HAT2035R

Silicon N Channel Power MOS FET
High Speed Power Switching

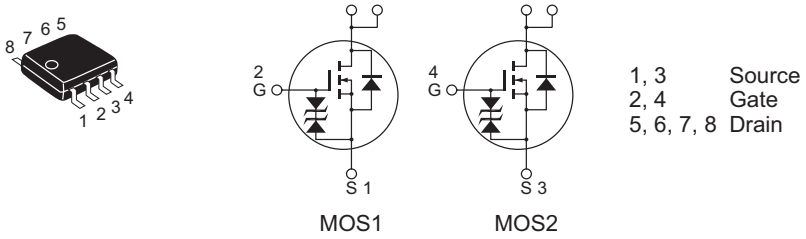
REJ03G1242-0100
Rev.1.00
Jun. 09, 2005

Features

- Low on-resistance
- Capable of 4 V gate drive
- Low drive current
- High density mounting

Outline

RENESAS Package code: PRSP0008DD-D
(Package name: SOP-8<FP-8DAV>)



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to Source voltage	V_{DSS}	150	V
Gate to Source voltage	V_{GSS}	±15	V
Drain current	I_D	0.5	A
Drain peak current	$I_{D(pulse)}$ Note1	2	A
Body-Drain diode reverse Drain current	I_{DR}	0.5	A
Channel dissipation	P_{ch} Note2	1	W
Channel dissipation	P_{ch} Note3	1.5	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. PW ≤ 10 µs, duty cycle ≤ 1 %
2. 1 Drive operation : When using the glass epoxy board (FR4 40 x 40 x 1.6 mm)
3. 2 Drive operation : When using the glass epoxy board (FR4 40 x 40 x 1.6 mm)

Electrical Characteristics

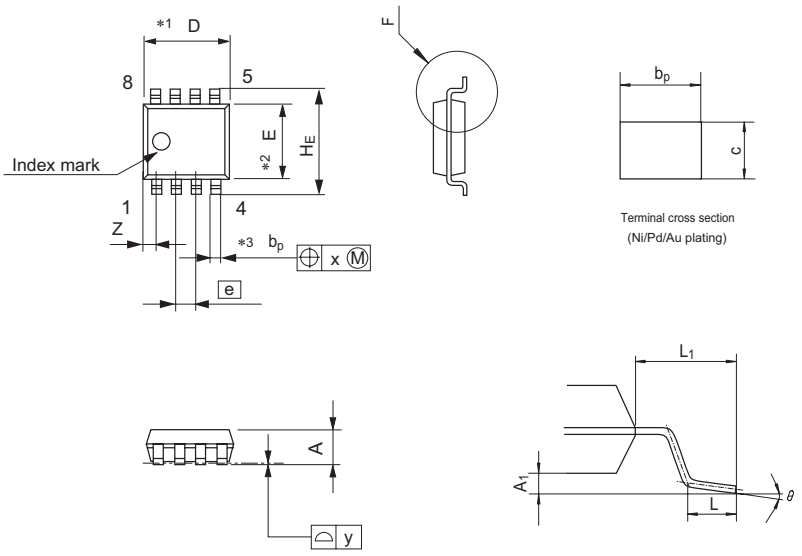
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	150	—	—	V	I_D = 10 mA, V_{GS} = 0
Gate to Source breakdown voltage	$V_{(BR)GSS}$	±15	—	—	V	I_G = ±100 µA, V_{DS} = 0
Gate to Source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±12 V, V_{DS} = 0
Zero Gate voltage Drain current	I_{DSS}	—	—	5	µA	V_{DS} = 150 V, V_{GS} = 0
Gate to Source cutoff voltage	$V_{GS(off)}$	1.0	—	2.1	V	V_{DS} = 10 V, I_D = 1 mA
Static Drain to Source on state resistance	$R_{DS(on)}$	—	1.6	2.2	Ω	I_D = 0.5 A, V_{GS} = 10 V [Note4]
	$R_{DS(on)}$	—	1.9	2.7	Ω	I_D = 0.5 A, V_{GS} = 4 V [Note4]
	$R_{DS(on)}$	—	2.4	5.5	Ω	I_D = 2 A, V_{GS} = 5 V [Note4]
Forward transfer admittance	$\|y_{fs}\|$	0.56	0.86	—	S	I_D = 0.5 A, V_{DS} = 10 V [Note4]
Input capacitance	Ciss	—	95	—	pF	V_{DS} = 10 V V_{GS} = 0 f = 1 MHz
Output capacitance	Coss	—	42	—	pF	
Reverse transfer capacitance	Crss	—	11	—	pF	
Turn-on delay time	$t_{d(on)}$	—	9	—	ns	V_{GS} = 5 V, I_D = 0.5 A, V_{DD} ≅ 30 V
Rise time	t_r	—	16	—	ns	
Turn-off delay time	$t_{d(off)}$	—	18	—	ns	
Fall time	t_f	—	14	—	ns	
Body–Drain diode forward voltage	V_{DF}	—	0.9	1.4	V	IF = 0.5 A, V_{GS} = 0 [Note4]
Body–Drain diode reverse recovery time	t_{rr}	—	90	—	ns	IF = 0.5 A, V_{GS} = 0 diF/ dt = 50 A/µs

Notes: 4. Pulse test

Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
P-SOP8-3.95 × 4.9-1.27	PRSP0008DD-D	FP-8DAV	0.085g



NOTE)
1. DIMENSIONS "*1(Nom)" AND "*2" DO NOT INCLUDE MOLD FLASH.
2. DIMENSION "*3" DOES NOT INCLUDE TRIM OFFSET.

Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	—	4.90	5.3
E	—	3.95	—
A_2	—	—	—
A_1	0.10	0.14	0.25
A	—	—	1.75
b_p	0.34	0.40	0.46
b_1	—	—	—
c	0.15	0.20	0.25
c_1	—	—	—
θ	0°	—	8°
H_E	5.80	6.10	6.20
e	—	1.27	—
x	—	—	0.25
y	—	—	0.1
Z	—	—	0.75
L	0.40	0.60	1.27
L_1	—	1.08	—

Ordering Information

Part Name	Quantity	Shipping Container
HAT2035R-EL-E	2500 pcs.	Taping

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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RENESAS SALES OFFICES

http://www.renesas.com

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

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