

## HZK Series

### Silicon Epitaxial Planar Zener Diodes for Stabilized Power Supply

REJ03G0018-0300Z  
(Previous: ADE-208-126B)  
Rev.3.00  
May.14.2003

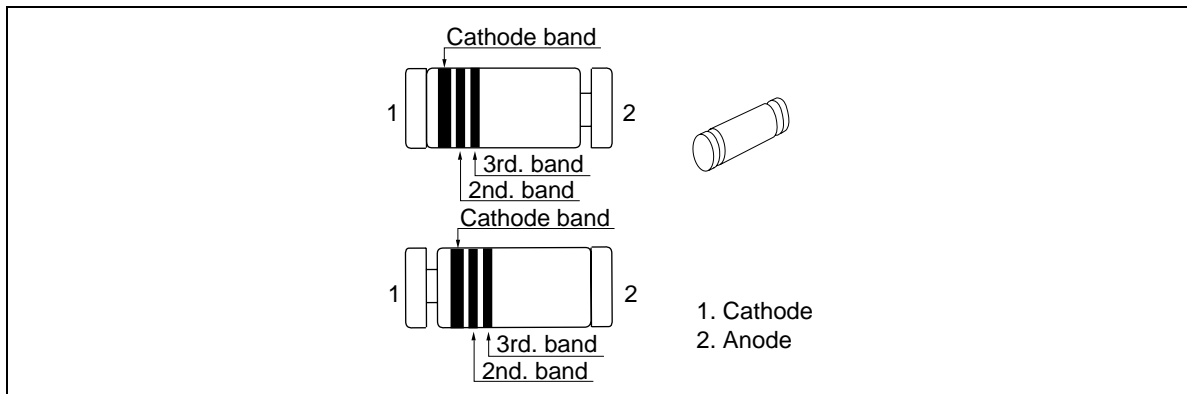
#### Features

- Low leakage, low zener impedance and maximum power dissipation of 500 mW.
- Wide spectrum from 1.9V through 38V of zener voltage provide flexible application.
- LLD Package is suitable for high density surface mounting and high speed assembly.

#### Ordering Information

Type No.	Mark	Package Code
HZK Series	Color Code	LLD

#### Pin Arrangement



## HZK Series

### 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

Note: With P.C. Board.

### Electrical Characteristics

(Ta = 25°C)

Type	Grade	Zener Voltage			Reverse Current		Dynamic Resistance	
		V <sub>z</sub> (V) *		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)
HZK2	B	1.9	2.3	5	5	0.5	100	5
	C	2.2	2.6					
HZK3	A	2.5	2.9	5	5	0.5	100	5
	B	2.8	3.2					
	C	3.1	3.5					
HZK4	A	3.4	3.8	5	5	1.0	100	5
	B	3.7	4.1					
	C	4.0	4.4					
HZK5	A	4.3	4.7	5	5	1.5	100	5
	B	4.6	5.0					
	C	4.9	5.3					
HZK6	A	5.2	5.7	5	5	2	40	5
	B	5.5	6.0					
	C	5.8	6.4					
HZK7	A	6.3	6.9	5	1	3.5	15	5
	B	6.7	7.3					
	C	7.2	7.9					
HZK9	A	7.7	8.5	5	1	5	20	5
	B	8.3	9.1					
	C	8.9	9.7					

Note: Tested with DC.

## HZK Series

### Electrical Characteristics (cont.)

(T<sub>a</sub> = 25°C)

Type	Grade	Zener Voltage			Reverse Current		Dynamic Resistance	
		V <sub>z</sub> (V)*		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)
HZK11	A	9.5	10.3	5	1	7.5	25	5
	B	10.2	11.1					
	C	10.9	11.9					
HZK12	A	11.6	12.7	5	1	9.5	35	5
	B	12.4	13.4					
	C	13.2	14.3					
HZK15		14.1	15.5	5	1	11	40	5
HZK16		15.3	17.1	5	1	12	45	5
HZK18		16.9	19.0	5	1	13	55	5
HZK20		18.8	21.1	2	1	15	60	2
HZK22		20.9	23.3	2	1	17	65	2
HZK24		22.9	25.5	2	1	19	70	2
HZK27		25.2	28.6	2	1	21	80	2
HZK30		28.2	31.6	2	1	23	100	2
HZK33		31.2	34.6	2	1	25	120	2
HZK36		34.2	38.0	2	1	27	140	2

Note: Tested with DC.

Type No. is as follows: HZK2B, HZK2C, ••• HZK36.

