

RJL60S5DPK-M0

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

R07DS0818EJ0002

Rev.0.02

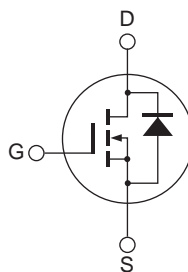
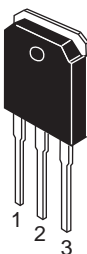
Jun 21, 2012

Features

- Superjunction MOSFET
- Built-in fast recovery diode
- Low on-resistance
 $R_{DS(on)} = 0.150 \Omega$ typ. (at $I_D = 10$ A, $V_{GS} = 10$ V, $T_a = 25^\circ\text{C}$)
- High speed switching

Outline

RENESAS Package code: PRSS0004ZH-A
(Package name:TO-3PSG)



1. Gate
2. Drain (Flange)
3. Source

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	P_{ch} ^{Note2}	192.3	W
Channel to case thermal impedance	θ_{ch-c}	0.65	°C/W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. Limited by T_{ch} max.

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)

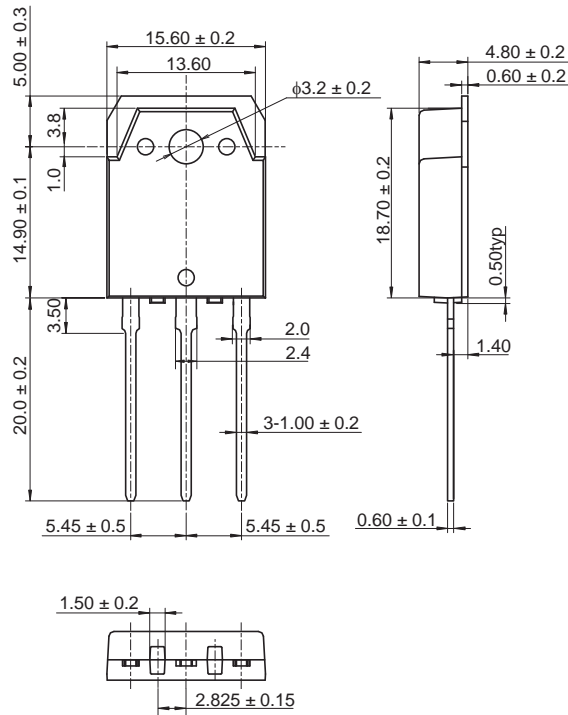
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	600	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	1	mA	$V_{DS} = 600 \text{ V}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 0.1	μA	$V_{GS} = (+30 \text{ V}),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

Notes: 4. Pulse test

Package Dimension

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-3PSG	—	PRSS0004ZH-A	TO-3PSG/TO-3PSGV	3.7g

Unit: mm



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