

2SK1334

Silicon N Channel MOS FET

REJ03G0932-0200
(Previous: ADE-208-1271)
Rev.2.00
Sep 07, 2005

Application

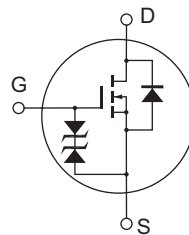
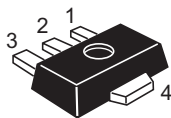
High speed power switching

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: PLZZ0004CA-A
(Package name: UPAK[®])



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

Note: Marking is "BY".

*UPAK is a trademark of Renesas Technology Corp.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	200	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	1	A
Drain peak current	I _{D(pulse)} ^{*1}	2	A
Body to drain diode reverse drain current	I _{DR}	1	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 ≤ 10 μs, duty cycle ≤ 1%

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

Electrical Characteristics

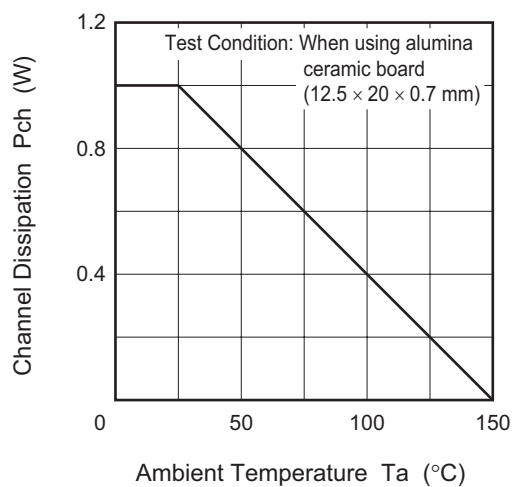
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	V _{(BR)DSS}	200	—	—	V	I _D = 10 mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR)GSS}	±20	—	—	V	I _G = ±100 μA, V _{DS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	μA	V _{GS} = ±16 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	50	μA	V _{DS} = 160 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	2.0	—	4.0	V	I _D = 1 mA, V _{DS} = 10 V
Static drain to source on state resistance	R _{DS(on)}	—	2.5	3.8	Ω	I _D = 0.5 A, V _{GS} = 10 V ^{*3}
		—	4.5	7.0	Ω	I _D = 2 A, V _{GS} = 10 V ^{*3}
Forward transfer admittance	y _{fs}	0.4	0.6	—	S	I _D = 0.5 A, V _{DS} = 10 V ^{*3}
Input capacitance	C _{iss}	—	80	—	pF	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz
Output capacitance	C _{oss}	—	40	—	pF	
Reverse transfer capacitance	C _{rss}	—	7	—	pF	
Turn-on delay time	t _{d(on)}	—	5	—	ns	I _D = 0.5 A, V _{GS} = 10 V, R _L = 60 Ω
Rise time	t _r	—	8	—	ns	
Turn-off delay time	t _{d(off)}	—	10	—	ns	
Fall time	t _f	—	7	—	ns	
Body to drain diode forward voltage	V _{DF}	—	1.0	—	V	I _F = 1 A, V _{GS} = 0
Body to drain diode reverse recovery time	t _{rr}	—	75	—	ns	I _F = 1 A, V _{GS} = 0, di _F /dt = 50 A/μs

