

HZ-P Series

Silicon Epitaxial Planar Zener Diodes
for Voltage Controller & Voltage Limiter

HITACHI

ADE-208-123E (Z)

Rev.5
Mar. 2002

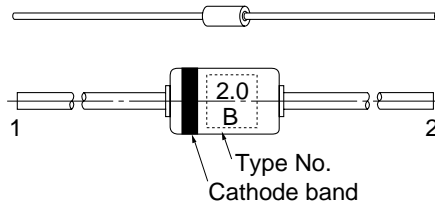
Features

- Wide spectrum from 1.88 V through 40 V of zener voltage provide flexible application.
- Glass package DO-41 structure ensures high reliability.

Ordering Information

Type No.	Mark	Package Code
HZ-P Series	Type No.	DO-41

Pin Arrangement



1. Cathode
2. Anode

HZ-P Series

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Power dissipation	Pd	1.0	W
Junction temperature	Tj	175	°C
Storage temperature	Tstg	-55 to +175	°C

Electrical Characteristics

(Ta = 25°C)

Type	Grade	Zener Voltage		Reverse Current		Dynamic Resistance		
		V _z (V)* ¹		Test Condition	I _R (μA)	Test Condition	r _d (Ω)	Test Condition
		Min	Max	I _z (mA)	Max	V _R (V)	Max	I _z (mA)
HZ2.0	BP	1.88	2.12	40	200	0.5	25	40
	CP	2.00	2.24					
HZ2.2	BP	2.08	2.33	40	200	0.7	20	40
	CP	2.20	2.45					
HZ2.4	BP	2.28	2.56	40	200	1.0	15	40
	CP	2.40	2.70					
HZ2.7	BP	2.5	2.9	40	200	1.0	15	40
	CP	2.7	3.1					
HZ3.0	BP	2.8	3.2	40	100	1.0	15	40
	CP	3.0	3.4					
HZ3.3	BP	3.1	3.5	40	80	1.0	15	40
	CP	3.3	3.7					
HZ3.6	BP	3.4	3.8	40	60	1.0	15	40
	CP	3.6	4.0					
HZ3.9	BP	3.7	4.1	40	40	1.0	15	40
	CP	3.9	4.4					
HZ4.3	BP	4.0	4.5	40	20	1.0	15	40
	CP	4.3	4.8					
HZ4.7	BP	4.4	4.9	40	20	1.0	10	40
	CP	4.7	5.2					

Note: 1. Tested with DC.

Electrical Characteristics (cont)

(Ta = 25°C)

Type	Grade	Zener Voltage		Reverse Current			Dynamic Resistance	
		V _z (V)* ¹		Test Condition	I _R (μA)	Test Condition	r _d (Ω)	Test Condition
		Min	Max	I _z (mA)	Max	V _R (V)	Max	I _z (mA)
HZ5.1	BP	4.8	5.4	40	20	1.0	8	40
	CP	5.1	5.7					
HZ5.6	BP	5.3	6.0	40	20	1.5	8	40
	CP	5.6	6.3					
HZ6.2	BP	5.8	6.6	40	20	3.0	6	40
	CP	6.2	7.0					
HZ6.8	BP	6.4	7.2	40	20	3.5	6	40
	CP	6.8	7.7					
HZ7.5	BP	7.0	7.9	40	20	4.0	4	40
	CP	7.5	8.4					
HZ8.2	BP	7.7	8.7	40	20	5.0	4	40
	CP	8.2	9.3					
HZ9.1	BP	8.5	9.6	40	20	6.0	6	40
	CP	9.1	10.2					
HZ10	BP	9.4	10.6	40	10	7.0	6	40
	CP	10.0	11.2					
HZ11	BP	10.4	11.6	20	10	8.0	8	20
	CP	11.0	12.3					
HZ12	BP	11.4	12.6	20	10	9.0	8	20
	CP	12.0	13.5					
HZ13	BP	12.4	14.1	20	10	10.0	10	20
	CP	13.3	15.0					
HZ15	BP	13.8	15.6	20	10	11.0	10	20
	CP	14.7	16.5					
HZ16	BP	15.3	17.1	20	10	12.0	12	20
	CP	16.2	18.3					
HZ18	BP	16.8	19.1	20	10	13.0	12	20
	CP	18.0	20.3					
HZ20	BP	18.8	21.2	20	10	15.0	14	20
	CP	20.0	22.4					

Note: 1. Tested with DC.

HZ-P Series

Electrical Characteristics (cont)

(Ta = 25°C)

Type	Grade	Zener Voltage		Reverse Current			Dynamic Resistance	
		V_z (V)* ¹		Test Condition	I_R (μA)	Test Condition	r_d (Ω)	Test Condition
		Min	Max	I_z (mA)	Max	V_R (V)	Max	I_z (mA)
HZ22	BP	20.8	23.3	10	10	17.0	14	10
	CP	22.0	24.5					
HZ24	BP	22.8	25.6	10	10	19.0	16	10
	CP	24.0	27.6					
HZ27	BP	25.1	28.9	10	10	21.0	16	10
	CP	27.0	30.8					
HZ30	BP	28.0	32.0	10	10	23.0	18	10
	CP	30.0	34.0					
HZ33	BP	31.0	35.0	10	10	25.0	18	10
	CP	33.0	37.0					
HZ36	BP	34.0	38.0	10	10	27.0	20	10
	CP	36.0	40.0					

Notes: 1. Tested with DC.

