HAT1030T

Silicon P Channel Power MOS FET
High Speed Power Switching

HITACHI

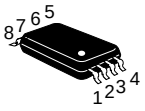
ADE-208-527 B (Z)
Target Specification 3rd. Edition
June 1997

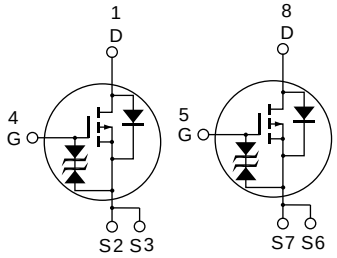
Features

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

Outline

TSSOP–8





1, 8	Drain
2, 3, 7, 6	Source
4, 5,	Gate

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	–3	A
Drain peak current	$I_{D(pulse)}$ Note1	–24	A
Body-drain diode reverse drain current	I_{DR}	–3	A
Channel dissipation	Pch Note2	1	W
Channel dissipation	Pch Note3	1.5	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: 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)

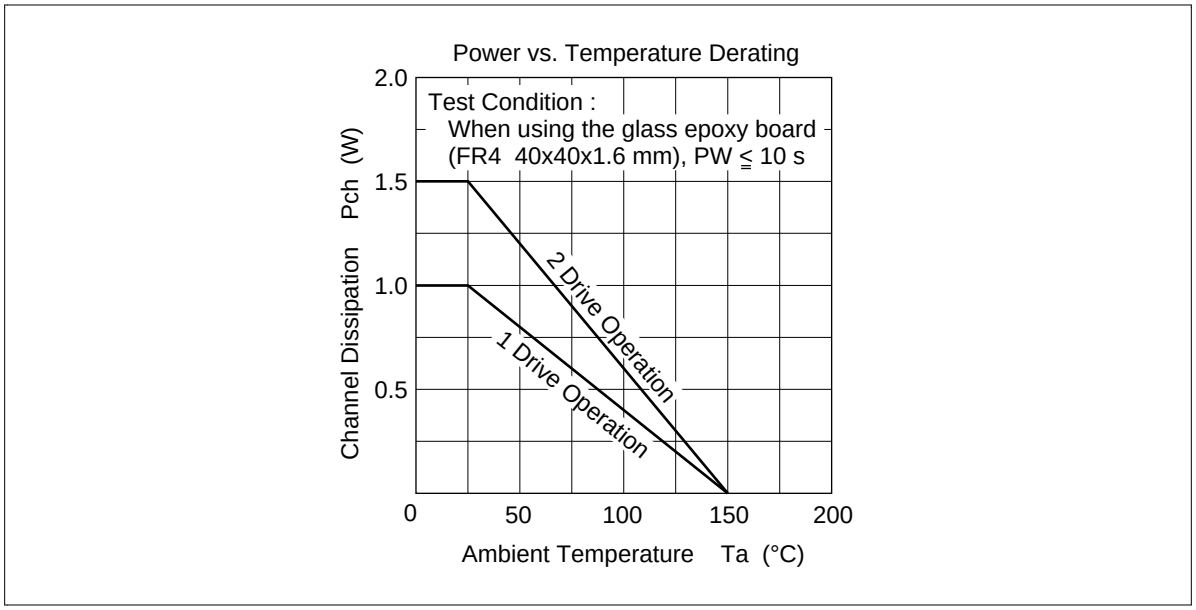
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	–12	—	—	V	I_D = –10mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±10	—	—	V	I_G = ±100µA, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±8V, V_{DS} = 0
Zero gate voltege drain current	I_{DSS}	—	—	–1	µA	V_{DS} = –12 V, 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	$R_{DS(on)}$	—	(0.085)	(0.1)	Ω	I_D = –2A, V_{GS} = –4V Note4
	$R_{DS(on)}$	—	(0.12)	(0.18)	Ω	I_D = –2A, V_{GS} = –2.5V Note4
Forward transfer admittance	$\|y_{fs}\|$	(TBD)	(TBD)	—	S	I_D = –2A, V_{DS} = –10V Note4
Input capacitance	Ciss	—	(TBD)	—	pF	V_{DS} = –10V
Output capacitance	Coss	—	(TBD)	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	(TBD)	—	pF	f = 1MHz
Turn-on delay time	$t_{d(on)}$	—	(TBD)	—	ns	V_{GS} = –4V, I_D = –2A
Rise time	t_r	—	(TBD)	—	ns	V_{DD} ≅ –10V
Turn-off delay time	$t_{d(off)}$	—	(TBD)	—	ns	
Fall time	t_f	—	(TBD)	—	ns	

