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April 1st, 2010 Renesas Electronics Corporation

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

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HAT2085T

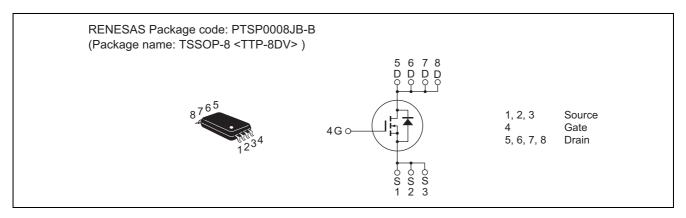
Silicon N Channel MOS FET High Speed Power Switching

REJ03G0163-0500 Rev.5.00 Nov 27, 2007

Features

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

Outline



Absolute Maximum Ratings

 $(Ta = 25^{\circ}C)$

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	Α
Drain peak current	I _{D (pulse)} Note 1	11.2	Α
Body to drain diode reverse drain current	I _{DR}	1.4	A
Channel dissipation	Pch Note 2	1.3	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

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

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

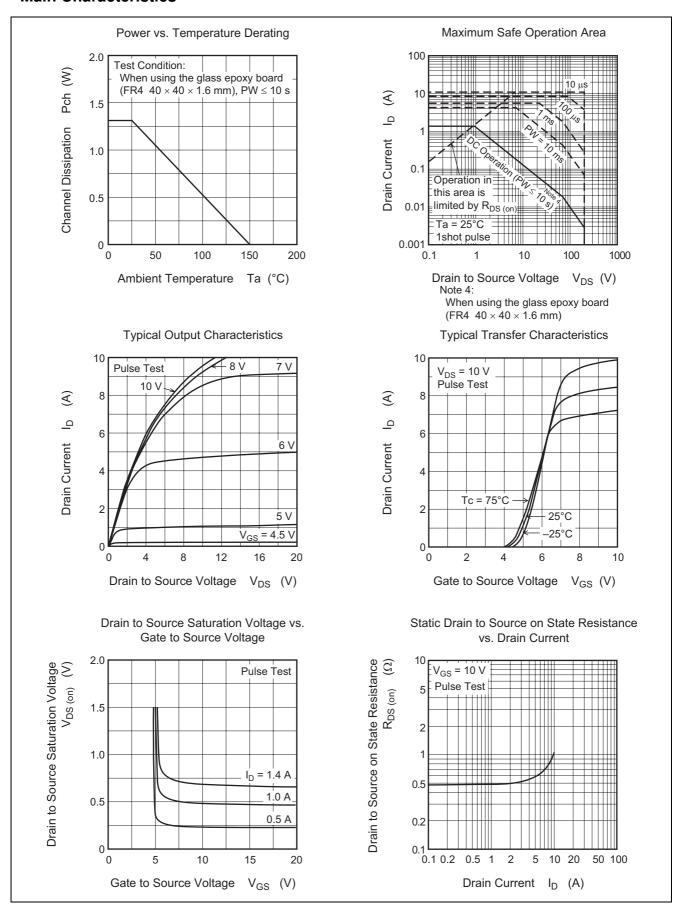
Electrical Characteristics

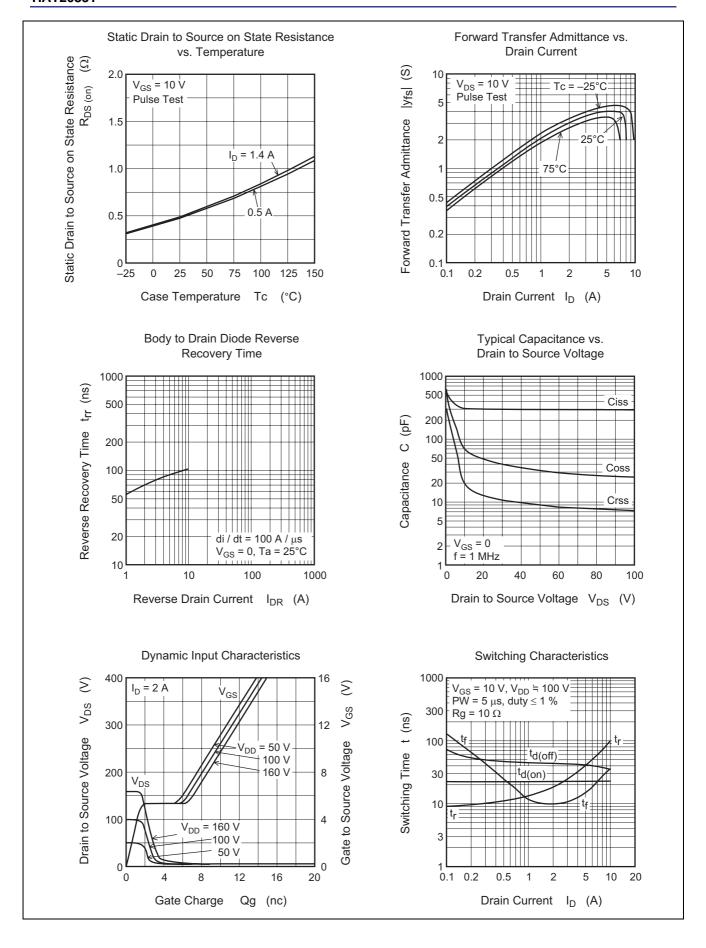
 $(Ta = 25^{\circ}C)$

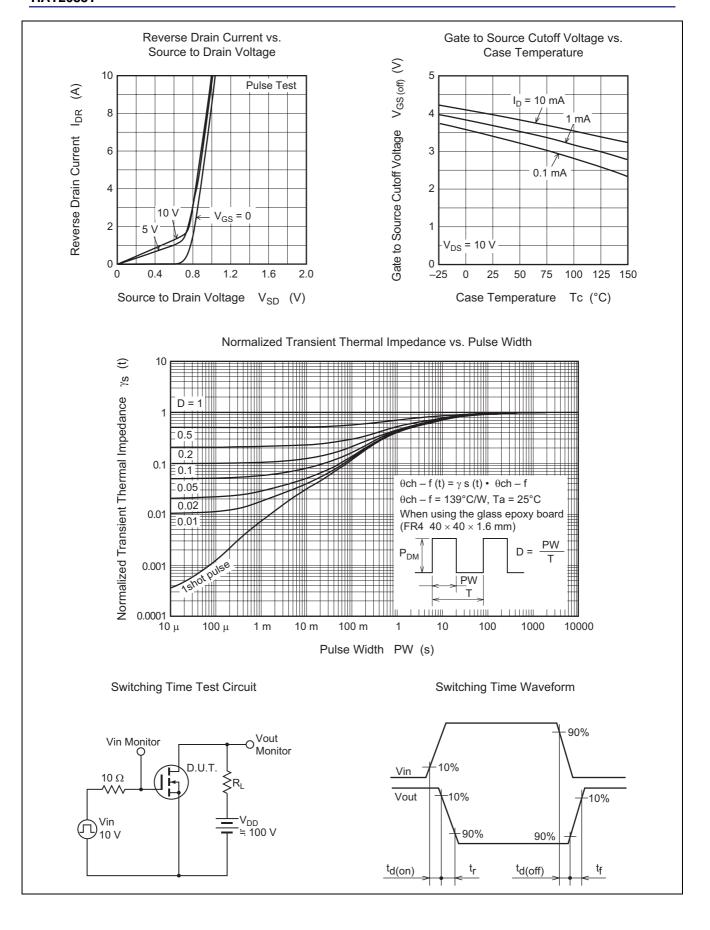
Item	Symbol	Min	Тур	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR) DSS}	200	_	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source leak current	I _{GSS}	_	_	±0.1	μΑ	$V_{GS} = \pm 30 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I _{DSS}	_	_	1	μΑ	$V_{DS} = 200 \text{ V}, V_{GS} = 0$
