RJJ0101DPD

P Channel Power MOS FET
High Speed Switching

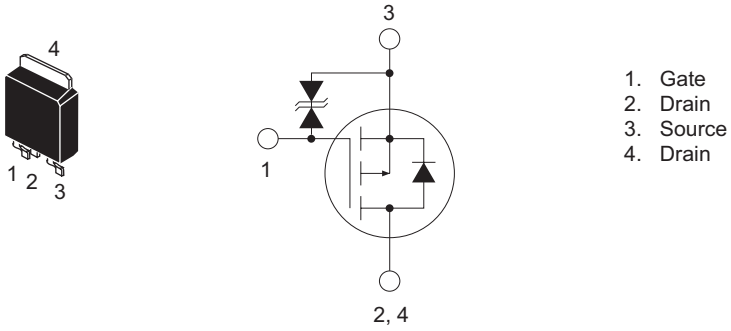
REJ03G1580-0200
Preliminary
Rev.2.00
Nov 11, 2007

Features

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

Outline

RENESAS Package code: PRSS0004ZA-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	Pch Note1	15	W
Channel to case thermal impedance	θch-c	8.33	°C/W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. Value at Tc = 25°C

Electrical Characteristics

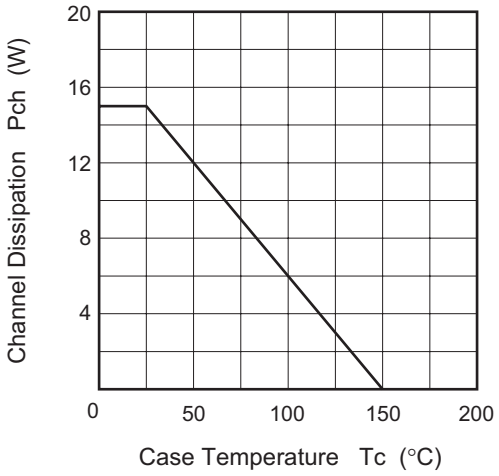
(Ta = 25°C)

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 = ±100 µA, V_{GS} = 0 V
Zero Gate voltage drain current	I_{DSS}	—	—	–1	µA	V_{DS} = –12 V, V_{GS} = 0 V
Gate to Source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±6.4V, 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	mΩ	I_D = –1.5 A, V_{GS} = –4.5 V Note2
		—	48	70	mΩ	I_D = –1.5 A, V_{GS} = –2.5 V Note2
		—	60	93	mΩ	I_D = –1.5 A, V_{GS} = –1.8 V Note2
Input capacitance	Ciss	—	1380	—	pF	V_{DS} = –10 V V_{GS} = 0 V f = 1 MHz
Output capacitance	Coss	—	235	—	pF	
Reverse transfer capacitance	Crss	—	115	—	pF	
Turn-on delay time	$t_{d(on)}$	—	35	—	ns	V_{DD} = –10 V I_D = –1.5 A V_{GS} = –4 V R_{GS} = 4.7 Ω
Rise time	t_r	—	150	—	ns	
Turn-off delay time	$t_{d(off)}$	—	490	—	ns	
Fall time	t_f	—	350	—	ns	
Body-Drain diode forward voltage	V_{DF}	—	-0.8	–1.1	V	I_S = –3 A, V_{GS} = 0 V

