

RJK6024DPD

600V - 0.4A - MOS FET
High Speed Power Switching

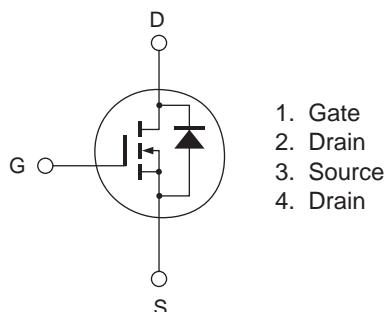
R07DS0688EJ0200
(Previous: REJ03G1936-0100)
Rev.2.00
Feb 27, 2012

Features

- Low on-resistance
 $R_{DS(on)} = 28 \Omega$ typ. (at $I_D = 0.2$ A, $V_{GS} = 10$ V, $T_a = 25^\circ\text{C}$)
- Low drive current
- High density mounting

Outline

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



Absolute Maximum Ratings

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

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	600	V
Gate to source voltage	V_{GSS}	± 30	V
Drain current	I_D	0.4	A
Drain peak current	$I_{D(\text{pulse})}$ ^{Note1}	0.6	A
Body-drain diode reverse drain current	I_{DR}	0.4	A
Body-drain diode reverse drain peak current	$I_{DR(\text{pulse})}$ ^{Note1}	0.6	A
Channel dissipation	P_{ch} ^{Note2}	27.2	W
Channel to case thermal impedance	θ_{ch-c}	4.58	$^\circ\text{C}/\text{W}$
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes: 1. $PW \leq 10 \mu\text{s}$, duty cycle $\leq 1\%$

