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

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HZ-L Series

Silicon Epitaxial Planar Zener Diode for Low Noise Application

RENESAS

ADE-208-118A(Z)

Rev. 1
Nov. 1996

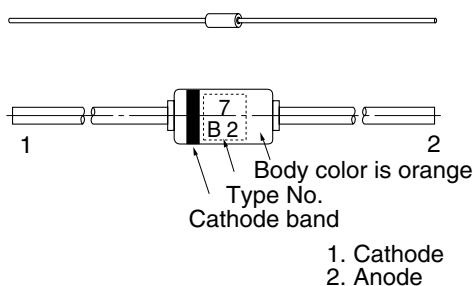
Features

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

Ordering Information

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

Pin Arrangement



Absolute Maximum Ratings

(Ta = 25°C)

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

Electrical Characteristics

(Ta = 25°C)

Type	Grade	Zener Voltage		Reverse Current		Dynamic Resistance	
		V _z (V)* ¹		Test Condition	I _r (μA)	Test Condition	r _d (Ω)
		Min	Max	I _z (mA)	Max	V _r (V)	Max
HZ6L	A1	5.2	5.5	0.5	1	2.0	150
	A2	5.3	5.6				80
	A3	5.4	5.7				
	B1	5.5	5.8				
	B2	5.6	5.9				60
	B3	5.7	6.0				
	C1	5.8	6.1				
	C2	6.0	6.3				
	C3	6.1	6.4				
HZ7L	A1	6.3	6.6	0.5	1	3.5	60
	A2	6.4	6.7				0.5
	A3	6.6	6.9				
	B1	6.7	7.0				
	B2	6.9	7.2				
	B3	7.0	7.3				
	C1	7.2	7.6				
	C2	7.3	7.7				
	C3	7.5	7.9				
HZ9L	A1	7.7	8.1	0.5	1	6.0	60
	A2	7.9	8.3				0.5
	A3	8.1	8.5				

Note: 1. Tested with DC.

Type	Grade	Zener Voltage		Reverse Current		Dynamic Resistance		
		V_z (V)* ¹		Test Condition	I_R (μA)	Test Condition	r_d (Ω)	Test Condition
		Min	Max	I_z (mA)	Max	V_R (V)	Max	I_z (mA)
HZ9L	B1	8.3	8.7	0.5	1	6.0	60	0.5
	B2	8.5	8.9					
	B3	8.7	9.1					
	C1	8.9	9.3					
	C2	9.1	9.5					
	C3	9.3	9.7					
HZ11L	A1	9.5	9.9	0.5	1	8.0	80	0.5
	A2	9.7	10.1					
	A3	9.9	10.3					
	B1	10.2	10.6					
	B2	10.4	10.8					
	B3	10.7	11.1					
	C1	10.9	11.3					
	C2	11.1	11.6					
	C3	11.4	11.9					
HZ12L	A1	11.6	12.1	0.5	1	10.5	80	0.5
	A2	11.9	12.4					
	A3	12.2	12.7					
	B1	12.4	12.9					
	B2	12.6	13.1					
	B3	12.9	13.4					
	C1	13.2	13.7					
	C2	13.5	14.0					
	C3	13.8	14.3					
HZ15L	1	14.1	14.7	0.5	1	13.0	80	0.5
	2	14.5	15.1					
	3	14.9	15.5					
HZ16L	1	15.3	15.9	0.5	1	14.0	80	0.5
	2	15.7	16.5					
	3	16.3	17.1					

Note: 1. Tested with DC.

HZ-L Series

Type	Grade	Zener Voltage		Reverse Current		Dynamic Resistance	
		V_z (V)* ¹		Test Condition	I_R (μA)	Test Condition	r_d (Ω)
		Min	Max	I_z (mA)	Max	V_R (V)	Max
HZ18L	1	16.9	17.7	0.5	1	15.0	80
	2	17.5	18.3				
	3	18.1	19.0				
HZ20L	1	18.8	19.7	0.5	1	18.0	100
	2	19.5	20.4				
	3	20.2	21.1				
HZ22L	1	20.9	21.9	0.5	1	20.0	100
	2	21.6	22.6				
	3	22.3	23.3				
HZ24L	1	22.9	24.0	0.5	1	22.0	120
	2	23.6	24.7				
	3	24.3	25.5				
HZ27L	1	25.2	26.6	0.5	1	24.0	150
	2	26.2	27.6				
	3	27.2	28.6				
HZ30L	1	28.2	29.6	0.5	1	27.0	200
	2	29.2	30.6				
	3	30.2	31.6				
HZ33L	1	31.2	32.6	0.5	1	30.0	250
	2	32.2	33.6				
	3	33.2	34.6				
HZ36L	1	34.2	35.7	0.5	1	33.0	300
	2	35.3	36.8				
	3	36.4	38.0				

Note: 1. Tested with DC.

