

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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# HZ-P Series

Silicon Planar Zener Diode for Voltage Controller & Voltage Limiter

REJ03G0236-0700

Rev.7.00

Nov 12, 2007

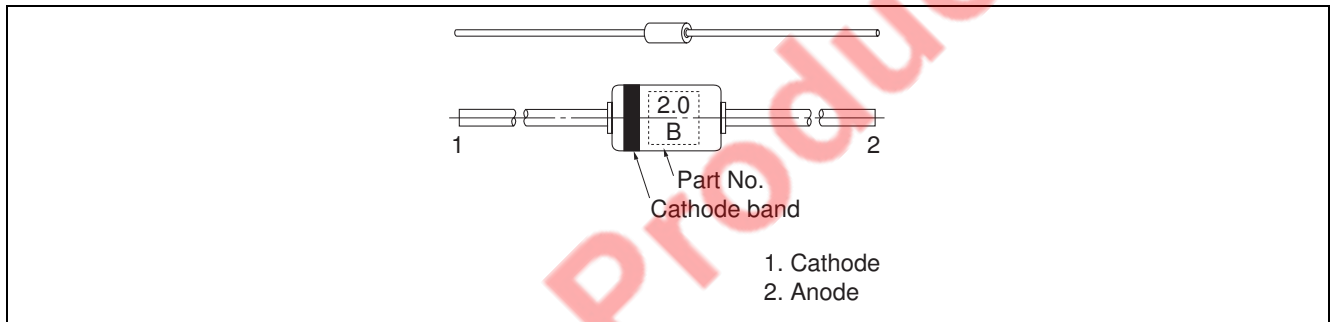
## Features

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

## Ordering Information

Part No.	Cathode Band	Package Name	Package Code
HZ-P Series	Black	DO-41	GRZZ0002ZA-A

## Pin Arrangement



**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 <sub>Z</sub> (V)* <sup>1</sup>		Test Condition	I <sub>R</sub> (μA)	Test Condition	r <sub>d</sub> (Ω)	Test Condition
		Min	Max	I <sub>Z</sub> (mA)	Max	V <sub>R</sub> (V)	Max	I <sub>Z</sub> (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					
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					

Note: 1. Tested with DC.

Type	Grade	Zener Voltage		Reverse Current		Dynamic Resistance		
		V <sub>Z</sub> (V)* <sup>1</sup>		Test Condition	I <sub>R</sub> (μA)	Test Condition	r <sub>d</sub> (Ω)	Test Condition
		Min	Max	I <sub>Z</sub> (mA)	Max	V <sub>R</sub> (V)	Max	I <sub>Z</sub> (mA)
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					
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. Part No. is as follows; HZ2.0BP, HZ2.0CP, ••• HZ36BP, HZ36CP.

