

2SJ517

Silicon P Channel MOS FET

REJ03G0874-0400
(Previous: ADE-208-575B)
Rev.4.00
Sep 07, 2005

Description

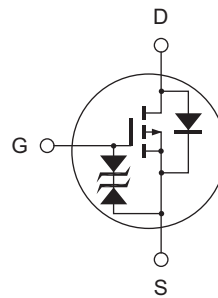
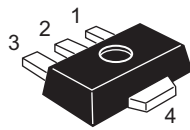
High speed power switching

Features

- Low on-resistance
 $R_{DS(on)} = 0.18 \Omega$ typ. (at $V_{GS} = -4 \text{ V}$, $I_D = -1 \text{ A}$)
- Low drive current
- High speed switching
- 2.5 V gate drive devices.

Outline

RENESAS Package code: PLZZ0004CA-A
(Package name: UPAK®)



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

Note: Marking is "YY".

*UPAK is a trademark of Renesas Technology Corp.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DS}	-20	V
Gate to source voltage	V_{GS}	±10	V
Drain current	I_D	-2	A
Drain peak current	$I_{D(pulse)}$ ^{Note 1}	-4	A
Body to drain diode reverse drain current	I_{DR}	-2	A
Channel dissipation	P_{ch} ^{Note 2}	1	W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. $PW \leq 100 \mu s$, duty cycle $\leq 10\%$ 2. When using the aluminium ceramic board ($12.5 \times 20 \times 0.7$ mm)

Electrical Characteristics

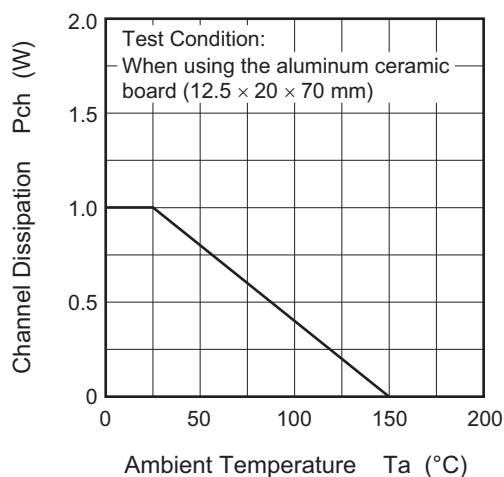
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR) DSS}$	-20	—	—	V	$I_D = -10$ mA, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR) GSS}$	±10	—	—	V	$I_G = \pm 100 \mu A$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-10	μA	$V_{DS} = -20$ V, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 8$ V, $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-0.5	—	-1.5	V	$I_D = -1$ mA, $V_{DS} = -10$ V
Static drain to source on state resistance	$R_{DS(on)}$	—	0.18	0.24	Ω	$I_D = -1$ A, $V_{GS} = -4$ V ^{Note 3}
	$R_{DS(on)}$	—	0.27	0.43	Ω	$I_D = -1$ A, $V_{GS} = -2.5$ V ^{Note 3}
Forward transfer admittance	$ y_{fs} $	1.8	3.0	—	S	$I_D = -1$ A, $V_{DS} = -10$ V ^{Note 3}
Input capacitance	C_{iss}	—	320	—	pF	$V_{DS} = -10$ V $V_{GS} = 0$ $f = 1$ MHz
Output capacitance	C_{oss}	—	190	—	pF	
Reverse transfer capacitance	C_{rss}	—	90	—	pF	
Turn-on delay time	$t_{d(on)}$	—	14	—	ns	$V_{GS} = -4$ V $I_D = -1$ A $R_L = 10 \Omega$
Rise time	t_r	—	75	—	ns	
Turn-off delay time	$t_{d(off)}$	—	90	—	ns	
Fall time	t_f	—	90	—	ns	
Body to drain diode forward voltage	V_{DF}	—	-0.95	—	V	$I_F = -2$ A, $V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	70	—	ns	$I_F = -2$ A, $V_{GS} = 0$ $di_F/dt = 50$ A/ μs

