
HAT1030T

Silicon P Channel Power MOS FET
High Speed Power Switching

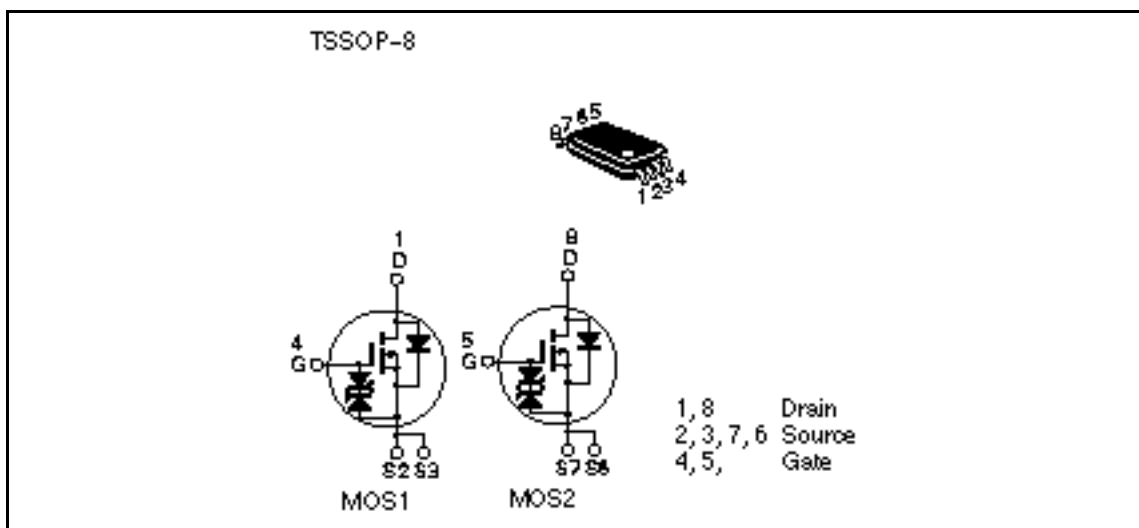
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ADE-208-527 B
Target Specification 3rd. Edition

Features

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

Outline



HAT1030T

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	-12	V
Gate to source voltage	V_{GSS}	±10	V
Drain current	I_D	-2.5	A
Drain peak current	$I_{D(pulse)}^{*1}$	-20	A
Body to drain diode reverse drain current	I_{DR}	-2.5	A
Channel dissipation	P_{ch}^{*2}	1	W
Channel dissipation	P_{ch}^{*3}	1.5	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Notes: 1. PW 10μs, duty cycle 1 %

2. 1 Drive operation : When using the glass epoxy board (FR4 40 x 40 x 1.6 mm), PW 10s

3. 2 Drive operation : When using the glass epoxy board (FR4 40 x 40 x 1.6 mm), PW 10s

Electrical Characteristics (Ta = 25°C)

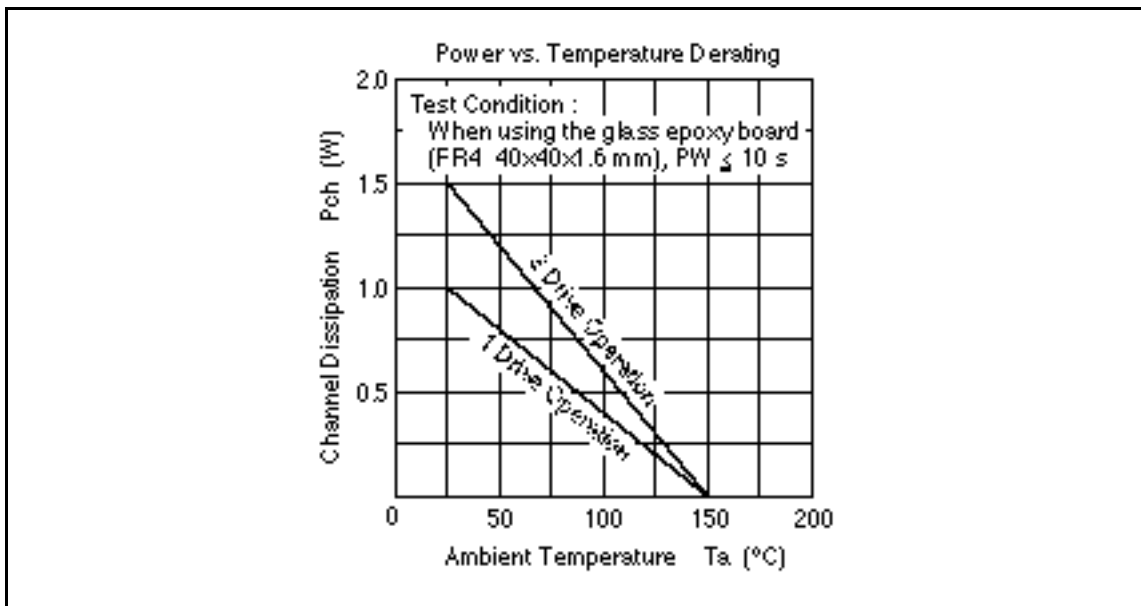
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-12	—	—	V	$I_D = -10mA, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±10	—	—	V	$I_G = ±100μA, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = ±8V, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-1	μA	$V_{DS} = -12V, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-0.5	—	-1.5	V	$V_{DS} = -10V, I_D = -1mA$
Static drain to source on state resistance	$R_{DS(on)}$	—	(0.110)	(0.135)		$I_D = -2A, V_{GS} = -4V^{*1}$
	$R_{DS(on)}$	—	(0.190)	(0.260)		$I_D = -2A, V_{GS} = -2.5V^{*1}$
Forward transfer admittance	$ y_{fs} $	(3.0)	(4.5)	—	S	$I_D = -2A, V_{DS} = -10V^{*1}$
Input capacitance	Ciss	—	(400)	—	pF	$V_{DS} = -10V$
Output capacitance	Coss	—	(270)	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	(115)	—	pF	f = 1MHz
Turn-on delay time	$t_{d(on)}$	—	(14)	—	ns	$V_{GS} = -4V, I_D = -2A$
Rise time	t_r	—	(90)	—	ns	$V_{DD} = -10V$
Turn-off delay time	$t_{d(off)}$	—	(60)	—	ns	
Fall time	t_f	—	(85)	—	ns	

