

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

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Not recommended  
for new design

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# HZS-LL Series

## Silicon Planar Zener Diode for Hard Knee Low Noise

REJ03G0167-0300  
 Rev.3.00  
 Nov 08, 2007

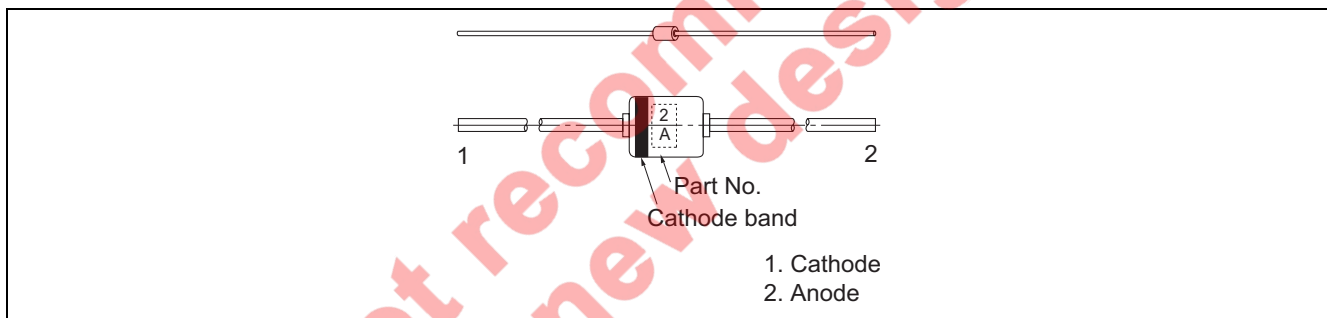
### Features

- $V_Z$ - $I_Z$  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).
- Suitable for 5 mm-pitch high speed automatic insertion.

### Ordering Information

Part No.	Cathode Band	Package Name	Package Code
HZS-LL Series	Navy blue	MHD	GRZZ0002ZC-A

### Pin Arrangement



## Absolute Maximum Ratings

(Ta = 25°C)

tem	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)

Part No.	Zener Voltage			Reverse Current		Dynamic Resistance				Linearity <sup>*3</sup>	
	Vz(V) <sup>*1</sup>		Iz (mA)	IR (nA)		ZzT (Ω)		ZzK (Ω) <sup>*2</sup>		ΔVz1 (V)	ΔVz2(V)
	Min	Max		Max	V <sub>R</sub> (V)	Max	IzT (mA)	Typ	IzK (μA)	Max	Max
HZS2ALL	1.6	2.0	0.5	100	0.5	350	0.5	(1.2)	50	0.5	0.6
HZS2BLL	1.9	2.3									
HZS2CLL	2.2	2.6									
HZS3ALL	2.5	2.9	0.5	100	1.0	360	0.5	(1.2)	50	0.5	0.6
HZS3BLL	2.8	3.2									
HZS3CLL	3.1	3.5									
HZS4ALL	3.4	3.8	0.5	100	2.0	370	0.5	(1.5)	50	0.5	0.6
HZS4BLL	3.7	4.1									
HZS4CLL	4.0	4.4									
HZS5ALL	4.3	4.7	0.5	100	3.0	380	0.5	(1.5)	50	0.5	0.6
HZS5BLL	4.6	5.0									
HZS5CLL	4.9	5.3									

Notes: 1. Tested with DC.

2. Reference only.

3.  $\Delta V_{z1} = V_z (I_z = 0.5 \text{ mA}) - V_{z1} (I_z = 0.05 \text{ mA})$        $\Delta V_{z2} = V_{z1} (I_z = 0.05 \text{ mA}) - V_{z2} (I_z = 0.001 \text{ mA})$ Not recommended  
for new design