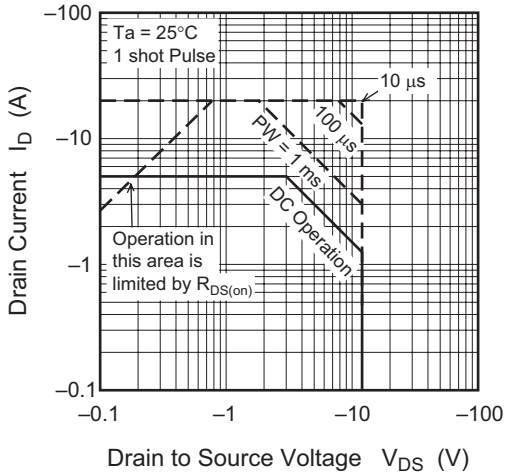
Notes: 2. Pulse test

Main Characteristics

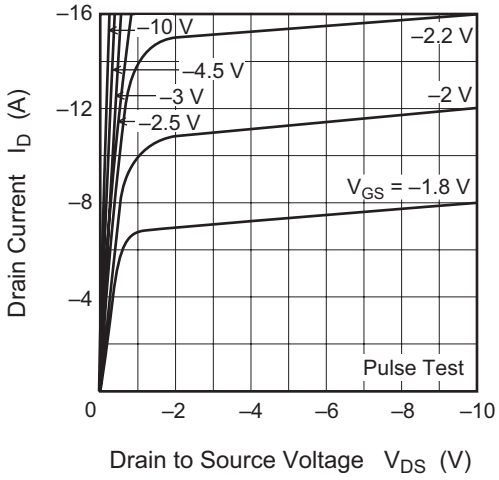
Power vs. Temperature Derating



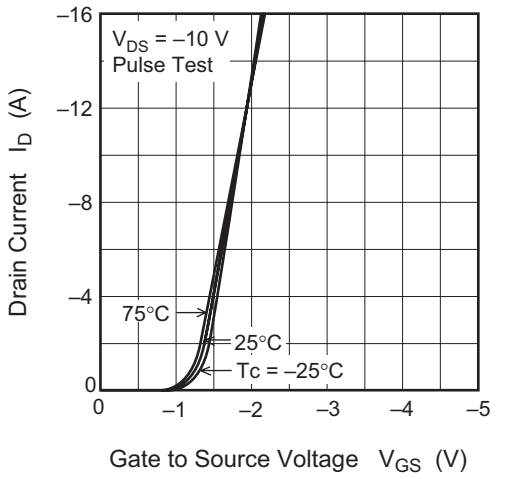
Maximum Safe Operation Area



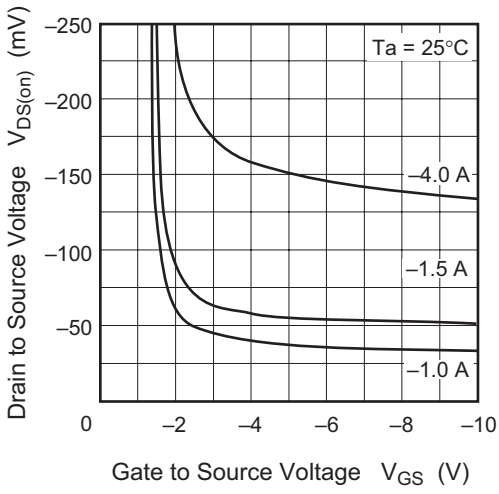
Typical Output Characteristics



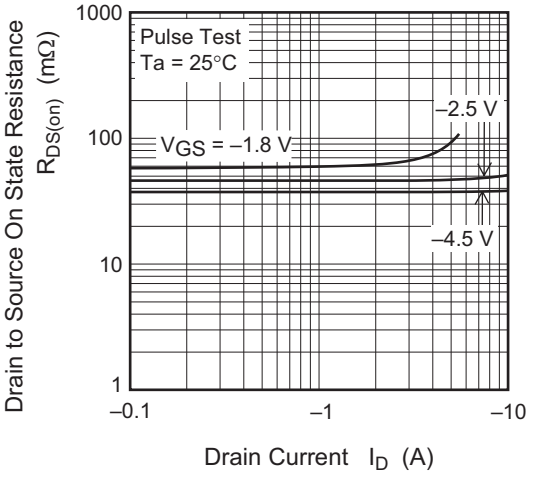
Typical Transfer Characteristics



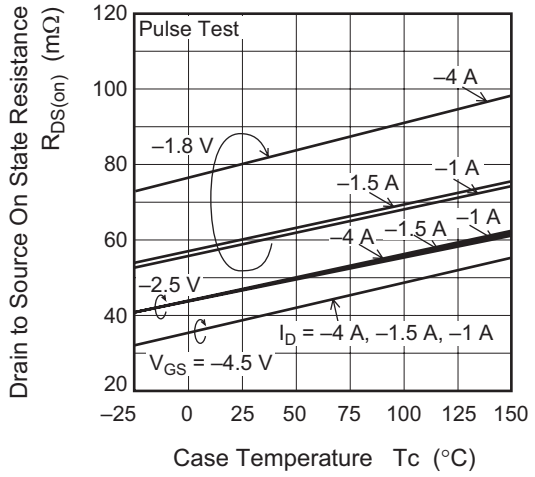
Drain to Source Saturation Voltage vs. Gate to Source Voltage