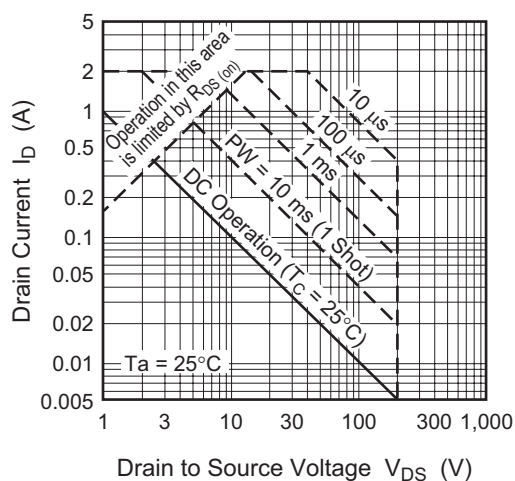
Notes: 3. Pulse test

Main Characteristics

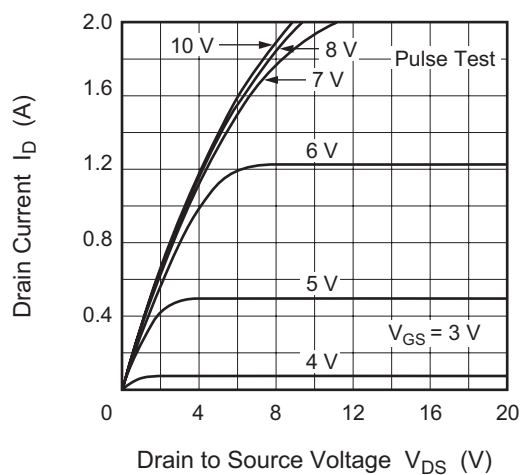
Power vs. Temperature Derating



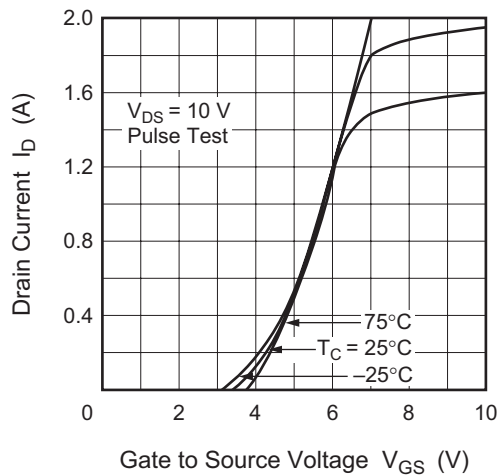
Maximum Safe Operation Area



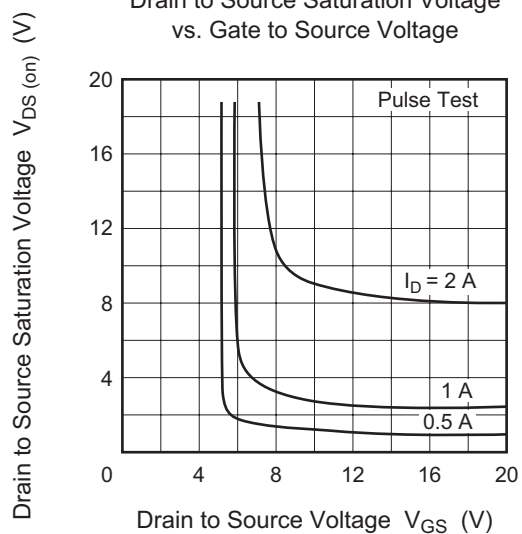
Typical Output Characteristics



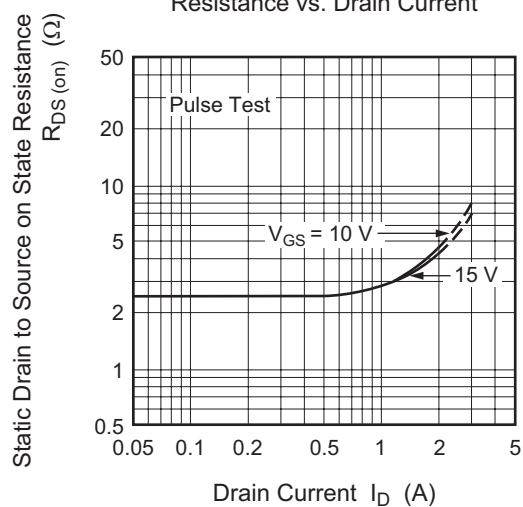
Typical Transfer Characteristics



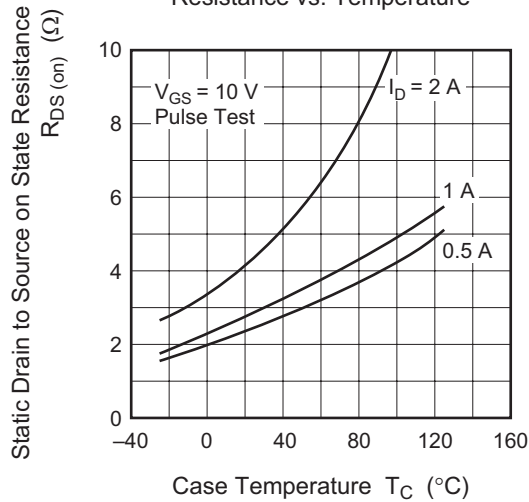
Drain to Source Saturation Voltage vs. Gate to Source Voltage



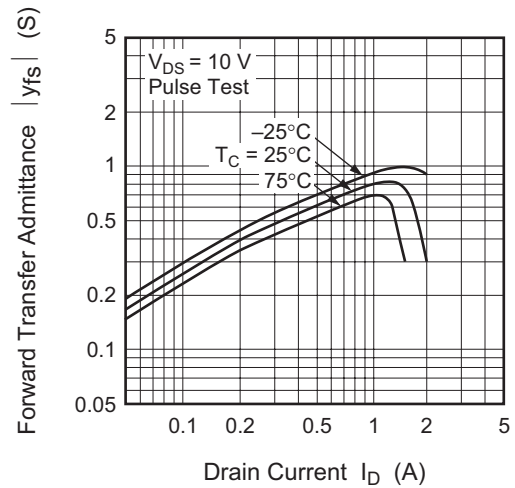
Static Drain to Source on State Resistance vs. Drain Current



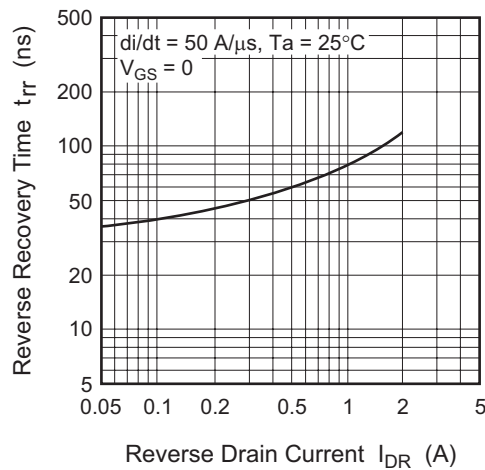
Static Drain to Source on State Resistance vs. Temperature



