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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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EOL announced Product

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HAT2085T

Silicon N Channel MOS FET
High Speed Power Switching

REJ03G0163-0500

Rev.5.00

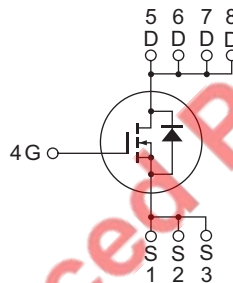
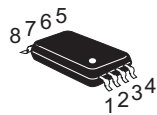
Nov 27, 2007

Features

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

Outline

RENESAS Package code: PTSP0008JB-B
(Package name: TSSOP-8 <TTP-8DV>)



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}	200	V
Gate to source voltage	V _{GSS}	±30	V
Drain current	I _D	1.4	A
Drain peak current	I _{D (pulse)} ^{Note 1}	11.2	A
Body to drain diode reverse drain current	I _{DR}	1.4	A
Channel dissipation	P _{ch} ^{Note 2}	1.3	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

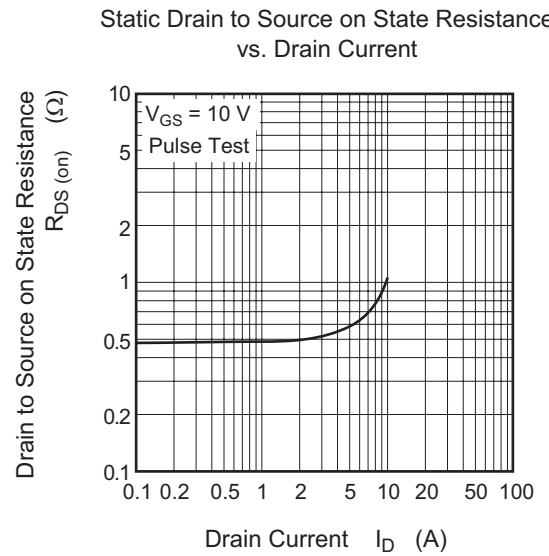
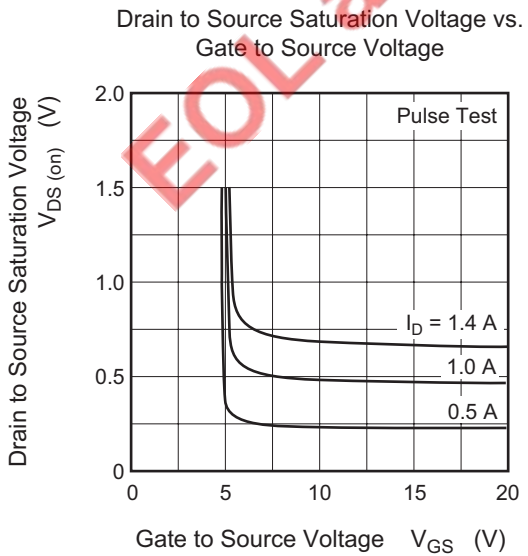
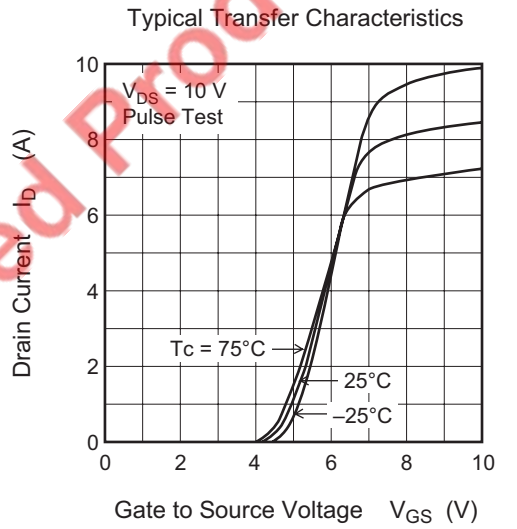
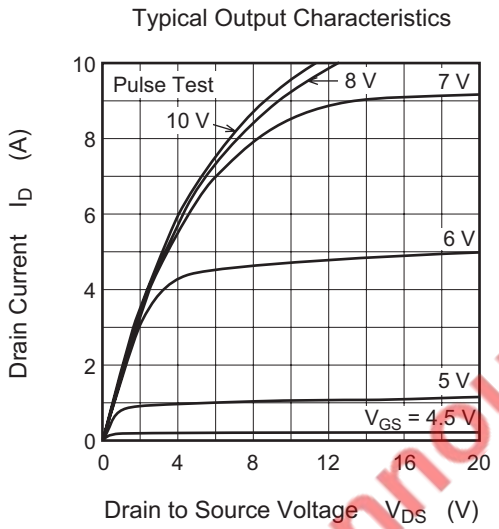
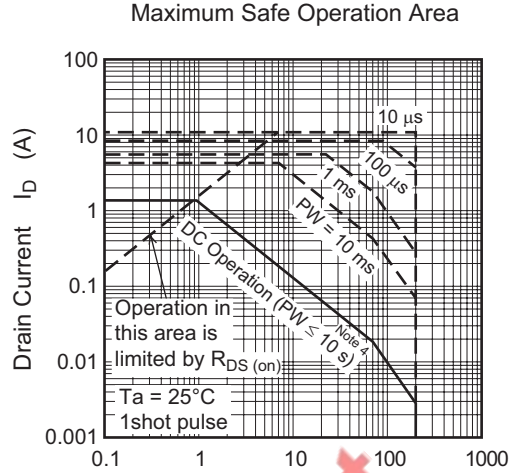
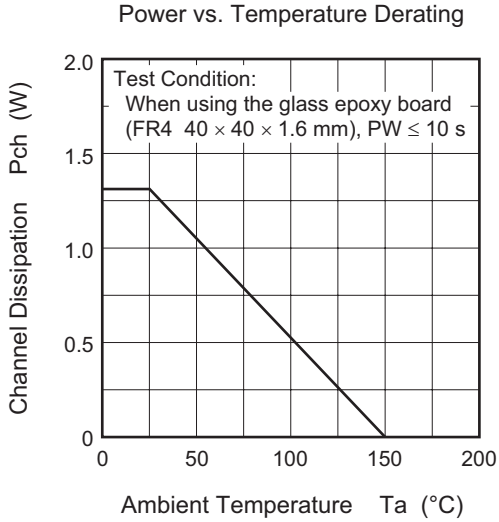
Electrical Characteristics

