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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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RJJ0101DPD

P Channel Power MOS FET
High Speed Switching

REJ03G1580-0300

Rev.3.00

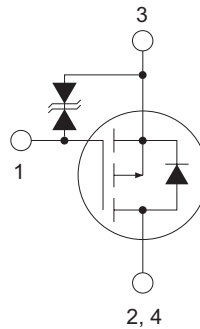
Dec 19, 2008

Features

- V_{DSS} : -12 V
- $R_{DS(on)}$: 38 m Ω (TYP)
- I_D : -5 A

Outline

RENESAS Package code: PRSS0004ZG-A
(Package name: MP-3A)



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

Application

- Power management switching, etc.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to Source voltage	V_{DSS}	-12	V
Gate to Source voltage	V_{GSS}	±8	V
Drain current	I_D	-5	A
Drain peak current	$I_{D(pulse)}$	-20	A
Channel dissipation	P_{ch} ^{Note1}	15	W
Channel to case thermal impedance	θ_{ch-c}	8.33	°C/W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. Value at Tc = 25°C

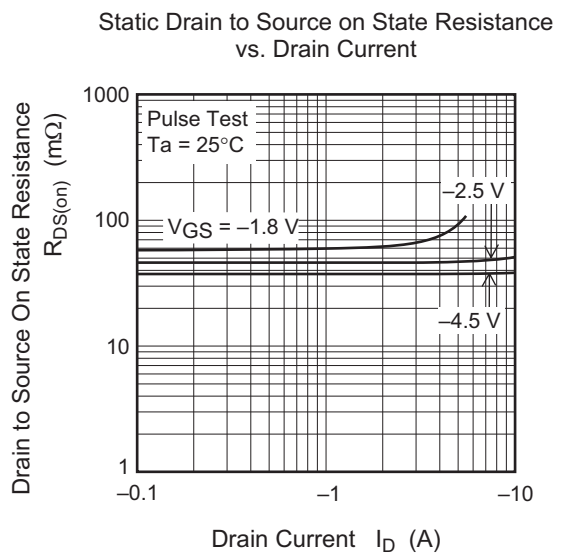
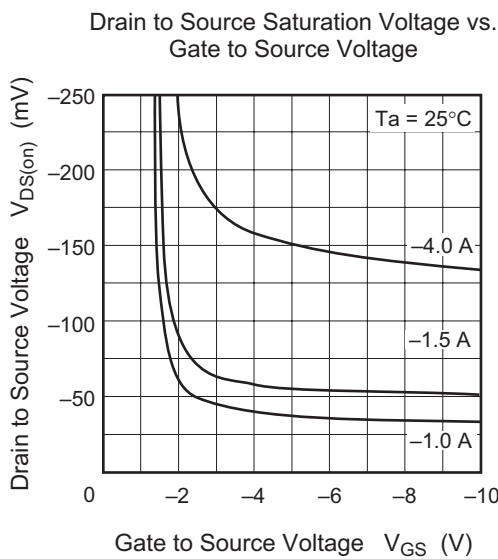
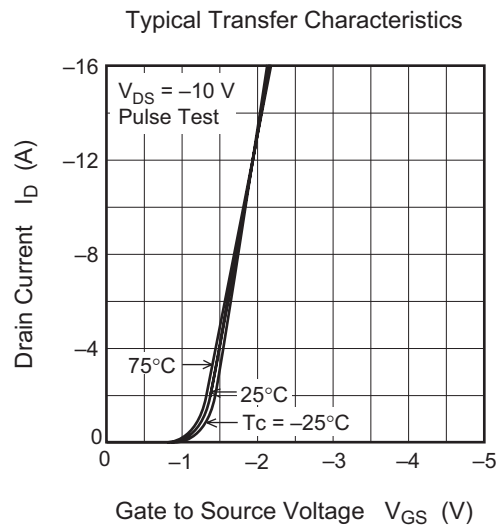
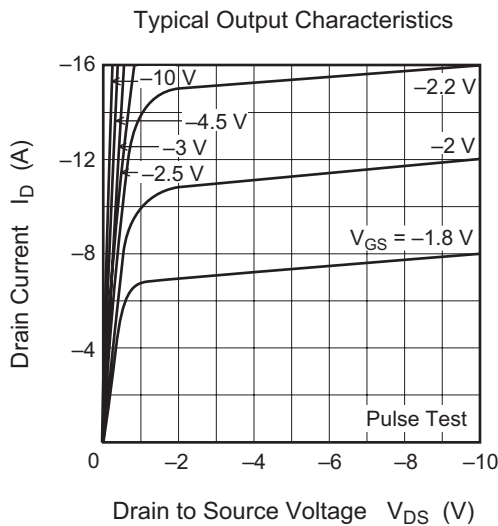
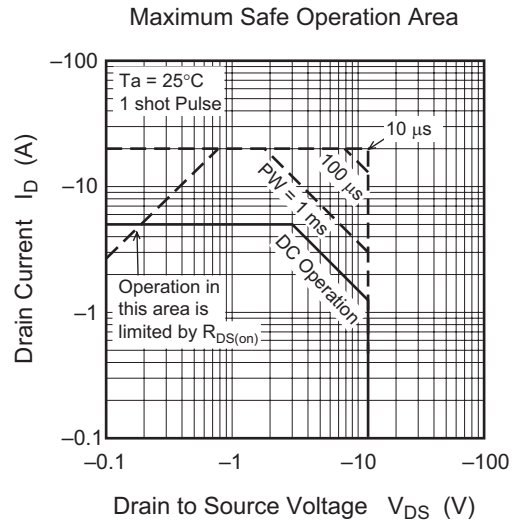
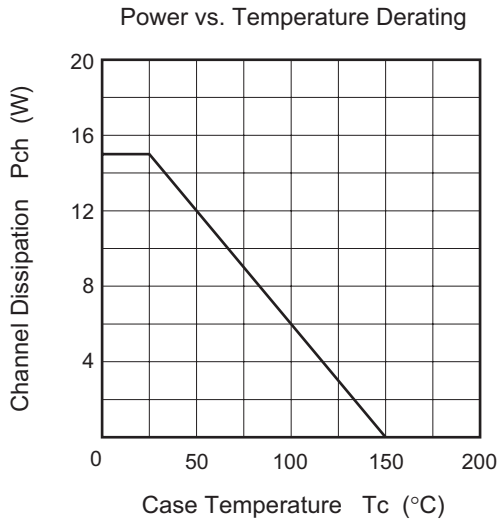
Electrical Characteristics

