To all our customers

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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

Cautions

Keep safety first in your circuit designs!

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   Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

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HAT2087R

Silicon N Channel MOS FET
High Speed Power Switching

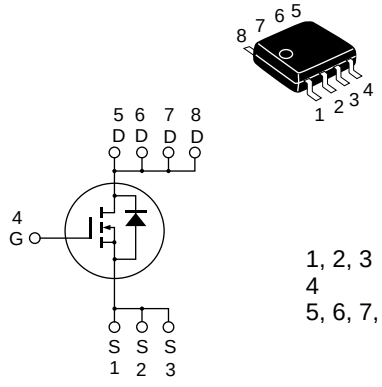
ADE-208-1233 (Z)
Target Specification 1st. Edition
Dec. 2000

Features

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

Outline

SOP–8



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

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	250	V
Gate to source voltage	V_{GSS}	±30	V
Drain current	I_D	(2.5)	A
Drain peak current	$I_{D(pulse)}$ Note1	(20)	A
Body-drain diode reverse drain current	I_{DR}	(2.5)	A
Channel dissipation	Pch Note2	2.5	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: 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)

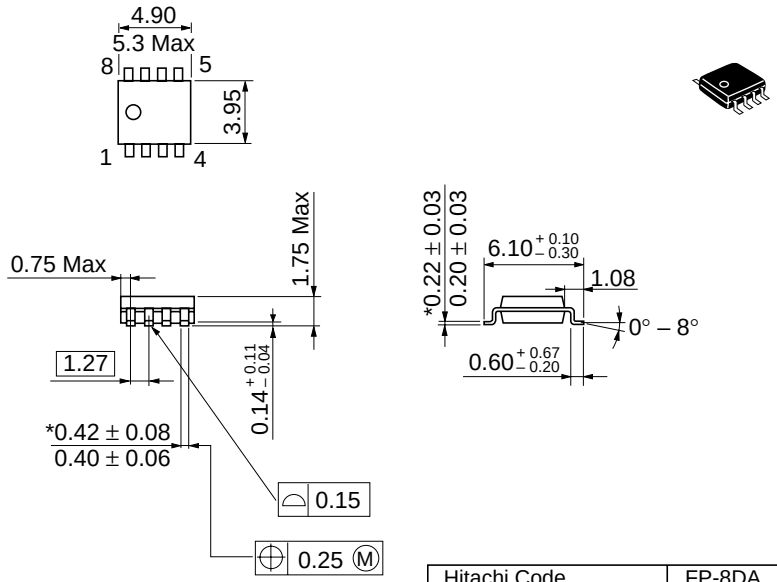
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	250	—	—	V	I_D = 10mA, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±0.1	µA	V_{GS} = ±30V, V_{DS} = 0
Zero gate voltege drain current	I_{DSS}	—	—	1	µA	V_{DS} = 250 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	(3.0)	—	(4.5)	V	I_D = 1mA, V_{DS} = 10V
Static drain to source on state resistance	$R_{DS(on)}$	—	(0.24)	(0.31)	Ω	I_D = 1.25A, V_{GS} = 10V Note3
Forward transfer admittance	$\|y_{fs}\|$	(2.1)	(3.5)	—	S	I_D = 1.25A, V_{DS} = 10V Note3
Input capacitance	Ciss	—	(830)	—	pF	V_{DS} = 25V
Output capacitance	Coss	—	(105)	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	(21)	—	pF	f = 1MHz
Turn-on delay time	$t_{d(on)}$	—	(21)	—	ns	V_{DD} ≅ 125V, I_D = 1.25A
Rise time	t_r	—	(12)	—	ns	V_{GS} = 10V
Turn-off delay time	$t_{d(off)}$	—	(69)	—	ns	R_L = 100Ω
Fall time	t_f	—	(17)	—	ns	R_g = 10Ω
Total gate charge	Qg	—	(23)	—	nC	V_{DD} = 200V
Gate to source charge	Qgs	—	(3.5)	—	nC	V_{GS} = 10V
Gate to drain charge	Qgd	—	(10)	—	nC	I_D = 2.5A
Body–drain diode forward voltage	V_{DF}	—	(0.75)	(1.15)	V	I_F = 2.5A, V_{GS} = 0 Note3
Body–drain diode reverse recovery time	t_{rr}	—	(85)	—	ns	I_F = 2.5A, V_{GS} = 0 diF/ dt =100A/µs

Note: 3. Pulse test

Package Dimensions

As of January, 2001

Unit: mm



*Dimension including the plating thickness
Base material dimension

Hitachi Code	FP-8DA
JEDEC	Conforms
EIAJ	—
Mass (reference value)	0.085 g

Cautions

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HITACHI

Hitachi, Ltd.
Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL NorthAmerica : http://semiconductor.hitachi.com/
Europe : http://www.hitachi-eu.com/hel/ecg
Asia : http://sicapac.hitachi-asia.com
Japan : http://www.hitachi.co.jp/Sicd/indx.htm

For further information write to:

Hitachi Semiconductor (America) Inc.
179 East Tasman Drive,
San Jose,CA 95134
Tel: <1> (408) 433-1990
Fax: <1>(408) 433-0223

Hitachi Europe GmbH
Electronic Components Group
Dornacher Straβe 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 585160

Hitachi Asia Ltd.
Hitachi Tower
16 Collyer Quay #20-00,
Singapore 049318
Tel : <65>-538-6533/538-8577
Fax : <65>-538-6933/538-3877
URL : http://www.hitachi.com.sg

Hitachi Asia Ltd.
(Taipei Branch Office)
4/F, No. 167, Tun Hwa North Road,
Hung-Kuo Building,
Taipei (105), Taiwan
Tel : <886>-(2)-2718-3666
Fax : <886>-(2)-2718-8180
Telex : 23222 HAS-TP
URL : http://www.hitachi.com.tw

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower,
World Finance Centre,
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon,
Hong Kong
Tel : <852>-(2)-735-9218
Fax : <852>-(2)-730-0281
URL : http://www.hitachi.com.hk

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