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

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# HZ Series

## Silicon Planar Zener Diode for Stabilized Power Supply

REJ03G0180-0600  
 Rev.6.00  
 Oct 29, 2007

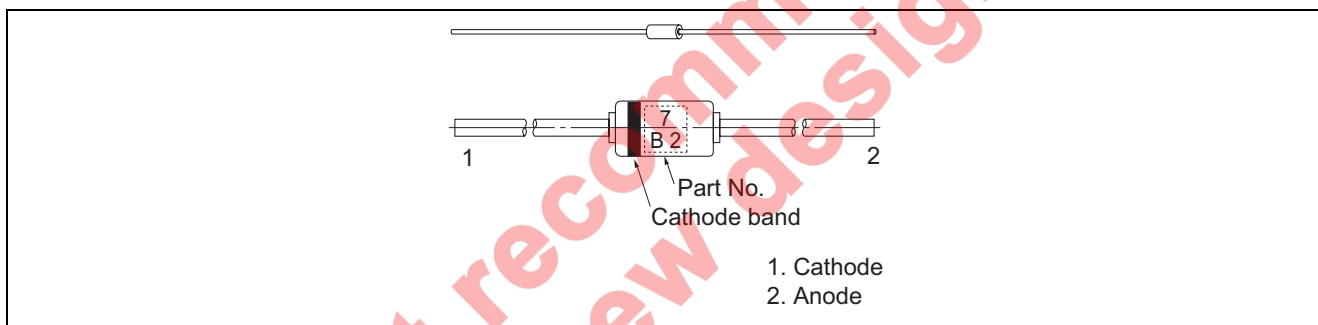
### Features

- Low leakage, low zener impedance and maximum power dissipation of 500 mW are ideally suited for stabilized power supply, etc.
- Wide spectrum from 1.6 V through 38 V of zener voltage provide flexible application.

### Ordering Information

Part No.	Cathode band	Package Name	Package Code
HZ Series	Navy blue	DO-35	GRZZ0002ZB-A

### Pin Arrangement



Not recommended for new design

**Absolute Maximum Ratings**

(Ta = 25°C)

Item	Symbol	Value	Unit
Power dissipation	Pd	500	mW
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	A1	1.6	1.8	5	25	0.5	100	5
	A2	1.7	1.9					
	A3	1.8	2.0					
	B1	1.9	2.1	5	5	0.5	100	5
	B2	2.0	2.2					
	B3	2.1	2.3					
	C1	2.2	2.4					
	C2	2.3	2.5					
C3	2.4	2.6						
HZ3	A1	2.5	2.7	5	5	0.5	100	5
	A2	2.6	2.8					
	A3	2.7	2.9					
	B1	2.8	3.0	5	5	0.5	100	5
	B2	2.9	3.1					
	B3	3.0	3.2					
	C1	3.1	3.3					
	C2	3.2	3.4					
C3	3.3	3.5						
HZ4	A1	3.4	3.6	5	5	1.0	100	5
	A2	3.5	3.7					
	A3	3.6	3.8					
	B1	3.7	3.9	5	5	1.0	100	5
	B2	3.8	4.0					
	B3	3.9	4.1					
	C1	4.0	4.2					
	C2	4.1	4.3					
C3	4.2	4.4						
HZ5	A1	4.3	4.5	5	5	1.5	100	5
	A2	4.4	4.6					
	A3	4.5	4.7					
	B1	4.6	4.8	5	5	1.5	100	5
	B2	4.7	4.9					
	B3	4.8	5.0					

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)
HZ5	C1	4.9	5.1	5	5	1.5	100	5
	C2	5.0	5.2					
	C3	5.1	5.3					
HZ6	A1	5.2	5.5	5	5	2.0	40	5
	A2	5.3	5.6					
	A3	5.4	5.7					
	B1	5.5	5.8					
	B2	5.6	5.9					
	B3	5.7	6.0					
	C1	5.8	6.1					
	C2	6.0	6.3					
	C3	6.1	6.4					
HZ7	A1	6.3	6.6	5	1	3.5	15	5
	A2	6.4	6.7					
	A3	6.6	6.9					
	B1	6.7	7.0					
	B2	6.9	7.2					
	B3	7.0	7.3					
	C1	7.2	7.6					
	C2	7.3	7.7					
	C3	7.5	7.9					
HZ9	A1	7.7	8.1	5	1	5.0	20	5
	A2	7.9	8.3					
	A3	8.1	8.5					
	B1	8.3	8.7					
	B2	8.5	8.9					
	B3	8.7	9.1					
	C1	8.9	9.3					
	C2	9.1	9.5					
	C3	9.3	9.7					
HZ11	A1	9.5	9.9	5	1	7.5	25	5
	A2	9.7	10.1					
	A3	9.9	10.3					
	B1	10.2	10.6					
	B2	10.4	10.8					
	B3	10.7	11.1					
	C1	10.9	11.3					
	C2	11.1	11.6					
	C3	11.4	11.9					