2. Type No. is as follows; HZ2.0BP, HZ2.0CP, ••• HZ36BP, HZ36CP.

Main Characteristic

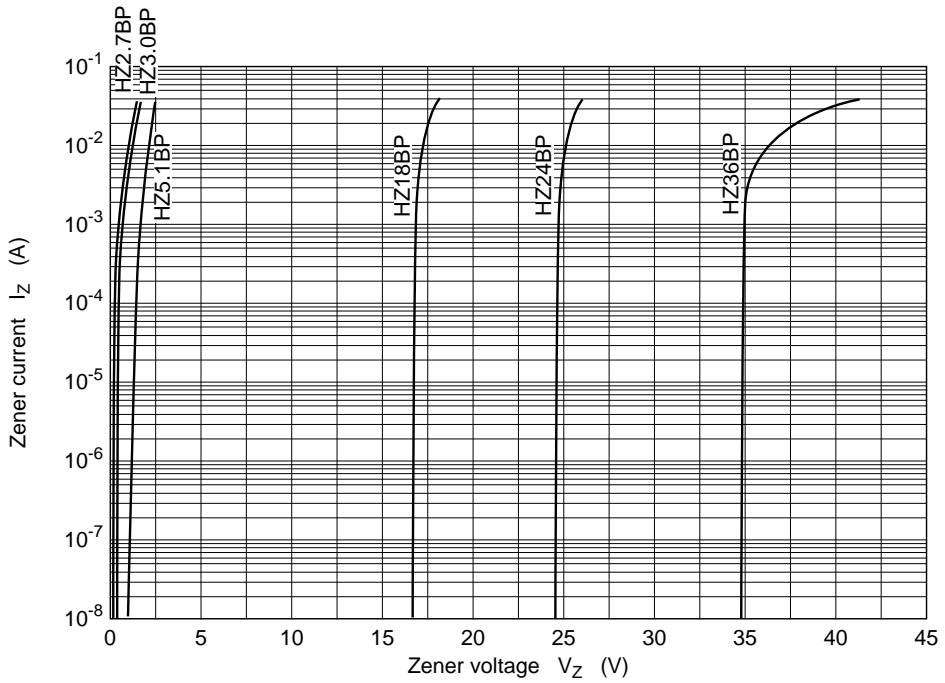


Fig.1 Zener Current vs. Zener Voltage

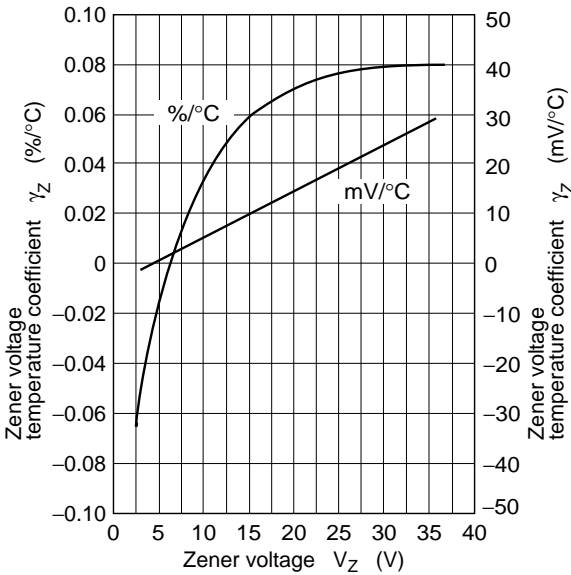


Fig.2 Temperature Coefficient vs. Zener Voltage

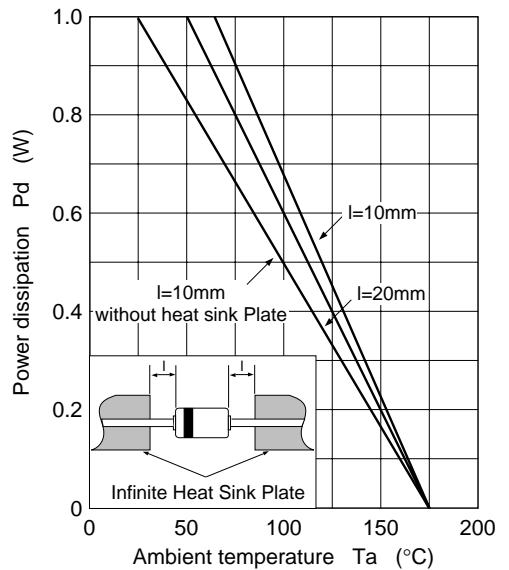


Fig.3 Power Dissipation vs. Ambient Temperature

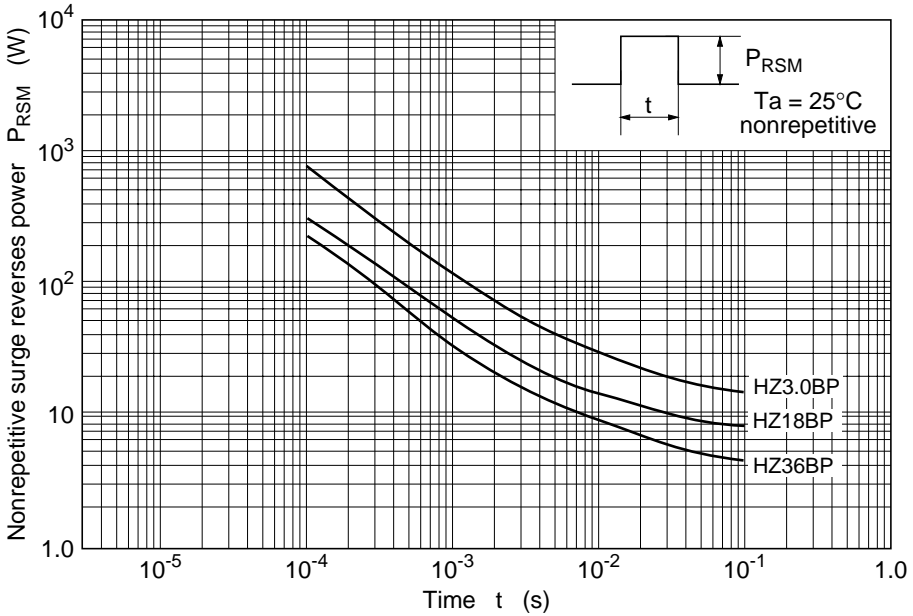


Fig.4 Surge Reverse Power Ratings (Reference Data)

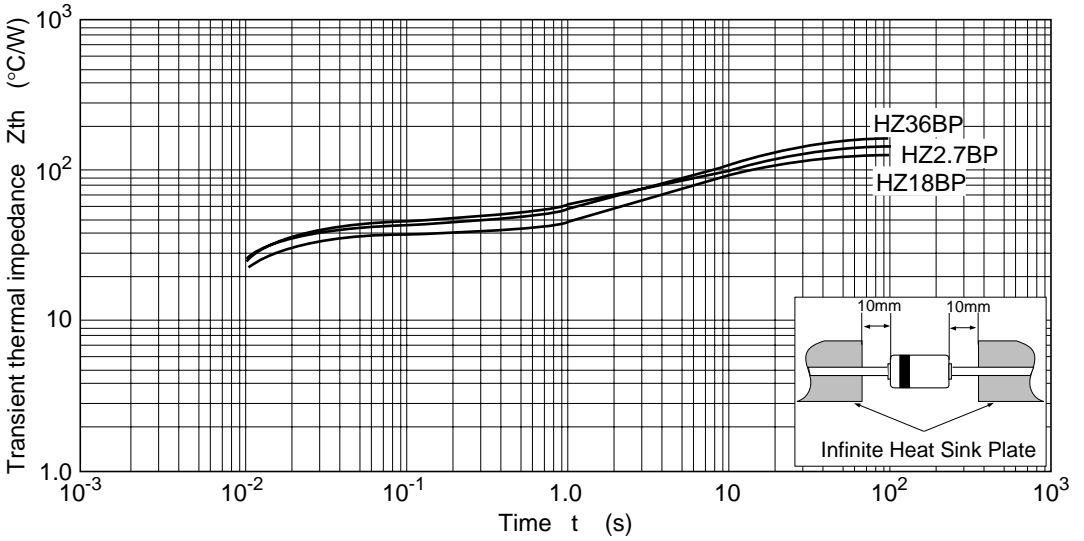
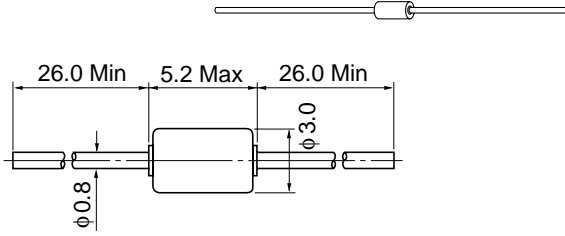


Fig.5 Transient Thermal Impedance

Package Dimensions

As of July, 2001
Unit: mm



Hitachi Code	DO-41
JEDEC	Conforms
JEITA	Conforms
Mass (reference value)	0.38 g

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Sales Offices

HITACHI

Hitachi, Ltd.

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

URL <http://www.hitachisemiconductor.com/>

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 Ltd.
Electronic Components Group
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 585200

Hitachi Europe GmbH
Electronic Components Group
Dornacher Straße 3
D-85622 Feldkirchen
Postfach 201, D-85619 Feldkirchen
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

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://semiconductor.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://semiconductor.hitachi.com.hk>

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