2. Value at $T_c = 25^\circ\text{C}$

Electrical Characteristics

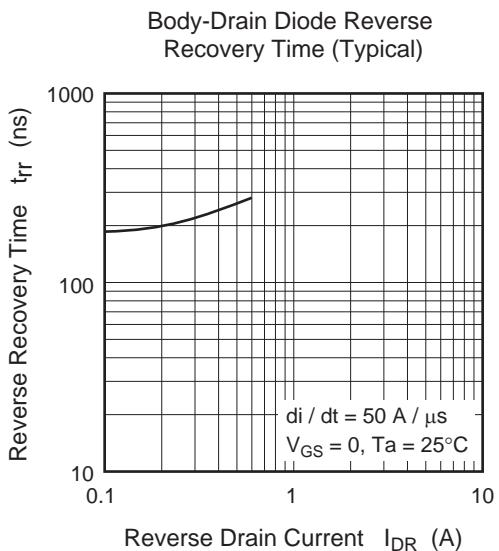
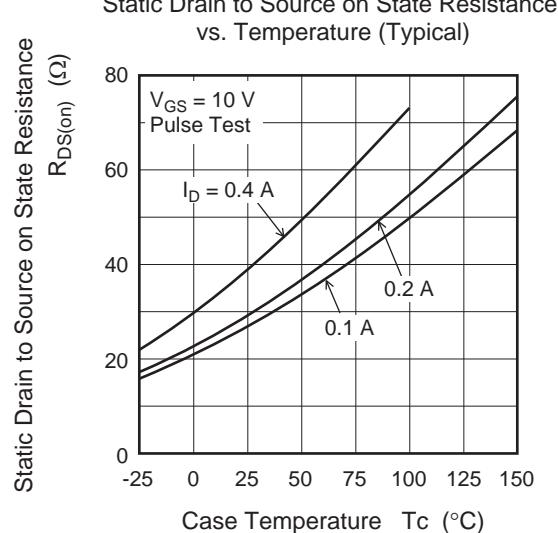
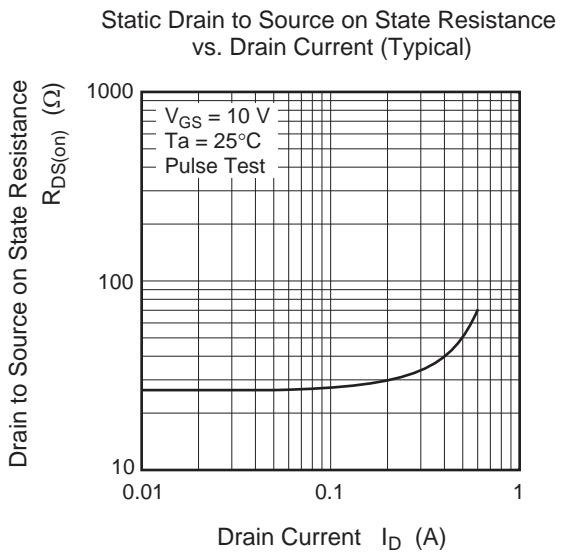
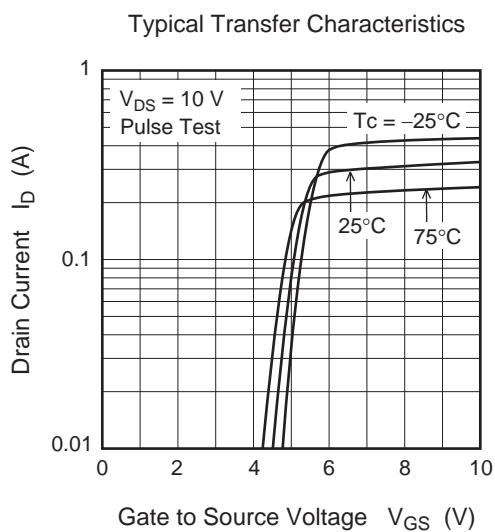
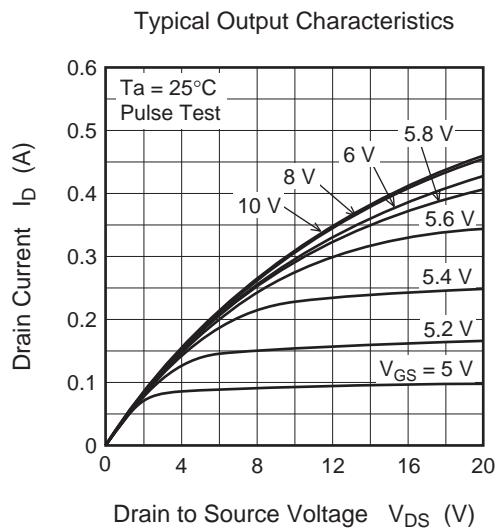
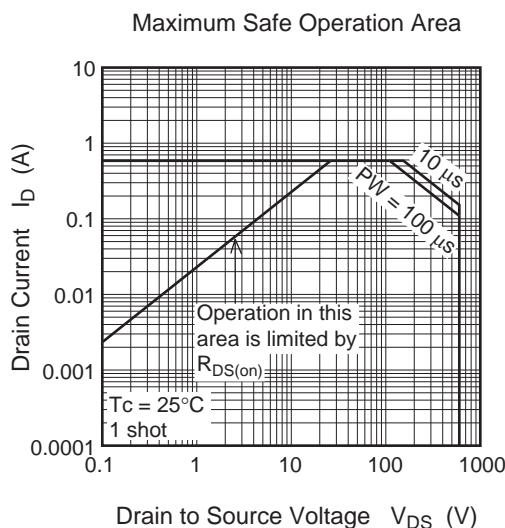
(Ta = 25°C)

