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

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HZⓂSeries

Silicon Epitaxial Planar Zener Diode for Stabilized Power Supply

RENESAS

ADE-208-794 (Z)

Rev. 0
May 1999

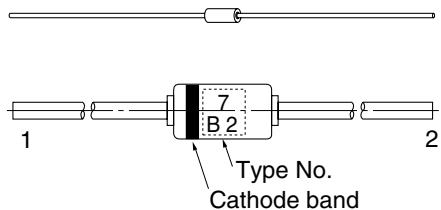
Features

- Low leakage, low zener impedance and maximum power dissipation of 500 mW are ideally suited for stabilized power supply, etc.
- Wide spectrum from 1.9V through 38V of zener voltage provide flexible application.

Ordering Information

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

Pin Arrangement



1. Cathode
2. Anode

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Power dissipation	Pd	500	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
HZ2Ⓜ	B1	1.9	2.1	5	5	0.5	100
	B2	2.0	2.2				
	B3	2.1	2.3				
	C1	2.2	2.4				
	C2	2.3	2.5				
	C3	2.4	2.6				
HZ3Ⓜ	A1	2.5	2.7	5	5	0.5	100
	A2	2.6	2.8				
	A3	2.7	2.9				
	B1	2.8	3.0				
	B2	2.9	3.1				
	B3	3.0	3.2				
	C1	3.1	3.3				
	C2	3.2	3.4				
	C3	3.3	3.5				
HZ4Ⓜ	A1	3.4	3.6	5	5	1.0	100
	A2	3.5	3.7				
	A3	3.6	3.8				
	B1	3.7	3.9				
	B2	3.8	4.0				
	B3	3.9	4.1				

Note: 1. Tested with DC.

Type	Grade	Zener Voltage		Reverse Current		Dynamic Resistance	
		V_z (V)* ¹		Test Condition	I_R (μ A)	Test Condition	r_d (Ω)
		Min	Max	I_z (mA)	Max	V_R (V)	Max
HZ4(H)	C1	4.0	4.2	5	5	1.0	100
	C2	4.1	4.3				
	C3	4.2	4.4				
HZ5(H)	A1	4.3	4.5	5	5	1.5	100
	A2	4.4	4.6				
	A3	4.5	4.7				
	B1	4.6	4.8				
	B2	4.7	4.9				
	B3	4.8	5.0				
	C1	4.9	5.1				
	C2	5.0	5.2				
	C3	5.1	5.3				
HZ6(H)	A1	5.2	5.5	5	5	2.0	40
	A2	5.3	5.6				
	A3	5.4	5.7				
	B1	5.5	5.8				
	B2	5.6	5.9				
	B3	5.7	6.0				
	C1	5.8	6.1				
	C2	6.0	6.3				
	C3	6.1	6.4				
HZ7(H)	A1	6.3	6.6	5	1	3.5	15
	A2	6.4	6.7				
	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				

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)
		Min	Max	I_z (mA)	Max	V_R (V)	Max
HZ9 [Ⓜ]	A1	7.7	8.1	5	1	5.0	20
	A2	7.9	8.3				
	A3	8.1	8.5				
	B1	8.3	8.7				
	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				
HZ11 [Ⓜ]	A1	9.5	9.9	5	1	7.5	25
	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				
HZ12 [Ⓜ]	A1	11.6	12.1	5	1	9.5	35
	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				
HZ15 [Ⓜ]	1	14.1	14.7	5	1	11.0	40
	2	14.5	15.1				
	3	14.9	15.5				

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)
		Min	Max	I_z (mA)	Max	V_R (V)	Max
HZ16(H)	1	15.3	15.9	5	1	12.0	45
	2	15.7	16.5				
	3	16.3	17.1				
HZ18(H)	1	16.9	17.7	5	1	13.0	55
	2	17.5	18.3				
	3	18.1	19.0				
HZ20(H)	1	18.8	19.7	2	1	15.0	60
	2	19.5	20.4				
	3	20.2	21.1				
HZ22(H)	1	20.9	21.9	2	1	17.0	65
	2	21.6	22.6				
	3	22.3	23.3				
HZ24(H)	1	22.9	24.0	2	1	19.0	70
	2	23.6	24.7				
	3	24.3	25.5				
HZ27(H)	1	25.2	26.6	2	1	21.0	80
	2	26.2	27.6				
	3	27.2	28.6				
HZ30(H)	1	28.2	29.6	2	1	23.0	100
	2	29.2	30.6				
	3	30.2	31.6				
HZ33(H)	1	31.2	32.6	2	1	25.0	120
	2	32.2	33.6				
	3	33.2	34.6				
HZ36(H)	1	34.2	35.7	2	1	27.0	140
	2	35.3	36.8				
	3	36.4	38.0				

Note: 1. Tested with DC.

