RJK4515DPK

Silicon N Channel MOS FET
High Speed Power Switching

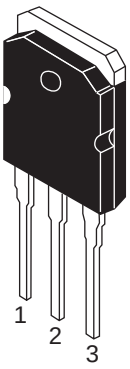
REJ03G1869-0100
Rev.1.00
Dec 08, 2009

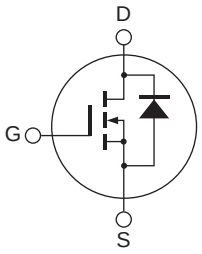
Features

- Low on-resistance
  $R_{DS(on)}$ = 0.171 Ω typ. (at I_D = 13.5 A, V_{GS} = 10 V, Ta = 25°C)
- Low leakage current
- High speed switching

Outline

RENESAS Package code: PRSS0004ZE-A
(Package name:TO-3P)





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

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	450	V
Gate to source voltage	V_{GSS}	±30	V
Drain current	I_D	27	A
Drain peak current	$I_{D\ (pulse)}$ Note1	81	A
Body-drain diode reverse drain current	I_{DR}	27	A
Body-drain diode reverse drain peak current	$I_{DR\ (pulse)}$ Note1	81	A
Avalanche current	I_{AP} Note3	8	A
Avalanche energy	E_{AR} Note3	3.6	mJ
Channel dissipation	Pch Note2	150	W
Channel to case thermal impedance	θch-c	0.833	°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)

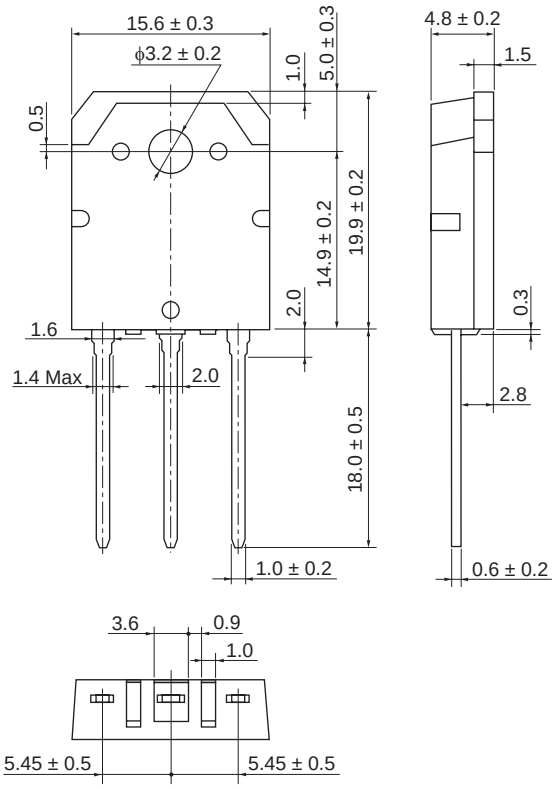
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	450	—	—	V	I_D = 10 mA, V_{GS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	V_{DS} = 450 V, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±0.1	μA	V_{GS} = ±30 V, V_{DS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	3.0	—	4.5	V	V_{DS} = 10 V, I_D = 1 mA
Static drain to source on state resistance	$R_{DS(on)}$	—	0.171	0.200	Ω	I_D = 13.5 A, V_{GS} = 10 V Note4
Input capacitance	Ciss	—	2600	—	pF	V_{DS} = 25 V V_{GS} = 0 f = 1 MHz
Output capacitance	Coss	—	283	—	pF	
Reverse transfer capacitance	Crss	—	34	—	pF	
Turn-on delay time	$t_{d(on)}$	—	40	—	ns	I_D = 13.5 A V_{GS} = 10 V R_L = 16.7 Ω Rg = 10 Ω
Rise time	t_r	—	65	—	ns	
Turn-off delay time	$t_{d(off)}$	—	103	—	ns	
Fall time	t_f	—	52	—	ns	
Total gate charge	Qg	—	61.8	—	nC	V_{DD} = 360 V V_{GS} = 10 V I_D = 27 A
Gate to source charge	Qgs	—	13.0	—	nC	
Gate to drain charge	Qgd	—	27.5	—	nC	
Body-drain diode forward voltage	V_{DF}	—	0.92	1.50	V	I_F = 27 A, V_{GS} = 0 Note4
Body-drain diode reverse recovery time	t_{rr}	—	360	—	ns	I_F = 27 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.]
TO-3P	SC-65	PRSS0004ZE-A	TO-3P / TO-3PV	5.0g

Unit: mm



Ordering Information

Part No.	Quantity	Shipping Container
RJK4515DPK-00-T0	360 pcs	Box (Tube)

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http://www.renesas.com

Refer to "**http://www.renesas.com/en/network**" for the latest and detailed information.

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