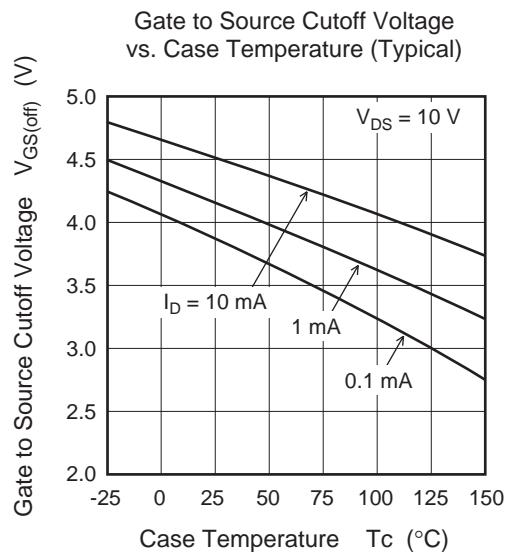
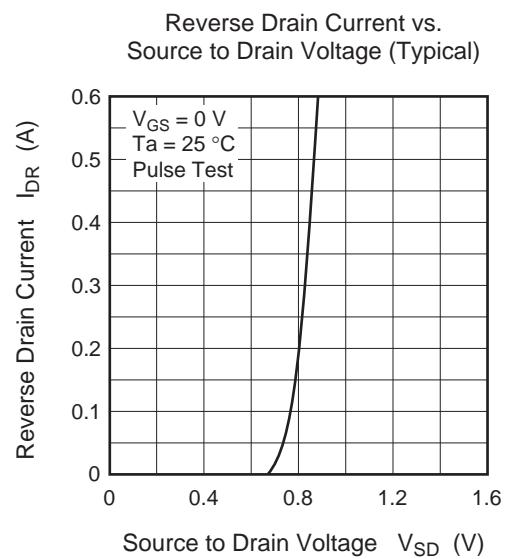
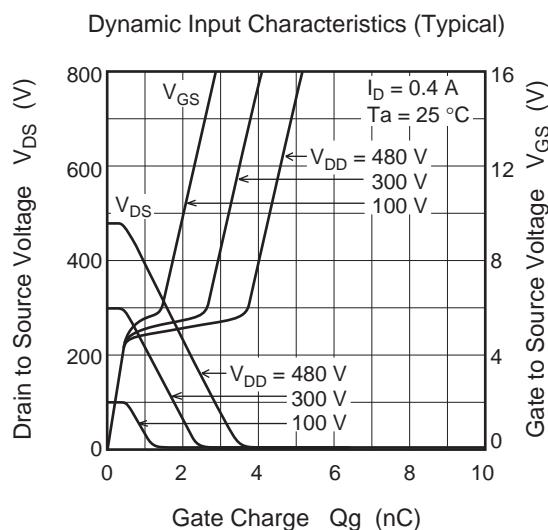
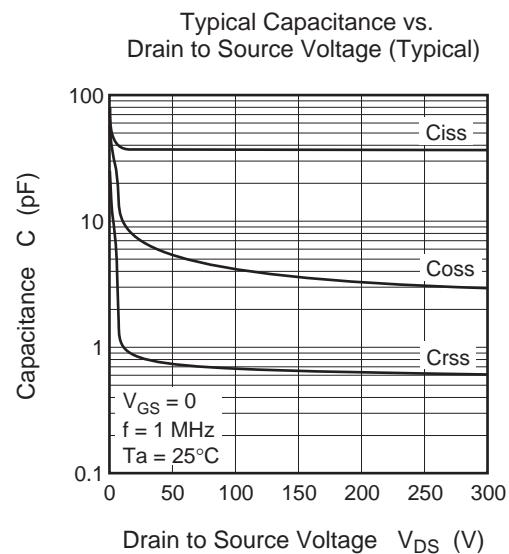
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	V _{(BR)DSS}	600	—	—	V	I _D = 10 mA, V _{GS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	1	μA	V _{DS} = 600 V, V _{GS} = 0
Gate to source leak current	I _{GSS}	—	—	±0.1	μA	V _{GS} = ±30 V, V _{DS} = 0
Gate to source cutoff voltage	V _{GS(off)}	3	—	5	V	V _{DS} = 10 V, I _D = 1 mA
Static drain to source on state resistance	R _{DS(on)}	—	28	42	Ω	I _D = 0.2 A, V _{GS} = 10 V ^{Note3}
Input capacitance	C _{iss}	—	37.5	—	pF	V _{DS} = 25 V V _{GS} = 0 f = 1 MHz
Output capacitance	C _{oss}	—	7.5	—	pF	
Reverse transfer capacitance	C _{rss}	—	0.9	—	pF	
Turn-on delay time	t _{d(on)}	—	30	—	ns	I _D = 0.2 A V _{GS} = 10 V R _L = 1500 Ω R _g = 10 Ω
Rise time	t _r	—	14.5	—	ns	
Turn-off delay time	t _{d(off)}	—	48	—	ns	
Fall time	t _f	—	77	—	ns	
Total gate charge	Q _g	—	4.3	—	nC	V _{DD} = 480 V V _{GS} = 10 V I _D = 0.15 A
Gate to source charge	Q _{gs}	—	0.5	—	nC	
Gate to drain charge	Q _{gd}	—	3.2	—	nC	
Body-drain diode forward voltage	V _{DF}	—	0.85	1.45	V	I _F = 0.4 A, V _{GS} = 0 ^{Note3}
Body-drain diode reverse recovery time	t _{rr}	—	230	—	ns	I _F = 0.4 A, V _{GS} = 0 di _F /dt = 100 A/μs