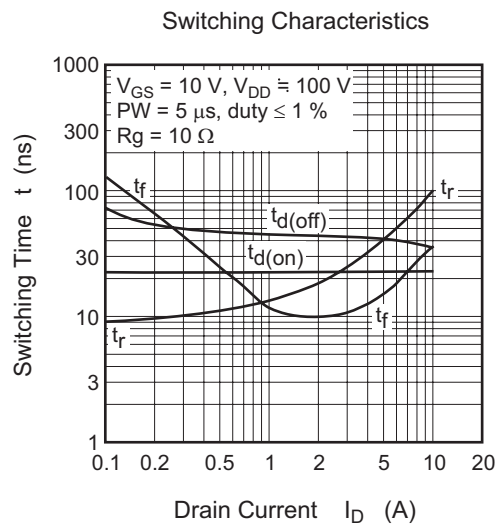
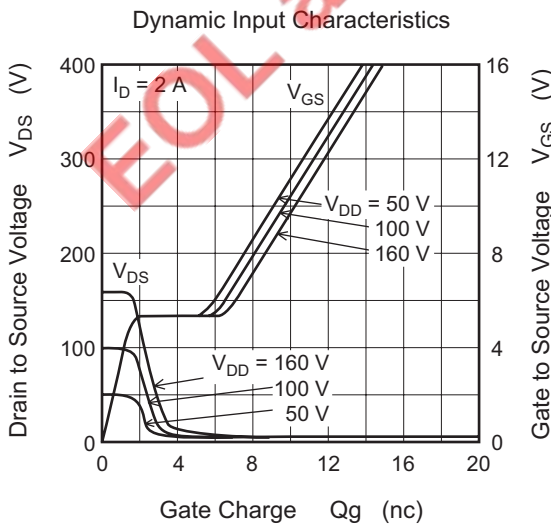
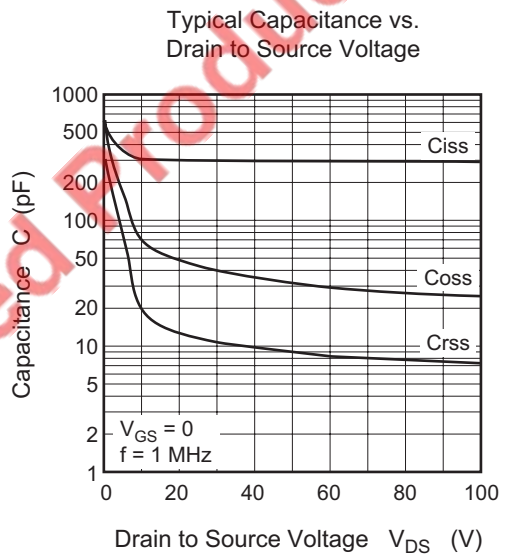
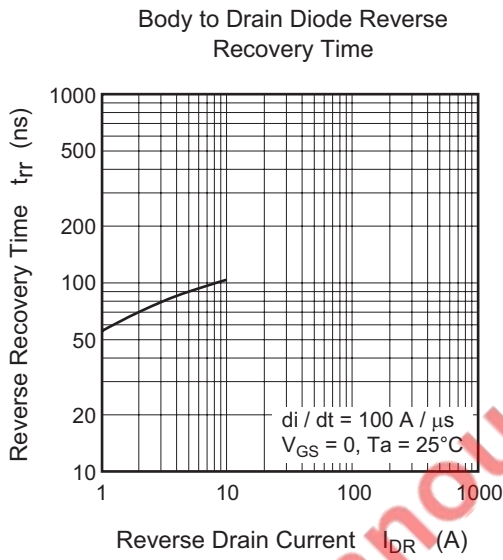
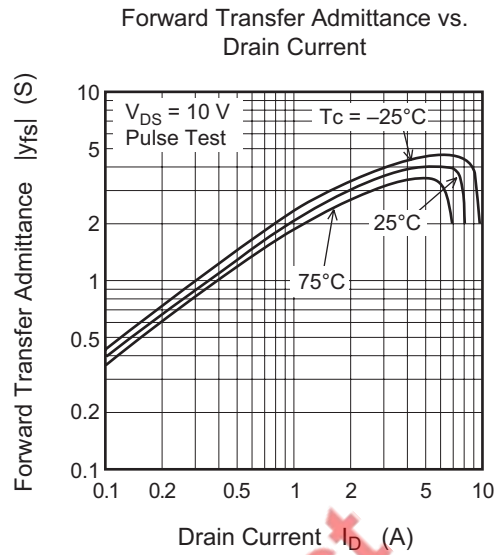
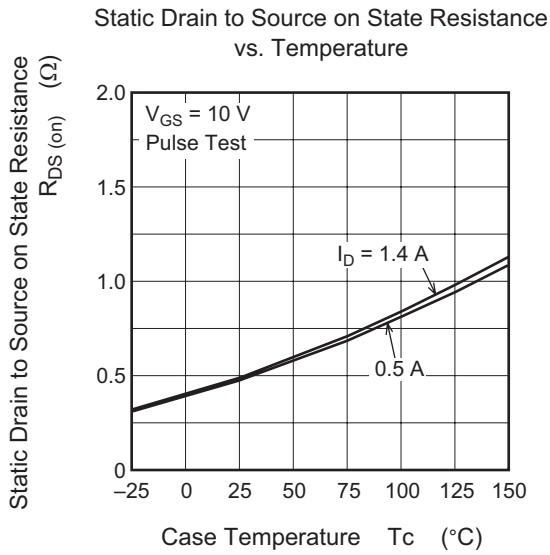
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	200	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 0.1	μA	$V_{GS} = \pm 30 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	$V_{DS} = 200 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	3.0	—	4.5	V	$I_D = 1 \text{ mA}$, $V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.49	0.64	Ω	$I_D = 0.7 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note 3}
Forward transfer admittance	$ y_{fs} $	1.0	1.7	—	S	$I_D = 0.7 \text{ A}$, $V_{DS} = 10 \text{ V}$ ^{Note 3}
Input capacitance	C_{iss}	—	300	—	pF	$V_{DS} = 25 \text{ V}$
Output capacitance	C_{oss}	—	43	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	12	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	21	—	ns	$V_{DD} \cong 100 \text{ V}$, $I_D = 0.7 \text{ A}$
Rise time	t_r	—	11	—	ns	$V_{GS} = 10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	48	—	ns	$R_L = 143 \Omega$
Fall time	t_f	—	18	—	ns	$R_g = 10 \Omega$
Total gate charge	Q_g	—	10	—	nC	$V_{DD} = 160 \text{ V}$
Gate to source charge	Q_{gs}	—	1.8	—	nC	$V_{GS} = 10 \text{ V}$
Gate to drain charge	Q_{gd}	—	4.8	—	nC	$I_D = 1.4 \text{ A}$
Body to drain diode forward voltage	V_{DF}	—	0.8	1.2	V	$I_F = 1.4 \text{ A}$, $V_{GS} = 0$ ^{Note 3}
Body to drain diode reverse recovery time	t_{rr}	—	65	—	ns	$I_F = 1.4 \text{ A}$, $V_{GS} = 0$ $di_F/dt = 100 \text{ A}/\mu\text{s}$

