

To our customers,

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## Old Company Name in Catalogs and Other Documents

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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# HZS-L Series

## Silicon Planar Zener Diode for Low Noise Application

REJ03G0166-0300  
 Rev.3.00  
 Nov 06, 2007

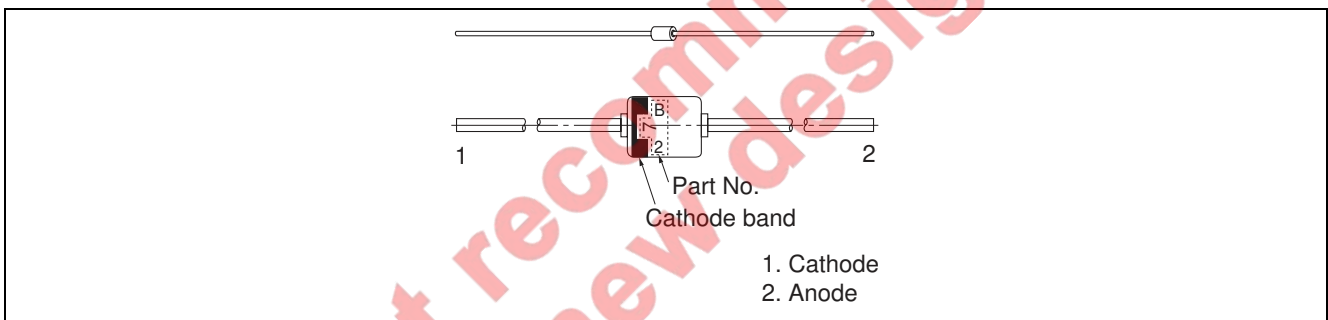
### Features

- Diode noise level of this series is approximately 1/3-1/10 lower than the HZ series.
- Low leakage, low zener impedance and maximum power dissipation of 400 mW are ideally suited for stabilized power supply, etc.
- Wide voltage range from 5.2 V through 38 V of zener voltage provide flexible application.
- Suitable for 5mm-pitch high speed automatic insertion.

### Ordering Information

Part No.	Cathode Band	Package Name	Package Code
HZS-L Series	Black	MHD	GRZZ0002ZC-A

### Pin Arrangement



**Absolute Maximum Ratings**

(Ta = 25°C)

Item	Symbol	Value	Unit
Power dissipation	Pd	400	mW
Junction temperature	Tj	200	°C
Storage temperature	Tstg	-55 to +175	°C

**Electrical Characteristics**

(Ta = 25°C)

Part No.	Zener Voltage		Reverse Current		Dynamic Resistance		
	V <sub>Z</sub> (V) *1		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)
HZS6A1L	5.2	5.5	0.5	1	2.0	150	0.5
HZS6A2L	5.3	5.6					
HZS6A3L	5.4	5.7					
HZS6B1L	5.5	5.8	0.5	1	2.0	80	0.5
HZS6B2L	5.6	5.9					
HZS6B3L	5.7	6.0					
HZS6C1L	5.8	6.1	0.5	1	2.0	60	0.5
HZS6C2L	6.0	6.3					
HZS6C3L	6.1	6.4					
HZS7A1L	6.3	6.6	0.5	1	3.5	60	0.5
HZS7A2L	6.4	6.7					
HZS7A3L	6.6	6.9					
HZS7B1L	6.7	7.0	0.5	1	3.5	60	0.5
HZS7B2L	6.9	7.2					
HZS7B3L	7.0	7.3					
HZS7C1L	7.2	7.6	0.5	1	3.5	60	0.5
HZS7C2L	7.3	7.7					
HZS7C3L	7.5	7.9					
HZS9A1L	7.7	8.1	0.5	1	6.0	60	0.5
HZS9A2L	7.9	8.3					
HZS9A3L	8.1	8.5					
HZS9B1L	8.3	8.7	0.5	1	6.0	60	0.5
HZS9B2L	8.5	8.9					
HZS9B3L	8.7	9.1					
HZS9C1L	8.9	9.3	0.5	1	6.0	60	0.5
HZS9C2L	9.1	9.5					
HZS9C3L	9.3	9.7					
HZS11A1L	9.5	9.9	0.5	1	8.0	80	0.5
HZS11A2L	9.7	10.1					
HZS11A3L	9.9	10.3					
HZS11B1L	10.2	10.6	0.5	1	8.0	80	0.5
HZS11B2L	10.4	10.8					
HZS11B3L	10.7	11.1					
HZS11C1L	10.9	11.3	0.5	1	8.0	80	0.5
HZS11C2L	11.1	11.6					
HZS11C3L	11.4	11.9					

Note: 1. Tested with DC.