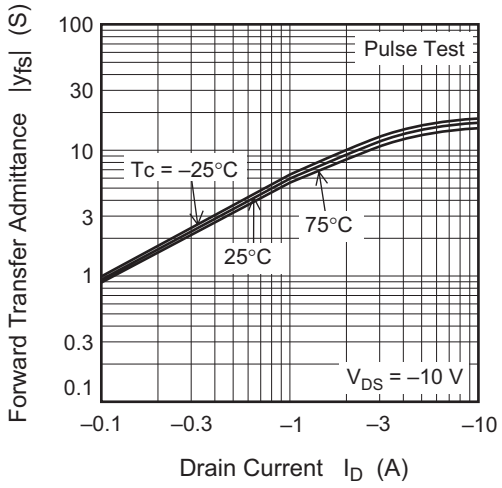
Static Drain to Source on State Resistance vs. Drain Current



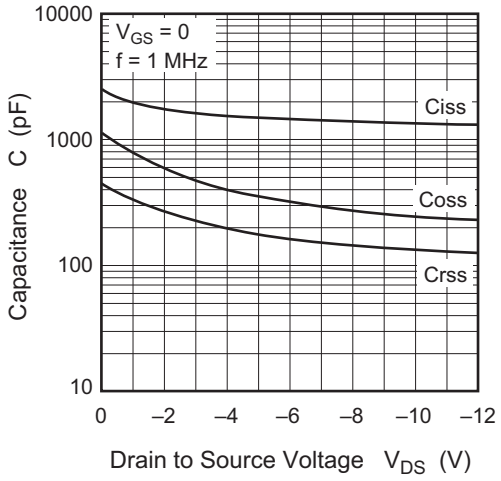
Static Drain to Source on State Resistance vs. Temperature



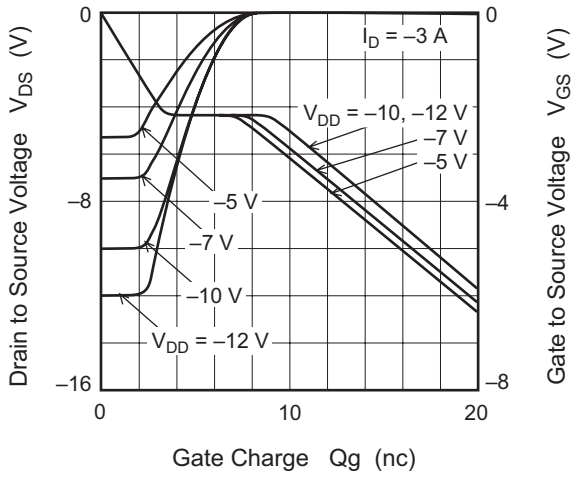
Forward Transfer Admittance vs. Drain Current



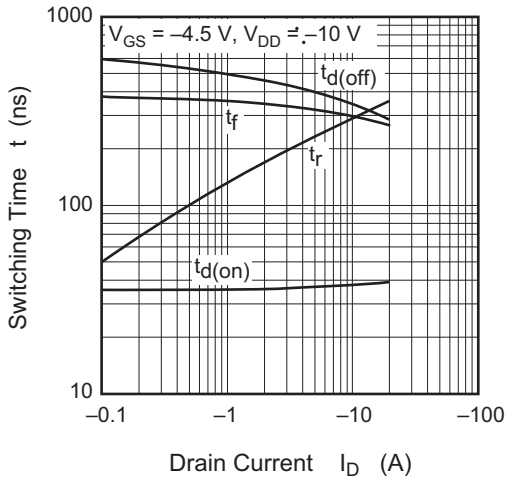
Typical Capacitance vs. Drain to Source Voltage