Electrical Characteristics ($T_a = 25^\circ\text{C}$) (cont)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Body to drain diode forward voltage	V_{DF}	—	(0.88)	(1.15)	V	$I_F = -2.5\text{A}$, $V_{GS} = 0^{*1}$
Body to drain diode reverse recovery time	t_{rr}	—	(45)	—	ns	$I_F = -2.5\text{A}$, $V_{GS} = 0$ $di_F/dt = 20\text{A}/\mu\text{s}$

Note: 1. Pulse test

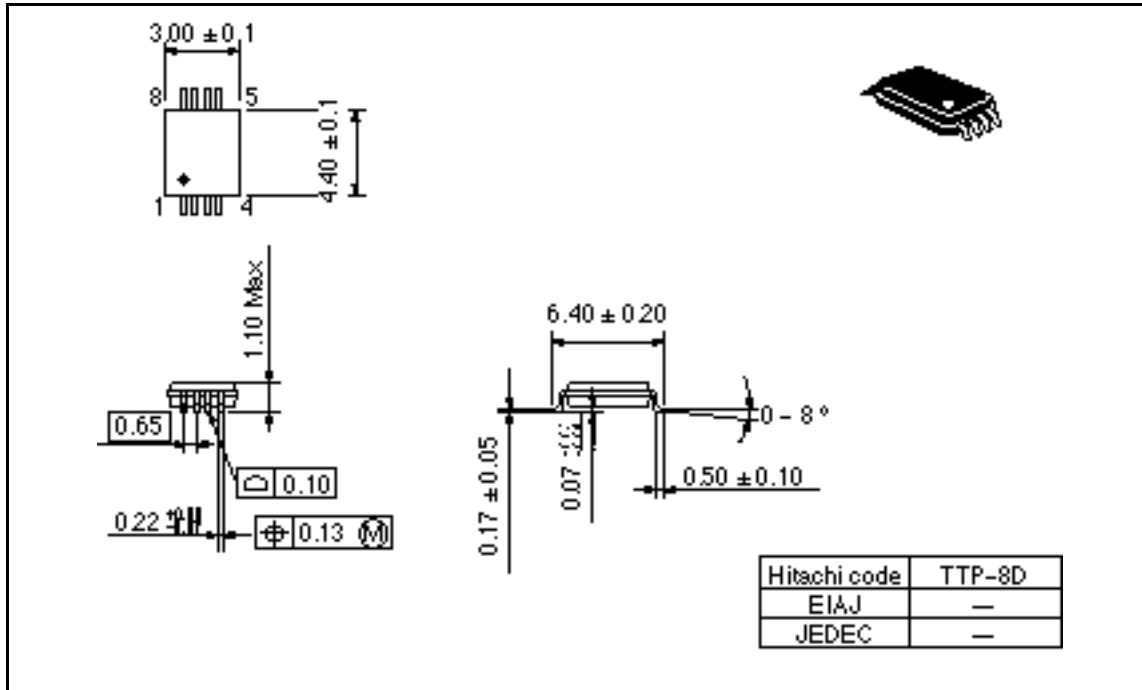
Main Characteristics



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Package Dimensions

Unit: mm



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