## HZK Series

---

### Mark Color Code

Type	Cathode Band	Second Band	Third Band
HZK2B	Yellow Green	Yellow Ocher	Verdure
HZK2C	Yellow Green	Yellow Ocher	Light Blue
HZK3A	Yellow Green	Pink	Pink
HZK3B	Yellow Green	Pink	Verdure
HZK3C	Yellow Green	Pink	Light Blue
HZK4A	Yellow Green	Orange	Pink
HZK4B	Yellow Green	Orange	Verdure
HZK4C	Yellow Green	Orange	Light Blue
HZK5A	Yellow Green	Yellow	Pink
HZK5B	Yellow Green	Yellow	Verdure
HZK5C	Yellow Green	Yellow	Light Blue
HZK6A	Yellow Green	Verdure	Pink
HZK6B	Yellow Green	Verdure	Verdure
HZK6C	Yellow Verdure	Verdure	Light Blue
HZK7A	Yellow Green	Yellow Green	Pink
HZK7B	Yellow Green	Yellow Green	Verdure
HZK7C	Yellow Green	Yellow Green	Light Blue
HZK9A	Yellow Green	Purple	Pink
HZK9B	Yellow Green	Purple	Verdure
HZK9C	Yellow Green	Purple	Light Blue
HZK11A	Yellow Green	Light Blue	Pink
HZK11B	Yellow Green	Light Blue	Verdure
HZK11C	Yellow Green	Light Blue	Light Blue
HZK12A	Yellow Green	White	Pink
HZK12B	Yellow Green	White	Verdure
HZK12C	Yellow Green	White	Light Blue
HZK15	Light Blue	Black	Pink
HZK16	Light Blue	Yellow Ocher	Pink
HZK18	Light Blue	Pink	Pink
HZK20	Light Blue	Orange	Pink
HZK22	Light Blue	Yellow	Pink
HZK24	Light Blue	Verdure	Pink
HZK27	Light Blue	Yellow Green	Pink
HZK30	Light Blue	Purple	Pink
HZK33	Light Blue	Light Blue	Pink
HZK36	Light Blue	White	Pink

