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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2SJ387(L), 2SJ387(S)

Silicon P Channel MOS FET

REJ03G0862-0200
(Previous: ADE-208-1196)
Rev.2.00
Sep 07, 2005

Description

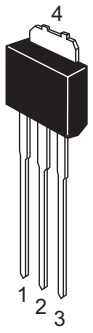
High speed power switching

Features

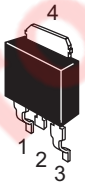
- Low on-resistance
- Low drive current
- 2.5 V Gate drive device can be driven from 3 V Source
- Suitable for Switching regulator, DC-DC converter

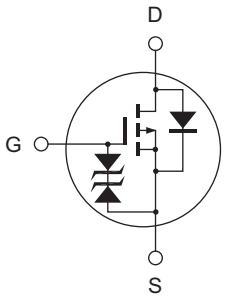
Outline

RENESAS Package code: PRSS0004ZD-B
(Package name: DPAK (L)-(2))



RENESAS Package code: PRSS0004ZD-C
(Package name: DPAK (S))





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

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Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DSS}	–20	V
Gate to source voltage	V_{GSS}	±10	V
Drain current	I_D	–10	A
Drain peak current	$I_{D\ (pulse)}$ Note 1	–40	A
Body to drain diode reverse drain current	I_{DR}	–10	A
Channel dissipation	Pch Note 2	20	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. PW ≤ 10 µs, duty cycle ≤ 1%
2. Value at Tc = 25°C

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 = ±200 µA, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±6.5 V, V_{DS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	–100	µA	V_{DS} = –16 V, V_{GS} = 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	$R_{DS\ (on)}$	—	0.05	0.07	Ω	I_D = –5 A, V_{GS} = –4 V Note 3
	$R_{DS\ (on)}$	—	0.07	0.1	Ω	I_D = –5 A, V_{GS} = –2.5 V Note 3
Forward transfer admittance	$\|y_{fs}\|$	7	12	—	S	I_D = –5 A, V_{DS} = –10 V Note 3
Input capacitance	Ciss	—	1170	—	pF	V_{DS} = –10 V
Output capacitance	Coss	—	860	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	310	—	pF	f = 1 MHz
Turn-on delay time	$t_{d\ (on)}$	—	20	—	ns	I_D = –5 A
Rise time	t_r	—	325	—	ns	V_{GS} = –4 V
Turn-off delay time	$t_{d\ (off)}$	—	350	—	ns	R_L = 2 Ω
Fall time	t_f	—	425	—	ns	
Body to drain diode forward voltage	V_{DF}	—	–1.0	—	V	I_F = –10 A, V_{GS} = 0
Body to drain diode reverse recovery time	t_{rr}	—	240	—	ns	I_F = –10 A, V_{GS} = 0 di_F/dt = 20 A/µs

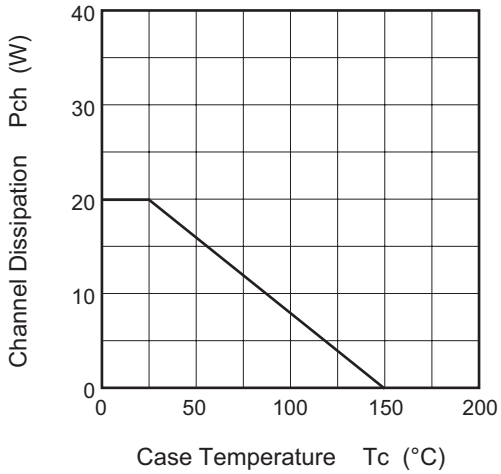
Note: 3. Pulse test

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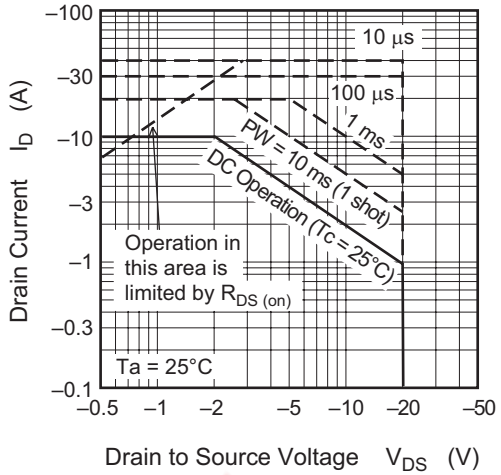
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Main Characteristics

