

RJK6002DPD

Silicon N Channel MOS FET
High Speed Power Switching

REJ03G1483-0100

Rev.1.00

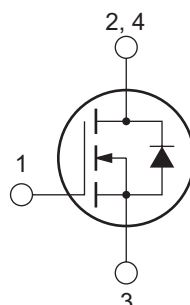
Nov 09, 2006

Features

- Low on-resistance
- Low leakage current
- High speed switching

Outline

RENESAS Package code: PRSS0004ZA-A
(Package name : MP-3A)



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

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	2	A
Drain peak current	$I_{D(pulse)}$ ^{Note1}	4	A
Body-drain diode reverse drain current	I_{DR}	2	A
Body-drain diode reverse drain peak current	$I_{DR(pulse)}$ ^{Note1}	4	A
Avalanche current	I_{AP} ^{Note3}	1	A
Avalanche energy	E_{AR} ^{Note3}	0.05	mJ
Channel dissipation	P_{ch} ^{Note2}	30	W
Channel to case thermal impedance	θ_{ch-c}	4.17	$^\circ\text{C}/\text{W}$
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 $T_c = 25^\circ\text{C}$

3. $ST_{ch} = 25^\circ\text{C}$, $T_{ch} \leq 150^\circ\text{C}$

Electrical Characteristics

(Ta = 25°C)

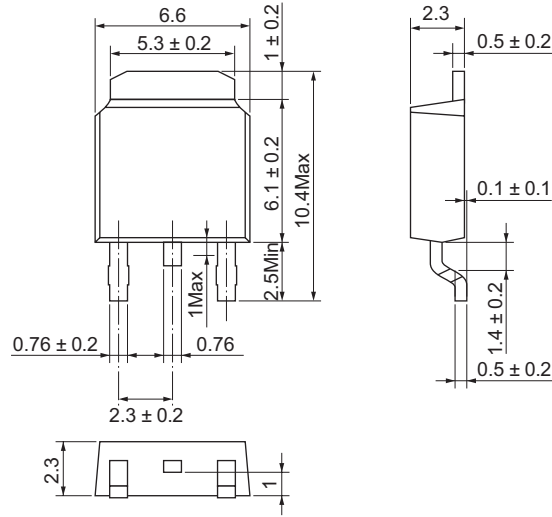
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	600	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	$V_{DS} = 600 \text{ V}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 0.1	μA	$V_{GS} = \pm 30 \text{ V}$, $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	3.0	—	4.5	V	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$
Static drain to source on state resistance	$R_{DS(on)}$	—	5.7	6.8	Ω	$I_D = 1 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note4}
Input capacitance	C_{iss}	—	165	—	pF	$V_{DS} = 25 \text{ V}$ $V_{GS} = 0$ $f = 1 \text{ MHz}$
Output capacitance	C_{oss}	—	20	—	pF	
Reverse transfer capacitance	C_{rss}	—	2.5	—	pF	
Turn-on delay time	$t_{d(on)}$	—	28	—	ns	$I_D = 1 \text{ A}$ $V_{GS} = 10 \text{ V}$ $R_L = 300 \Omega$ $R_g = 10 \Omega$
Rise time	t_r	—	17	—	ns	
Turn-off delay time	$t_{d(off)}$	—	47	—	ns	
Fall time	t_f	—	20	—	ns	
Total gate charge	Q_g	—	6.2	—	nC	$V_{DD} = 480 \text{ V}$ $V_{GS} = 10 \text{ V}$ $I_D = 2 \text{ A}$
Gate to source charge	Q_{gs}	—	1.1	—	nC	
Gate to drain charge	Q_{gd}	—	3.6	—	nC	
Body-drain diode forward voltage	V_{DF}	—	0.87	1.45	V	$I_F = 2 \text{ A}$, $V_{GS} = 0$ ^{Note4}
Body-drain diode reverse recovery time	t_{rr}	—	260	—	ns	$I_F = 2 \text{ A}$, $V_{GS} = 0$ $di_F/dt = 100 \text{ A}/\mu\text{s}$

Notes: 4. Pulse test

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 Name	Quantity	Shipping Container
RJK6002DPD-00-J2	3000 pcs	Taping

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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