Part No.	Zener Voltage		Test Condition	Reverse Current		Dynamic Resistance	
	V <sub>Z</sub> (V) *1			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)
HZS12A1L	11.6	12.1	0.5	1	10.5	80	0.5
HZS12A2L	11.9	12.4					
HZS12A3L	12.2	12.7					
HZS12B1L	12.4	12.9					
HZS12B2L	12.6	13.1					
HZS12B3L	12.9	13.4					
HZS12C1L	13.2	13.7					
HZS12C2L	13.5	14.0					
HZS12C3L	13.8	14.3					
HZS15-1L	14.1	14.7	0.5	1	13.0	80	0.5
HZS15-2L	14.5	15.1					
HZS15-3L	14.9	15.5					
HZS16-1L	15.3	15.9	0.5	1	14.0	80	0.5
HZS16-2L	15.7	16.5					
HZS16-3L	16.3	17.1					
HZS18-1L	16.9	17.7	0.5	1	15.0	80	0.5
HZS18-2L	17.5	18.3					
HZS18-3L	18.1	19.0					
HZS20-1L	18.8	19.7	0.5	1	18.0	100	0.5
HZS20-2L	19.5	20.4					
HZS20-3L	20.2	21.1					
HZS22-1L	20.9	21.9	0.5	1	20.0	100	0.5
HZS22-2L	21.6	22.6					
HZS22-3L	22.3	23.3					
HZS24-1L	22.9	24.0	0.5	1	22.0	120	0.5
HZS24-2L	23.6	24.7					
HZS24-3L	24.3	25.5					
HZS27-1L	25.2	26.6	0.5	1	24.0	150	0.5
HZS27-2L	26.2	27.6					
HZS27-3L	27.2	28.6					
HZS30-1L	28.2	29.6	0.5	1	27.0	200	0.5
HZS30-2L	29.2	30.6					
HZS30-3L	30.2	31.6					
HZS33-1L	31.2	32.6	0.5	1	30.0	250	0.5
HZS33-2L	32.2	33.6					
HZS33-3L	33.2	34.6					
HZS36-1L	34.2	35.7	0.5	1	33.0	300	0.5
HZS36-2L	35.3	36.8					
HZS36-3L	36.4	38.0					

Note: 1. Tested with DC.