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)
HZ12	A1	11.6	12.1	5	1	9.5	35	5
	A2	11.9	12.4					
	A3	12.2	12.7					
	B1	12.4	12.9					
	B2	12.6	13.1					
	B3	12.9	13.4					
	C1	13.2	13.7					
	C2	13.5	14.0					
HZ15	-1	14.1	14.7	5	1	11.0	40	5
	-2	14.5	15.1					
	-3	14.9	15.5					
HZ16	-1	15.3	15.9	5	1	12.0	45	5
	-2	15.7	16.5					
	-3	16.3	17.1					
HZ18	-1	16.9	17.7	5	1	13.0	55	5
	-2	17.5	18.3					
	-3	18.1	19.0					
HZ20	-1	18.8	19.7	2	1	15.0	60	2
	-2	19.5	20.4					
	-3	20.2	21.1					
HZ22	-1	20.9	21.9	2	1	17.0	65	2
	-2	21.6	22.6					
	-3	22.3	23.3					
HZ24	-1	22.9	24.0	2	1	19.0	70	2
	-2	23.6	24.7					
	-3	24.3	25.5					
HZ27	-1	25.2	26.6	2	1	21.0	80	2
	-2	26.2	27.6					
	-3	27.2	28.6					
HZ30	-1	28.2	29.6	2	1	23.0	100	2
	-2	29.2	30.6					
	-3	30.2	31.6					
HZ33	-1	31.2	32.6	2	1	25.0	120	2
	-2	32.2	33.6					
	-3	33.2	34.6					
HZ36	-1	34.2	35.7	2	1	27.0	140	2
	-2	35.3	36.8					
	-3	36.4	38.0					

Notes: 1. Tested with DC.