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	$I_D = 0.7 \text{ A}, V_{GS} = 10 \text{ V}^{\text{Note 3}}$
Forward transfer admittance	y _{fs}	1.0	1.7	_	S	$I_D = 0.7 \text{ A}, V_{DS} = 10 \text{ V}^{\text{Note 3}}$
Input capacitance	Ciss	_	300	_	pF	V _{DS} = 25 V
Output capacitance	Coss	_	43	_	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	_	12	_	pF	f = 1 MHz
Turn-on delay time	t _{d (on)}	_	21	_	ns	$V_{DD}\cong 100~V,~I_D=0.7~A$
Rise time	t _r	_	11	_	ns	V _{GS} = 10 V
Turn-off delay time	t _{d (off)}	_	48	_	ns	$R_L = 143 \Omega$
Fall time	t _f	_	18	_	ns	$Rg = 10 \Omega$
Total gate charge	Qg	_	10	_	nC	V _{DD} = 160 V
Gate to source charge	Qgs	_	1.8	_	nC	V _{GS} = 10 V
Gate to drain charge	Qgd	_	4.8	_	nC	I _D = 1.4 A
Body to drain diode forward voltage	V_{DF}	_	0.8	1.2	V	$I_F = 1.4 \text{ A}, V_{GS} = 0^{\text{Note 3}}$
Body to drain diode reverse recovery time	t _{rr}	_	65	_	ns	I _F = 1.4 A, V _{GS} = 0
						$di_F/dt = 100 A/\mu s$

Note: 3. Pulse test

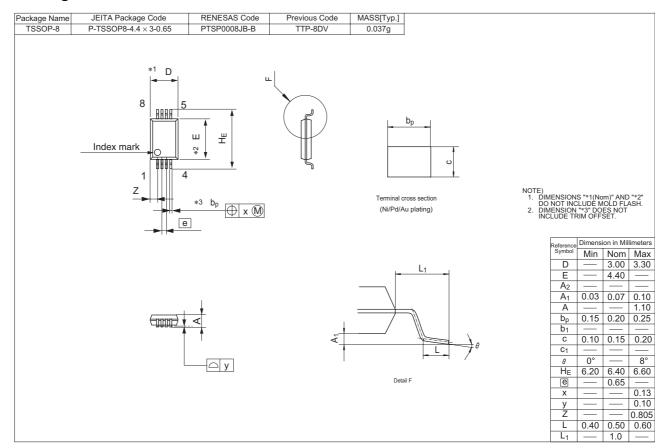
Main Characteristics







Package Dimensions



Ordering Information

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

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