RJK5002DJE

500V - 2.4A - MOS FET
High Speed Power Switching

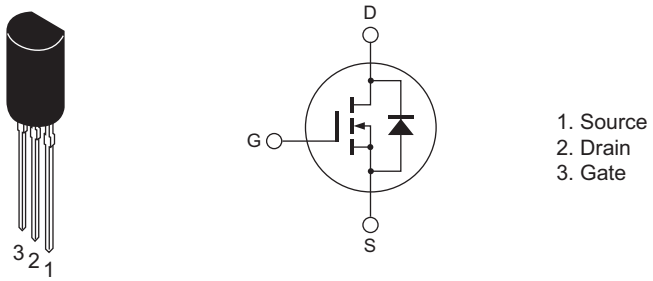
R07DS0844EJ0100
Rev.1.00
Jul 05, 2012

Features

- Low on-state resistance
  $R_{DS(on)}$ = 3.83 Ω typ. (at I_D = 1.2 A, V_{GS} = 10 V, Ta = 25°C)
- High speed switching

Outline

RENESAS Package code: PRSS0003DC-A
(Package name: TO-92 Mod)



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DSS}	500	V
Gate to source voltage	V_{GSS}	±30	V
Drain current	I_D Note1	2.4	A
Drain peak current	$I_{D(pulse)}$ Note3	4.8	A
Body-drain diode reverse drain current	I_{DR} Note1	2.4	A
Body-drain diode reverse drain peak current	$I_{DR(pulse)}$ Note3	4.8	A
Channel dissipation	Pch Note 2	0.9	W
Channel to ambient thermal Impedance	θch-a	139	°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. Pulse width limited by safe operating area.

Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	500	—	—	V	I_D = 10 mA, V_{GS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	V_{DS} = 500 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	$R_{DS(on)}$	—	3.83	5.00	Ω	I_D = 1.2 A, V_{GS} = 10 V Note 4
Input capacitance	Ciss	—	165	—	pF	V_{DS} = 25 V V_{GS} = 0 f = 1 MHz
Output capacitance	Coss	—	21	—	pF	
Reverse transfer capacitance	Crss	—	2.6	—	pF	
Turn-on delay time	$t_{d(on)}$	—	11	—	ns	I_D = 1.2 A V_{GS} = 10 V R_L = 208 Ω Rg = 10 Ω
Rise time	t_r	—	12.5	—	ns	
Turn-off delay time	$t_{d(off)}$	—	22	—	ns	
Fall time	t_f	—	22	—	ns	
Body-drain diode forward voltage	V_{DF}	—	0.9	1.5	V	I_F = 2.4 A, V_{GS} = 0 Note 4
Body-drain diode reverse recovery time	t_{rr}	—	235	—	ns	I_F = 2.4 A, V_{GS} = 0 V_{DD} = 400 V di_F/dt = 100 A/μs

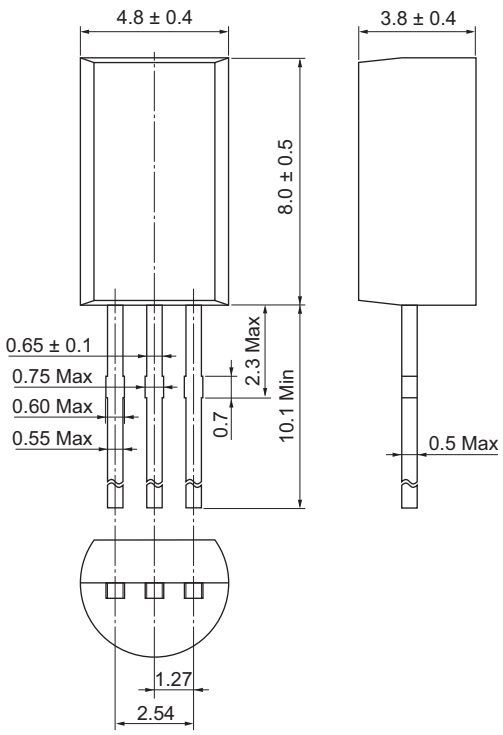
Note: 4. Pulse test

5. Since this device is equipped with high voltage FET chip ($V_{DSS} \geq 500$ V), high voltage may be supplied. Therefore, please be sure to confirm about electric discharge between drain terminal and other terminal.
6. This device is sensitive to electrostatic discharge. It is recommended to adopt appropriate cautions when handling this product.

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-92 Mod	SC-51	PRSS0003DC-A	TO-92 Mod / TO-92 ModV	0.35g

Unit: mm

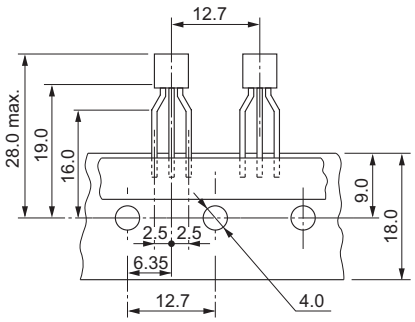


Ordering Information

Orderable Part No.	Quantity	Shipping Container
RJK5002DJE-00#Z0	2500 pcs	Hold Box, Radial Taping

Note: Leads is forming applied as following figure.

Unit: mm



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