Note: 2. Type No. is as follows; HZ2(H)B1, HZ 2(H)B2, HZ36(H)3.

Main Characteristic

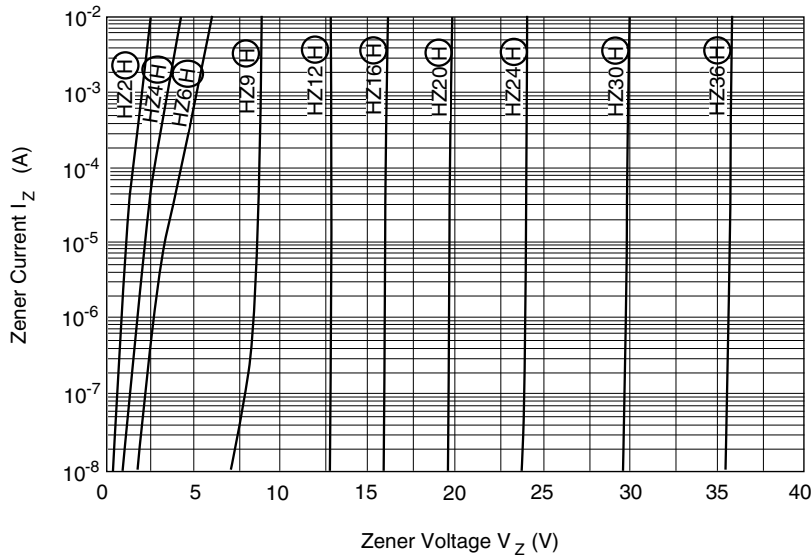


Fig.1 Zener current Vs. Zener voltage

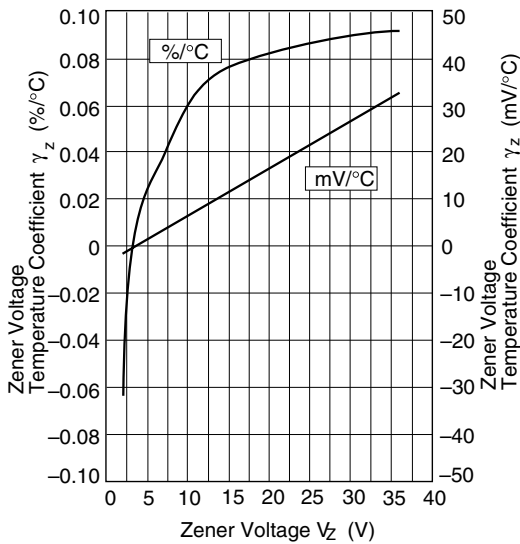


Fig.2 Temperature Coefficient Vs. Zener voltage

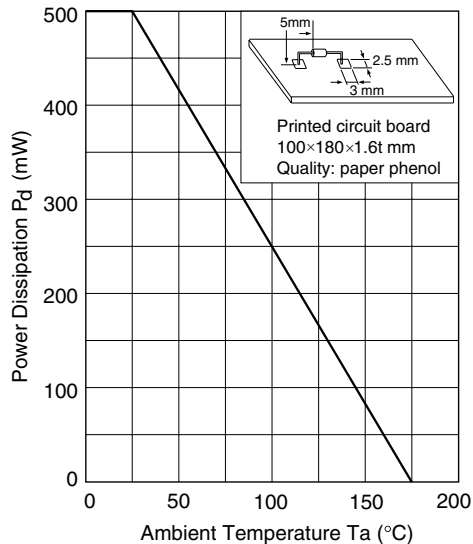
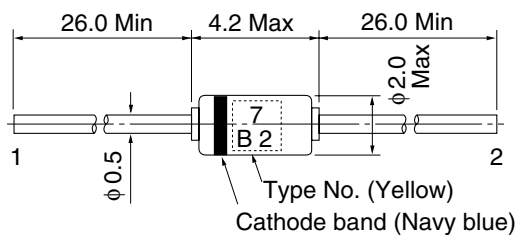


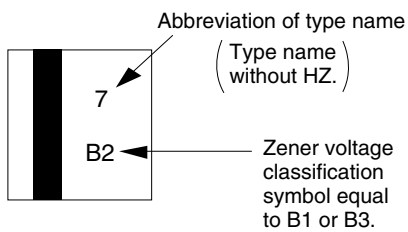
Fig.3 Power Dissipation Vs. Ambient Temperature

Package Dimensions

Unit: mm



1. Cathode
2. Anode



Expanded drawing of marking

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

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