GW

SEMICONDUCTOR

HZ2B1 through HZ36-3

500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators

AXIAL LEAD
DO35

Absolute Maximum Ratings T_A = 25°C unless otherwise noted

Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +175	°C
Operating Junction Temperature	+175	°C

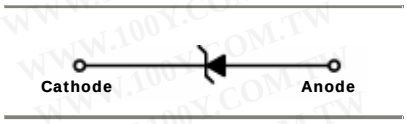
These ratings are limiting values above which the serviceability of the diode may be impaired.

DEVICE MARKING DIAGRAM

Voltage Code : XXX

Specification Features:

- Zener Voltage Range 2.0 to 36 Volts
- DO-35 Package (JEDEC)
- Through-Hole Device Type Mounting
- Hermetically Sealed Glass
- Compression Bonded Construction
- All External Surfaces Are Corrosion Resistant And Leads Are Readily Solderable
- RoHS Compliant and Halogen Free
- Solder Hot Dip Tin (Sn) Terminal Finish
- Cathode Indicated By Polarity Band



ELECTRICAL SYMBOL

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Type	Grade	Zener Voltage			Reverse Current		Dynamic Resistance	
		VZ(Volts)		Test Condition	IR (μA)	Test Condition	Z_{ZT} @I_{ZT} (Ω)	Test Condition
		Min	Max	Iz (mA)	Max	VR (V)	Max	Iz (mA)
HZ2	B1	1.9	2.1	5	5	0.5	100	5
	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	5
	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					

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Type	Grade	Zener Voltage VZ(Volts) Min	Zener Voltage VZ(Volts) Max	Zener Voltage Test Condition Iz (mA)	Reverse Current IR (μA) Max	Reverse Current Test Condition VR (V)	Dynamic Resistance Z_{ZT} @I_{ZT} (Ω) Max	Dynamic Resistance Test Condition Iz (mA)
HZ4	A1	3.4	3.6	5	5	1	100	5
	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					
	C1	4.0	4.2					
	C2	4.1	4.3					
	C3	4.2	4.4					
HZ5	A1	4.3	4.5	5	5	1.5	100	5
	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	5.2					
	C3	5.1	5.3					
HZ6	A1	5.2	5.5	5	5	2	40	5
	A2	5.3	5.6					
	A3	5.4	5.7					
	B1	5.5	5.8					
	B2	5.6	5.9					
	B3	5.7	6					
	C1	5.8	6.1					
	C2	6	6.3					
	C3	6.1	6.4					
HZ7	A1	6.3	6.6	5	1	3.5	15	5
	A2	6.4	6.7					
	A3	6.6	6.9					
	B1	6.7	7					
	B2	6.9	7.2					
	B3	7	7.3					
	C1	7.2	7.6					
	C2	7.3	7.7					
	C3	7.5	7.9					
HZ9	A1	7.7	8.1	5	1	5	20	5
	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					

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Type	Grade	Zener Voltage			Reverse Current		Dynamic Resistance	
		VZ(Volts)		Test Condition	IR (μA)	Test Condition	Z_{ZT} @I_{ZT} (Ω)	Test Condition
		Min	Max	Iz (mA)	Max	VR (V)	Max	Iz (mA)
HZ11	A1	9.5	9.9	5	1	7.5	25	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					
HZ12	A1	11.6	12.1	5	1	9.5	35	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					
	C3	13.8	14.3					
HZ15	-1	14.1	14.7	5	1	11	40	5
	-2	14.5	15.1					
	-3	14.9	15.5					
HZ16	-1	15.3	15.9	5	1	12	45	5
	-2	15.7	16.5					
	-3	16.3	17.1					
HZ18	-1	16.9	17.7	5	1	13	55	5
	-2	17.5	18.3					
	-3	18.1	19					
HZ20	-1	18.8	19.7	2	1	15	60	2
	-2	19.5	20.4					
	-3	20.2	21.1					
HZ22	-1	20.9	21.9	2	1	17	65	2
	-2	21.6	22.6					
	-3	22.3	23.3					
HZ24	-1	22.9	24	2	1	19	70	2
	-2	23.6	24.7					
	-3	24.3	25.5					
HZ27	-1	25.2	26.6	2	1	21	80	2
	-2	26.2	27.6					
	-3	27.2	28.6					
HZ30	-1	28.2	29.6	2	1	23	100	2
	-2	29.2	30.6					
	-3	30.2	31.6					
HZ33	-1	31.2	32.6	2	1	25	120	2
	-2	32.2	33.6					
	-3	33.2	34.6					

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Type	Grade	Zener Voltage			Reverse Current		Dynamic Resistance	
		VZ(Volts)		Test Condition	IR (μA)	Test Condition	Z_{ZT} @I_{ZT} (Ω)	Test Condition
		Min	Max	Iz (mA)	Max	VR (V)	Max	Iz (mA)
HZ36	-1	34.2	35.7	2	1	27	140	2
	-2	35.3	36.8					
	-3	36.4	38					

V_F Forward Voltage = 1.2 V Maximum @ I_F = 200 mA for all types

Notes:

1. The zener voltage (V_Z) is tested under pulse condition.
2. The dynamic resistance Z_{ZT} is measured by dividing the AC voltage drop across the device by the AC current applied. The specified limits are for $I_{Z(AC)}$ = 0.1 $I_{Z(DC)}$ with AC frequency = 60Hz.
3. Type No. is as follows; TC2B1, TC2B2, TC36-3.