Main Characteristic

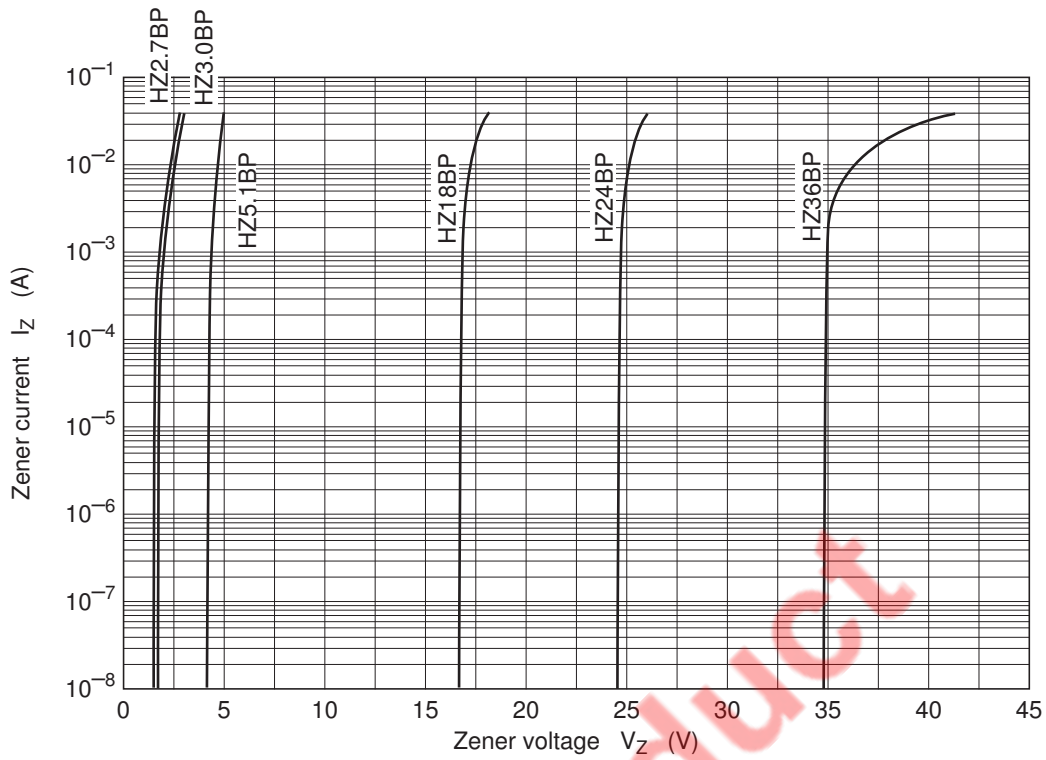


Fig.1 Zener Current vs. Zener Voltage

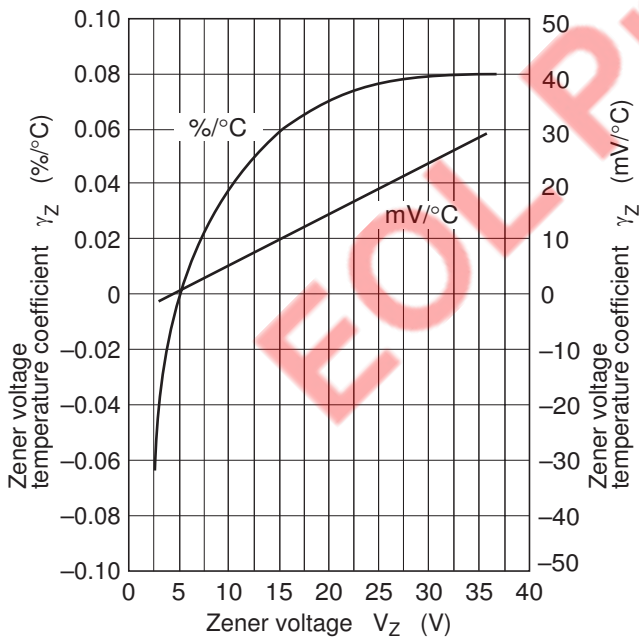


Fig.2 Temperature Coefficient vs. Zener Voltage

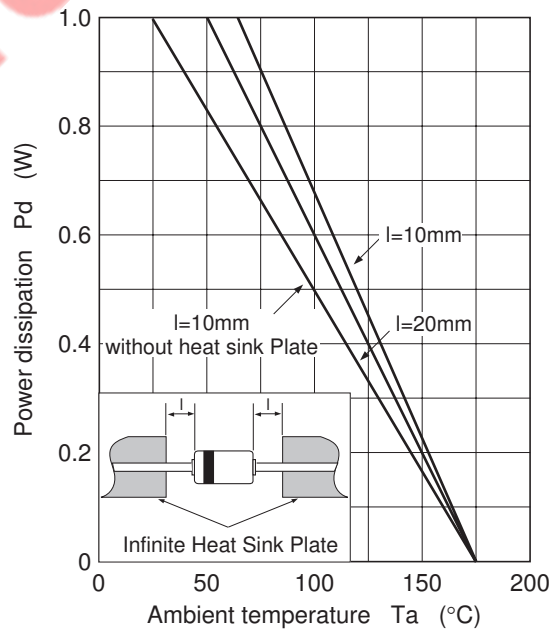


Fig.3 Power Dissipation vs. Ambient Temperature

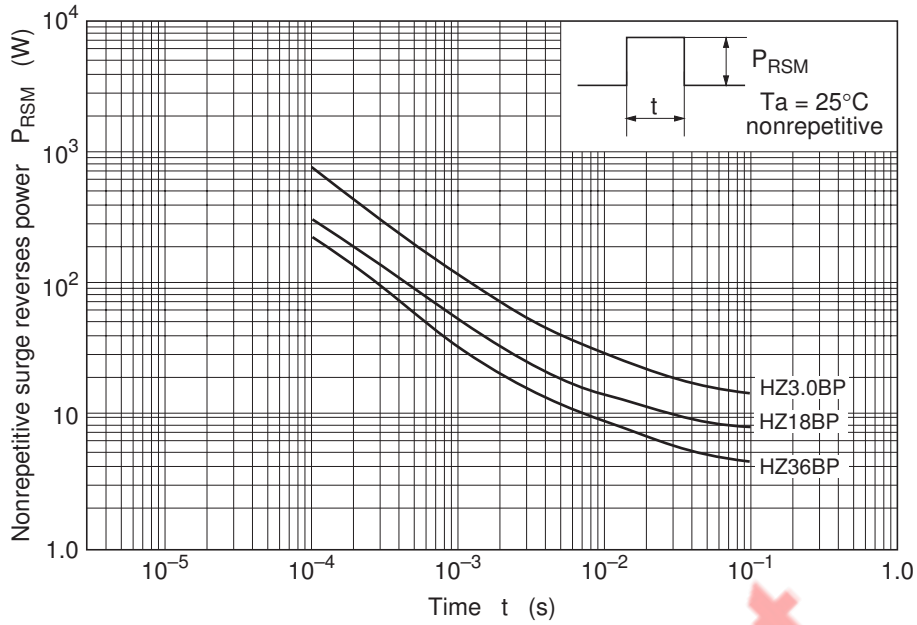


Fig.4 Surge Reverse Power Ratings (Reference Data)

