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RENESAS

RJK6013DPE

Silicon N Channel MOS FET
High Speed Power Switching

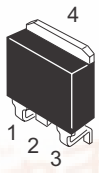
REJ03G1535-0100
Rev.1.00
Apr 04, 2007

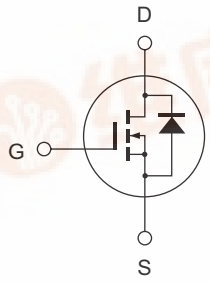
Features

- 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	11	A
Drain peak current	$I_{D\ (pulse)}^{Note1}$	33	A
Body-drain diode reverse drain current	I_{DR}	11	A
Body-drain diode reverse drain peak current	$I_{DR\ (pulse)}^{Note1}$	33	A
Avalanche current	I_{AP}^{Note3}	4	A
Avalanche energy	E_{AR}^{Note3}	0.87	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

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Electrical Characteristics

(Ta = 25°C)

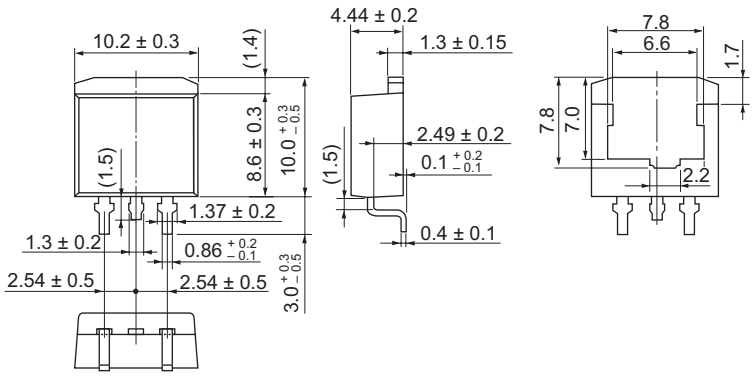
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	600	—	—	V	I_D = 10 mA, V_{GS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	1	µA	V_{DS} = 600 V, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±0.1	µA	V_{GS} = ±30 V, V_{DS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	3.0	—	4.5	V	V_{DS} = 10 V, I_D = 1 mA
Static drain to source on state resistance	$R_{DS(on)}$	—	0.58	0.70	Ω	I_D = 5.5 A, V_{GS} = 10 V Note4
Input capacitance	Ciss	—	1450	—	pF	V_{DS} = 25 V V_{GS} = 0 f = 1 MHz
Output capacitance	Coss	—	140	—	pF	
Reverse transfer capacitance	Crss	—	17	—	pF	
Turn-on delay time	$t_{d(on)}$	—	33	—	ns	I_D = 5.5 A V_{GS} = 10 V R_L = 54.5 Ω Rg = 10 Ω
Rise time	t_r	—	20	—	ns	
Turn-off delay time	$t_{d(off)}$	—	87	—	ns	
Fall time	t_f	—	15	—	ns	
Total gate charge	Qg	—	37.5	—	nC	V_{DD} = 480 V V_{GS} = 10 V I_D = 11 A
Gate to source charge	Qgs	—	7.3	—	nC	
Gate to drain charge	Qgd	—	16.4	—	nC	
Body-drain diode forward voltage	V_{DF}	—	0.87	1.45	V	I_F = 11 A, V_{GS} = 0 Note4
Body-drain diode reverse recovery time	t_{rr}	—	350	—	ns	I_F = 11 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
RJK6013DPE-00-J3	1000 pcs	Taping

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