

RJK5030DPD

Silicon N Channel MOS FET
High Speed Power Switching

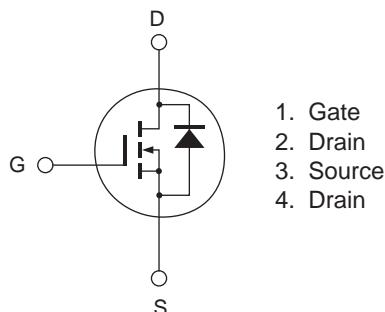
R07DS0050EJ0200
(Previous: REJ03G1913-0100)
Rev.2.00
Jul 22, 2010

Features

- Low on-state resistance
 $R_{DS(on)} = 1.3 \Omega$ typ. (at $I_D = 2$ A, $V_{GS} = 10$ V, $T_a = 25^\circ\text{C}$)
- High speed switching

Outline

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



Absolute Maximum Ratings

($T_a = 25^\circ\text{C}$)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DSS}	500	V
Gate to source voltage	V_{GSS}	± 30	V
Drain current	I_D	5	A
Drain peak current	I_D (pulse) ^{Note1}	20	A
Avalanche current	I_{AP} ^{Note3}	5	A
Channel dissipation	P_{ch} ^{Note 2}	41.7	W
Channel to case thermal Impedance	θ_{ch-c}	3.0	$^\circ\text{C}/\text{W}$
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes: 1. Pulse width limited by safe operating area.

- Value at $T_c = 25^\circ\text{C}$
- $ST_{ch} = 25^\circ\text{C}$, $T_{ch} \leq 150^\circ\text{C}$