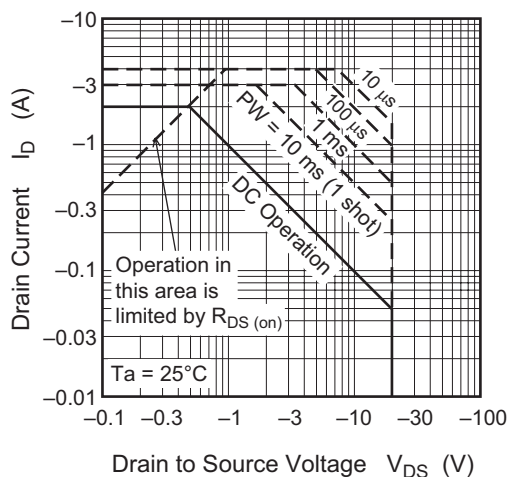
Note: 3. Pulse test

Main Characteristics

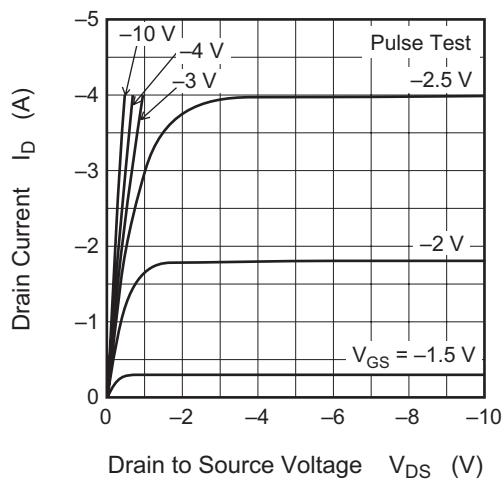
Power vs. Temperature Derating



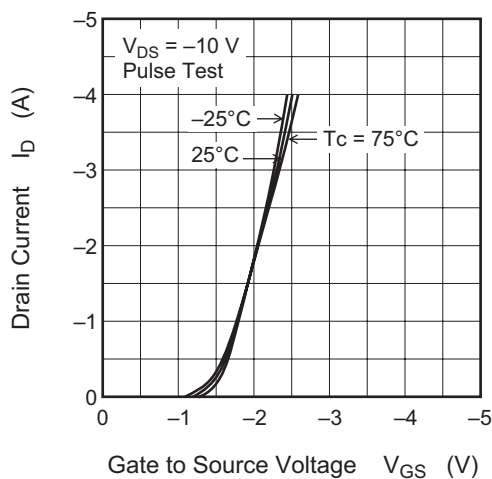
Maximum Safe Operation Area



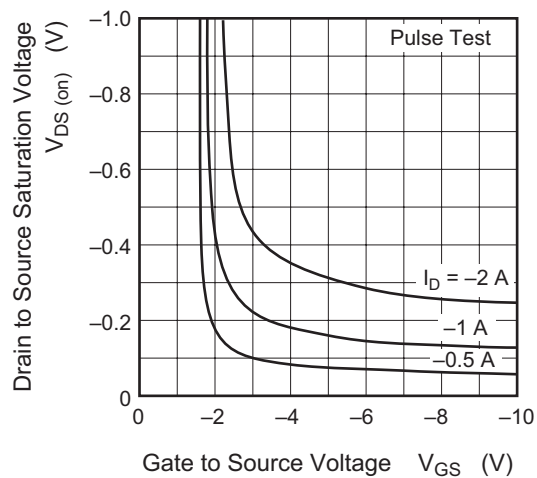
Typical Output Characteristics