Main Characteristic

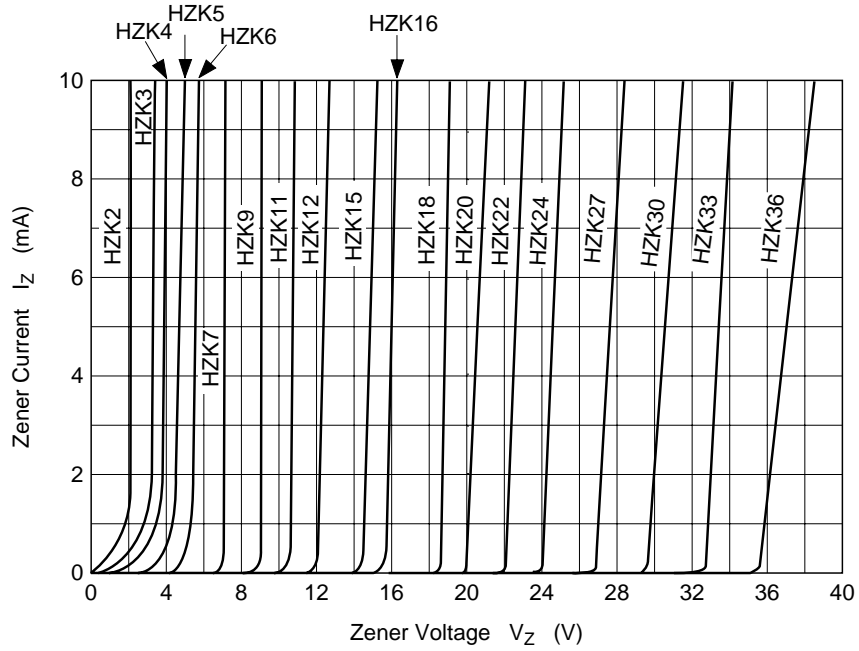


Fig.1 Zener current vs. Zener voltage

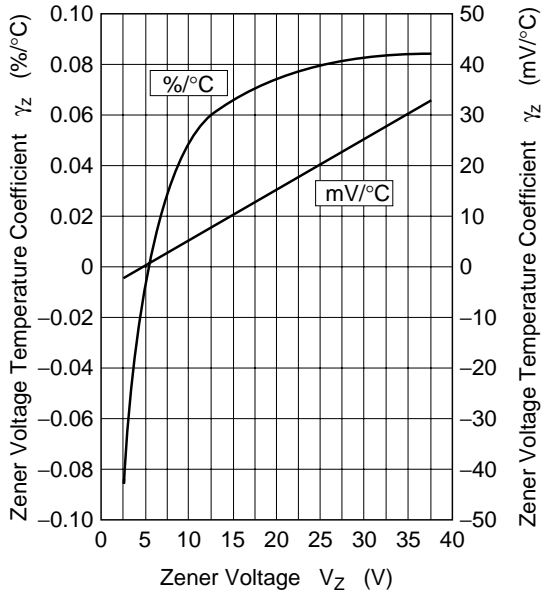


Fig.2 Temperature Coefficient vs. Zener voltage

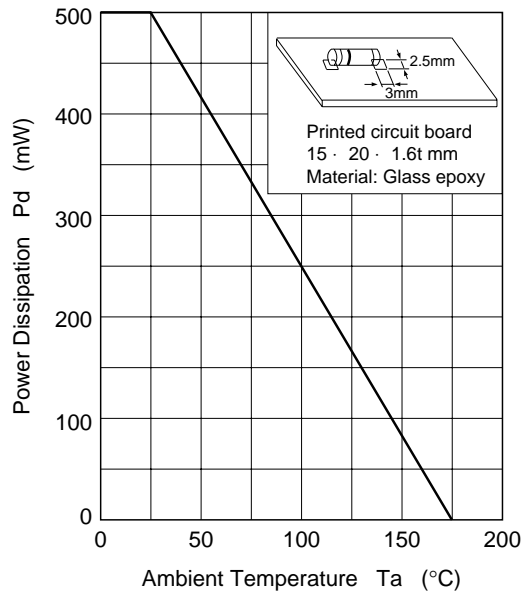
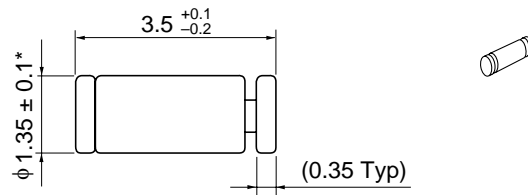


Fig.3 Power Dissipation vs. Ambient Temperature

## HZK Series

### Package Dimensions

As of January, 2003  
Unit: mm



\* HSK122:  $\phi 1.4 \pm 0.1$  type

Package Code	LLD
JEDEC	—
JEITA	—
Mass (reference value)	0.027 g

### Renesas Technology Corp. Sales Strategic Planning Div. Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan

---

#### Keep safety first in your circuit designs!

1. Renesas Technology Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage.  
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.

#### Notes regarding these materials

1. These materials are intended as a reference to assist our customers in the selection of the Renesas Technology Corporation product best suited to the customer's application; they do not convey any license under any intellectual property rights, or any other rights, belonging to Renesas Technology Corporation or a third party.
  2. Renesas Technology Corporation assumes no responsibility for any damage, or infringement of any third-party's rights, originating in the use of any product data, diagrams, charts, programs, algorithms, or circuit application examples contained in these materials.
  3. All information contained in these materials, including product data, diagrams, charts, programs and algorithms represents information on products at the time of publication of these materials, and are subject to change by Renesas Technology Corporation without notice due to product improvements or other reasons. It is therefore recommended that customers contact Renesas Technology Corporation or an authorized Renesas Technology Corporation product distributor for the latest product information before purchasing a product listed herein.  
The information described here may contain technical inaccuracies or typographical errors.  
Renesas Technology Corporation assumes no responsibility for any damage, liability, or other loss rising from these inaccuracies or errors.  
Please also pay attention to information published by Renesas Technology Corporation by various means, including the Renesas Technology Corporation Semiconductor home page (<http://www.renesas.com>).
  4. When using any or all of the information contained in these materials, including product data, diagrams, charts, programs, and algorithms, please be sure to evaluate all information as a total system before making a final decision on the applicability of the information and products. Renesas Technology Corporation assumes no responsibility for any damage, liability or other loss resulting from the information contained herein.
  5. Renesas Technology Corporation semiconductors are not designed or manufactured for use in a device or system that is used under circumstances in which human life is potentially at stake. Please contact Renesas Technology Corporation or an authorized Renesas Technology Corporation product distributor when considering the use of a product contained herein for any specific purposes, such as apparatus or systems for transportation, vehicular, medical, aerospace, nuclear, or undersea repeater use.
  6. The prior written approval of Renesas Technology Corporation is necessary to reprint or reproduce in whole or in part these materials.
  7. If these products or technologies are subject to the Japanese export control restrictions, they must be exported under a license from the Japanese government and cannot be imported into a country other than the approved destination.  
Any diversion or reexport contrary to the export control laws and regulations of Japan and/or the country of destination is prohibited.
  8. Please contact Renesas Technology Corporation for further details on these materials or the products contained therein.
- 



<http://www.renesas.com>



Copyright © 2003. Renesas Technology Corporation, All rights reserved. Printed in Japan.  
Colophon 0.0



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

[LittleDiode.com](http://LittleDiode.com)

Looking forward to providing you with the best possible service.