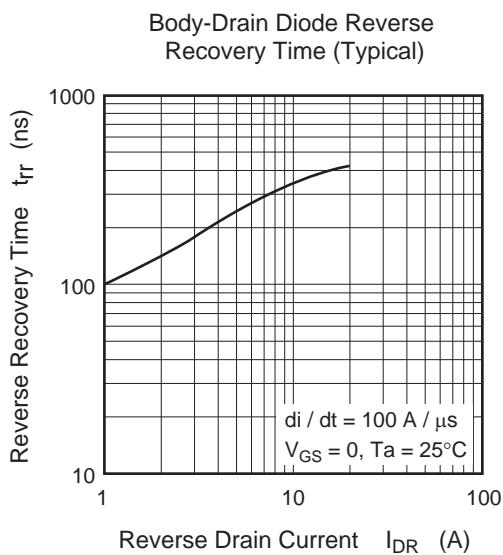
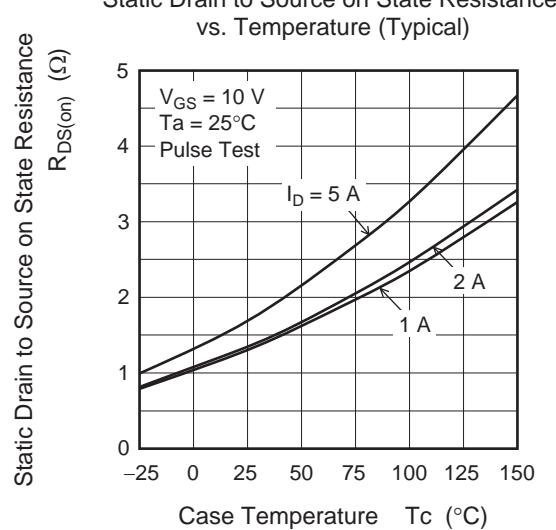
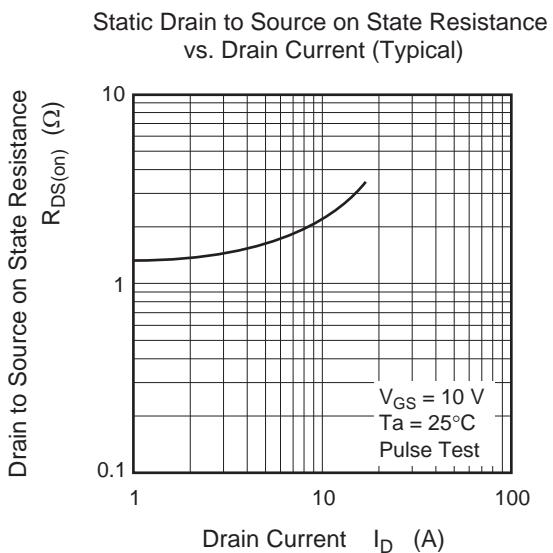
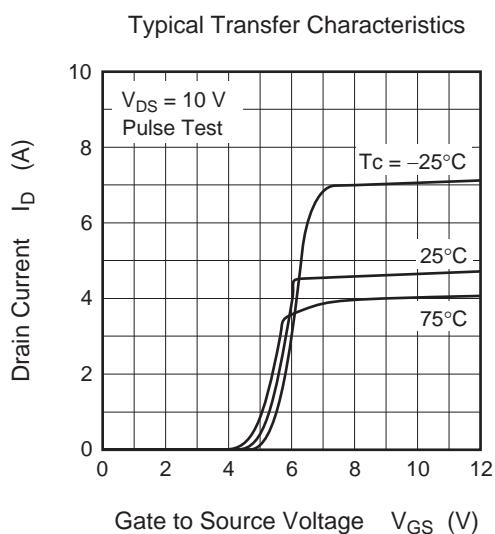
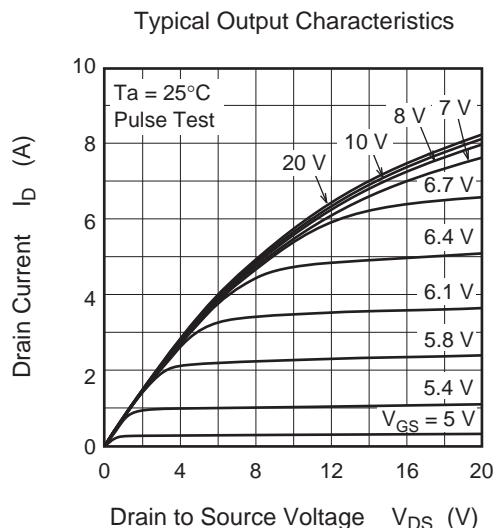
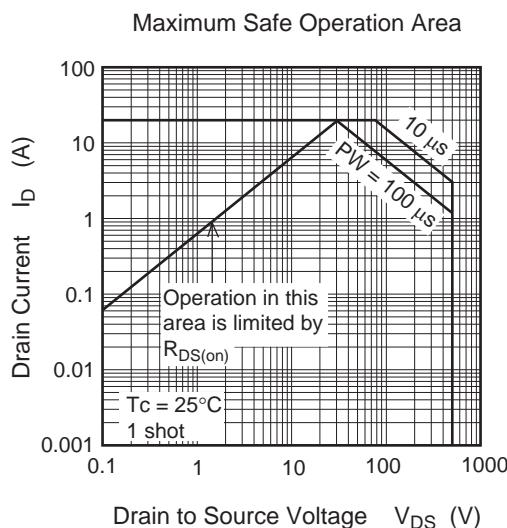
Electrical Characteristics