(Ta = 25°C)

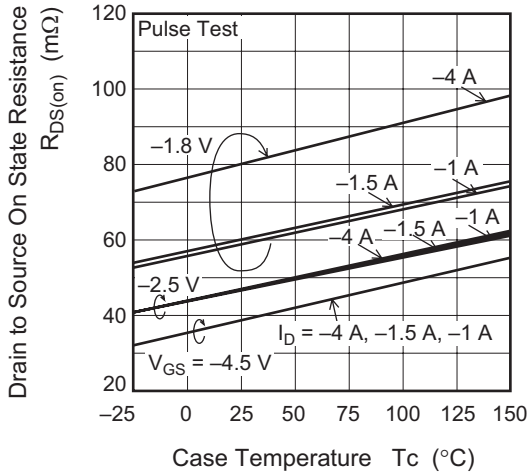
Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	-12	—	—	V	$I_D = -10$ mA, $V_{GS} = 0$ V
Gate to Source breakdown voltage	$V_{(BR)GSS}$	±8	—	—	V	$I_G = \pm 100$ μ A, $V_{DS} = 0$ V
Zero Gate voltage drain current	I_{DSS}	—	—	-1	μ A	$V_{DS} = -12$ V, $V_{GS} = 0$ V
Gate to Source leak current	I_{GSS}	—	—	±10	μ A	$V_{GS} = \pm 6.4$ V, $V_{DS} = 0$ V
Gate to Source cutoff voltage	$V_{GS(off)}$	-0.3	—	-1.1	V	$I_D = -1$ mA, $V_{DS} = -10$ V
Static Drain to Source on state resistance	$R_{DS(on)}$	—	38	52	m Ω	$I_D = -1.5$ A, $V_{GS} = -4.5$ V ^{Note2}
		—	48	70	m Ω	$I_D = -1.5$ A, $V_{GS} = -2.5$ V ^{Note2}
		—	60	93	m Ω	$I_D = -1.5$ A, $V_{GS} = -1.8$ V ^{Note2}
Input capacitance	C_{iss}	—	1380	—	pF	$V_{DS} = -10$ V
Output capacitance	C_{oss}	—	235	—	pF	$V_{GS} = 0$ V
Reverse transfer capacitance	C_{rss}	—	115	—	pF	f = 1 MHz
Turn-on delay time	$t_{d(on)}$	—	35	—	ns	$V_{DD} = -10$ V
Rise time	t_r	—	150	—	ns	$I_D = -1.5$ A
Turn-off delay time	$t_{d(off)}$	—	490	—	ns	$V_{GS} = -4$ V
Fall time	t_f	—	350	—	ns	$R_{GS} = 4.7$ Ω
Body-Drain diode forward voltage	V_{DF}	—	-0.8	-1.1	V	$I_S = -3$ A, $V_{GS} = 0$ V

