

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

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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Not recommended  
for new design

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## HZK-L Series

Silicon Epitaxial Planar Zener Diodes for Stabilized Power Supply

REJ03G0019-0300Z  
(Previous: ADE-208-127B)  
Rev.3.00  
May.14.2003

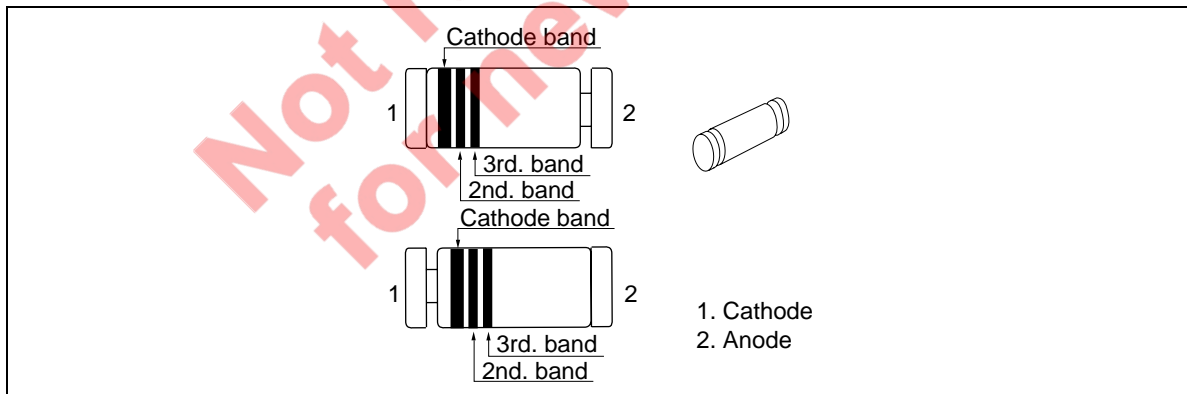
### Features

- Low leakage, low zener impedance and maximum power dissipation of 400 mW.
- Wide spectrum from 5.2V 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-L Series	Color Code	LLD

### Pin Arrangement



## HZK-L Series

### Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Power dissipation	Pd *	400	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)
HZK6L	A	5.2	5.7	0.5	1	2.0	150	0.5
	B	5.5	6.0				80	
	C	5.8	6.4				60	
HZK7L	A	6.3	6.9	0.5	1	3.5	60	0.5
	B	6.7	7.3					
	C	7.2	7.9					
HZK9L	A	7.7	8.5	0.5	1	6.0	60	0.5
	B	8.3	9.1					
	C	8.9	9.7					
HZK11L	A	9.5	10.3	0.5	1	8.0	80	0.5
	B	10.2	11.1					
	C	10.9	11.9					
HZK12L	A	11.6	12.7	0.5	1	10.5	80	0.5
	B	12.4	13.4					
	C	13.2	14.3					
HZK15L		14.1	15.5	0.5	1	13.0	80	0.5
HZK16L		15.3	17.1	0.5	1	14.0	80	0.5
HZK18L		16.9	19.0	0.5	1	15.0	80	0.5
HZK20L		18.8	21.1	0.5	1	18.0	100	0.5
HZK22L		20.9	23.3	0.5	1	20.0	100	0.5
HZK24L		22.9	25.5	0.5	1	22.0	120	0.5
HZK27L		25.2	28.6	0.5	1	24.0	150	0.5

Note: Tested with DC.

Type No. is as follows: HZK6AL, HZK6BL, ... HZK36L.

## HZK-L Series

### Electrical Characteristics (cont.)

Type	Grade	Zener Voltage			Reverse Current		Dynamic Resistance	
		$V_z$ (V)*		Test Condition	$I_R$ ( $\mu$ A)	Test Condition	$r_d$ ( $\Omega$ )	Test Condition
		Min	Max	$I_z$ (mA)	Max	$V_R$ (V)	Max	$I_z$ (mA)
HZK30L		28.2	31.6	0.5	1	27.0	200	0.5
HZK33L		31.2	34.6	0.5	1	30.0	250	0.5
HZK36L		34.2	38.0	0.5	1	33.0	300	0.5

Note: Tested with DC.

Type No. is as follows: HZK6AL, HZK6BL, ●●● HZK36L.

### Mark Color Code

Type	Cathode Band	Second Band	Third Band
HZK6AL	Orange	Verdure	Pink
HZK6BL	Orange	Verdure	Verdure
HZK6CL	Orange	Verdure	Light Blue
HZK7AL	Orange	Yellow Green	Pink
HZK7BL	Orange	Yellow Green	Verdure
HZK7CL	Orange	Yellow Green	Light Blue
HZK9AL	Orange	Purple	Pink
HZK9BL	Orange	Purple	Verdure
HZK9CL	Orange	Purple	Light Blue
HZK11AL	Orange	Light Blue	Pink
HZK11BL	Orange	Light Blue	Verdure
HZK11CL	Orange	Light Blue	Light Blue
HZK12AL	Orange	White	Pink
HZK12BL	Orange	White	Verdure
HZK12CL	Orange	White	Light Blue
HZK15L	Yellow	Black	Pink
HZK16L	Yellow	Yellow Ocher	Pink
HZK18L	Yellow	Pink	Pink
HZK20L	Yellow	Orange	Pink
HZK22L	Yellow	Yellow	Pink
HZK24L	Yellow	Verdure	Pink
HZK27L	Yellow	Yellow Green	Pink
HZK30L	Yellow	Purple	Pink
HZK33L	Yellow	Light Blue	Pink
HZK36L	Yellow	White	Pink
HZK30L	Yellow	Purple	Pink
HZK33L	Yellow	Light Blue	Pink
HZK36L	Yellow	White	Pink