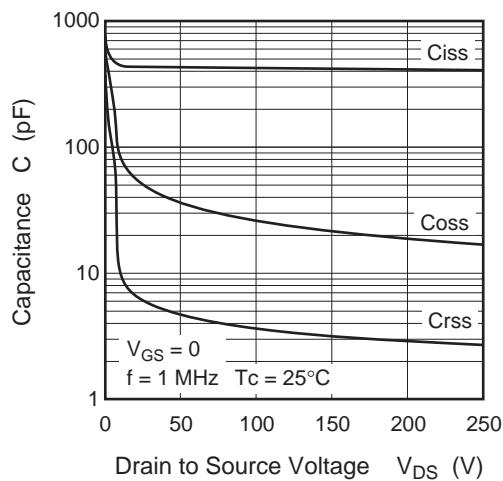
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR) DSS}	500	—	—	V	I _D = 1 mA, V _{GS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	10	μA	V _{DS} = 500 V, V _{GS} = 0
Gate to source leak current	I _{GSS}	—	—	±0.1	μA	V _{GS} = ±30 V, V _{DS} = 0
Gate to source cutoff voltage	V _{GS (off)}	3.5	—	4.5	V	V _{DS} = 10 V, I _D = 1 mA
Static drain to source on state resistance	R _{DS (on)}	—	1.3	1.6	Ω	I _D = 2 A, V _{GS} = 10 V ^{Note 4}
Input capacitance	C _{iss}	—	550	—	pF	V _{DS} = 25 V V _{GS} = 0 f = 1 MHz
Output capacitance	C _{oss}	—	60	—	pF	
Reverse transfer capacitance	C _{rss}	—	10	—	pF	
Turn-on delay time	t _{d (on)}	—	15	—	ns	V _{DD} = 200 V I _D = 2 A V _{GS} = 10 V R _g = 25 Ω
Rise time	t _r	—	20	—	ns	
Turn-off delay time	t _{d (off)}	—	90	—	ns	
Fall time	t _f	—	30	—	ns	
Body-drain diode forward voltage	V _{DF}	—	0.9	1.5	V	I _F = 5 A, V _{GS} = 0 ^{Note 4}
Body-drain diode reverse recovery time	t _{rr}	—	250	—	ns	I _F = 5 A, V _{GS} = 0 V _{DD} = 250 V dI _F /dt = 100 A/μs

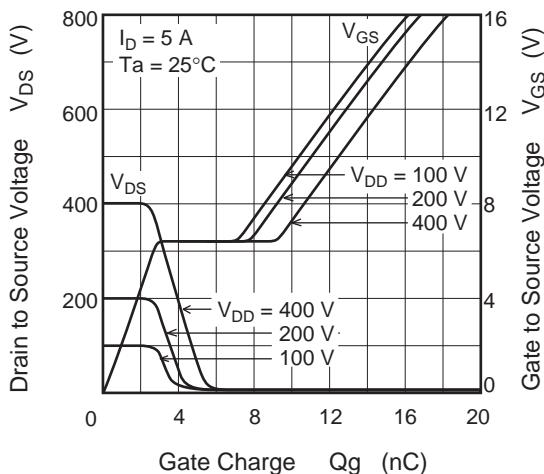
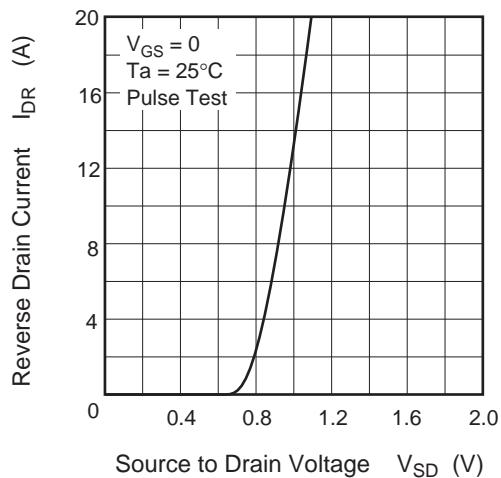
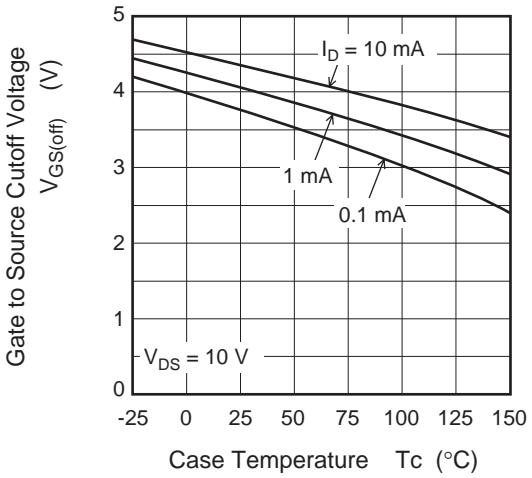
Note: 4. Pulse test