Main Characteristic

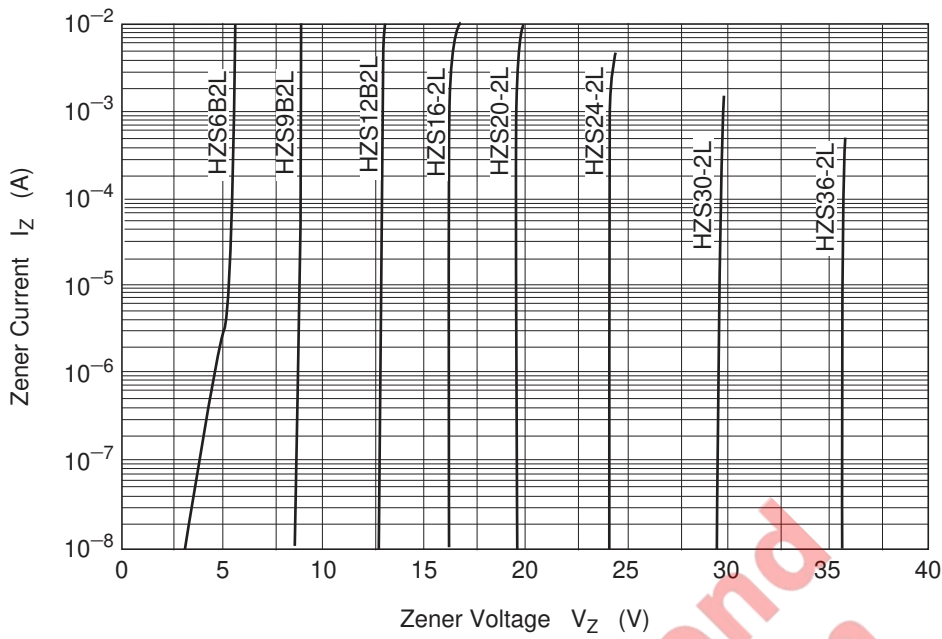


Fig.1 Zener current vs. Zener voltage

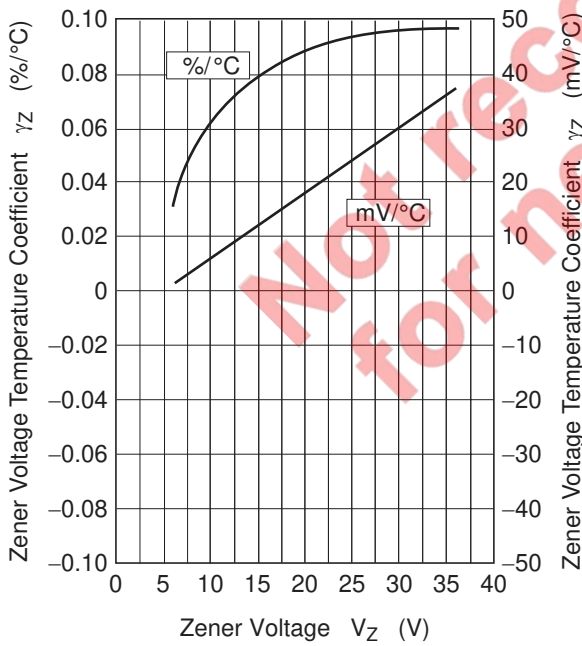


Fig.2 Temperature Coefficient vs. Zener voltage

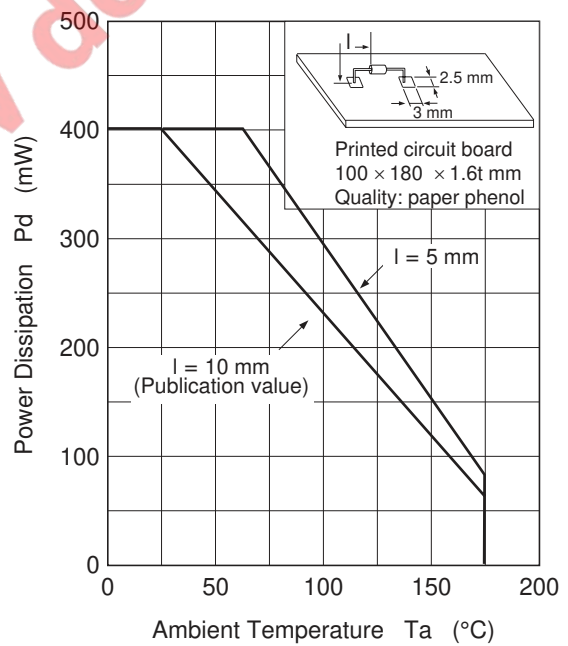
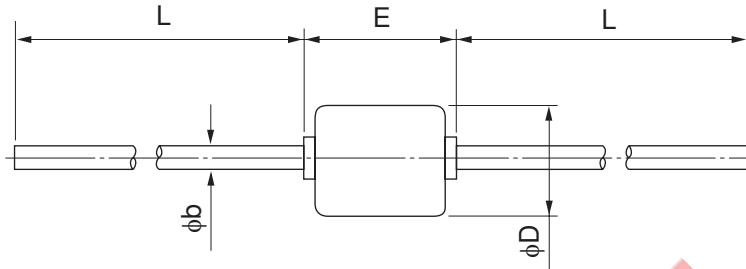


Fig.3 Power Dissipation vs. Ambient Temperature

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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