Typical Characteristics

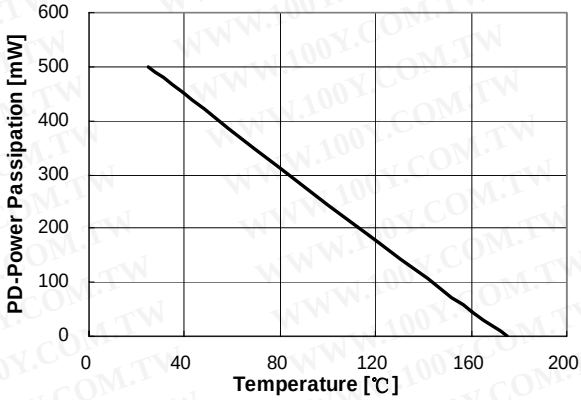


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

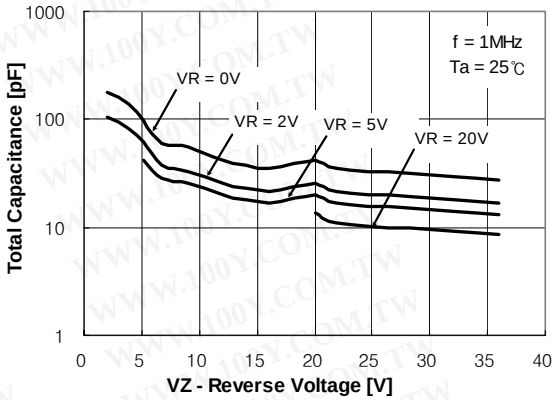


Figure 2. Total Capacitance

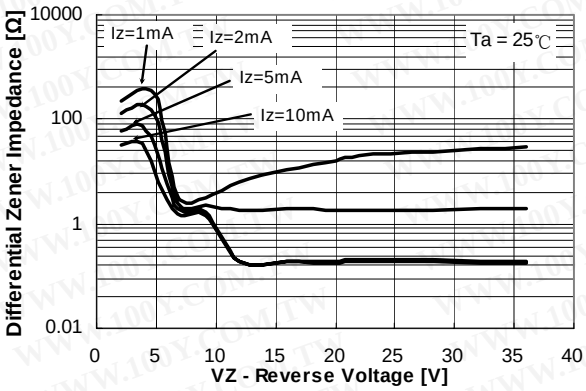


Figure 3. Differential Impedance vs. Zener Voltage

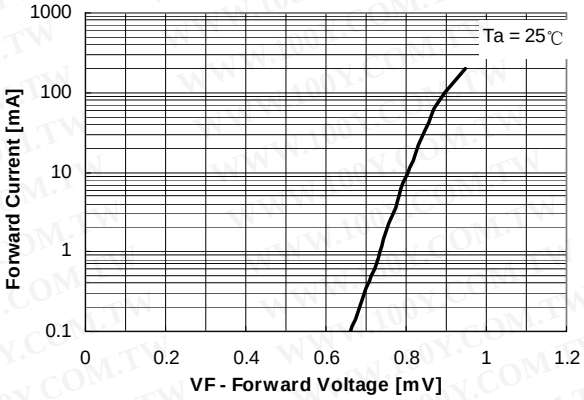


Figure 4. Forward Current vs. Forward Voltage

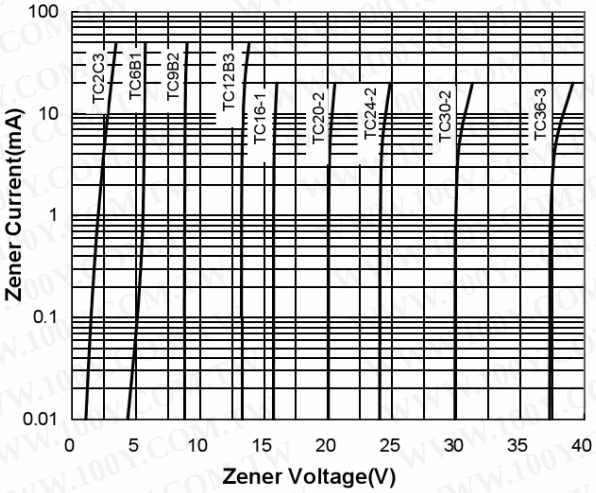
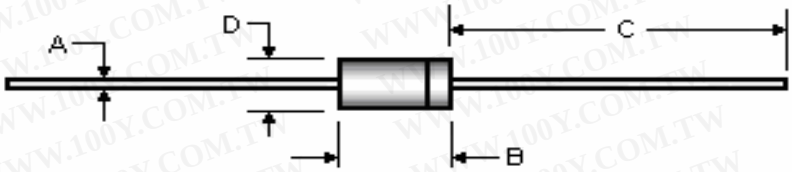


Figure 5. Zener Current vs. Zener Voltage

Package Outline

Package	Case Outline



DO-35

DIM	DO-35			
	Millimeters		Inches	
	Min	Max	Min	Max
A	0.46	0.55	0.018	0.022
B	3.05	5.08	0.120	0.200
C	25.40	38.10	1.000	1.500
D	1.53	2.28	0.060	0.090

Notes:

1. All dimensions are within JEDEC standard.
2. DO35 polarity denoted by cathode band.