RJL6012DPE

Silicon N Channel MOS FET
High Speed Power Switching

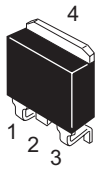
REJ03G1750-0100
Rev.1.00
Oct 26, 2009

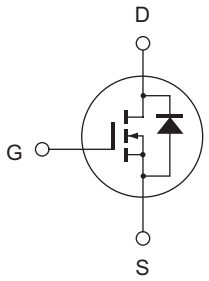
Features

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

Outline

RENESAS Package code: PRSS0004AE-B
(Package name: LDPAK(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	Pch Note2	100	W
Channel to case thermal impedance	θch-c	1.25	°C/W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1%
2. Value at Tc = 25°C
3. STch = 25°C, Tch ≤ 150°C

Electrical Characteristics

(Ta = 25°C)

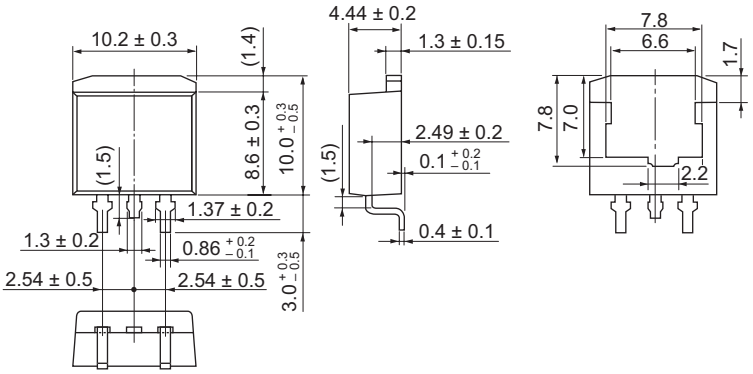
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	600	—	—	V	I_D = 10 mA, V_{GS} = 0
Zero Gate voltage drain current	I_{DSS}	—	—	10	μA	V_{DS} = 600 V, V_{GS} = 0
Gate to Source leak current	I_{GSS}	—	—	±0.1	μA	V_{GS} = ±30 V, V_{DS} = 0
Gate to Source cutoff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

Notes: 4. Pulse test

Package Dimensions

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

Unit: mm



Ordering Information

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

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