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# HZ-LL Series

Silicon Epitaxial Planar Zener Diode for Hard Knee Low Noise

# HITACHI

ADE-208-119A(Z)  
Rev 1

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## Features

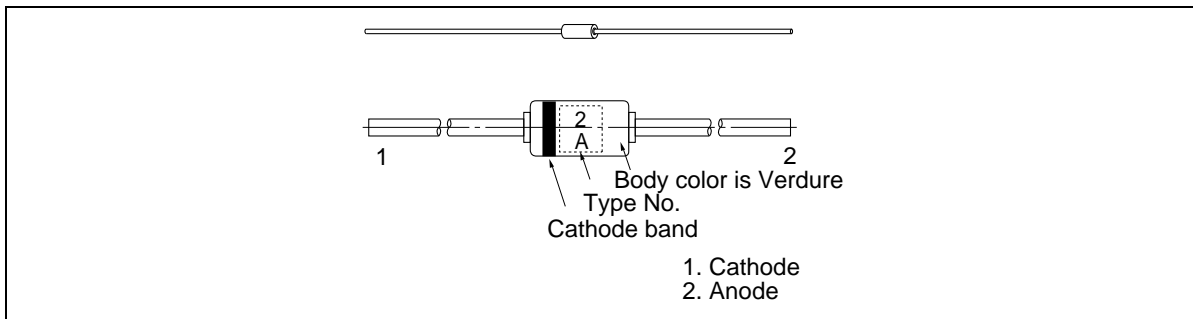
- $V_z$ - $I_z$  characteristics are semilogarithmic linear from  $I_z=1\text{nA}$  to  $1\text{mA}$  and have sharper breakdown knees in a low current region, and also lower  $V_z$  temperature coefficients .
- Low dynamic impedance and low noise in the low current region (approximately 1/10 lower than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

## Ordering Information

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

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## Outline



## HZ-LL Series

### 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 <sub>z</sub> (V) *1		I <sub>R</sub> (nA)			Z <sub>ZT</sub> (Ω)	Z <sub>ZK</sub> (kΩ)*2		ΔV <sub>Z1</sub> (V) *3	ΔV <sub>Z2</sub> (V) *3	
		Min	Max	I <sub>Z</sub> (mA)	Max	V <sub>R</sub> (V)	Max	I <sub>Z1</sub> (mA)	Typ	I <sub>ZK</sub> (μA)	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

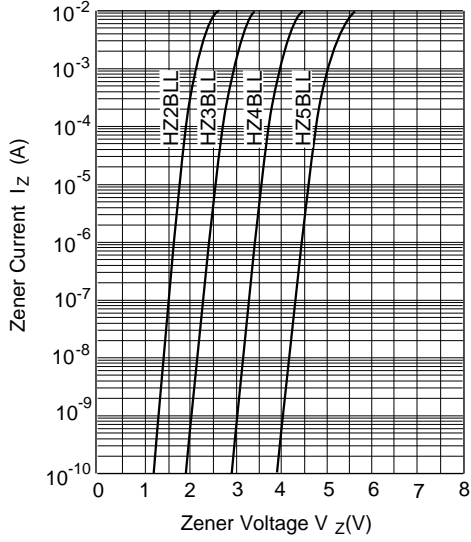


Fig.1 Zener current Vs. Zener voltage

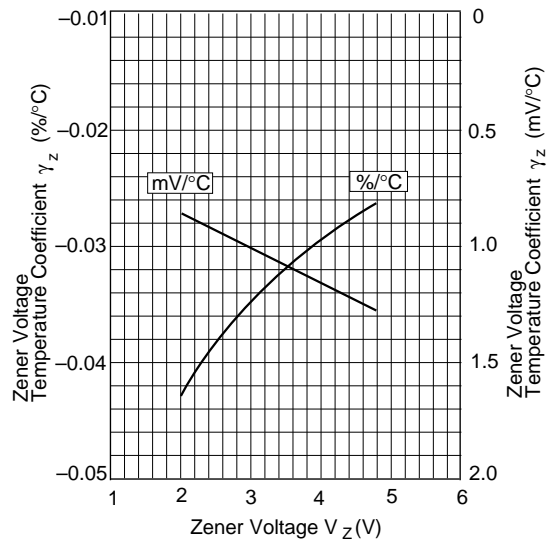


Fig.2 Temperature Coefficient Vs. Zener voltage

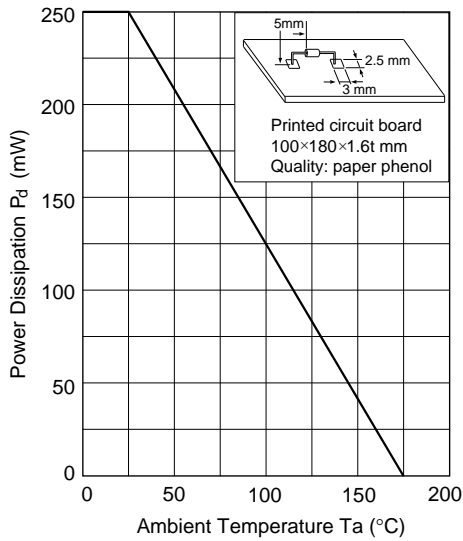


Fig.3 Power Dissipation Vs. Ambient Temperature