

HAT2179R

Silicon N Channel MOS FET
High Speed Power Switching

REJ03G1570-0100

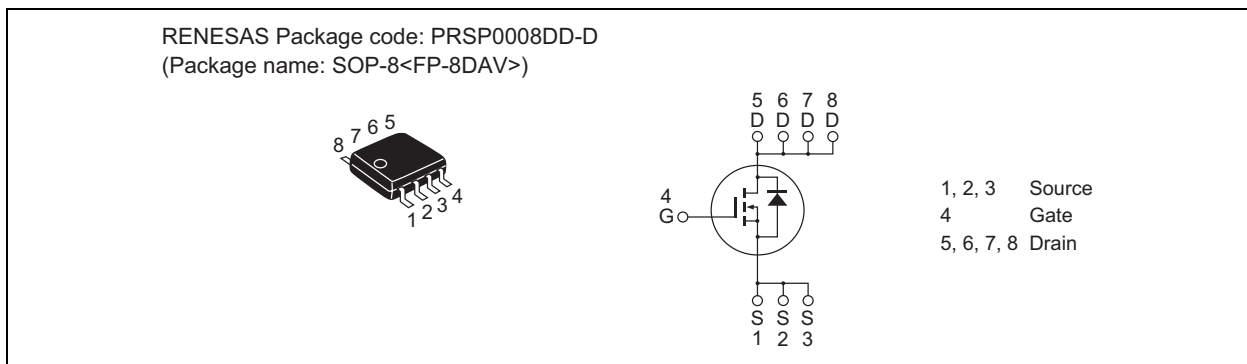
Rev.1.00

Jul 06, 2007

Features

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

Outline



Absolute Maximum Ratings

(Ta = 25°C)

| Item | Symbol | Ratings | Unit |
|---|----------------------------------|-------------|------|
| Drain to source voltage | V_{DSS} | 600 | V |
| Gate to source voltage | V_{GSS} | ± 30 | V |
| Drain current | I_D | 0.7 | A |
| Drain peak current | $I_{D(pulse)}$ ^{Note1} | 2.0 | A |
| Body-drain diode reverse drain current | I_{DR} | 0.7 | A |
| Body-drain diode reverse drain peak current | $I_{DR(pulse)}$ ^{Note1} | 2.0 | A |
| Channel dissipation | P_{ch} ^{Note2} | 2.5 | W |
| Channel temperature | Tch | 150 | °C |
| Storage temperature | Tstg | -55 to +150 | °C |