2. Type No. is as follows; HZ2B1, HZ2B2, HZ36-3.

Main Characteristic

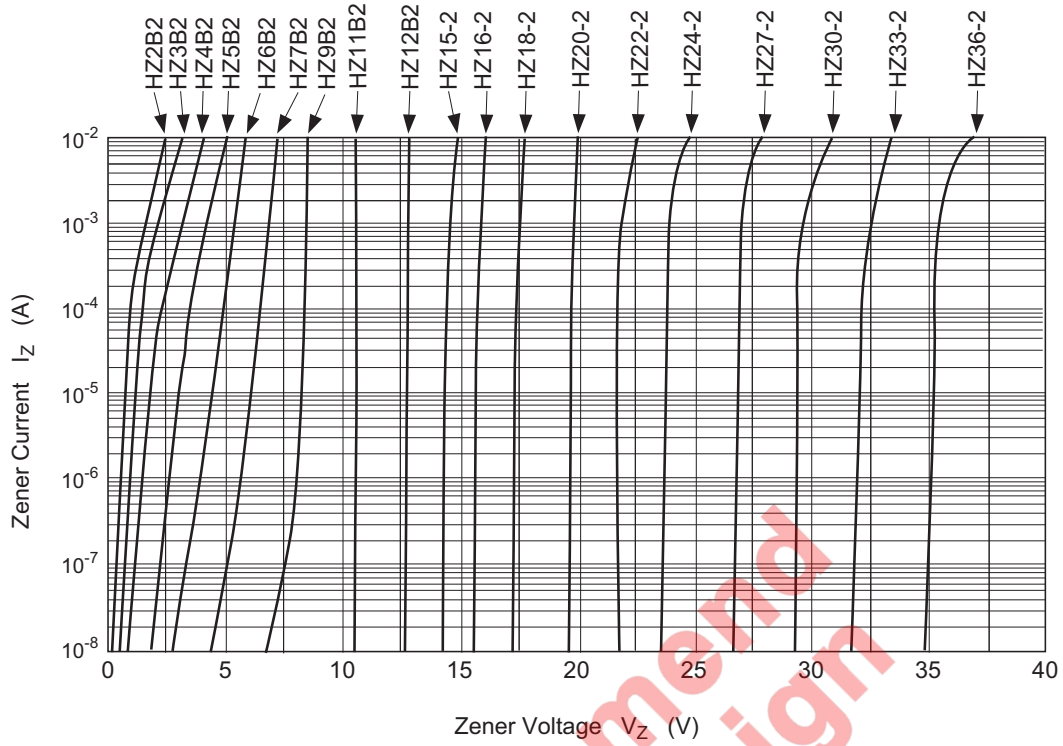


Fig.1 Zener current vs. Zener voltage

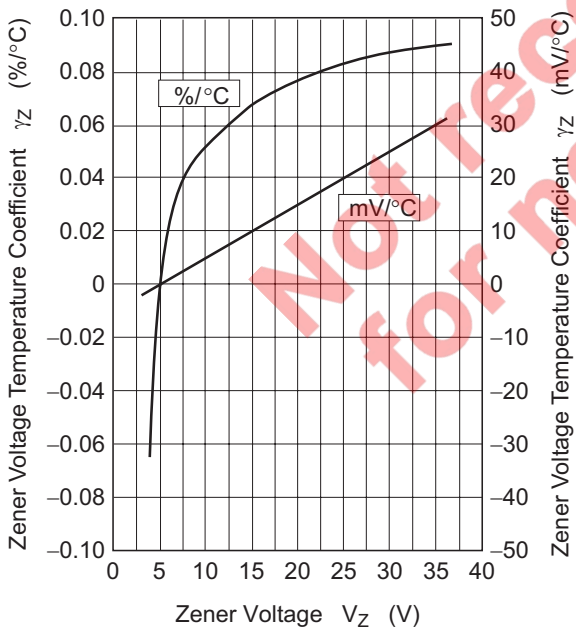


Fig.2 Temperature Coefficient vs. Zener voltage

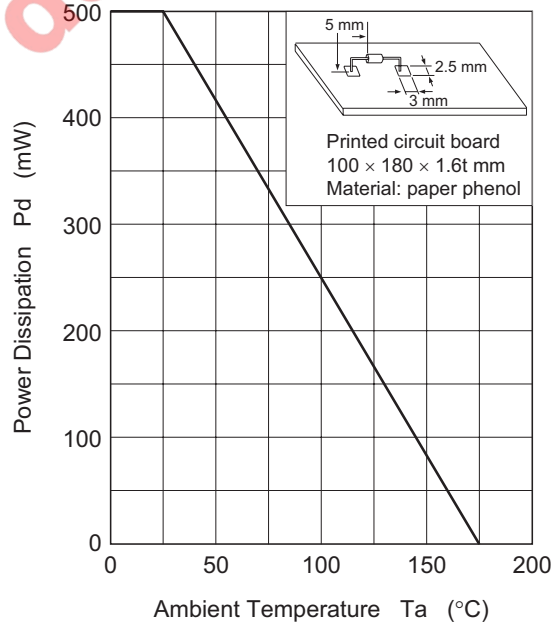
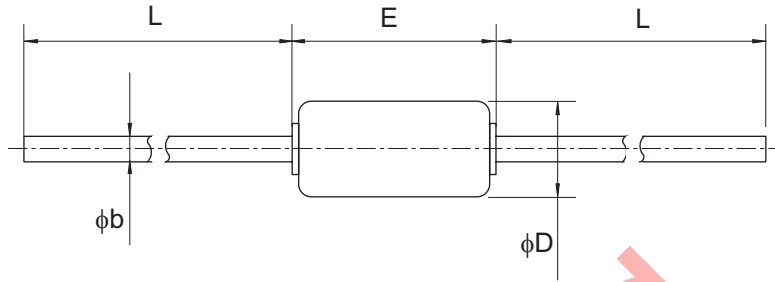


Fig.3 Power Dissipation vs. Ambient Temperature

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
DO-35	SC-40	GRZZ0002ZB-A	DO-35 / DO-35V	0.13g



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
$\phi b$	-	0.5	-
$\phi D$	-	2.0	-
E	-	-	4.2
L	26.0	-	-

Not recommend for new design



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