



HAT2089R

Silicon N Channel MOS FET
High Speed Power Switching

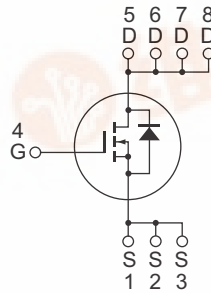
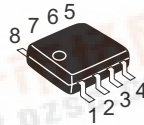
REJ03G1184-0200
(Previous: ADE-208-1235)
Rev.2.00
Sep 07, 2005

Features

- Low on-resistance
- Low drive current
- High density mounting

Outline

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



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

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V _{DSS}	250	V
Gate to source voltage	V _{GSS}	±30	V
Drain current	I _D	2	A
Drain peak current	I _{D (pulse)} ^{Note 1}	16	A
Body to drain diode reverse drain current	I _{DR}	2	A
Channel dissipation	P _{ch} ^{Note 2}	2.5	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	−55 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1%

2. When using the glass epoxy board (FR4 40 × 40 × 1.6 mm), PW ≤ 10 s

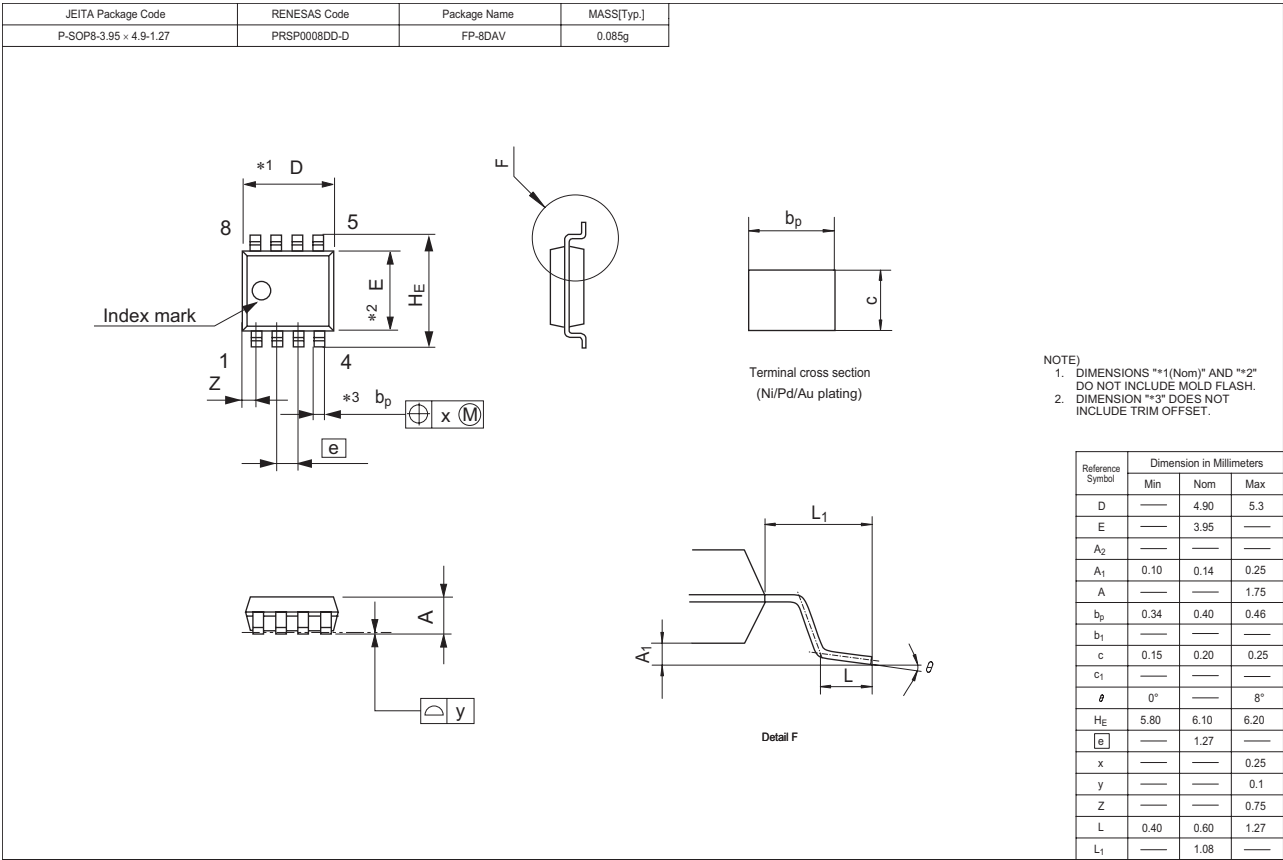
Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR) DSS}	250	—	—	V	I _D = 10 mA, V _{GS} = 0
Gate to source leak current	I _{GSS}	—	—	±0.1	μA	V _{GS} = ±30 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	1	μA	V _{DS} = 250 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS (off)}	3.0	—	4.5	V	I _D = 1 mA, V _{DS} = 10 V
Static drain to source on state resistance	R _{DS (on)}	—	0.46	0.6	Ω	I _D = 1 A, V _{GS} = 10 V ^{Note 3}
Forward transfer admittance	y _{fs}	1.5	2.5	—	S	I _D = 1 A, V _{DS} = 10 V ^{Note 3}
Input capacitance	C _{iss}	—	450	—	pF	V _{DS} = 25 V V _{GS} = 0 f = 1 MHz
Output capacitance	C _{oss}	—	59	—	pF	
Reverse transfer capacitance	C _{rss}	—	11.5	—	pF	
Turn-on delay time	t _{d (on)}	—	21	—	ns	V _{DD} = 125 V, I _D = 1 A V _{GS} = 10 V R _L = 125 Ω R _g = 10 Ω
Rise time	t _r	—	10	—	ns	
Turn-off delay time	t _{d (off)}	—	52	—	ns	
Fall time	t _f	—	15	—	ns	
Total gate charge	Q _g	—	12.8	—	nC	V _{DD} = 200 V V _{GS} = 10 V I _D = 2 A
Gate to source charge	Q _{gs}	—	2.2	—	nC	
Gate to drain charge	Q _{gd}	—	5.9	—	nC	
Body to drain diode forward voltage	V _{DF}	—	0.8	1.2	V	I _F = 2 A, V _{GS} = 0 ^{Note 3}
Body to drain diode reverse recovery time	t _{rr}	—	75	—	ns	I _F = 2 A, V _{GS} = 0 di _F /dt = 100 A/μs

Note: 3. Pulse test

Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
HAT2089R-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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