

## RJJ0101DPD

P Channel Power MOS FET  
High Speed Switching

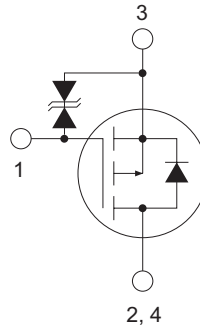
REJ03G1580-0200  
Preliminary  
Rev.2.00  
Nov 11, 2007

### Features

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

### 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	$V_{GSS}$	$\pm 8$	V
Drain current	$I_D$	-5	A
Drain peak current	$I_{D(pulse)}$	-20	A
Channel dissipation	$P_{ch}$ <sup>Note1</sup>	15	W
Channel to case thermal impedance	$\theta_{ch-c}$	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

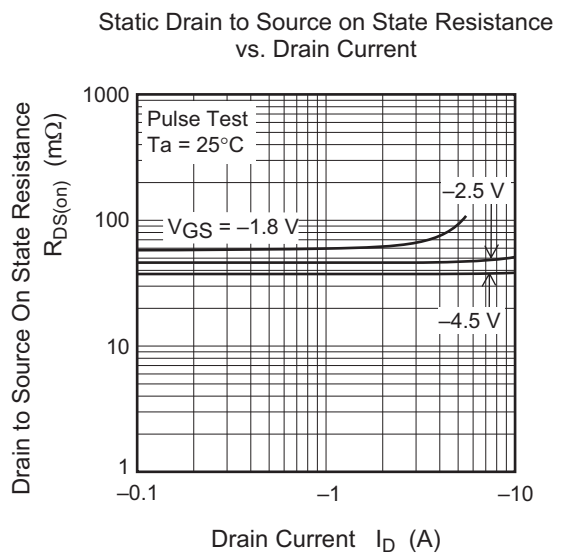
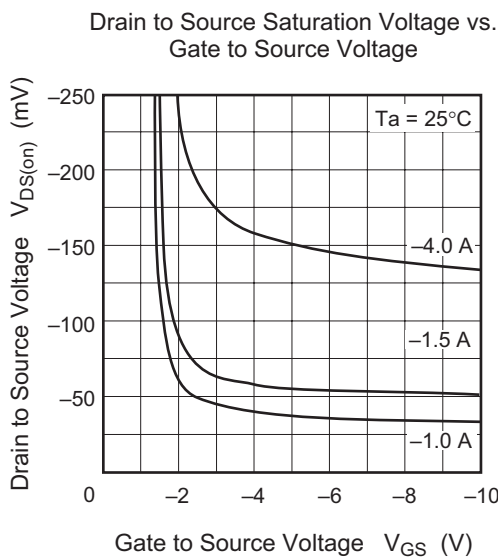
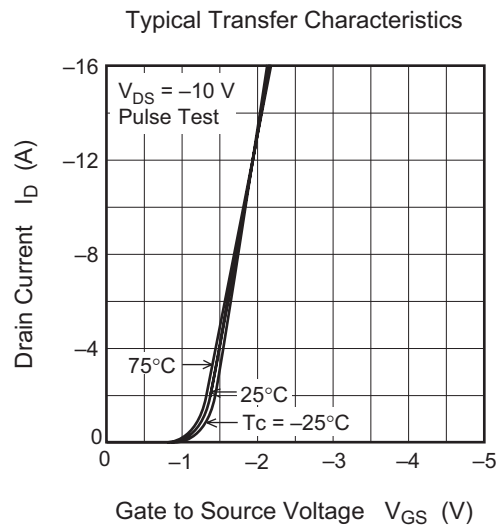
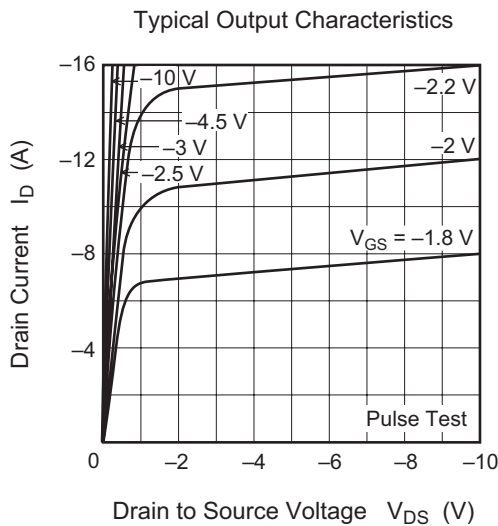
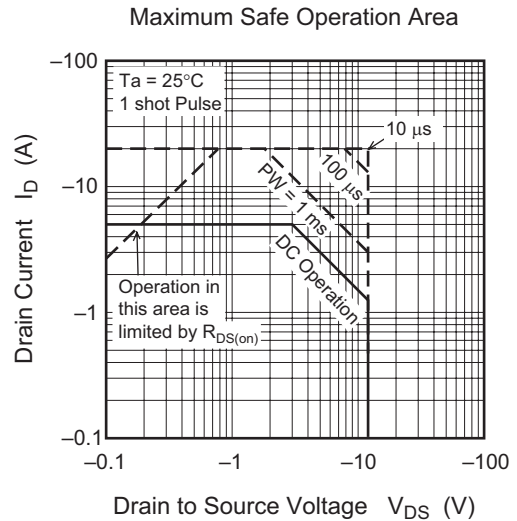
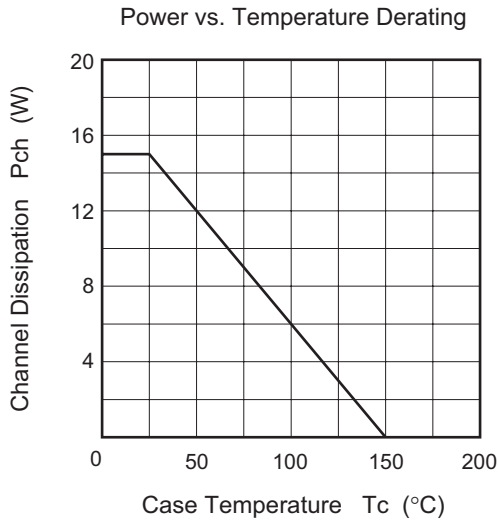
## Electrical Characteristics