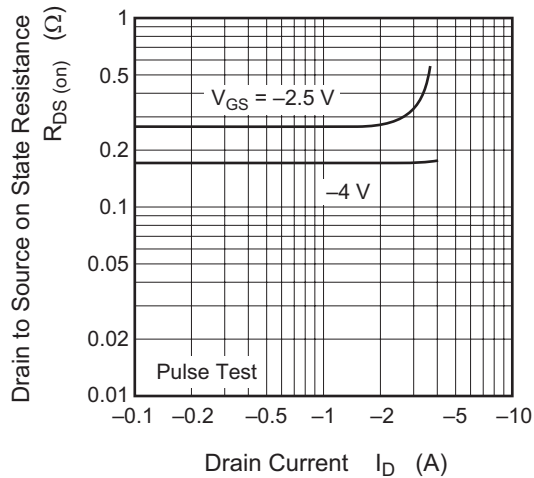
Typical Transfer Characteristics

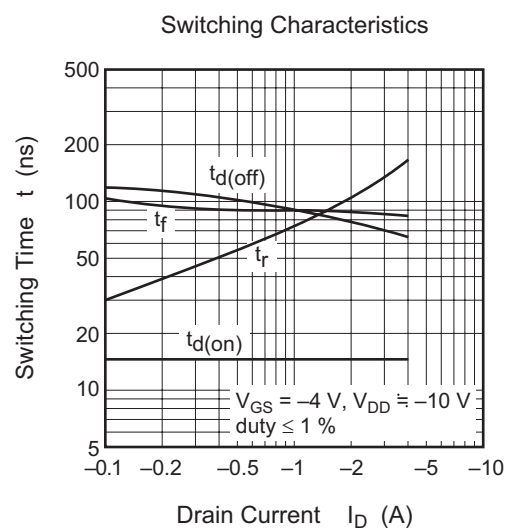
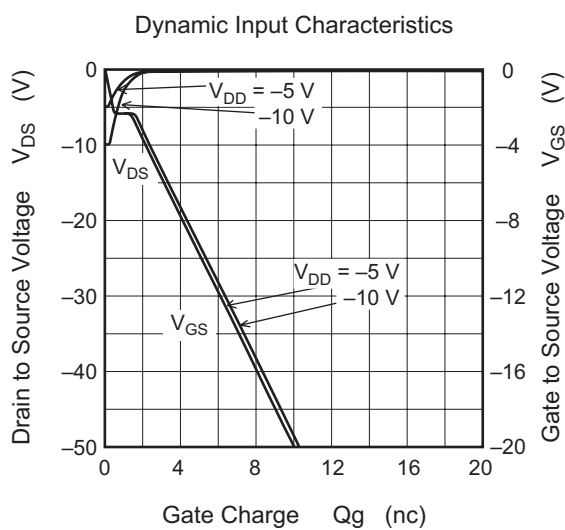
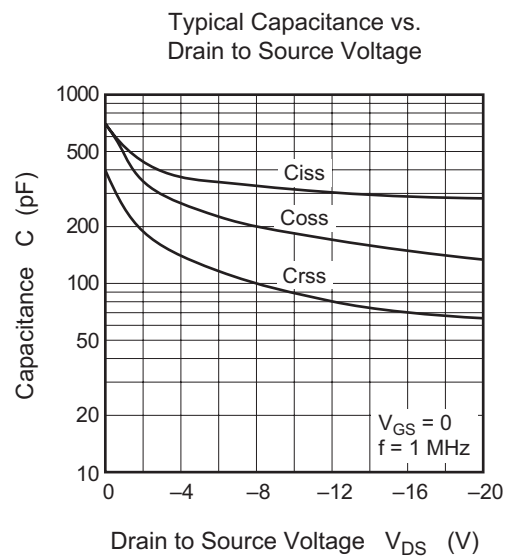
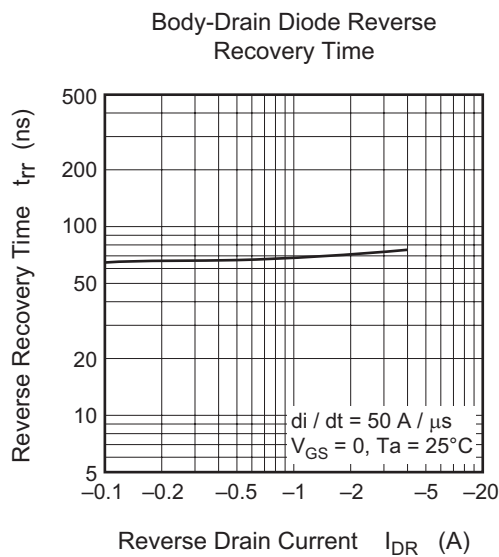
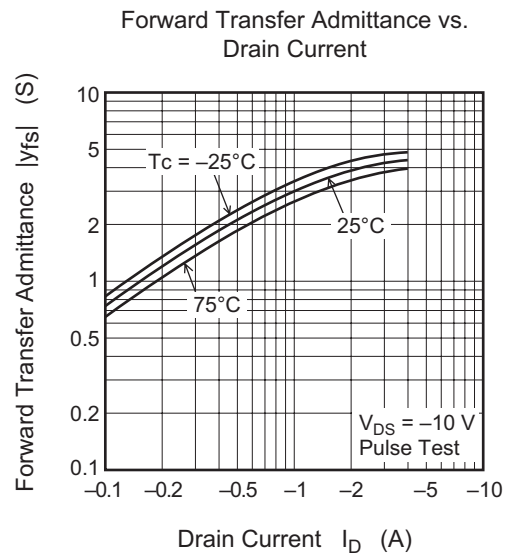
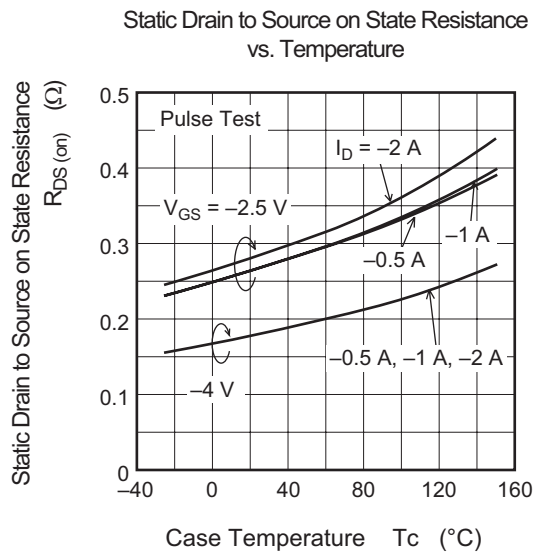