Note: 2. Type No. is as follows; HZ6A1L, HZ6A2L, HZ36-3L

Main Characteristic

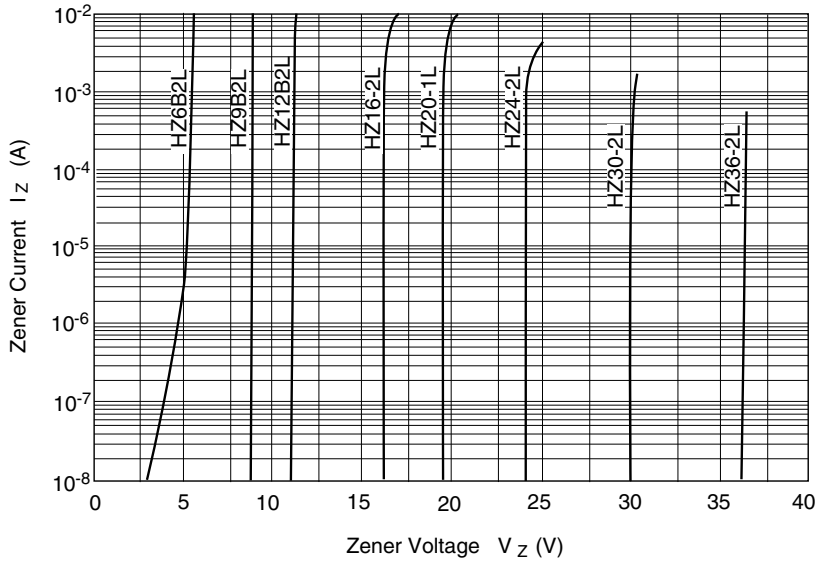


Fig.1 Zener current Vs. Zener voltage

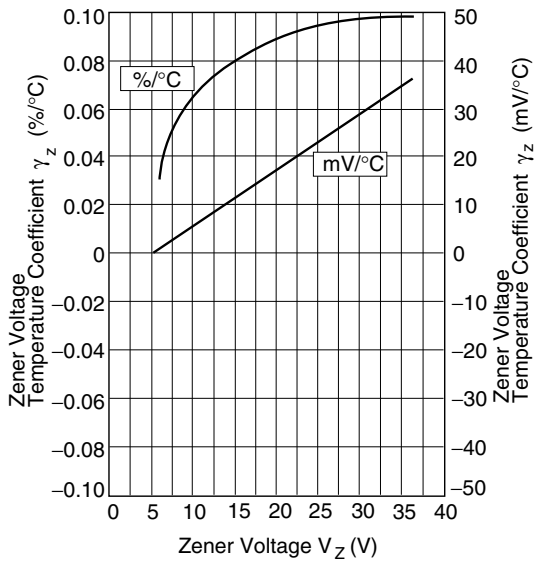


Fig.2 Temperature Coefficient Vs. Zener voltage

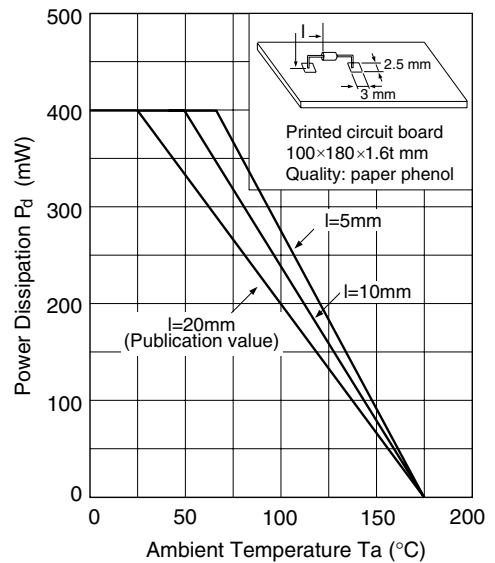
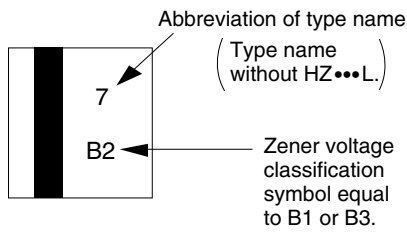
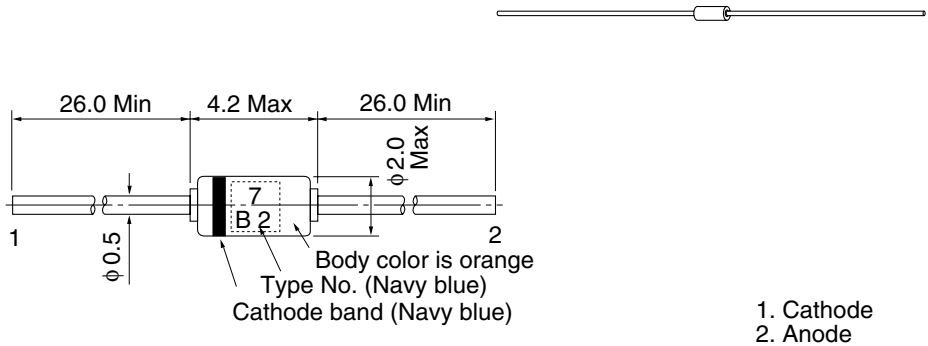


Fig.3 Power Dissipation Vs. Ambient Temperature

Package Dimensions

Unit: mm



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

Expanded drawing of marking

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