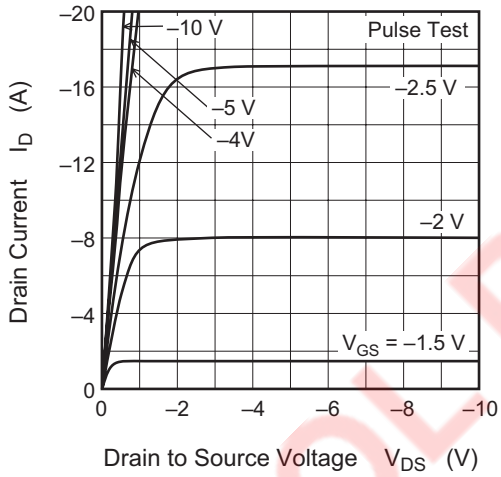
Power vs. Temperature Derating



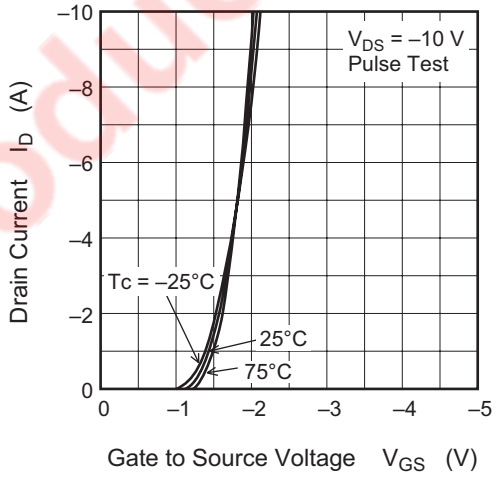
Maximum Safe Operation Area



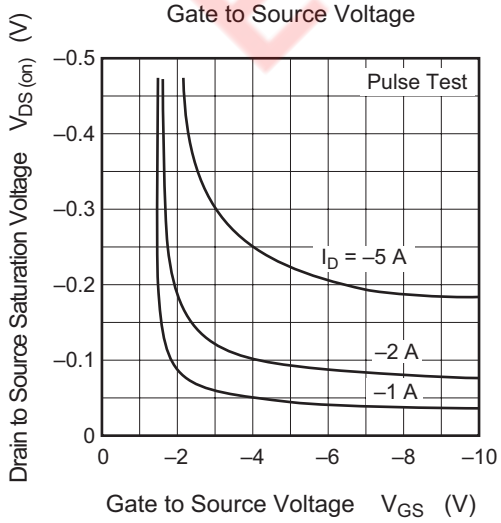
Typical Output Characteristics



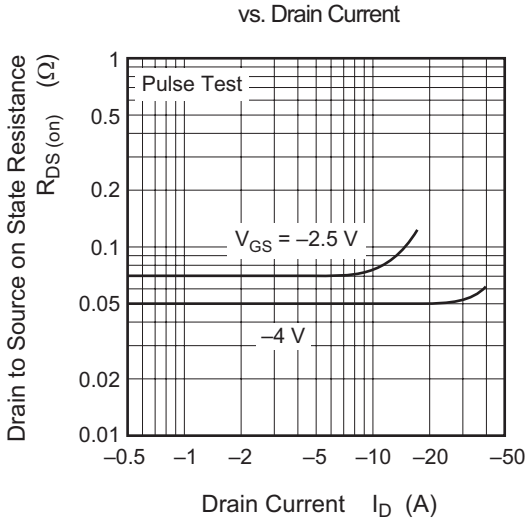
Typical Transfer Characteristics



Drain to Source Saturation Voltage vs. Gate to Source Voltage