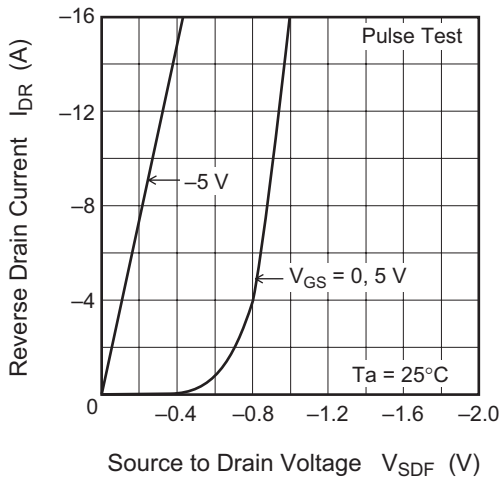
Dynamic Input Characteristics



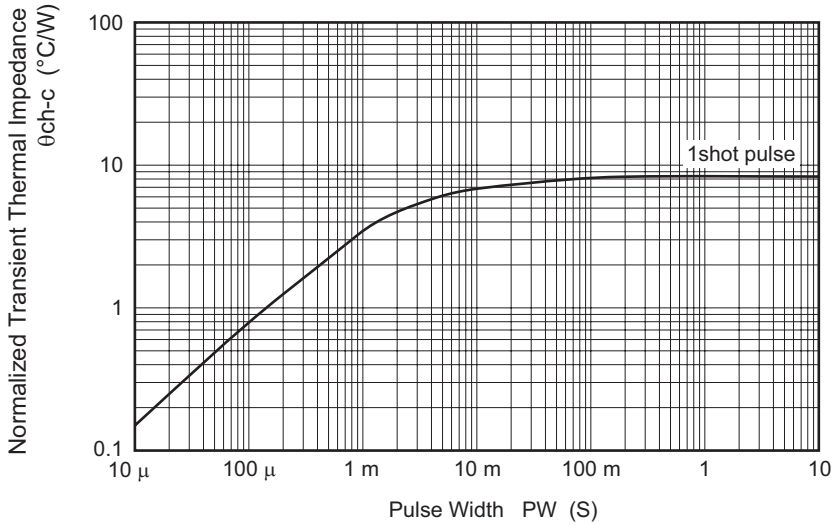
Switching Characteristics



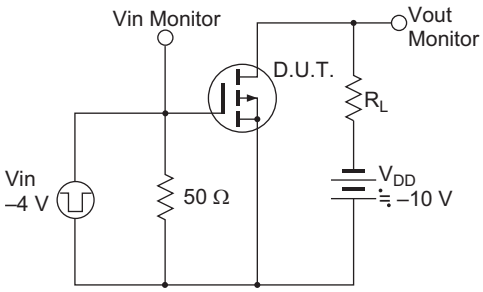
Reverse Drain Current vs. Source to Drain Voltage



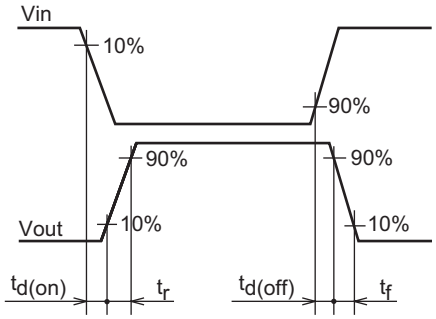
Normalized Transient Thermal Impedance vs. Pulse Width



Switching Time Test Circuit



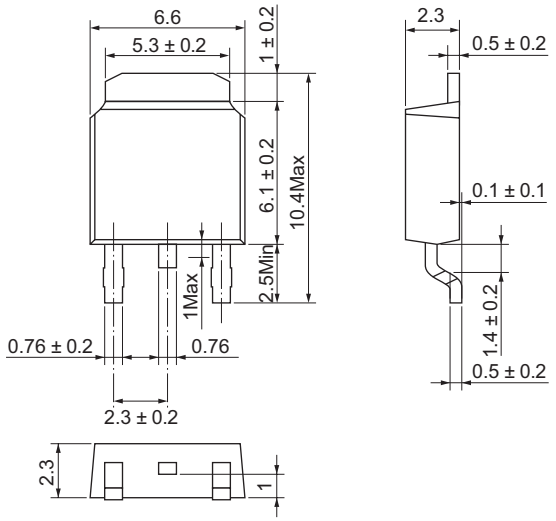
Switching Time Waveform



Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
MP-3A	SC-63	PRSS0004ZA-A	—	0.32g

Unit: mm



Ordering Information

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

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Refer to "**http://www.renesas.com/en/network**" for the latest and detailed information.

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