RJL60S5DPE

600V - 20A - SJ MOS FET
High Speed Power Switching

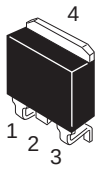
R07DS0817EJ0001
Rev.0.01
Jun 21, 2012

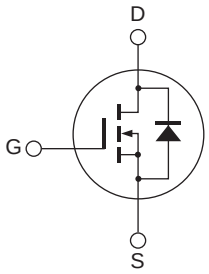
Features

- Superjunction MOSFET
- Built-in fast recovery diode
- Low on-resistance
  $R_{DS(on)}$ = 0.150 Ω typ. (at I_D = 10 A, V_{GS} = 10 V, Ta = 25°C)
- 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), (–20)	V
Drain current	I_D	20	A
Drain peak current	$I_{D\ (pulse)}^{Note1}$	40	A
Body-drain diode reverse drain current	I_{DR}	20	A
Body-drain diode reverse drain peak current	$I_{DR\ (pulse)}^{Note1}$	40	A
Channel dissipation	Pch^{Note2}	125	W
Channel to case thermal impedance	θch-c	1.0	°C/W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. Limited by Tch max.
2. Value at Tc = 25°C
3. STch = 25°C, Tch ≤ 150°C

Electrical Characteristics

(Ta = 25°C)

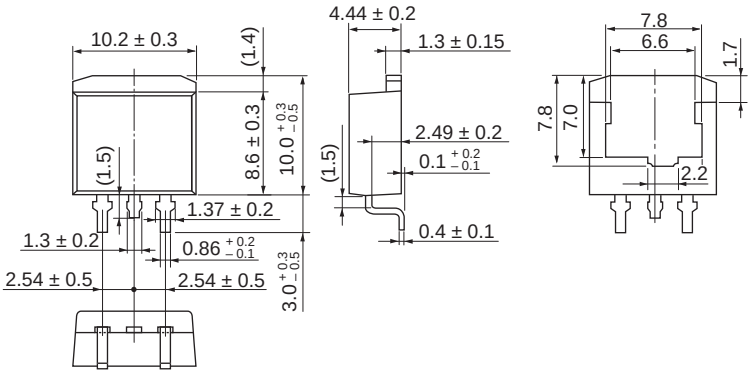
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	600	—	—	V	I_D = 10 mA, V_{GS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	1	mA	V_{DS} = 600 V, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±0.1	μA	V_{GS} = (+30 V), (–20 V), V_{DS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	3	—	5	V	V_{DS} = 10 V, I_D = 1 mA
Static drain to source on state resistance	$R_{DS(on)}$	—	0.150	0.178	Ω	I_D = 10 A, V_{GS} = 10 V Note4
Input capacitance	Ciss	—	1700	—	pF	V_{DS} = 25 V V_{GS} = 0 f = 100kHz
Output capacitance	Coss	—	2050	—	pF	
Reverse transfer capacitance	Crss	—	13	—	pF	
Body-drain diode forward voltage	V_{DF}	—	0.96	1.60	V	I_F = 20 A, V_{GS} = 0 Note4
Body-drain diode reverse recovery time	t_{rr}	—	150	—	ns	I_F = 20 A, V_{GS} = 0 di_F/dt = 100 A/μs

Notes: 4. Pulse test

Package Dimension

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



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