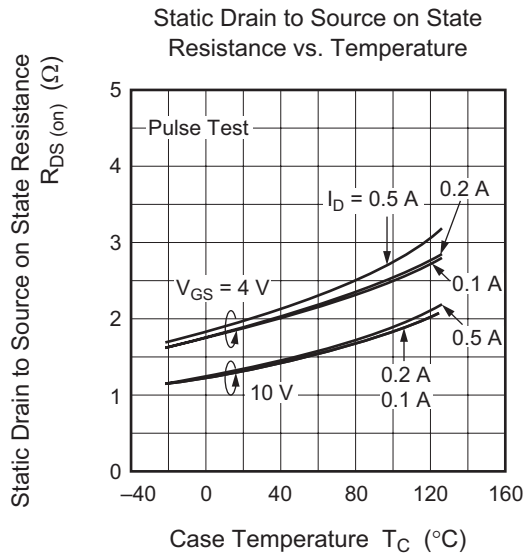
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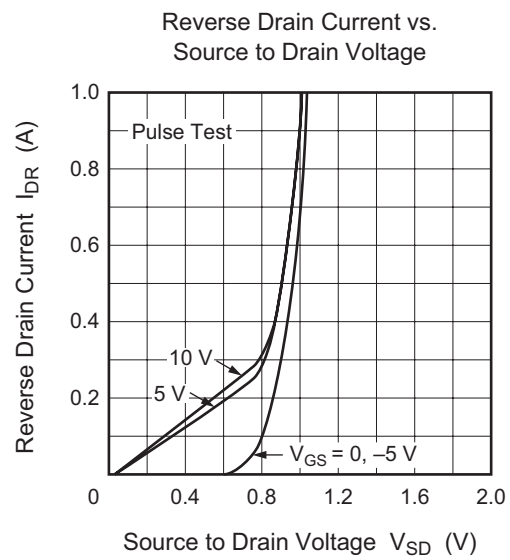
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100 \mu\text{A}$, $V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 16 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	50	μA	$V_{DS} = 50 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	$I_D = 1 \text{ mA}$, $V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	1.3	1.7	Ω	$I_D = 0.3 \text{ A}$, $V_{GS} = 10 \text{ V}^{*1}$
		—	1.8	2.5	Ω	$I_D = 0.3 \text{ A}$, $V_{GS} = 4 \text{ V}^{*1}$
Forward transfer admittance	$ y_{fs} $	0.25	0.38	—	S	$I_D = 0.3 \text{ A}$, $V_{DS} = 10 \text{ V}^{*1}$
Input capacitance	C_{iss}	—	33	—	pF	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$
Output capacitance	C_{oss}	—	17	—	pF	
Reverse transfer capacitance	C_{rss}	—	5	—	pF	
Turn-on delay time	$t_{d(on)}$	—	3	—	ns	$I_D = 0.3 \text{ A}$, $V_{GS} = 10 \text{ V}$, $R_L = 100 \Omega$
Rise time	t_r	—	8	—	ns	
Turn-off delay time	$t_{d(off)}$	—	18	—	ns	
Fall time	t_f	—	14	—	ns	
Body to drain diode forward voltage	V_{DF}	—	1	—	V	$I_F = 0.5 \text{ A}$, $V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	45	—	ns	$I_F = 0.5 \text{ A}$, $V_{GS} = 0$, $di_F/dt = 50 \text{ A}/\mu\text{s}$

Note: 1. Pulse test

Main Characteristics







Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]	Unit: mm
UPAK	SC-62	PLZZ0004CA-A	UPAK / UPAKV	0.050g	

The drawing shows three views of the package:

- Top View:** Overall width is 4.5 ± 0.1 mm. The distance between the two leads is 1.8 Max mm. The lead width is 0.53 Max mm. The lead thickness is 0.48 Max mm. The distance from the lead edge to the center of the package is 1.5 mm. The total length of the package is 3.0 mm. The diameter of the central hole is $\phi 1$ mm. The distance from the lead edge to the top edge is 2.5 ± 0.1 mm. The distance from the lead edge to the bottom edge is 0.8 Min mm. The distance from the lead edge to the top edge of the package is 4.25 Max mm. The distance from the lead edge to the top edge of the package is 0.4 mm.
- Side View:** The height of the package is 1.5 ± 0.1 mm. The distance from the lead edge to the top edge is 0.44 Max mm. The distance from the lead edge to the bottom edge is 0.44 Max mm.
- Bottom View:** The distance between the two leads is (1.5) mm. The distance from the lead edge to the center of the package is (0.4) mm. The distance from the lead edge to the bottom edge is (0.2) mm.

Ordering Information

Part Name	Quantity	Shipping Container
2SK1697EYTL-E	1000 pcs	$\phi 178$ mm Reel, 12 mm Emboss Taping
2SK1697EYTR-E		

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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