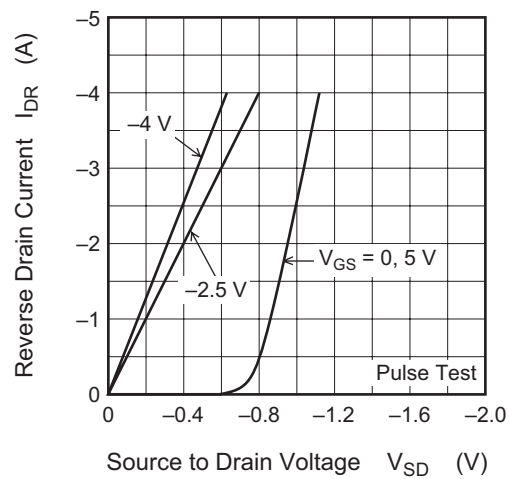
Drain to Source Saturation Voltage vs. Gate to Source Voltage



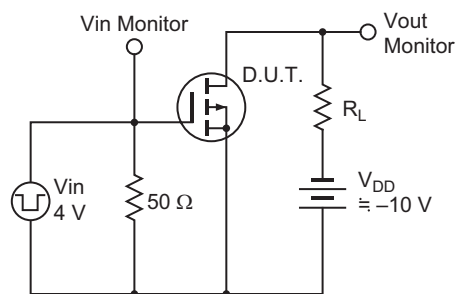
Static Drain to Source on State Resistance vs. Drain Current



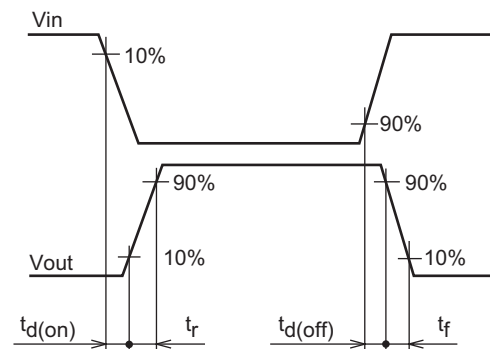


Reverse Drain Current vs.
Source to Drain Voltage

Switching Time Test Circuit



Waveform



Package Dimensions

JEITA Package Code	RENEAS 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 mounting pad has a diameter of $\phi 1$ mm. The distance from the center to the side leads is 1.8 Max mm. The distance from the center to the bottom leads is 2.5 ± 0.1 mm. The bottom leads are spaced 1.5 mm apart, with a total width of 3.0 mm. The distance from the center to the bottom edge is 4.25 Max mm. The distance from the center to the top edge is 0.4 mm. The distance from the center to the side leads is 0.53 Max mm and 0.48 Max mm.
- Side View:** The package height is 1.5 ± 0.1 mm. The distance from the base to the top of the package is 0.44 Max mm. The distance from the base to the bottom of the package is 0.44 Max mm.
- Front View:** The package width is 1.5 mm. The distance from the base to the top of the package is (2.5) mm. The distance from the base to the bottom of the package is (0.4) mm. The distance from the base to the side leads is (0.2) mm.

Ordering Information

Part Name	Quantity	Shipping Container
2SJ517YYTL-E	1000 pcs	Taping
2SJ517YYTR-E	1000 pcs	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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