Notes: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1\%$

2. When using the glass epoxy board (FR4 40 x 40 x 1.6 mm), $PW \leq 10 s$

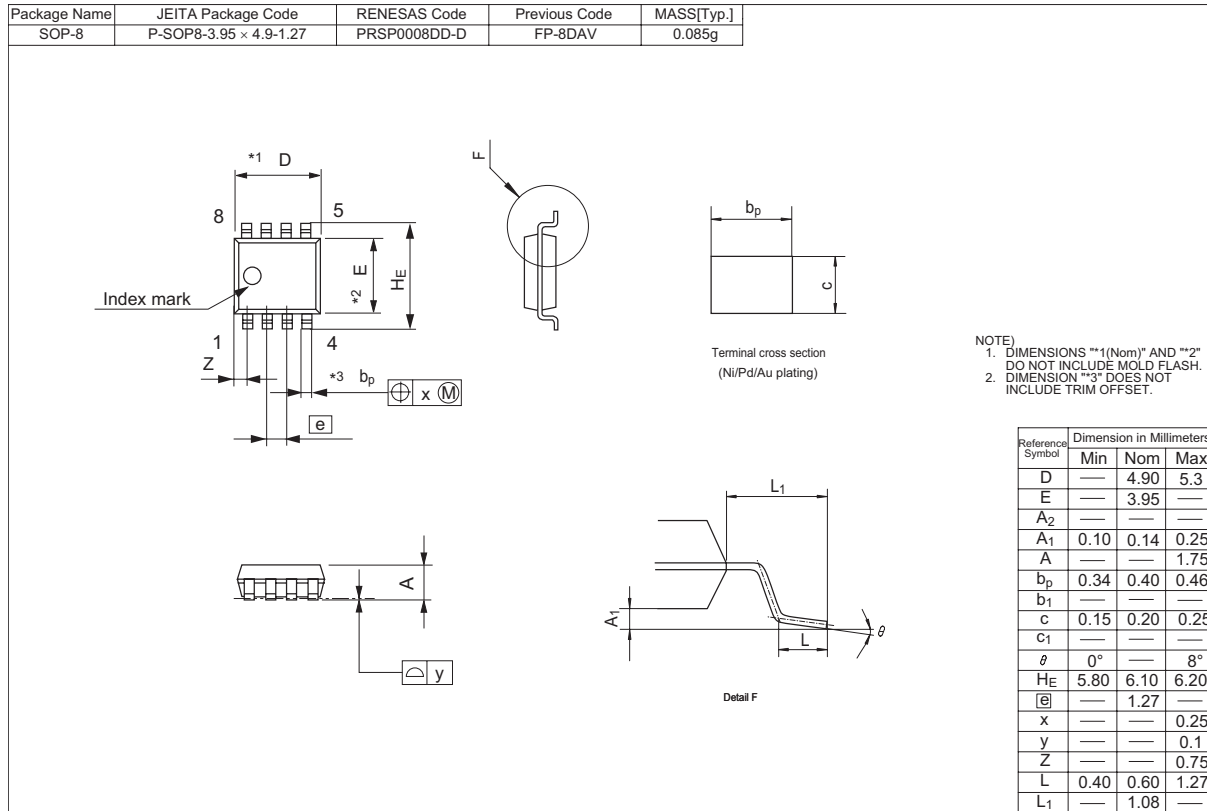
Electrical Characteristics

(Ta = 25°C)

| Item | Symbol | Min | Typ | Max | Unit | Test conditions |
|--|---------------|-----|-----|-----------|---------------|---|
| Drain to source breakdown voltage | $V_{(BR)DSS}$ | 600 | — | — | V | $I_D = 10 \text{ mA}$, $V_{GS} = 0$ |
| Zero gate voltage drain current | I_{DSS} | — | — | 1 | μA | $V_{DS} = 600 \text{ V}$, $V_{GS} = 0$ |
| Gate to source leak current | I_{GSS} | — | — | ± 0.1 | μA | $V_{GS} = \pm 30 \text{ V}$, $V_{DS} = 0$ |
| Gate to source cutoff voltage | $V_{GS(off)}$ | 3.0 | — | 5.0 | V | $V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$ |
| Forward transfer admittance | $ y_{fs} $ | 0.8 | 1.2 | — | S | $I_D = 0.4 \text{ A}$, $V_{DS} = 10 \text{ V}$ ^{Note3} |
| Static drain to source on state resistance | $R_{DS(on)}$ | — | 3.5 | 4.5 | Ω | $I_D = 0.4 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note3} |
| Input capacitance | C_{iss} | — | 280 | — | pF | $V_{DS} = 25 \text{ V}$ |
| Output capacitance | C_{oss} | — | 31 | — | pF | $V_{GS} = 0$ |
| Reverse transfer capacitance | C_{rss} | — | 3.8 | — | pF | $f = 1 \text{ MHz}$ |
| Turn-on delay time | $t_{d(on)}$ | — | 24 | — | ns | $I_D = 0.4 \text{ A}$ |
| Rise time | t_r | — | 15 | — | ns | $V_{GS} = 10 \text{ V}$ |
| Turn-off delay time | $t_{d(off)}$ | — | 50 | — | ns | $R_L = 750 \Omega$ |
| Fall time | t_f | — | 58 | — | ns | $R_g = 10 \Omega$ |
| Total gate charge | Q_g | — | 10 | — | nC | $V_{DD} = 480 \text{ V}$ |
| Gate to source charge | Q_{gs} | — | 1.6 | — | nC | $V_{GS} = 10 \text{ V}$ |
| Gate to drain charge | Q_{gd} | — | 5.4 | — | nC | $I_D = 0.7 \text{ A}$ |
| Body-drain diode forward voltage | V_{DF} | — | 0.8 | 1.2 | V | $I_F = 0.7 \text{ A}$, $V_{GS} = 0$ ^{Note3} |
| Body-drain diode reverse recovery time | t_{rr} | — | 200 | — | ns | $I_F = 0.7 \text{ A}$, $V_{GS} = 0$ $di_F/dt = 100 \text{ A}/\mu\text{s}$ |

Notes: 3. Pulse test

Package Dimensions



Ordering Information

| Part No. | Quantity | Shipping Container |
|---------------|----------|--------------------|
| HAT2179R-EL-E | 2500 pcs | Taping |

Notes:

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