HZF Series

Silicon Epitaxial Planar Zener Diodes for Voltage Controller & Voltage Limitter

HITACHI

ADE-208-129 (Z)
Preliminary
Rev. 0
Aug. 1993

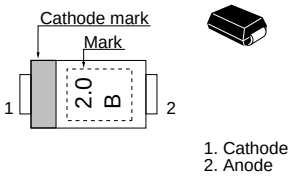
Features

- Wide spectrum from 1.88V through 40V of zener voltage provide flexible application.
- LRP package is suitable for high density surface mounting and high speed assembly.

Ordering Information

Type No.	Mark	Package Code
HZF Series	Type No.	LRP

Outline



1. Cathode
2. Anode

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Value	Unit
Power dissipation	Pd	0.9	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Electrical Characteristics (Ta = 25°C)

		Zener Voltage			Reverse Current		Dynamic Resistance	
		V_Z (V)*		Test Condition	I_R (µA)	Test Condition	r_d (½)	Test Condition
Type	Grade	Min	Max	I_Z (mA)	Max	V_R (V)	Max	I_Z (mA)
HZF2.0	BP	1.88	2.12	40	200	0.5	25	40
	CP	2.00	2.24					
HZF2.2	BP	2.08	2.33	40	200	0.7	20	40
	CP	2.20	2.45					
HZF2.4	BP	2.28	2.56	40	200	1.0	15	40
	CP	2.40	2.70					
HZF2.7	BP	2.5	2.9	40	200	1.0	15	40
	CP	2.7	3.1					
HZF3.0	BP	2.8	3.2	40	100	1.0	15	40
	CP	3.0	3.4					
HZF3.3	BP	3.1	3.5	40	80	1.0	15	40
	CP	3.3	3.7					
HZF3.6	BP	3.4	3.8	40	60	1.0	15	40
	CP	3.6	4.0					
HZF3.9	BP	3.7	4.1	40	40	1.0	15	40
	CP	3.9	4.4					
HZF4.3	BP	4.0	4.5	40	20	1.0	15	40
	CP	4.3	4.8					
HZF4.7	BP	4.4	4.9	40	20	1.0	10	40
	CP	4.7	5.2					
HZF5.1	BP	4.8	5.4	40	20	1.0	8	40
	CP	5.1	5.7					
HZF5.6	BP	5.3	6.0	40	20	1.5	8	40
	CP	5.6	6.3					
HZF6.2	BP	5.8	6.6	40	20	3.0	6	40
	CP	6.2	7.0					
HZF6.8	BP	6.4	7.2	40	20	3.5	6	40
	CP	6.8	7.7					
HZF7.5	BP	7.0	7.9	40	20	4.0	4	40
	CP	7.5	8.4					
HZF8.2	BP	7.7	8.7	40	20	5.0	4	40
	CP	8.2	9.3					

Note: Tested with DC.

Electrical Characteristics (Ta = 25°C) (cont)

		Zener Voltage			Reverse Current		Dynamic Resistance	
		V_Z (V)*		Test Condition	I_R (µA)	Test Condition	r_d (½)	Test Condition
Type	Grade	Min	Max	I_Z (mA)	Max	V_R (V)	Max	I_Z (mA)
HZF9.1	BP	8.5	9.6	40	20	6.0	6	40
	CP	9.1	10.2					
HZF10	BP	9.4	10.6	40	10	7.0	6	40
	CP	10.0	11.2					
HZF11	BP	10.4	11.6	20	10	8.0	8	20
	CP	11.0	12.3					
HZF12	BP	11.4	12.6	20	10	9.0	8	20
	CP	12.0	13.5					
HZF13	BP	12.4	14.1	20	10	10.0	10	20
	CP	13.3	15.0					
HZF15	BP	13.8	15.6	20	10	11.0	10	20
	CP	14.7	16.5					
HZF16	BP	15.3	17.1	20	10	12.0	12	20
	CP	16.2	18.3					
HZF18	BP	16.8	19.1	20	10	13.0	12	20
	CP	18.0	20.3					
HZF20	BP	18.8	21.2	20	10	15.0	14	20
	CP	20.0	22.4					
HZF22	BP	20.8	23.3	10	10	17.0	14	10
	CP	22.0	24.5					
HZF24	BP	22.8	25.6	10	10	19.0	16	10
	CP	24.0	27.6					
HZF27	BP	25.1	28.9	10	10	21.0	16	10
	CP	27.0	30.8					
HZF30	BP	28.0	32.0	10	10	23.0	18	10
	CP	30.0	34.0					
HZF33	BP	31.0	35.0	10	10	25.0	18	10
	CP	33.0	37.0					
HZF36	BP	34.0	38.0	10	10	27.0	20	10
	CP	36.0	40.0					

Note: Tested with DC.
Type No. is as follows; HZF2.0BP, HZF2.0CP, ••• HZF36BP, HZF36CP.