(Ta = 25°C)

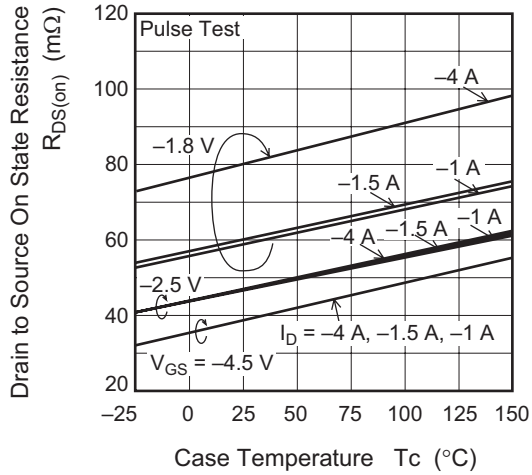
Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	-12	—	—	V	$I_D = -10$ mA, $V_{GS} = 0$ V
Gate to Source breakdown voltage	$V_{(BR)GSS}$	$\pm 8$	—	—	V	$I_G = \pm 100$ $\mu$ A, $V_{DS} = 0$ V
Zero Gate voltage drain current	$I_{DSS}$	—	—	-1	$\mu$ A	$V_{DS} = -12$ V, $V_{GS} = 0$ V
Gate to Source leak current	$I_{GSS}$	—	—	$\pm 10$	$\mu$ 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 $\Omega$	$I_D = -1.5$ A, $V_{GS} = -4.5$ V <sup>Note2</sup>
		—	48	70	m $\Omega$	$I_D = -1.5$ A, $V_{GS} = -2.5$ V <sup>Note2</sup>
		—	60	93	m $\Omega$	$I_D = -1.5$ A, $V_{GS} = -1.8$ V <sup>Note2</sup>
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	$R_{GS} = 4.7$ $\Omega$
Body-Drain diode forward voltage	$V_{DF}$	—	-0.8	-1.1	V	$I_S = -3$ A, $V_{GS} = 0$ V