Notes: 2. Pulse test

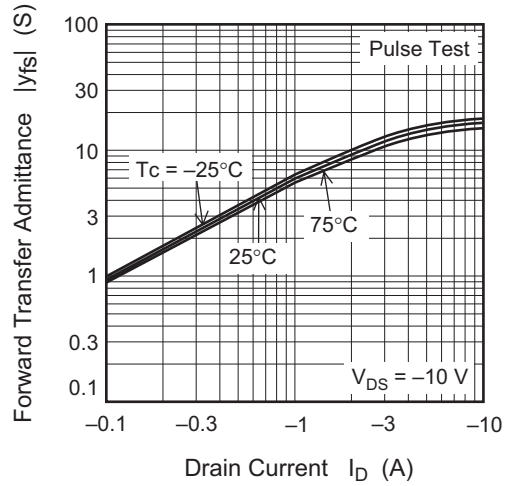
Main Characteristics



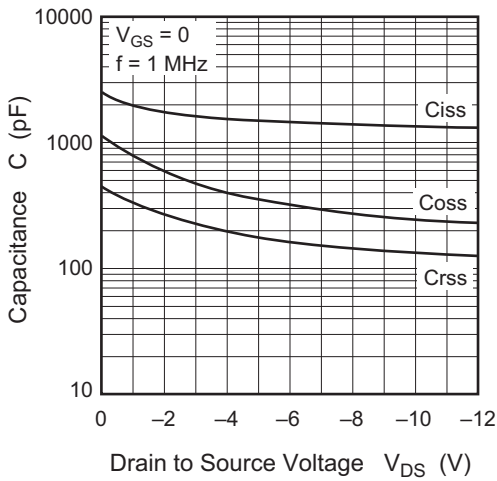
Static Drain to Source on State Resistance vs. Temperature



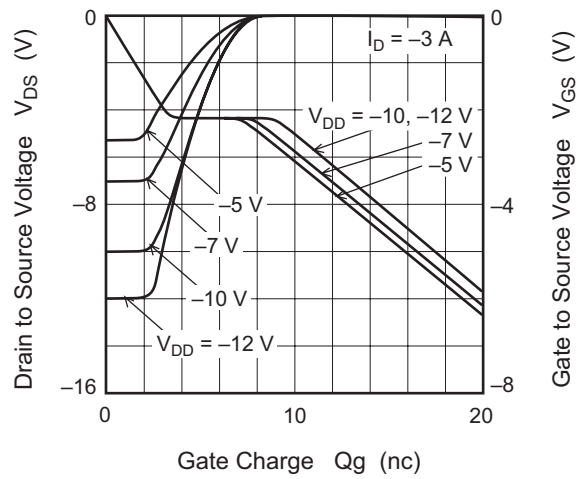
Forward Transfer Admittance vs. Drain Current