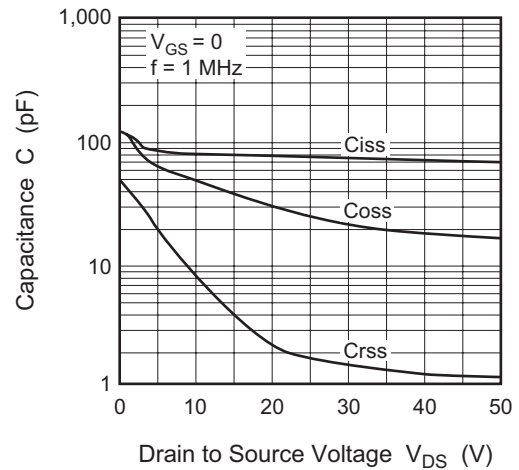
Forward Transfer Admittance vs. Drain Current



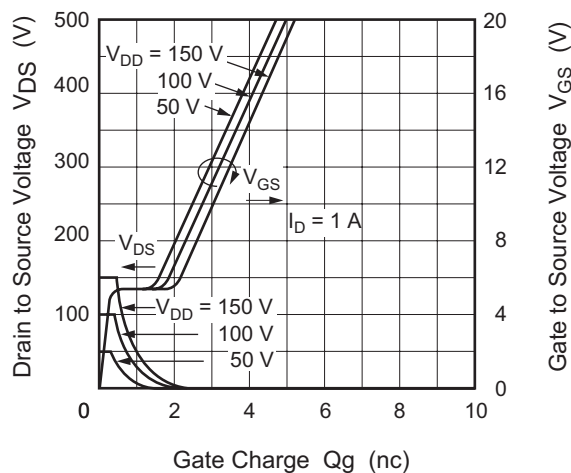
Reverse Recovery Time vs. Reverse Drain Current



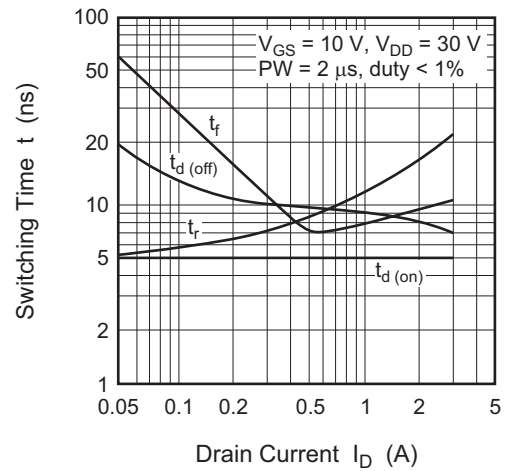
Typical Capacitance vs. Drain to Source Voltage

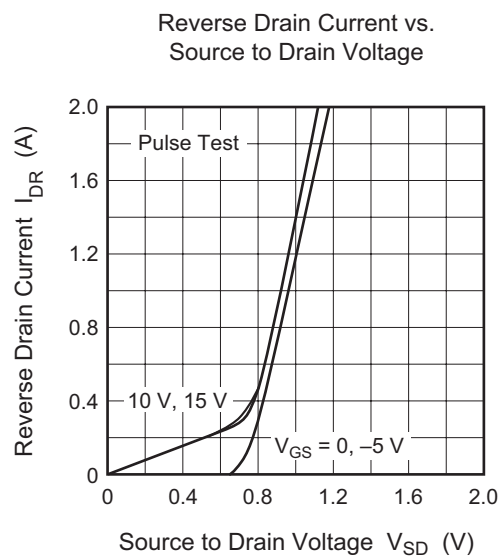


Dynamic Input Characteristics



Switching Characteristics





Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]	Unit: mm
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 central circular feature has a diameter of $\phi 1$ mm. The distance from the center to the top edge is 1.8 Max mm. The distance from the center to the bottom edge is 2.5 ± 0.1 mm. The distance from the center to the left edge is 0.53 Max mm. The distance from the center to the right edge is 0.48 Max mm. The distance between the two mounting tabs at the bottom is 3.0 mm. The distance from the center to the bottom edge of the mounting tabs is 0.8 Min mm.
- Side View:** The height of the package is 1.5 ± 0.1 mm. The distance from the top edge to the bottom edge of the mounting tabs is 0.44 Max mm.
- Front View:** The width of the package is 1.5 mm. The distance from the top edge to the bottom edge of the mounting tabs is 0.44 Max mm. The distance from the top edge to the bottom edge of the mounting tabs is 0.44 Max mm. The distance from the top edge to the bottom edge of the mounting tabs is 0.44 Max mm.

Ordering Information

Part Name	Quantity	Shipping Container
2SK1334BYTL-E	1000 pcs	$\phi 178$ mm Real, 12 mm Emboss taping

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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