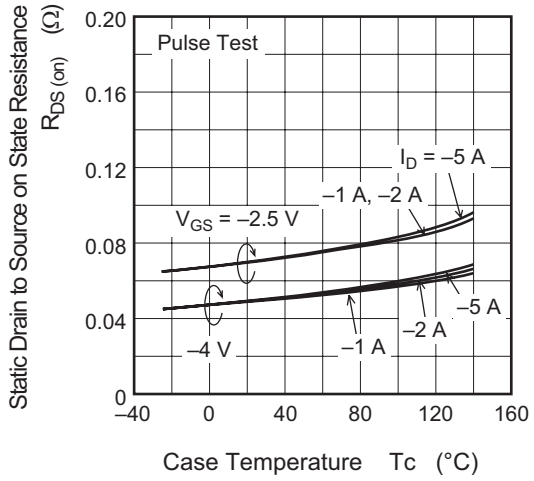
Static Drain to Source on State Resistance vs. Drain Current



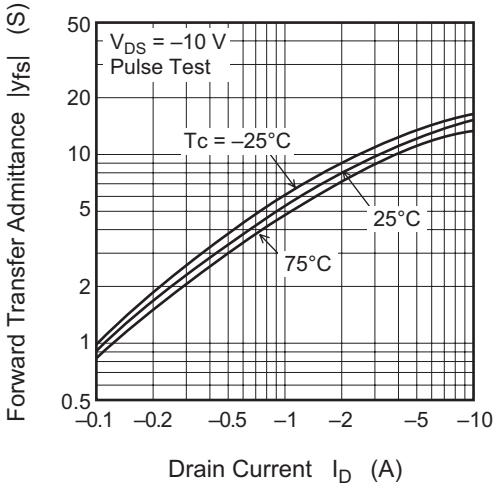
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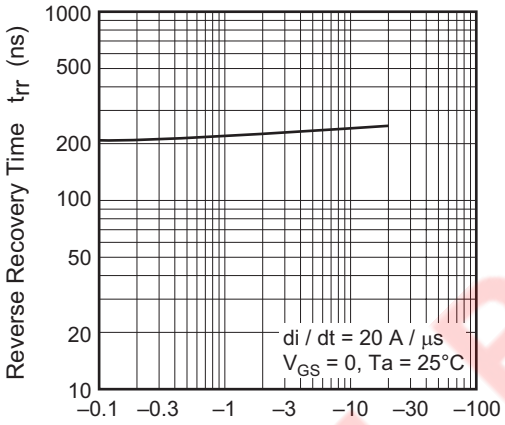
Static Drain to Source on State Resistance vs. Temperature



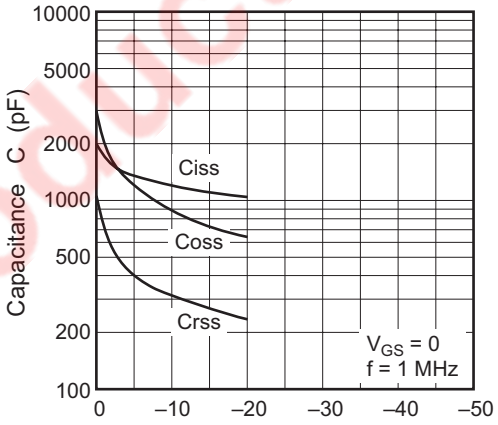
Forward Transfer Admittance vs. Drain Current