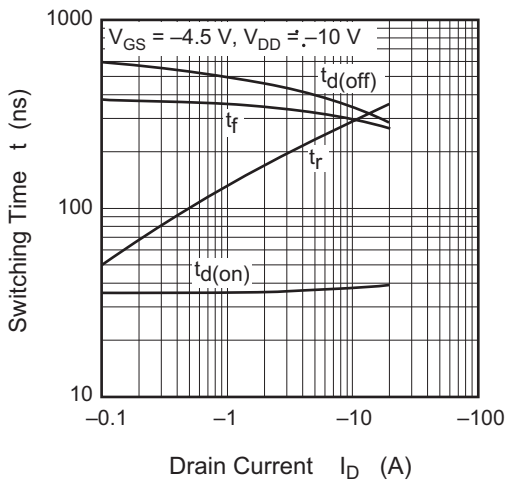
Typical Capacitance vs. Drain to Source Voltage



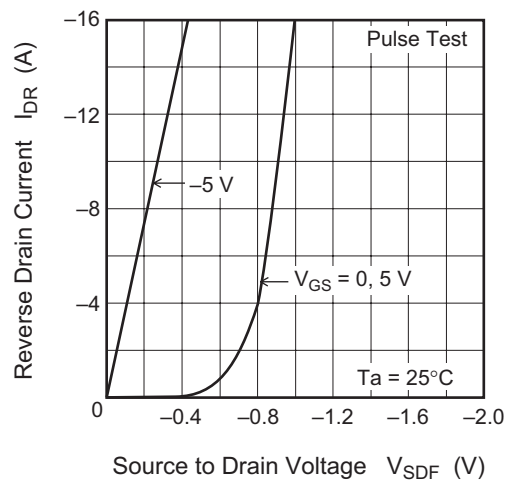
Dynamic Input Characteristics



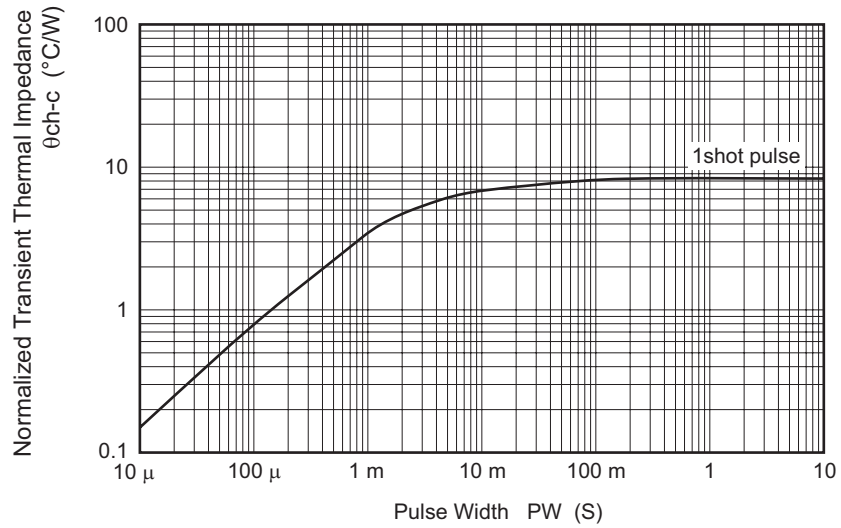
Switching Characteristics



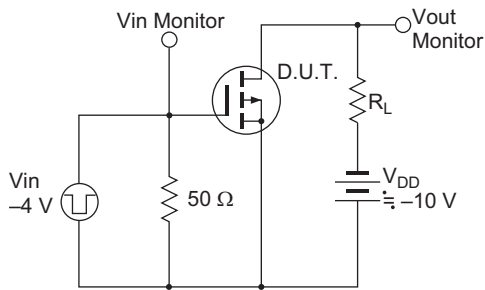
Reverse Drain Current vs. Source to Drain Voltage



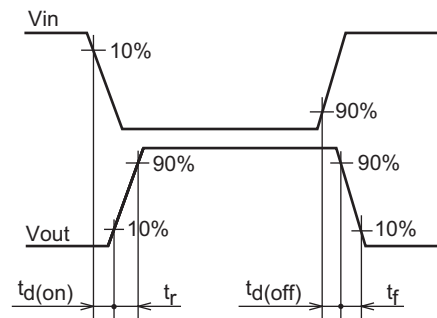
Normalized Transient Thermal Impedance vs. Pulse Width