Notes: 2. Pulse test

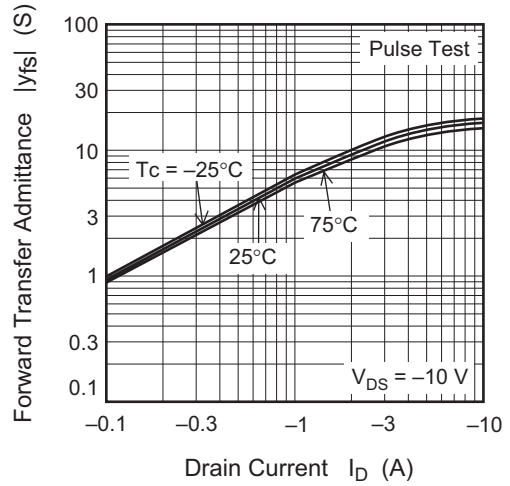
Main Characteristics



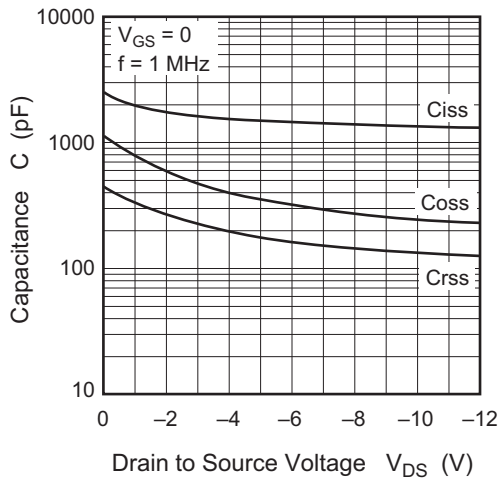
Static Drain to Source on State Resistance vs. Temperature



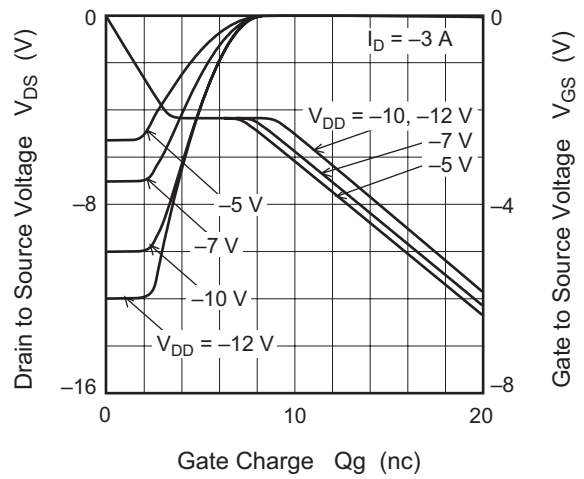
Forward Transfer Admittance vs. Drain Current



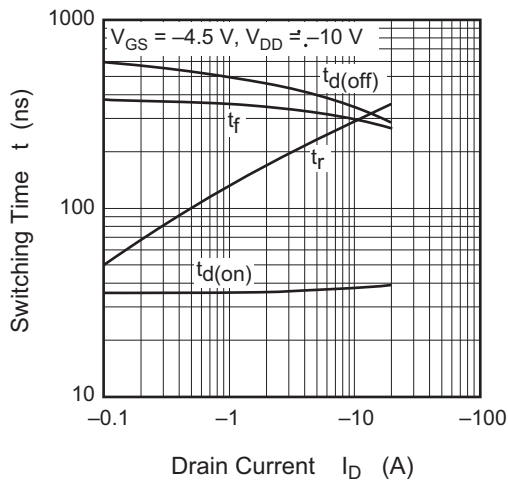
Typical Capacitance vs. Drain to Source Voltage