Notes: 3. Pulse test

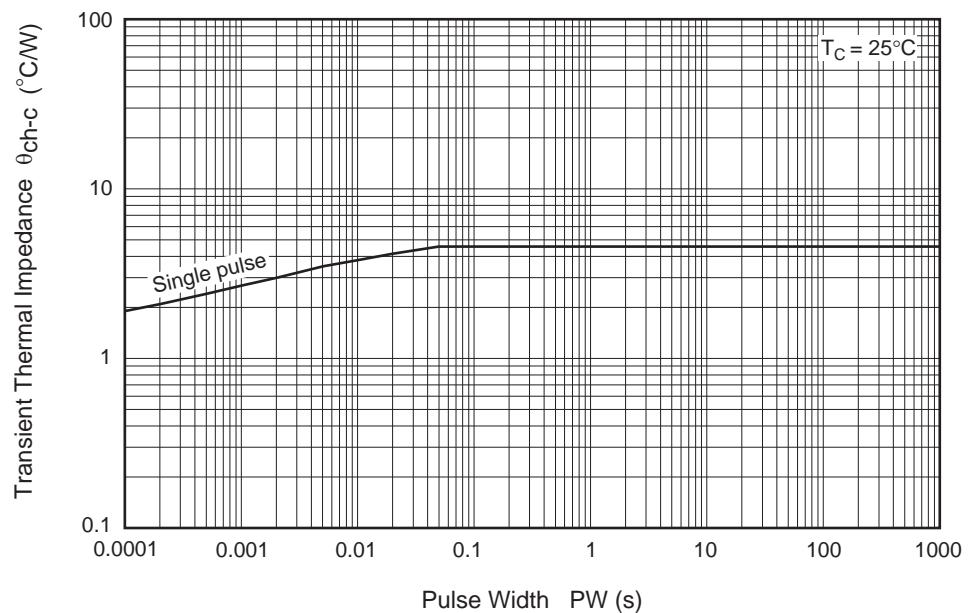
4. Since this device is equipped with high voltage FET chip (V_{DSS} ≥ 600 V), high voltage may be supplied. Therefore, please be sure to confirm about Electric discharge between Drain terminal and other terminal.
5. This device is sensitive to electrostatic discharge. It is recommended to adopt appropriate cautions when handling this product.

Main Characteristics

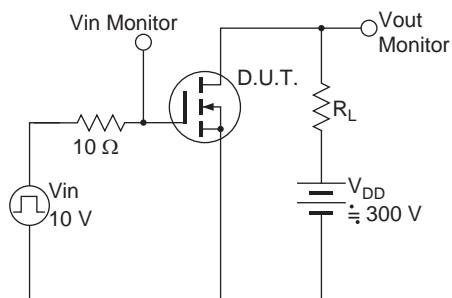




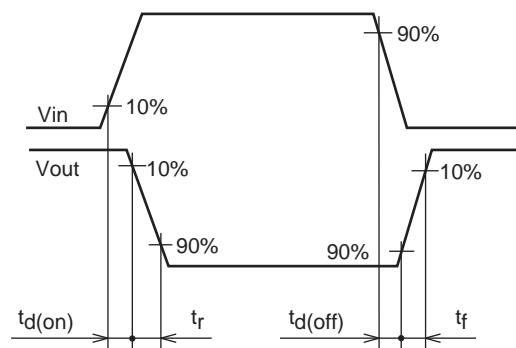
Transient Thermal Impedance vs. Pulse Width



Switching Time Test Circuit



Waveform



Package Dimensions

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

Ordering Information

Orderable Part Number	Quantity	Shipping Container
RJK6024DPD-00#J2	3000 pcs	Taping

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