

HZS-L Series

Silicon Epitaxial Planar Zener Diode for Low Noise Application

HITACHI

ADE-208-121A(Z)

Rev 1

Dec. 1996

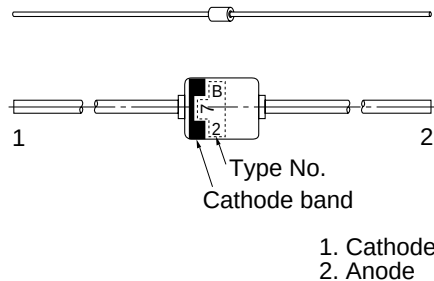
Features

- 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 spectrum from 5.2V through 38V of zener voltage provide flexible application.
- Suitable for 5mm-pitch high speed automatic insertion.

Ordering Information

Type No.	Mark	Package Code
HZS-L Series	Type No.	MHD

Outline



HZS-L Series

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)

		Zener Voltage		Reverse Current			Dynamic Resistance	
		V _Z (V)*1		Test Condition	I _R (μA)	Test Condition	r _d (Ω)	Test Condition
Type	Grade	Min	Max	I _Z (mA)	Max	V _R (V)	Max	I _Z (mA)
HZS6L	A1	5.2	5.5	0.5	1	2.0	150	0.5
	A2	5.3	5.6					
	A3	5.4	5.7					
	B1	5.5	5.8				80	0.5
	B2	5.6	5.9					
	B3	5.7	6.0					
	C1	5.8	6.1				60	0.5
	C2	6.0	6.3					
	C3	6.1	6.4					
HZS7L	A1	6.3	6.6	0.5	1	3.5	60	0.5
	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					
HZS9L	A1	7.7	8.1	0.5	1	6.0	60	0.5
	A2	7.9	8.3					
	A3	8.1	8.5					

Note: 1. Tested with DC.

		Zener Voltage		Reverse Current		Dynamic Resistance		
		V _z (V)* ¹		Test Condition	I _R (μA)	Test Condition	r _d (Ω)	Test Condition
Type	Grade	Min	Max	I _z (mA)	Max	V _R (V)	Max	I _z (mA)
HZS9L	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					
HZS11L	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					
HZS12L	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					
HZS15L	1	14.1	14.7	0.5	1	13.0	80	0.5
	2	14.5	15.1					
	3	14.9	15.5					
HZS16L	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.

HZS-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
HZS18L	1	16.9	17.7	0.5	1	15.0	80
	2	17.5	18.3				
	3	18.1	19.0				
HZS20L	1	18.8	19.7	0.5	1	18.0	100
	2	19.5	20.4				
	3	20.2	21.1				
HZS22L	1	20.9	21.9	0.5	1	20.0	100
	2	21.6	22.6				
	3	22.3	23.3				
HZS24L	1	22.9	24.0	0.5	1	22.0	120
	2	23.6	24.7				
	3	24.3	25.5				
HZS27L	1	25.2	26.6	0.5	1	24.0	150
	2	26.2	27.6				
	3	27.2	28.6				
HZS30L	1	28.2	29.6	0.5	1	27.0	200
	2	29.2	30.6				
	3	30.2	31.6				
HZS33L	1	31.2	32.6	0.5	1	30.0	250
	2	32.2	33.6				
	3	33.2	34.6				
HZS36L	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; HZS6A1L, HZS6A2L, HZS36-3L