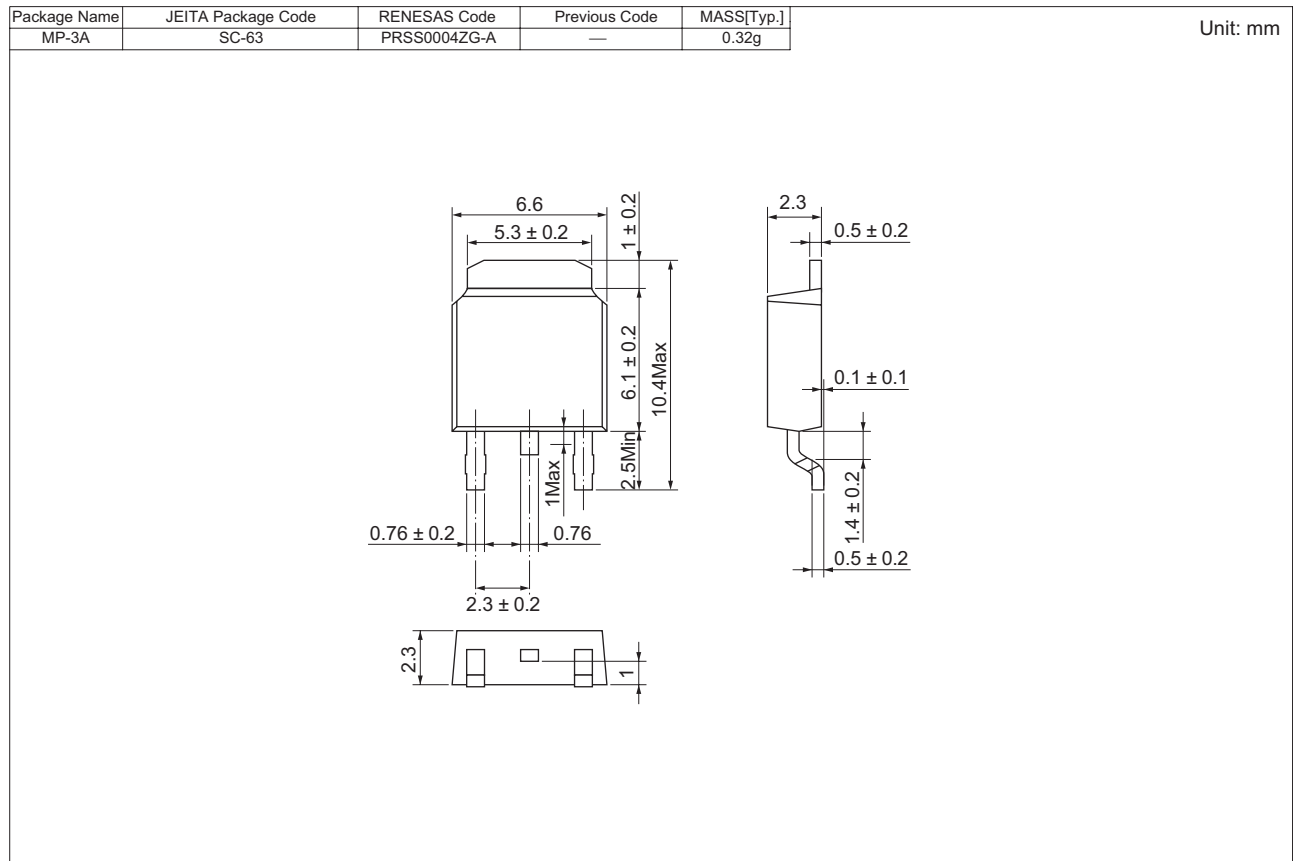
Switching Time Test Circuit



Switching Time Waveform



Package Dimensions



Ordering Information

Part No.	Quantity	Shipping Container
RJJ0101DPD-00-J2	3000 pcs	Taping

Notes:

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