RJK2054DPC

Silicon N Channel MOS FET
High Speed Power Switching

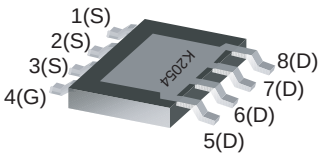
REJ03G1868-0100
Rev.1.00
Dec 08, 2009

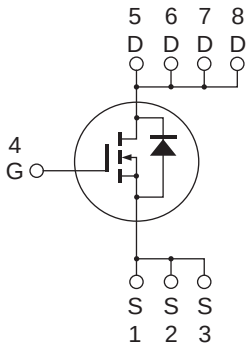
Features

- Low on-resistance
  $R_{DS(on)}$ = 0.075 Ω typ. (at I_D = 8.5 A, V_{GS} = 10 V, Ta = 25°C)
- Low drive current
- High density mounting

Outline

RENESAS Package code: PTSP0008DC-A
(Package name: LFPAK-i)





1, 2, 3	Source
4	Gate
5, 6, 7, 8	Drain

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	200	V
Gate to source voltage	V_{GSS}	±30	V
Drain current	I_D	17	A
Drain peak current	$I_{D\ (pulse)}$ Note1	34	A
Body-drain diode reverse drain current	I_{DR}	17	A
Body-drain diode reverse drain peak current	$I_{DR\ (pulse)}$ Note1	34	A
Avalanche current	I_{AP} Note3	10	A
Avalanche energy	E_{AR} Note3	6.6	mJ
Channel dissipation	Pch Note2	30	W
Channel to case thermal impedance	θch-c	4.17	°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

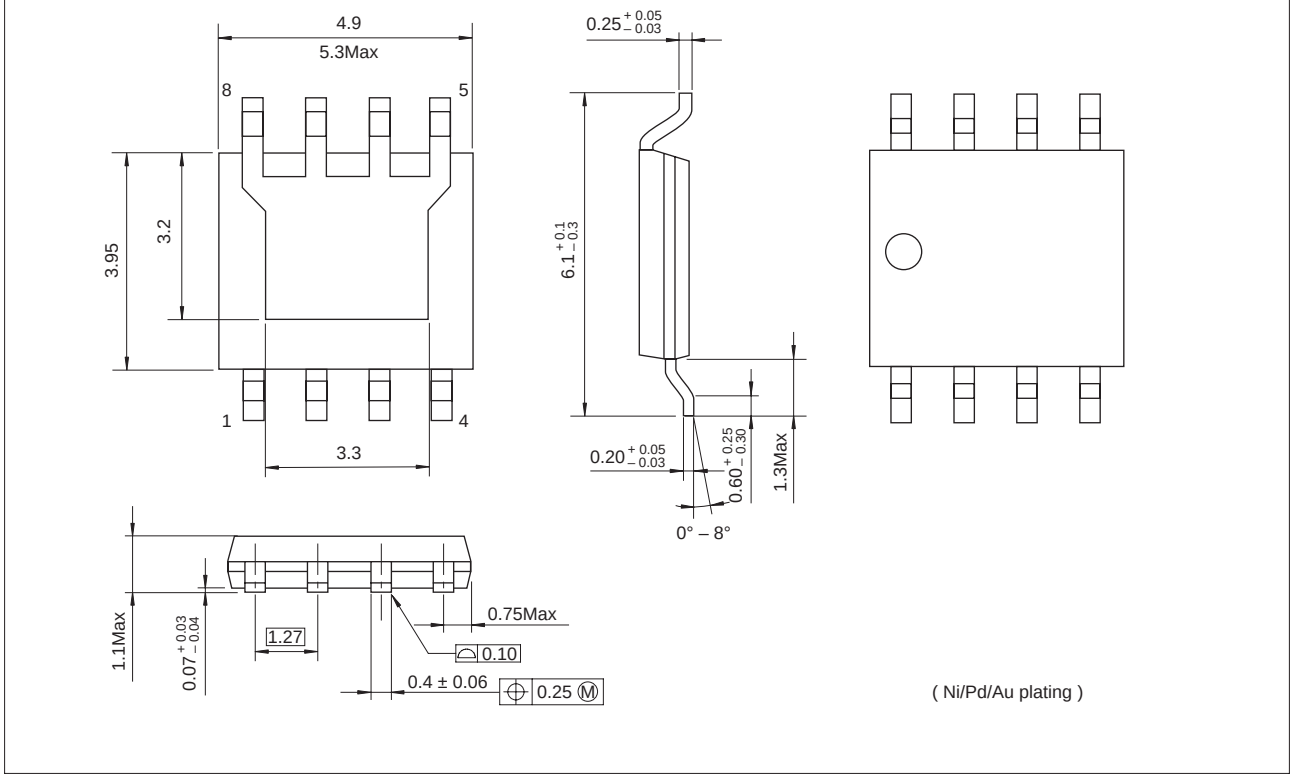
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	200	—	—	V	I_D = 10 mA, V_{GS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	V_{DS} = 200 V, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±1	μA	V_{GS} = ±30 V, V_{DS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	2.5	—	4.5	V	V_{DS} = 10 V, I_D = 1 mA
Static drain to source on state resistance	$R_{DS(on)}$	—	0.075	0.098	Ω	I_D = 8.5 A, V_{GS} = 10 V Note4
Input capacitance	Ciss	—	1700	—	pF	V_{DS} = 25 V V_{GS} = 0 f = 1 MHz
Output capacitance	Coss	—	180	—	pF	
Reverse transfer capacitance	Crss	—	37	—	pF	
Turn-on delay time	$t_{d(on)}$	—	21	—	ns	I_D = 8.5 A V_{GS} = 10 V R_L = 11.8 Ω Rg = 10 Ω
Rise time	t_r	—	13	—	ns	
Turn-off delay time	$t_{d(off)}$	—	40	—	ns	
Fall time	t_f	—	13	—	ns	
Total gate charge	Qg	—	27.3	—	nC	V_{DD} = 160 V V_{GS} = 10 V I_D = 17 A
Gate to source charge	Qgs	—	8.6	—	nC	
Gate to drain charge	Qgd	—	7.8	—	nC	
Body-drain diode forward voltage	V_{DF}	—	0.82	1.25	V	I_F = 17 A, V_{GS} = 0 Note4
Body-drain diode reverse recovery time	t_{rr}	—	110	—		I_F = 17 A, V_{GS} = 0 dt/dt = 100 A/μs

Notes: 4. Pulse test

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
LFPAK-i	—	PTSP0008DC-A	LFPAK-iV	0.080g



Ordering Information

Part No.	Quantity	Shipping Container
RJK2054DPC-00-J0	2500 pcs	Taping

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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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