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# HAT1032T

Silicon P Channel Power MOS FET  
High Speed Power Switching

## HITACHI

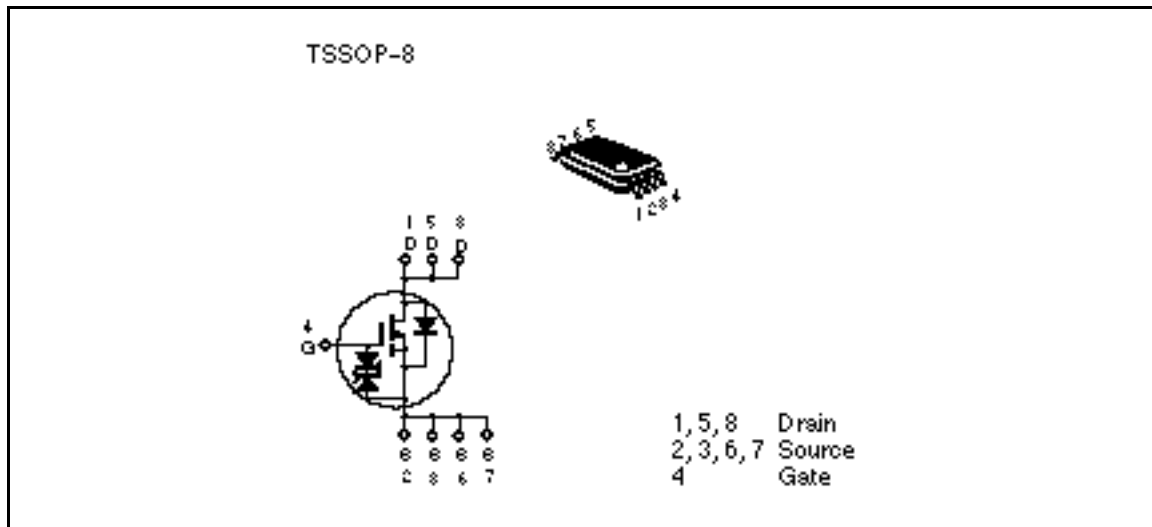
ADE-208-531 C  
Target Specification 4th. Edition

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### Features

- Low on-resistance
- Capable of 2.5 V gate drive
- Low drive current
- High density mounting

### Outline



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### Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V <sub>DSS</sub>	-12	V
Gate to source voltage	V <sub>GSS</sub>	±10	V
Drain current	I <sub>D</sub>	-4	A
Drain peak current	I <sub>D(pulse)</sub> *1	-32	A
Body to drain diode reverse drain current	I <sub>DR</sub>	-4	A
Channel dissipation	P <sub>ch</sub> *2	1.3	W
Channel temperature	T <sub>ch</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

Notes: 1. PW 10μs, duty cycle 1 %

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

**Electrical Characteristics (Ta = 25°C)**

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-12	—	—	V	$I_D = -10\text{mA}$ , $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	$\pm 10$	—	—	V	$I_G = \pm 100\mu\text{A}$ , $V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 10$	$\mu\text{A}$	$V_{GS} = \pm 8\text{V}$ , $V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	-1	$\mu\text{A}$	$V_{DS} = -12\text{V}$ , $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-0.4	—	-1.4	V	$V_{DS} = -10\text{V}$ , $I_D = -1\text{mA}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.045	0.060		$I_D = -2\text{A}$ , $V_{GS} = -4\text{V}^{*1}$
	$R_{DS(on)}$	—	0.060	0.085		$I_D = -2\text{A}$ , $V_{GS} = -2.5\text{V}^{*1}$
Forward transfer admittance	$ y_{fs} $	5.5	8.5	—	S	$I_D = -2\text{A}$ , $V_{DS} = -4\text{V}^{*1}$
Input capacitance	$C_{iss}$	—	1000	—	pF	$V_{DS} = -10\text{V}$
Output capacitance	$C_{oss}$	—	690	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	250	—	pF	$f = 1\text{MHz}$
Turn-on delay time	$t_{d(on)}$	—	14	—	ns	$V_{GS} = -4\text{V}$ , $I_D = -2\text{A}$
Rise time	$t_r$	—	120	—	ns	$V_{DD} = -10\text{V}$
Turn-off delay time	$t_{d(off)}$	—	245	—	ns	
Fall time	$t_f$	—	290	—	ns	
Body to drain diode forward voltage	$V_{DF}$	—	-0.80	-1.04	V	$I_F = -4\text{A}$ , $V_{GS} = 0^{*1}$
Body to drain diode reverse recovery time	$t_{rr}$	—	65	—	ns	$I_F = -4\text{A}$ , $V_{GS} = 0$ $diF/dt = 20\text{A}/\mu\text{s}$