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

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Body–drain diode forward voltage	V_{DF}	—	(TBD)	(TBD)	V	IF = –3A, V_{GS} = 0 Note4
Body–drain diode reverse recovery time	t_{rr}	—	(TBD)	—	ns	IF = –3A, V_{GS} = 0 diF/ dt =20A/µs

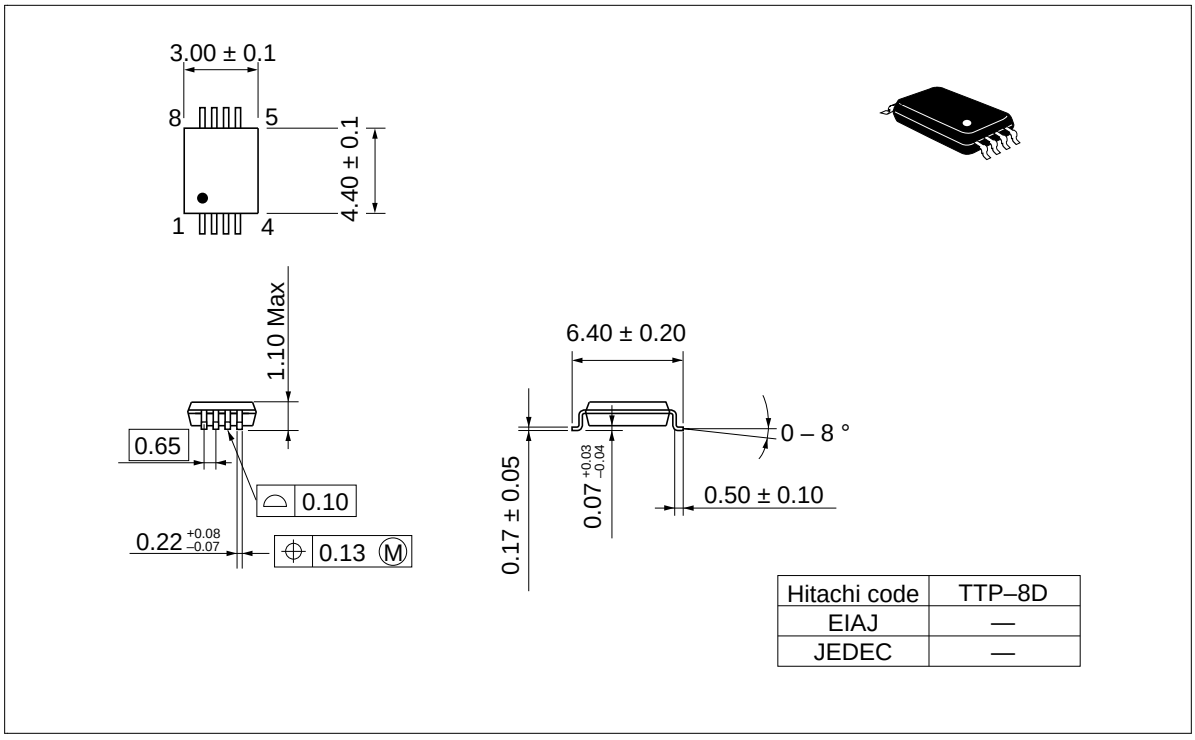
Note: 4. Pulse test

Main Characteristics



Package Dimensions

Unit: mm



Hitachi code	TTP–8D
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HITACHI

Hitachi, Ltd.
Semiconductor & IC Div.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100, Japan
Tel: Tokyo (03) 3270-2111
Fax: (03) 3270-5109

For further information write to:

Hitachi America, Ltd.
Semiconductor & IC Div.
2000 Sierra Point Parkway
Brisbane, CA. 94005-1835
U S A
Tel: 415-589-8300
Fax: 415-583-4207

Hitachi Europe GmbH
Electronic Components Group
Continental Europe
Dornacher Straße 3
D-85622 Feldkirchen
München
Tel: 089-9 91 80-0
Fax: 089-9 29 30 00

Hitachi Europe Ltd.
Electronic Components Div.
Northern Europe Headquarters
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA
United Kingdom
Tel: 0628-585000
Fax: 0628-778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 0104
Tel: 535-2100
Fax: 535-1533

Hitachi Asia (Hong Kong) Ltd.
Unit 706, North Tower,
World Finance Centre,
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon
Hong Kong
Tel: 27359218
Fax: 27306071