Main Characteristic

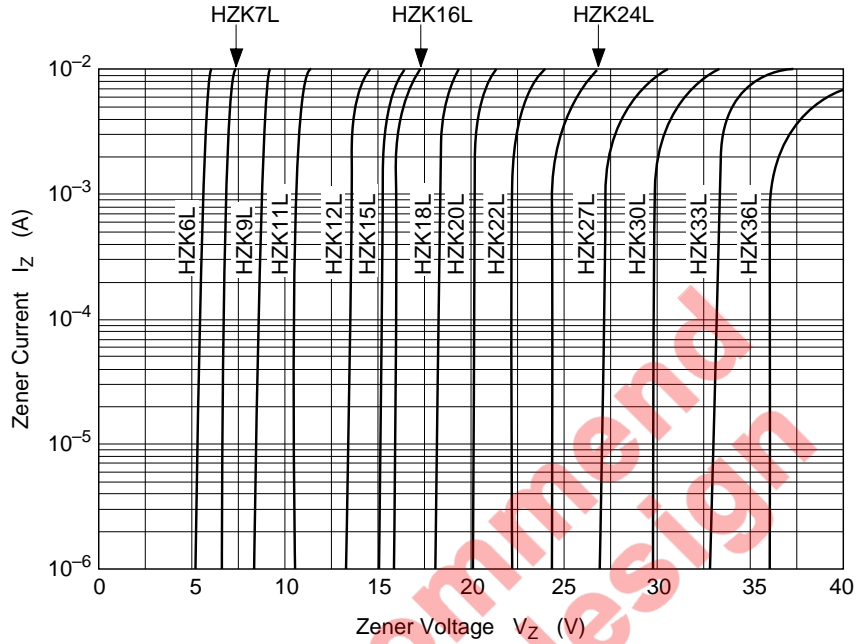


Fig.1 Zener current vs. Zener voltage

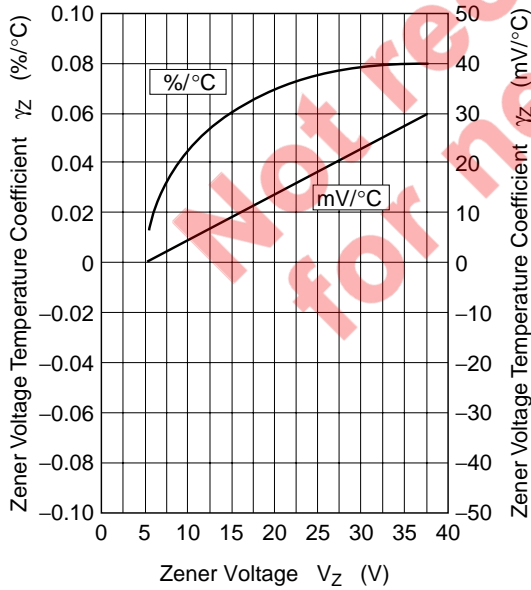


Fig.2 Temperature Coefficient vs. Zener voltage

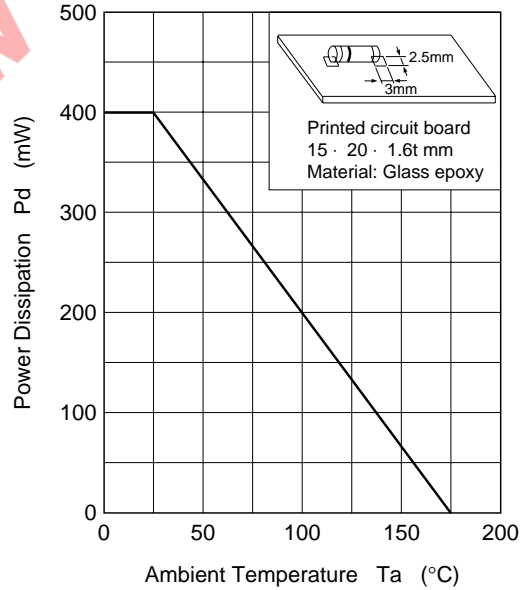
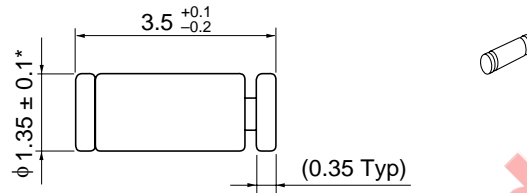


Fig.3 Power Dissipation vs. Ambient Temperature

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

Not recommended  
for new design

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

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