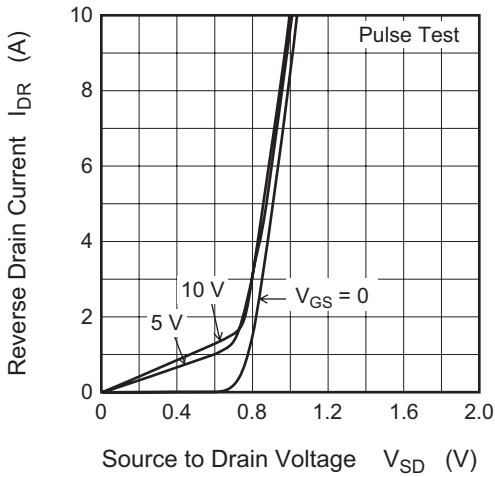
Note: 3. Pulse test

Main Characteristics

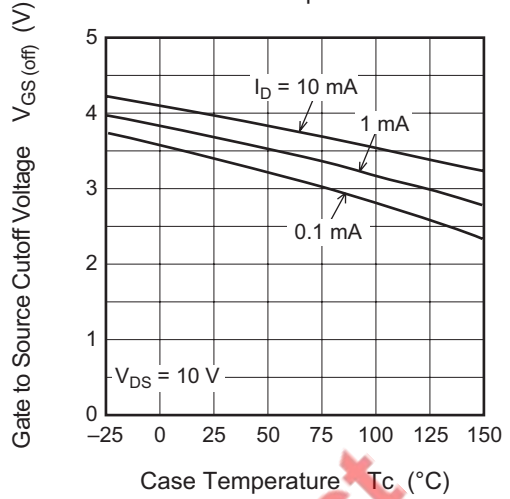




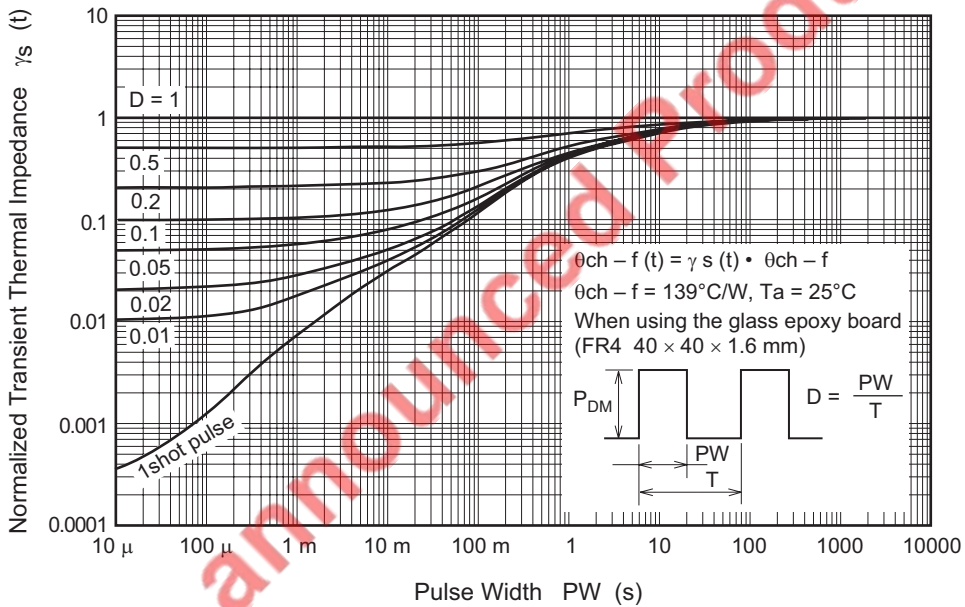
Reverse Drain Current vs. Source to Drain Voltage



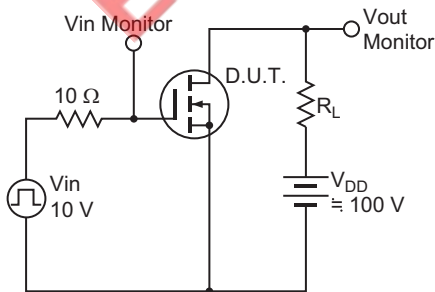
Gate to Source Cutoff Voltage vs. Case Temperature