MARK CODE

Type	Grade	MARK No.
HZF2.0	BP	2.0 B
	CP	2.0 C
HZF2.2	BP	2.2 B
	CP	2.2 C
HZF2.4	BP	2.4 B
	CP	2.4 C
HZF2.7	BP	2.7 B
	CP	2.7 C
HZF3.0	BP	3.0 B
	CP	3.0 C
HZF3.3	BP	3.3 B
	CP	3.3 C
HZF3.6	BP	3.6 B
	CP	3.6 C
HZF3.9	BP	3.9 B
	CP	3.9 C
HZF4.3	BP	4.3 B
	CP	4.3 C
HZF4.7	BP	4.7 B
	CP	4.7 C
HZF5.1	BP	5.1 B
	CP	5.1 C
HZF5.6	BP	5.6 B
	CP	5.6 C
HZF6.2	BP	6.2 B
	CP	6.2 C
HZF6.8	BP	6.8 B
	CP	6.8 C

Type	Grade	MARK No.
HZF7.5	BP	7.5 B
	CP	7.5 C
HZF8.2	BP	8.2 B
	CP	8.2 C
HZF9.1	BP	9.1 B
	CP	9.1 C
HZF10	BP	1 0 B
	CP	1 0 C
HZF11	BP	1 1 B
	CP	1 1 C
HZF12	BP	1 2 B
	CP	1 2 C
HZF13	BP	1 3 B
	CP	1 3 C
HZF15	BP	1 5 B
	CP	1 5 C
HZF16	BP	1 6 B
	CP	1 6 C
HZF18	BP	1 8 B
	CP	1 8 C
HZF20	BP	2 0 B
	CP	2 0 C
HZF22	BP	2 2 B
	CP	2 2 C
HZF24	BP	2 4 B
	CP	2 4 C
HZF27	BP	2 7 B
	CP	2 7 C