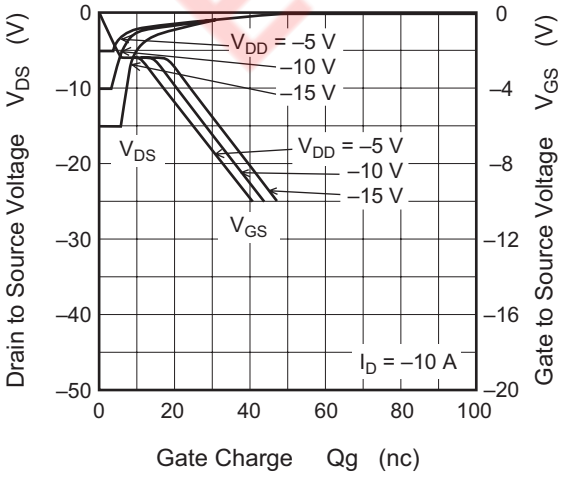
Body-Drain Diode Reverse Recovery Time



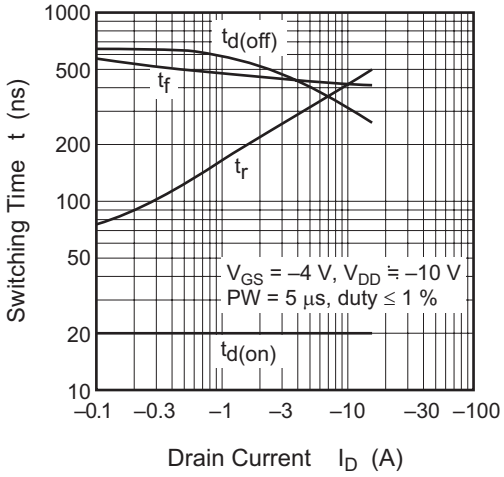
Typical Capacitance vs. Drain to Source Voltage



Dynamic Input Characteristics



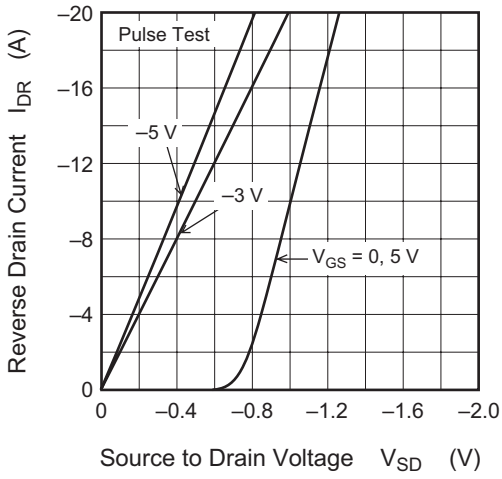
Switching Characteristics



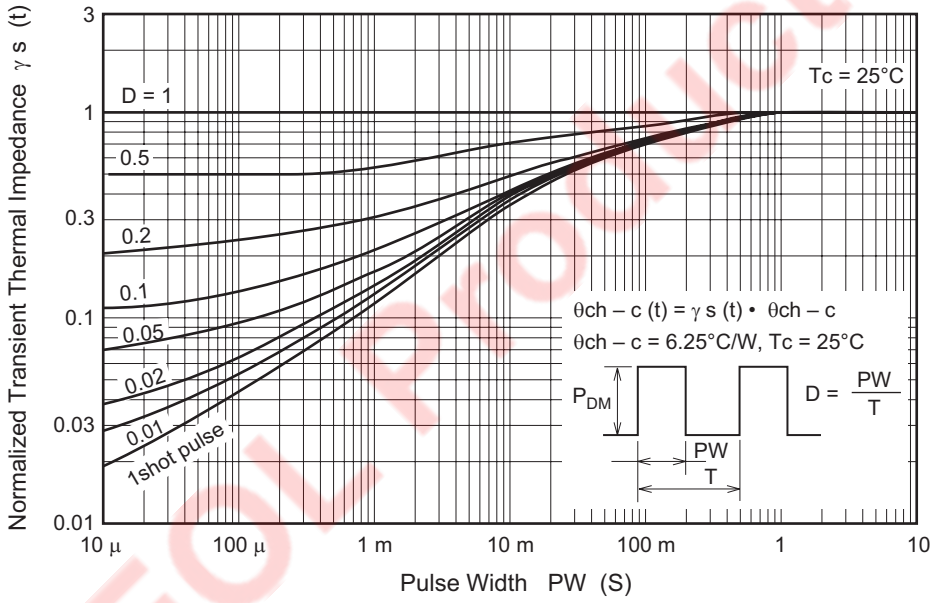
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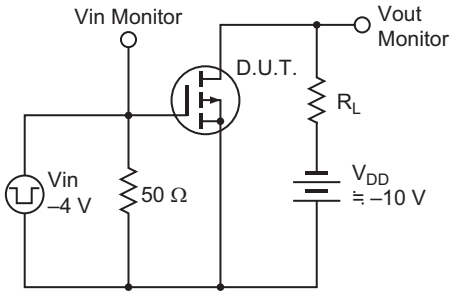
Reverse Drain Current vs.
Source to Drain Voltage



