

HAT2087R

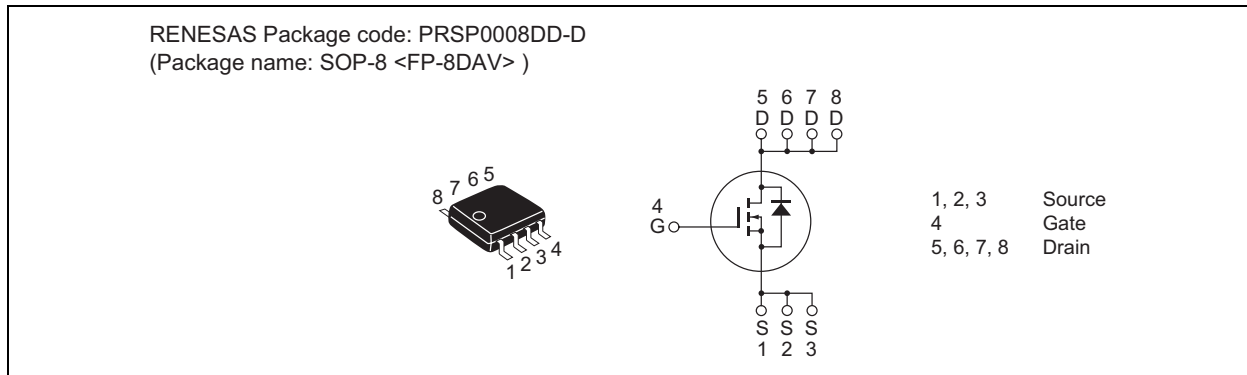
Silicon N Channel MOS FET
High Speed Power Switching

REJ03G1182-0200
(Previous: ADE-208-1233)
Rev.2.00
Sep 07, 2005

Features

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

Outline



Absolute Maximum Ratings

(T_a = 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	2.5	A
Drain peak current	I _{D (pulse)} ^{Note 1}	20	A
Body to drain diode reverse drain current	I _{DR}	2.5	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

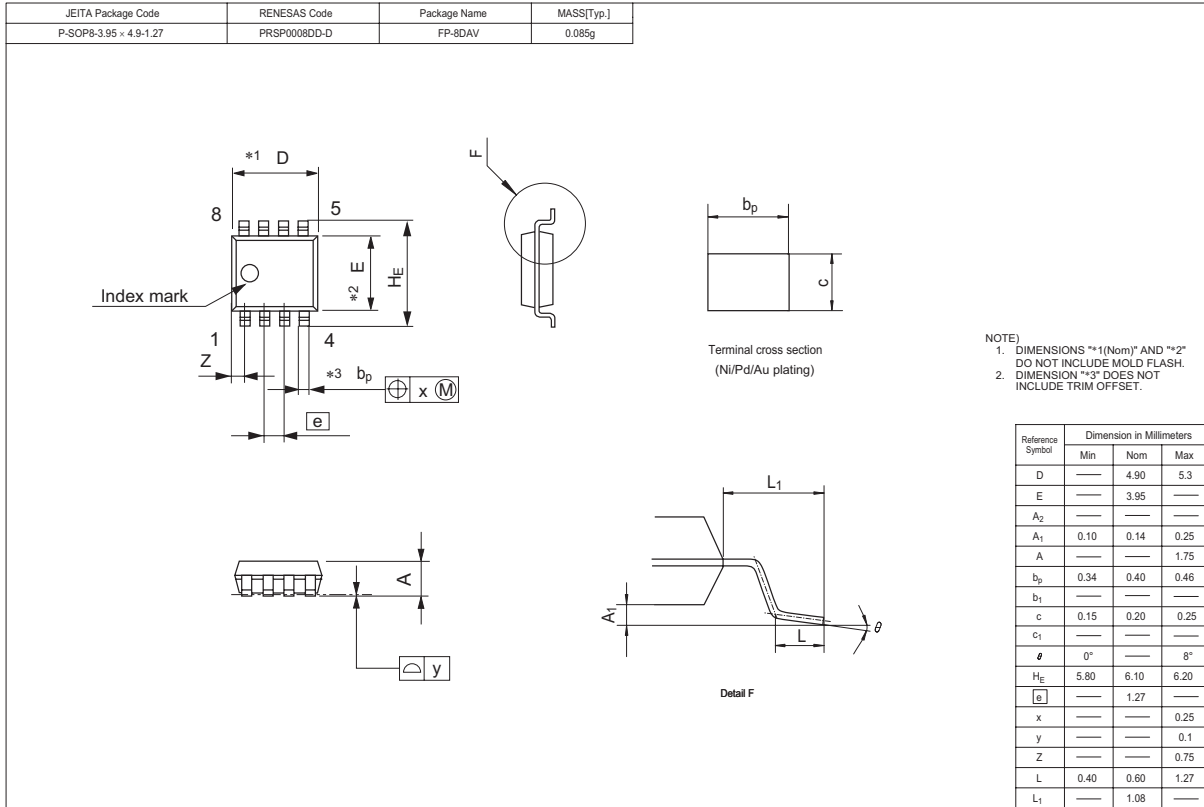
Electrical Characteristics

(T_a = 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)}	—	0.24	0.31	Ω	I _D = 1.25 A, V _{GS} = 10 V ^{Note 3}
Forward transfer admittance	y _{fs}	2.1	3.5	—	S	I _D = 1.25 A, V _{DS} = 10 V ^{Note 3}
Input capacitance	C _{iss}	—	830	—	pF	V _{DS} = 25 V
Output capacitance	C _{oss}	—	105	—	pF	V _{GS} = 0
Reverse transfer capacitance	C _{rss}	—	21	—	pF	f = 1 MHz
Turn-on delay time	t _{d (on)}	—	22.5	—	ns	V _{DD} = 125 V, I _D = 1.25 A
Rise time	t _r	—	12.5	—	ns	V _{GS} = 10 V
Turn-off delay time	t _{d (off)}	—	82	—	ns	R _L = 100 Ω
Fall time	t _f	—	17	—	ns	R _g = 10 Ω
Total gate charge	Q _g	—	23	—	nC	V _{DD} = 200 V
Gate to source charge	Q _{gs}	—	3.2	—	nC	V _{GS} = 10 V
Gate to drain charge	Q _{gd}	—	10.4	—	nC	I _D = 2.5 A
Body to drain diode forward voltage	V _{DF}	—	0.75	1.15	V	I _F = 2.5 A, V _{GS} = 0 ^{Note 3}
Body to drain diode reverse recovery time	t _{rr}	—	88	—	ns	I _F = 2.5 A, V _{GS} = 0 di _F /dt = 100 A/μs

Note: 3. Pulse test

Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
HAT2087R-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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