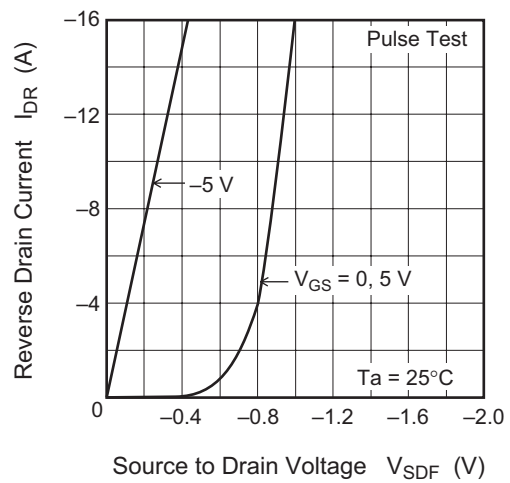
Dynamic Input Characteristics



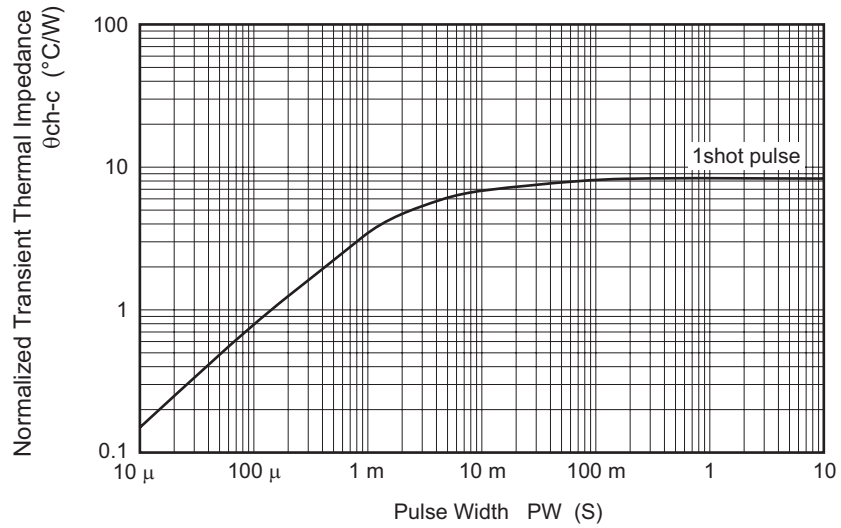
Switching Characteristics



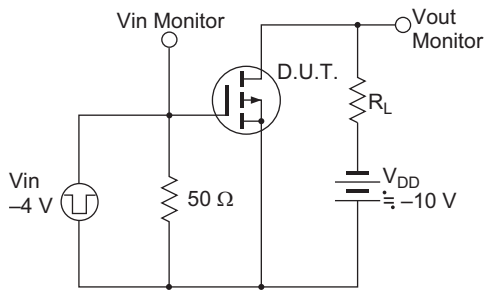
Reverse Drain Current vs. Source to Drain Voltage



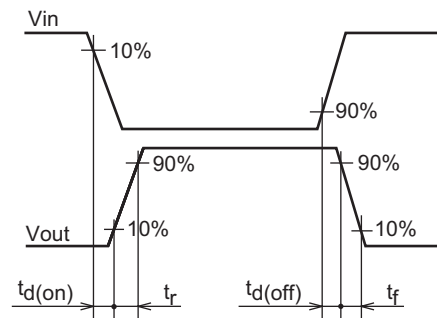
Normalized Transient Thermal Impedance vs. Pulse Width