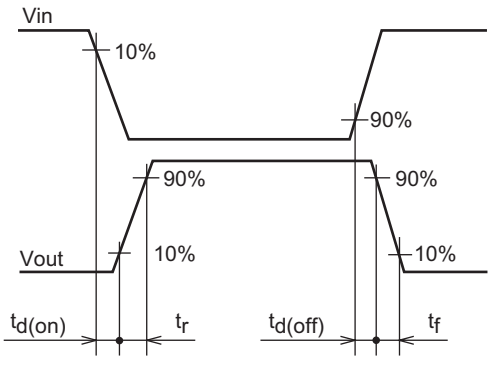
Normalized Transient Thermal Impedance vs. Pulse Width



Switching Time Test Circuit



Waveform



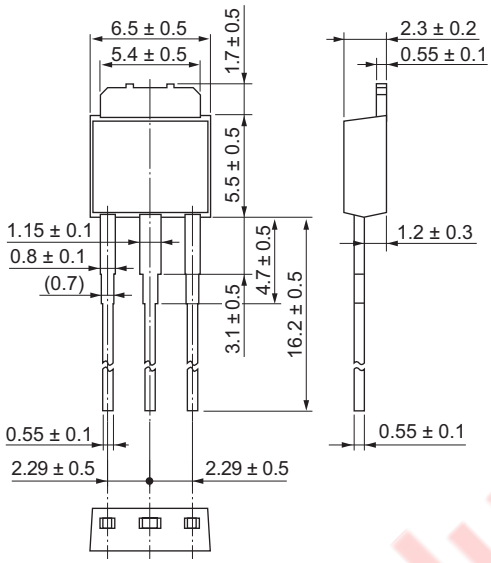
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Package Dimensions

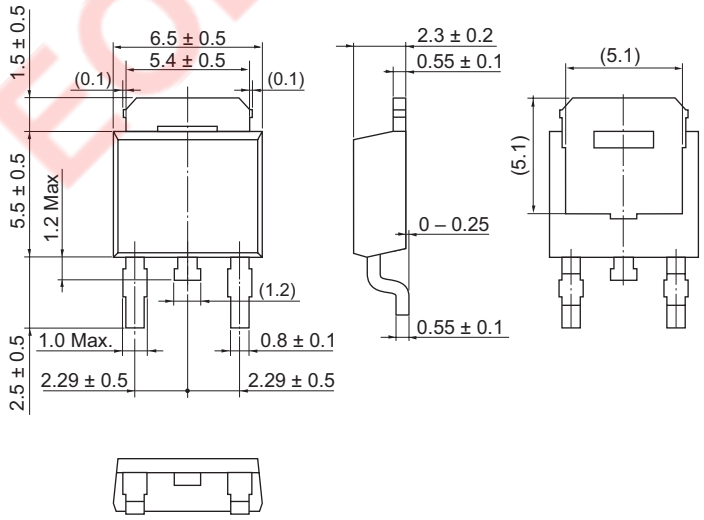
JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
—	PRSS0004ZD-B	DPAK(L)-(2) / DPAK(L)-(2)V	0.42g

Unit: mm



JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
SC-63	PRSS0004ZD-C	DPAK(S) / DPAK(S)V	0.28g

Unit: mm



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Ordering Information

Part Name	Quantity	Shipping Container
2SJ387L-E	3200 pcs	Box (Sack)
2SJ387STL-E	3000 pcs	Taping

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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.
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Tel: <65> 6213-0200, Fax: <65> 6278-8001

Renesas Technology Korea Co., Ltd.
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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
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