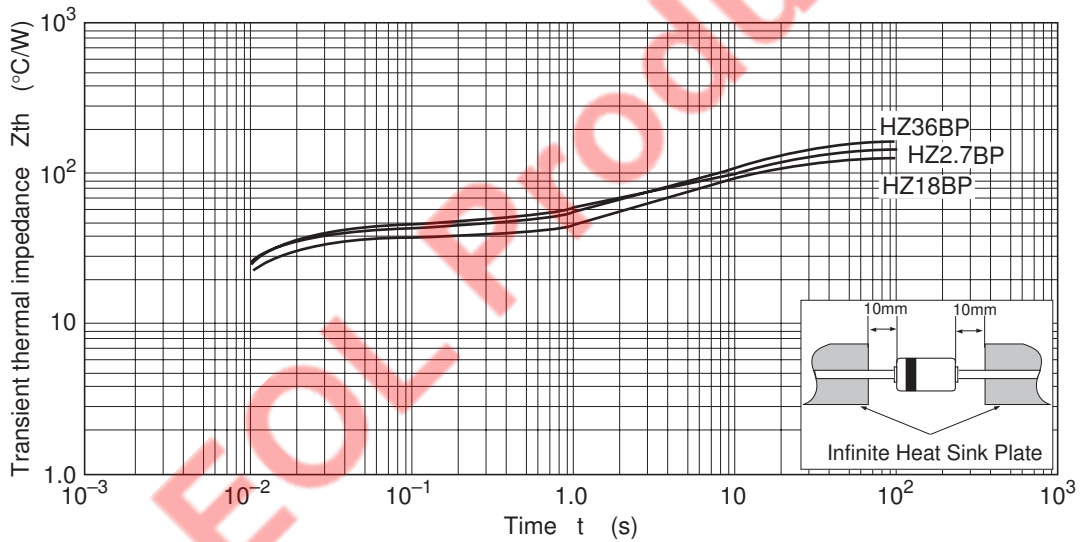
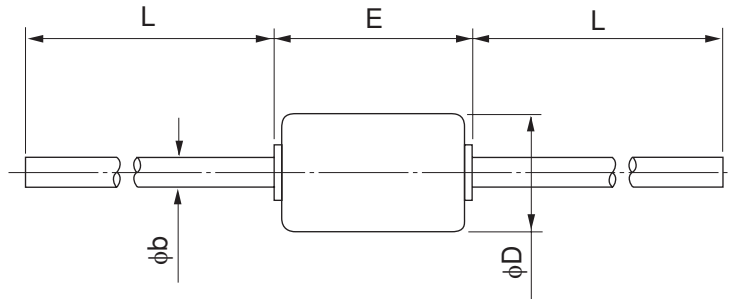


Fig.5 Transient Thermal Impedance

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
DO-41	—	GRZZ0002ZA-A	DO-41 / DO-41V	0.38g



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
$\phi b$	-	0.8	-
$\phi D$	-	3.0	-
E	-	-	5.2
L	26.0	-	-

EOL Product



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