Type	Grade	MARK No.
HZF30	BP	3 0 B
	CP	3 0 C
HZF33	BP	3 3 B
	CP	3 3 C
HZF36	BP	3 6 B
	CP	3 6 C

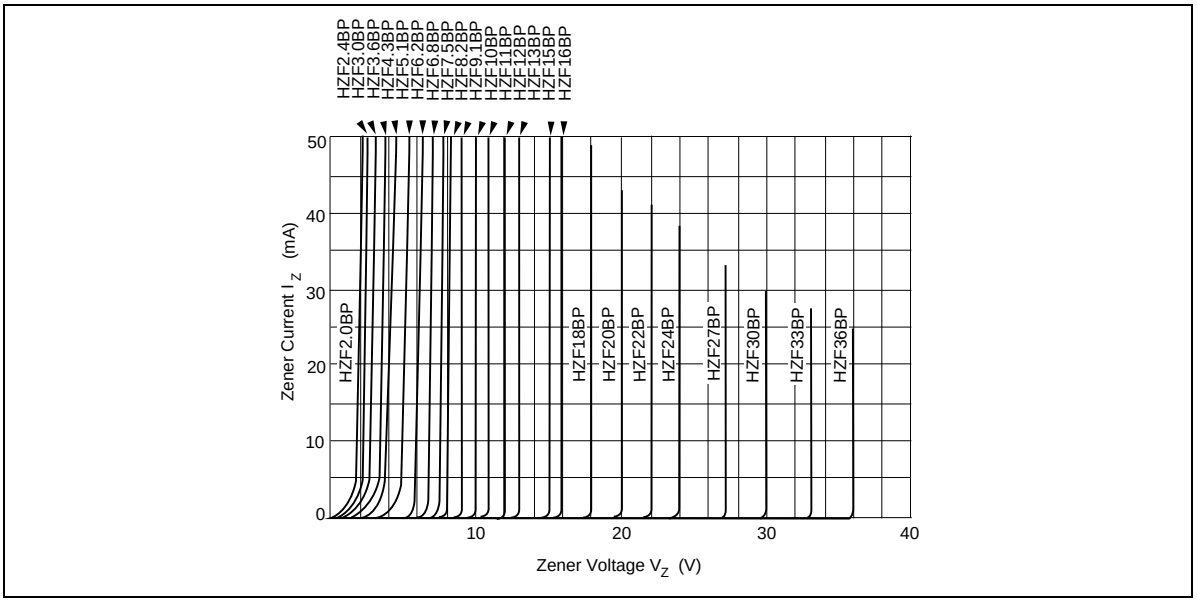


Fig.1 Zener current Vs. Zener voltage

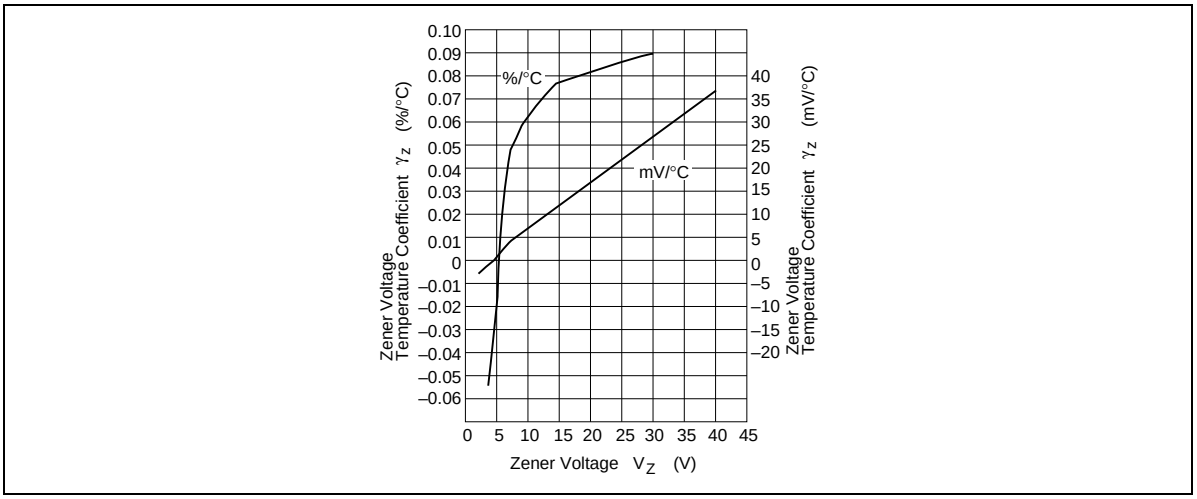


Fig.2 Temperature Coefficient Vs. Zener voltage

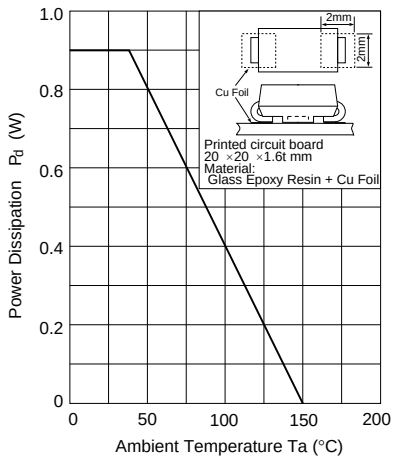
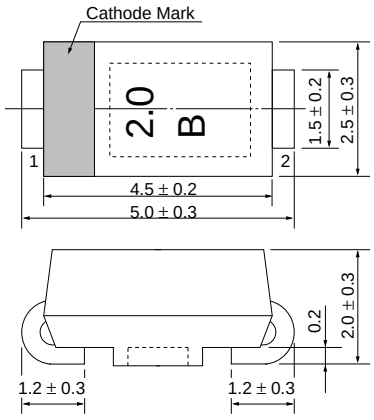


Fig.3 Power Dissipation Vs. Ambient Temperature

Package Dimensions

Unit: mm



1 Cathode
2 Anode

HITACHI Code	LRP
JEDEC Code	—
EIAJ Code	—
Weight (g)	0.058