Main Characteristic

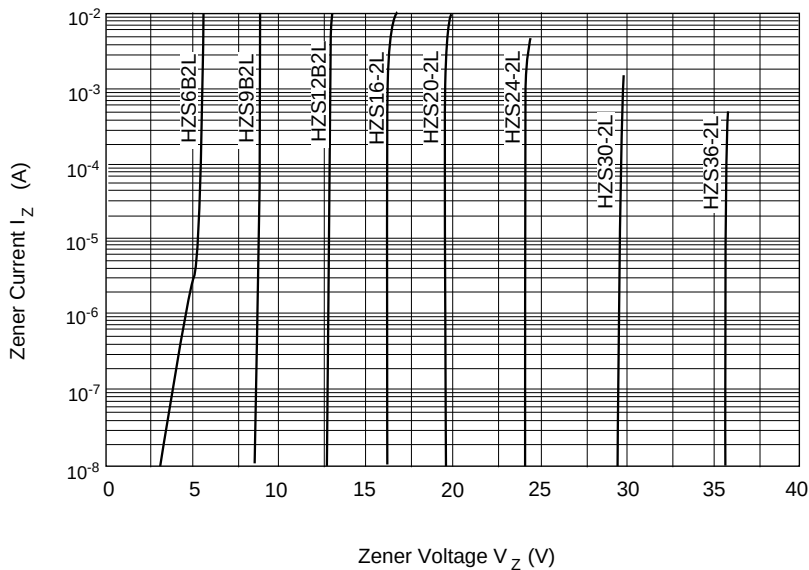


Fig.1 Zener current Vs. Zener voltage

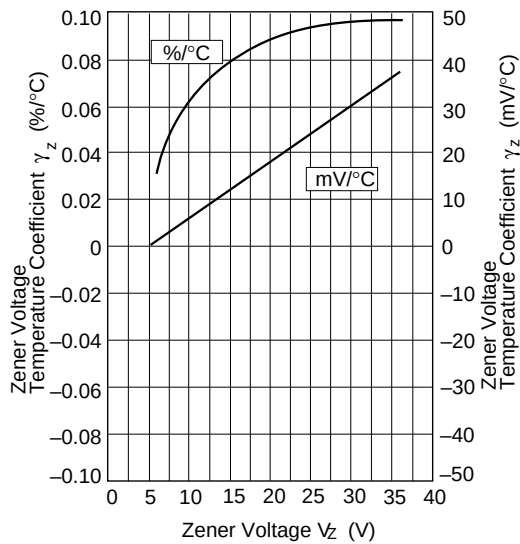


Fig.2 Temperature Coefficient Vs. Zener voltage

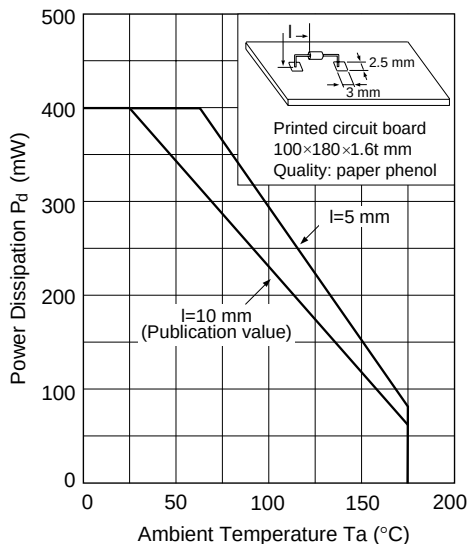
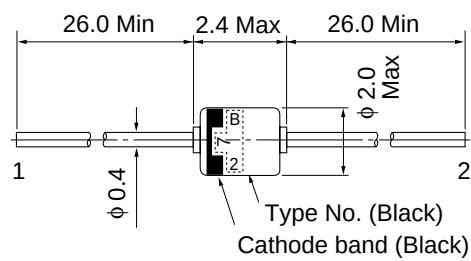


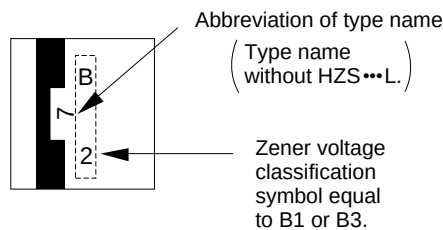
Fig.3 Power Dissipation Vs. Ambient Temperature

Package Dimensions

Unit : mm



- 1. Cathode
- 2. Anode



Expanded drawing of marking

Hitachi Code	MHD
JEDECCode	DO-34
EIAJCode	-
Weight(g)	0.084

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