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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   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.

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HZU-LL Series

Silicon Epitaxial Planar Zener Diode for Hard Knee Low Noise

ADE-208-236C (Z)

Rev.3
Dec. 2002

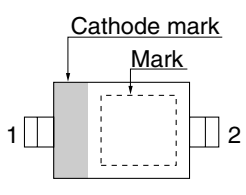
Features

- Low noise voltage (approximately 1/3 to 1/10 lower than the HZU series).
- Temperature coefficient is approximately 1/2 lower than the HZU series.
- Vz-Iz characteristics are semi-logarithmic linear from Iz=1nA to 1mA.
- Ultra small Resin Package(URP) is suitable for surface mount design.

Ordering Information

Type No.	Mark	Package Code
HZU-LL Series	Let to Mark Code	URP

Pin Arrangement



1. Cathode
2. Anode

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Power dissipation	Pd *[1]	150	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

Note: 1. See Fig.3.

Electrical Characteristics

(Ta = 25°C)

		Zener Voltage			Reverse Current		Dynamic Resistance				Linearity
		V_Z(V) *[1]			I_R(nA)		Z_{ZT}(Ω)		Z_{ZK}(kΩ) *[2]		ΔV_Z(V) *[3]
Type	Grade	Min	Max	I_Z(mA)	Max	V_R(V)	Max	I_{ZT}(mA)	Typ	I_{ZK}(μA)	Max
HZU2LL	A	1.6	2.0	0.5	100	0.5	350	0.5	(1.2)	50	0.5
	B	1.9	2.3								
	C	2.2	2.6								
HZU3LL	A	2.5	2.9	0.5	100	1.0	360	0.5	(1.2)	50	0.5
	B	2.8	3.2								
	C	3.1	3.5								
HZU4LL	A	3.4	3.8	0.5	100	2.0	370	0.5	(1.5)	50	0.5
	B	3.7	4.1								
	C	4.0	4.4								
HZU5LL	A	4.3	4.7	0.5	100	3.0	380	0.5	(1.5)	50	0.5
	B	4.6	5.0								
	C	4.9	5.3								

Notes: 1. Tested with DC.
2. Reference only.
3. $\Delta V_z = V_z$ (I_z = 0.5 mA) - V_z (I_z = 0.05 mA)
4. Type No. is as follows; HZU2ALL, HZU2BLL, … HZU5CLL.

Mark Code

Type	Grade	MarK No.	Type	Grade	Mark No.
HZU2LL	A	2A	HZU4LL	A	4A
	B	2B		B	4B
	C	2C		C	4C
HZU3LL	A	3A	HZU5LL	A	5A
	B	3B		B	5B
	C	3C		C	5C

Main Characteristic

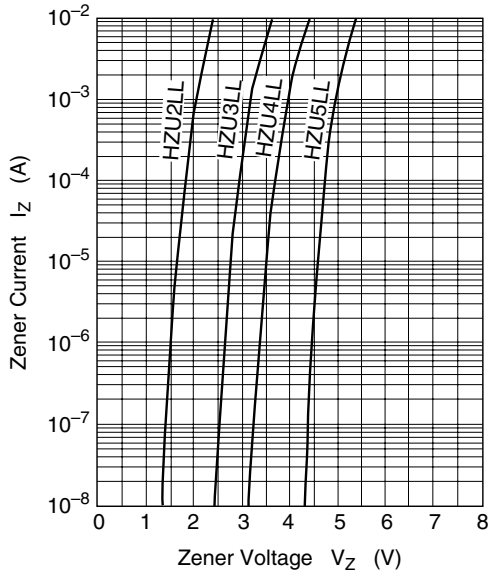


Fig.1 Zener current vs. Zener voltage

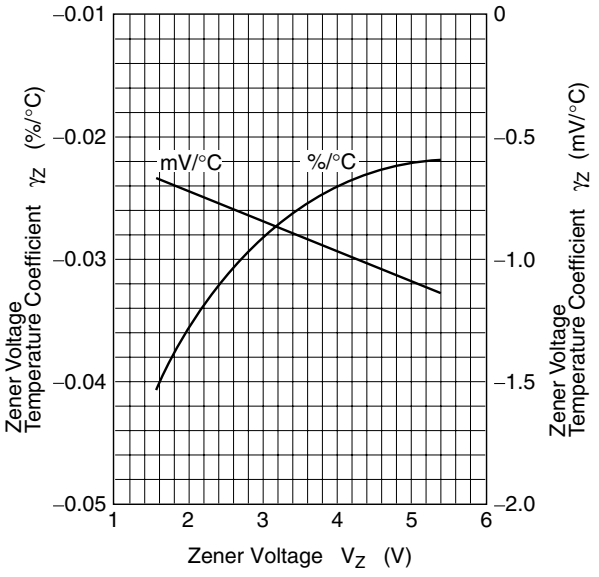


Fig.2 Temperature Coefficient vs. Zener voltage

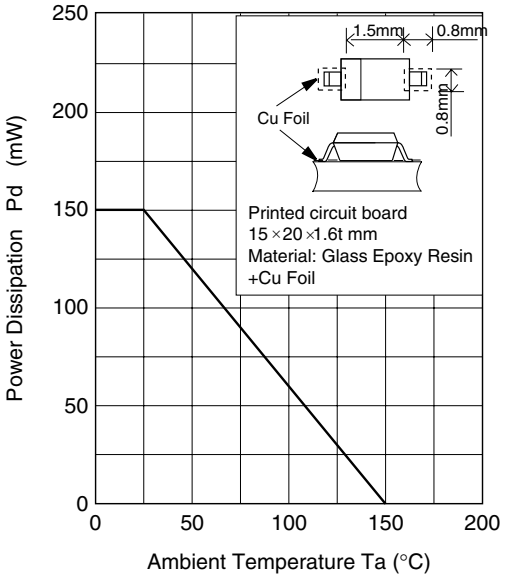
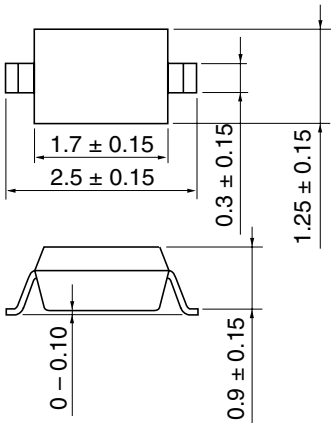


Fig.3 Power Dissipation vs. Ambient Temperature

Package Dimensions

As of July, 2002

Unit: mm



Hitachi Code	URP
JEDEC	Conforms
JEITA	—
Mass (reference value)	0.004 g

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