Main Characteristic

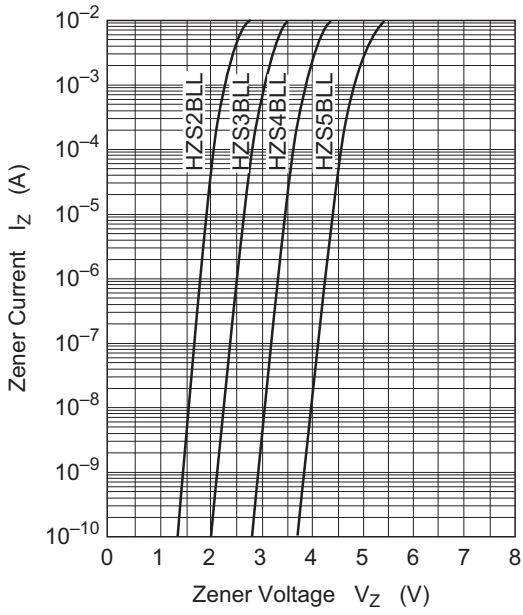


Fig.1 Zener current vs. Zener voltage

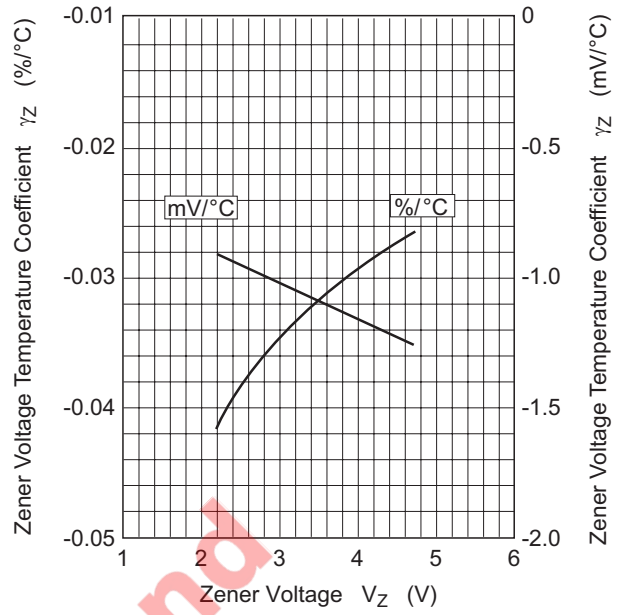


Fig.2 Temperature Coefficient vs. Zener voltage

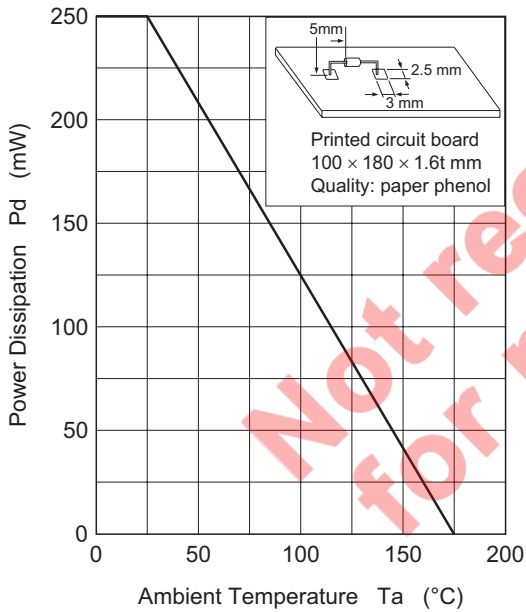
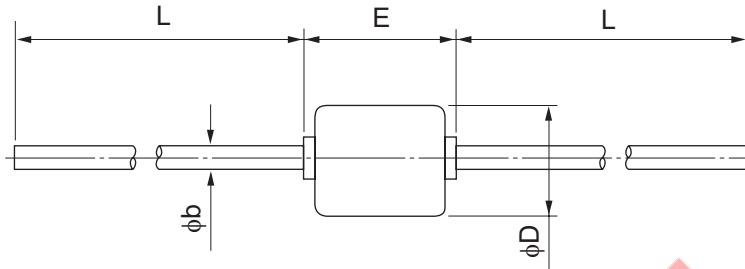


Fig.3 Power Dissipation vs. Ambient Temperature

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
MHD	—	GRZZ0002ZC-A	MHD / MHDV	0.084g



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
φb	-	0.4	-
φD	-	2.0	-
E	-	-	2.4
L	26.0	-	-

Not recommend for new design

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