Main Characteristics

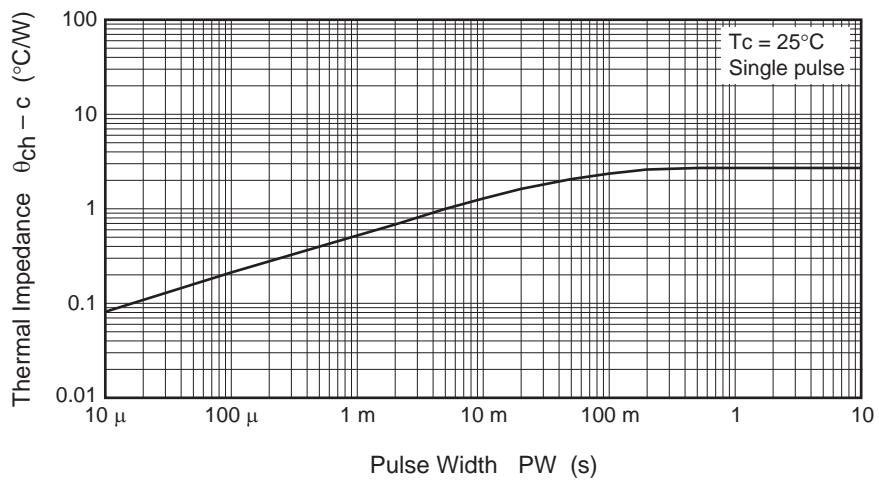


Typical Capacitance vs.
Drain to Source Voltage

Dynamic Input Characteristics (Typical)

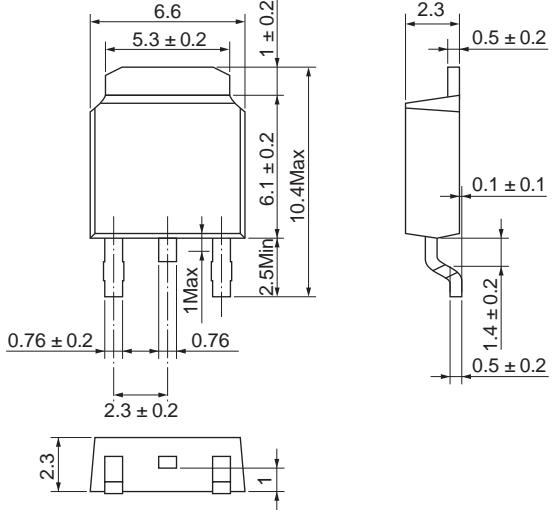
Reverse Drain Current vs.
Source to Drain Voltage (Typical)Gate to Source Cutoff Voltage
vs. Case Temperature (Typical)

Thermal Impedance vs. Pulse Width



Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]	Unit: mm
MP-3A	SC-63	PRSS0004ZG-A	TMP3	0.32g	



Front View Dimensions:

- Width: 6.6 mm
- Height: 1.1 ± 0.2 mm
- Lead Spacing: 0.76 ± 0.2 mm
- Lead Height: 2.5 Min. to 10.4 Max.
- Lead Width: 2.3 ± 0.2 mm

Side View Dimensions:

- Width: 2.3 mm
- Height: 0.5 ± 0.2 mm
- Lead Spacing: 0.1 ± 0.1 mm
- Lead Height: 1.4 ± 0.2 mm
- Lead Width: 0.5 ± 0.2 mm

Ordering Information

Part No.	Quantity	Shipping Container
RJK5030DPD-00	3000 pcs	Taping

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