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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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RJL6012DPE

Silicon N Channel MOS FET
High Speed Power Switching

REJ03G1750-0100

Rev.1.00

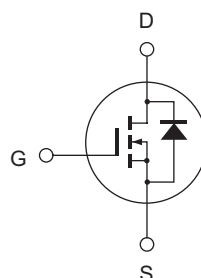
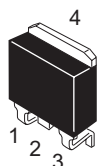
Oct 26, 2009

Features

- Built-in fast recovery diode
- Low on-resistance
- Low leakage current
- High speed switching

Outline

RENESAS Package code: PRSS0004AE-B
(Package name: LDKPAK(S)-(1))



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

Absolute Maximum Ratings

(Ta = 25°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	10	A
Drain peak current	$I_{D(pulse)}$ ^{Note1}	30	A
Body-Drain diode reverse Drain current	I_{DR}	10	A
Body-Drain diode reverse Drain peak current	$I_{DR(pulse)}$ ^{Note1}	30	A
Avalanche current	I_{AP} ^{Note3}	3	A
Avalanche energy	E_{AR} ^{Note3}	0.49	mJ
Channel dissipation	P_{ch} ^{Note2}	100	W
Channel to case thermal impedance	θ_{ch-c}	1.25	°C/W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

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

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

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

Electrical Characteristics

(Ta = 25°C)

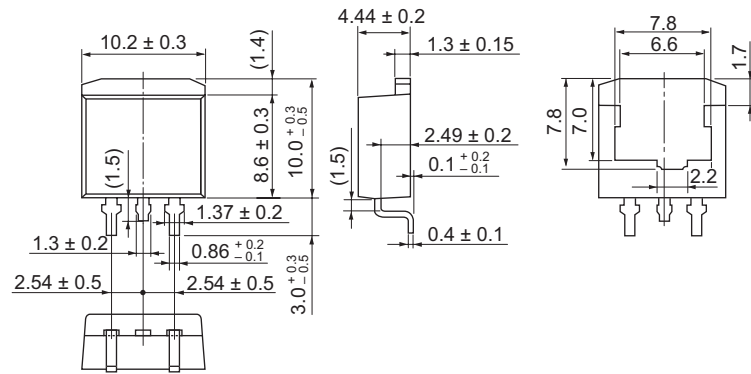
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	600	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Zero Gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 600 \text{ V}$, $V_{GS} = 0$
Gate to Source leak current	I_{GSS}	—	—	± 0.1	μA	$V_{GS} = \pm 30 \text{ V}$, $V_{DS} = 0$
Gate to Source cutoff voltage	$V_{GS(off)}$	2.0	—	4.0	V	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$
Static Drain to Source on state resistance	$R_{DS(on)}$	—	0.88	1.10	Ω	$I_D = 5 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note4}
Input capacitance	C_{iss}	—	1050	—	pF	$V_{DS} = 25 \text{ V}$ $V_{GS} = 0$ $f = 1 \text{ MHz}$
Output capacitance	C_{oss}	—	105	—	pF	
Reverse transfer capacitance	C_{rss}	—	12	—	pF	
Turn-on delay time	$t_{d(on)}$	—	27	—	ns	$I_D = 5 \text{ A}$ $V_{GS} = 10 \text{ V}$ $R_L = 60 \Omega$ $R_g = 10 \Omega$
Rise time	t_r	—	20	—	ns	
Turn-off delay time	$t_{d(off)}$	—	78	—	ns	
Fall time	t_f	—	16	—	ns	
Total Gate charge	Q_g	—	28	—	nC	$V_{DD} = 480 \text{ V}$ $V_{GS} = 10 \text{ V}$ $I_D = 10 \text{ A}$
Gate to Source charge	Q_{gs}	—	4.8	—	nC	
Gate to Drain charge	Q_{gd}	—	14.2	—	nC	
Body-Drain diode forward voltage	V_{DF}	—	1.0	1.7	V	$I_F = 10 \text{ A}$, $V_{GS} = 0$ ^{Note4}
Body-Drain diode reverse recovery time	t_{rr}	—	150	—	ns	$I_F = 10 \text{ A}$, $V_{GS} = 0$ $di_F/dt = 100 \text{ A}/\mu\text{s}$

Notes: 4. Pulse test

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
LDBAK(S)-(1)	SC-83	PRSS0004AE-B	LDBAK(S)-(1) / LDBAK(S)-(1)V	1.30g

Unit: mm



Ordering Information

Part No.	Quantity	Shipping Container
RJL6012DPE-00-J3	1000 pcs	Taping

Notes:

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