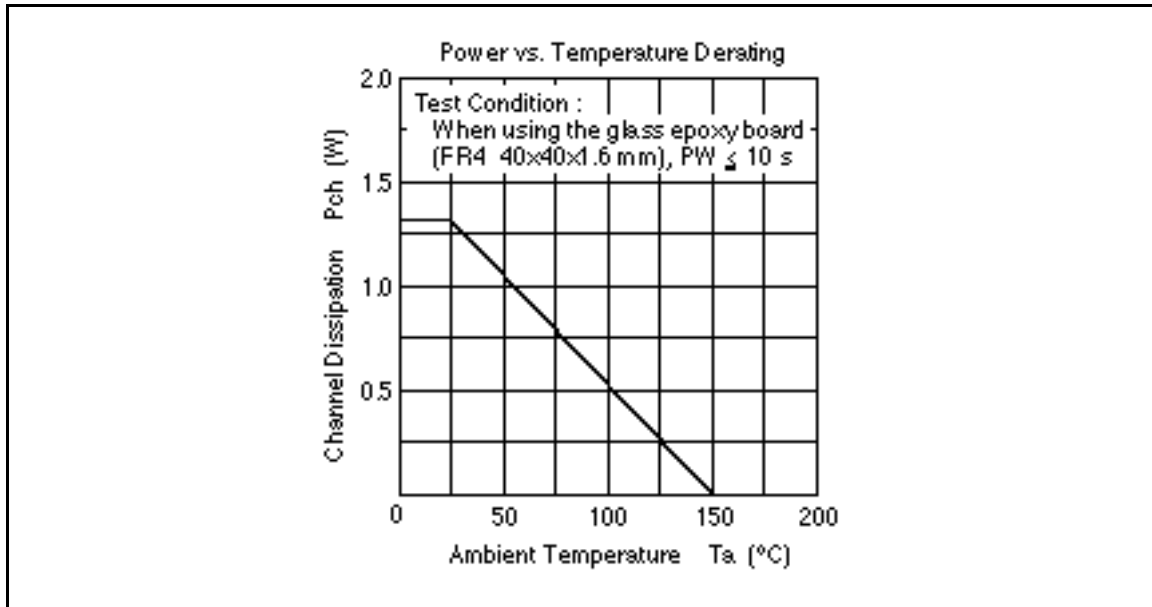
Note: 1. Pulse test

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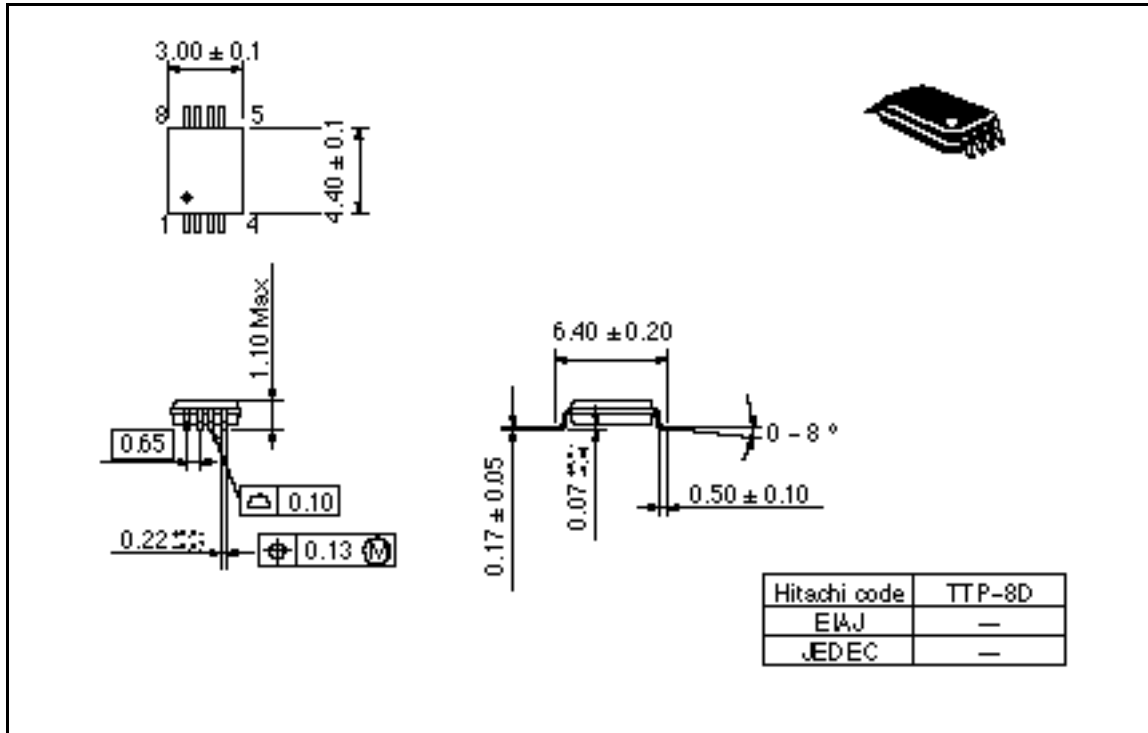
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## Main Characteristics



Package Dimensions

Unit: mm



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