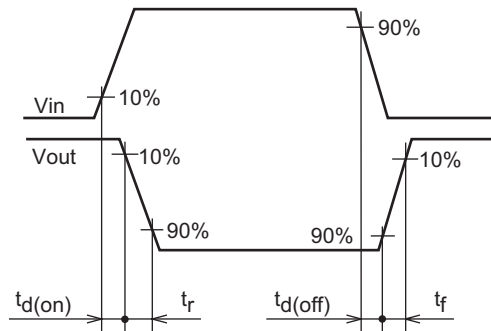
Normalized Transient Thermal Impedance vs. Pulse Width



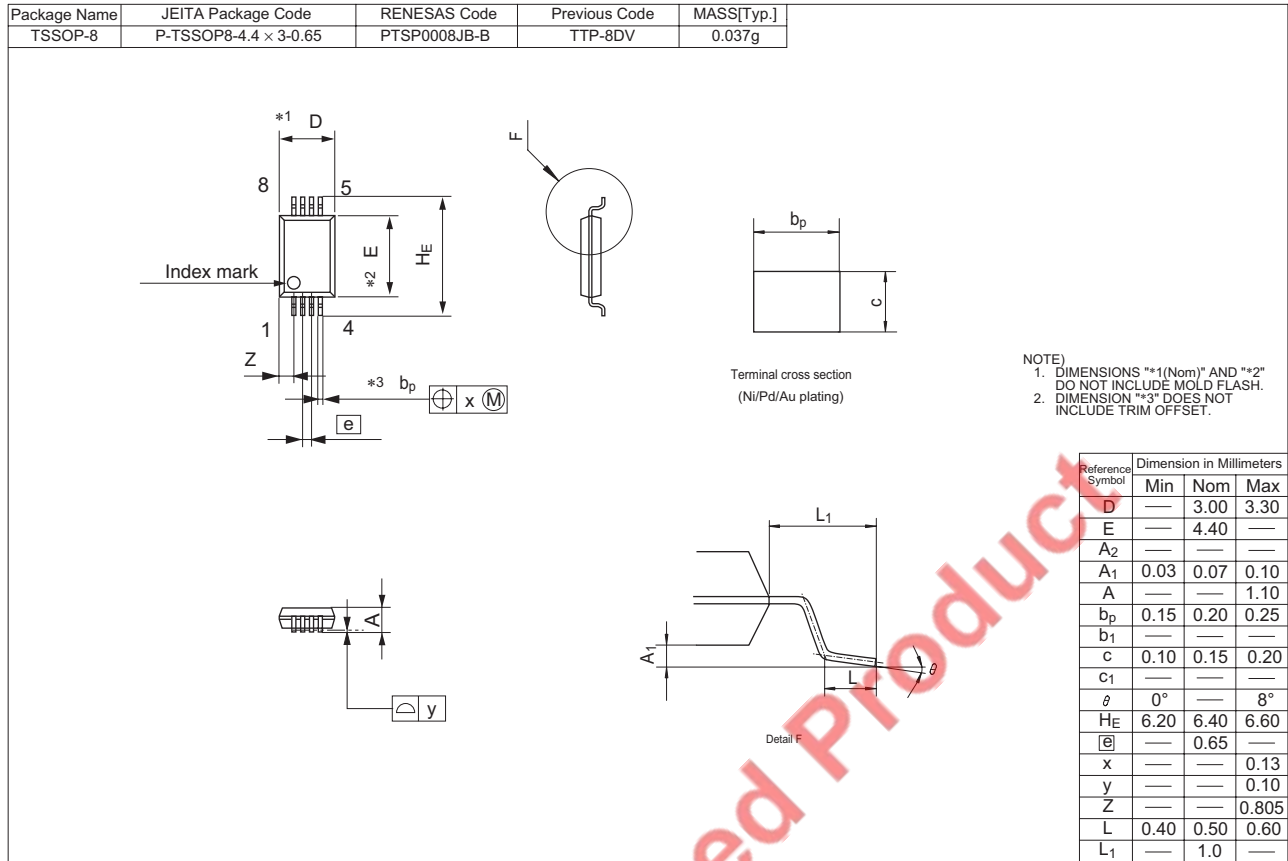
Switching Time Test Circuit



Switching Time Waveform



Package Dimensions



Ordering Information

Part No.	Quantity	Shipping Container
HAT2085T-EL-E	3000 pcs	Taping

Notes:

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