

To all our customers

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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

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Keep safety first in your circuit designs!

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HZ-LL Series

Silicon Epitaxial Planar Zener Diode for Hard Knee Low Noise

RENESAS

ADE-208-119A(Z)

Rev. 1
Nov. 1996

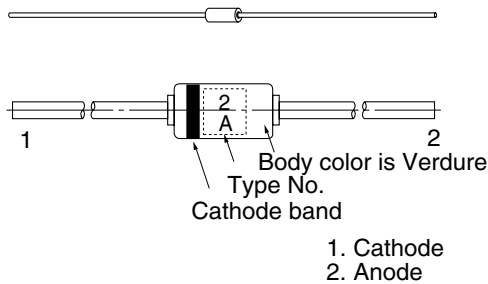
Features

- V_z - I_z characteristics are semi logarithmic linear from $I_z=1\text{nA}$ to 1mA and have sharper breakdown knees in a low current region, and also lower V_z temperature coefficients .
- Low dynamic impedance and low noise in the low current region (approximately 1/10 lower than the current zeners).

Ordering Information

Type No.	Mark	Package Code
HZ-LL Series	Type No.	DO-35

Pin Arrangement



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Power dissipation	Pd	250	mW
Junction temperature	Tj	175	°C
Storage temperature	Tstg	-55 to +175	°C

Electrical Characteristics

(Ta = 25°C)

Type	Grade	V _z (V) * ¹		I _r (nA)		Z _{z1} (Ω)		Z _{z2} (kΩ)* ²		ΔV _{z1} (V) * ³		ΔV _{z2} (V) * ³	
		Min	Max	I _z (mA)	Max	V _R (V)	Max	I _{z1} (mA)	Typ	I _{z2} (μA)	Max	Max	Max
HZ2LL	A	1.6	2.0	0.5	100	0.5	350	0.5	(1.2)	50	0.5	0.6	
	B	1.9	2.3										
	C	2.2	2.6										
HZ3LL	A	2.5	2.9	0.5	100	1.0	360	0.5	(1.2)	50	0.5	0.6	
	B	2.8	3.2										
	C	3.1	3.5										
HZ4LL	A	3.4	3.8	0.5	100	2.0	370	0.5	(1.5)	50	0.5	0.6	
	B	3.7	4.1										
	C	4.0	4.4										
HZ5LL	A	4.3	4.7	0.5	100	3.0	380	0.5	(1.5)	50	0.5	0.6	
	B	4.6	5.0										
	C	4.9	5.3										

Note: 1. Tested with DC.

Note: 2. Reference only.

Note: 3. $\Delta V_{z1} = V_z (I_z = 0.5 \text{ mA}) - V_{z1} (I_z = 0.05 \text{ mA})$ $\Delta V_{z2} = V_{z1} (I_z = 0.05 \text{ mA}) - V_{z2} (I_z = 0.001 \text{ mA})$

Note: 4. Type No. is as follows; HZ2ALL, HZ2BLL, HZ5CLL.

Main Characteristic

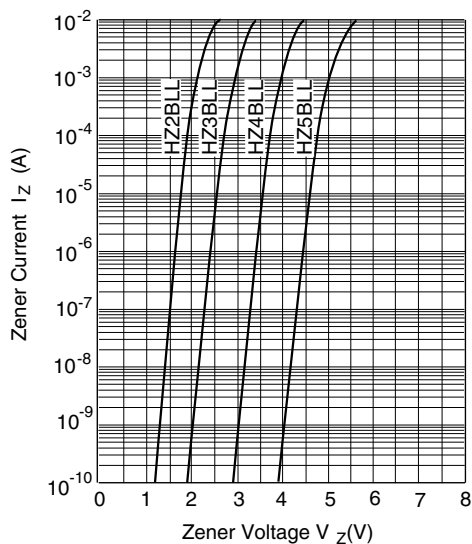


Fig.1 Zener current Vs. Zener voltage

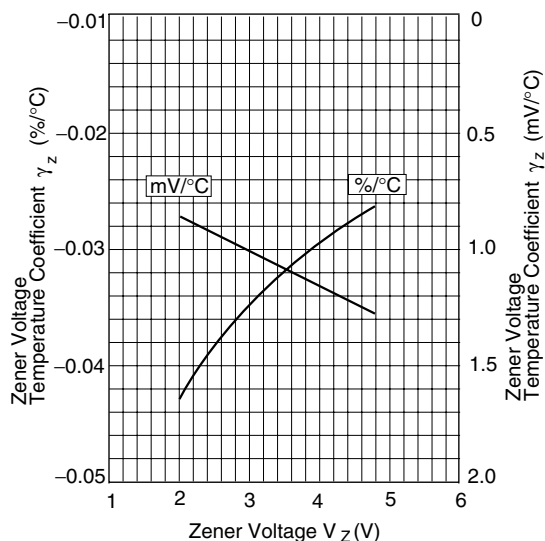


Fig.2 Temperature Coefficient Vs. Zener voltage

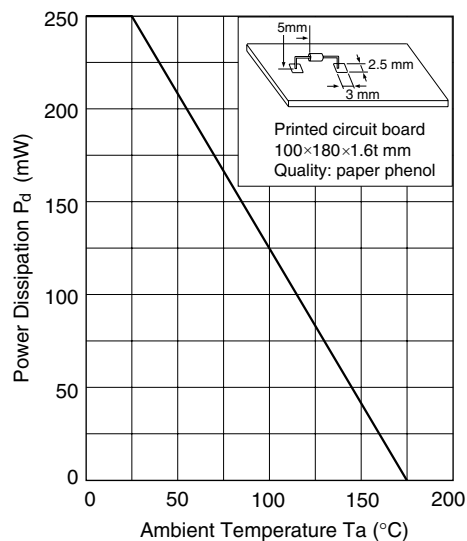
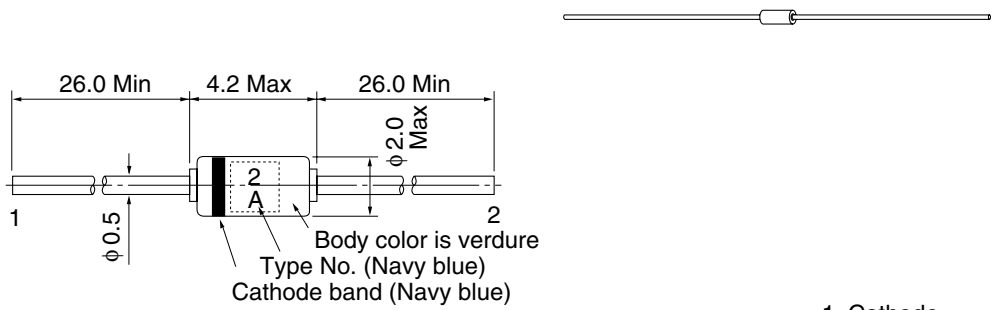


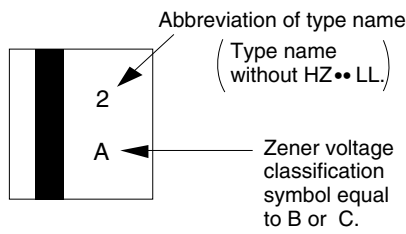
Fig.3 Power Dissipation Vs. Ambient Temperature

Package Dimensions

Unit: mm



- 1. Cathode
- 2. Anode



Hitachi Code	DO-35
JEDECCode	DO-35
EIAJCode	SC-48
Weight(g)	0.13

Expanded drawing of marking

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