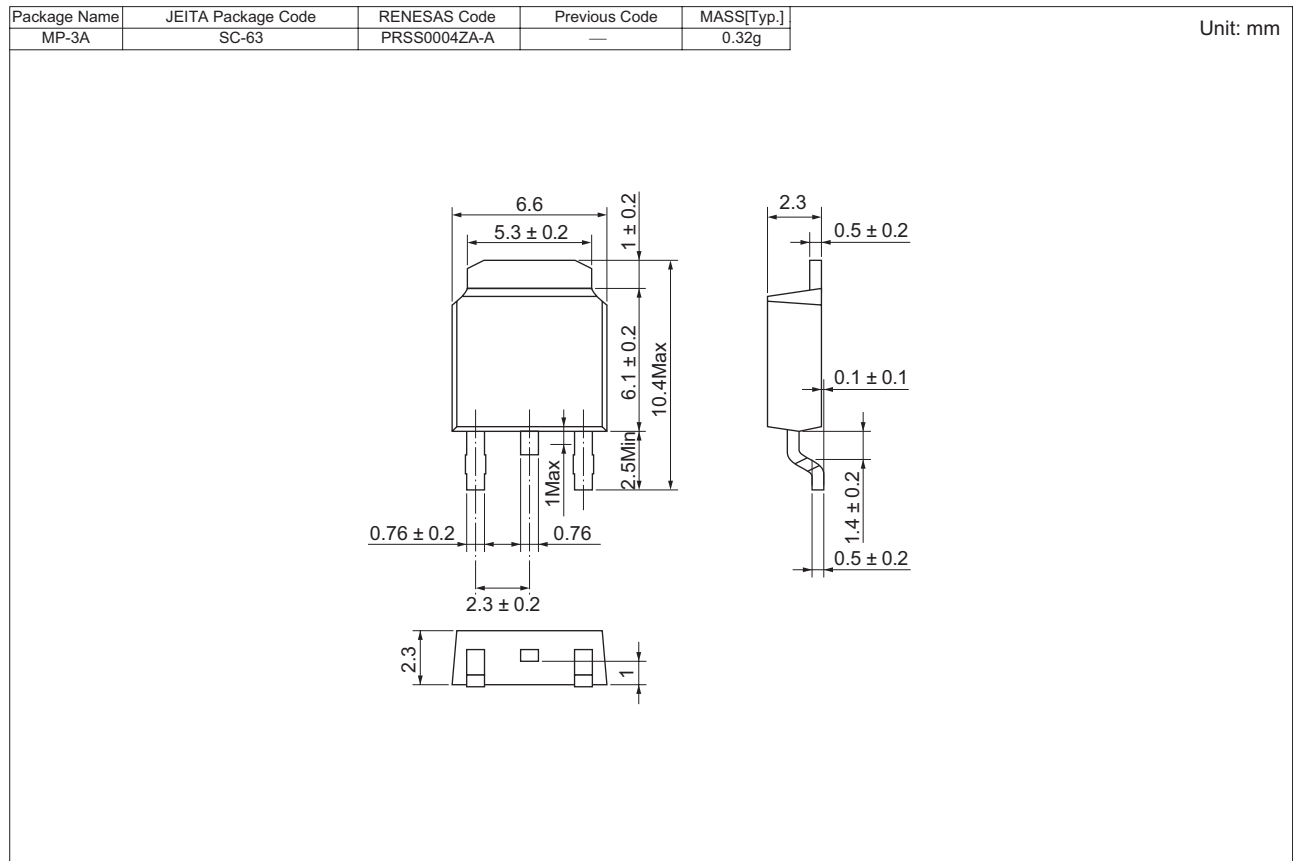
Switching Time Test Circuit



Switching Time Waveform



### Package Dimensions



### Ordering Information

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

Notes:

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