

500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators

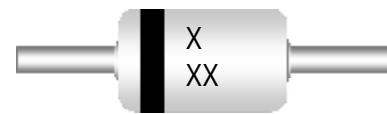


Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +175	$^\circ\text{C}$
Operating Junction Temperature	+175	$^\circ\text{C}$

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

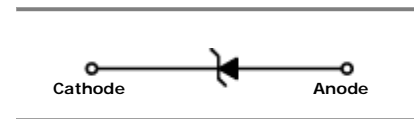
DEVICE MARKING DIAGRAM



Voltage Code : TCXXX

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 $(T_A = 25^\circ\text{C}$ 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	I _z (mA)	Max	VR (V)	Max	I _z (mA)
TC2	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					
TC3	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 ($T_A = 25^\circ\text{C}$ 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	I _Z (mA)	Max	VR (V)	Max	I _Z (mA)
TC4	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					
TC5	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					
TC6	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					
TC7	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					
TC9	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 ($T_A = 25^\circ\text{C}$ 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	I_z (mA)	Max	VR (V)	Max	I_z (mA)
TC11	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					
TC12	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					
TC15	-1	14.1	14.7	5	1	11	40	5
	-2	14.5	15.1					
	-3	14.9	15.5					
TC16	-1	15.3	15.9	5	1	12	45	5
	-2	15.7	16.5					
	-3	16.3	17.1					
TC18	-1	16.9	17.7	5	1	13	55	5
	-2	17.5	18.3					
	-3	18.1	19					
TC20	-1	18.8	19.7	2	1	15	60	2
	-2	19.5	20.4					
	-3	20.2	21.1					
TC22	-1	20.9	21.9	2	1	17	65	2
	-2	21.6	22.6					
	-3	22.3	23.3					
TC24	-1	22.9	24	2	1	19	70	2
	-2	23.6	24.7					
	-3	24.3	25.5					
TC27	-1	25.2	26.6	2	1	21	80	2
	-2	26.2	27.6					
	-3	27.2	28.6					
TC30	-1	28.2	29.6	2	1	23	100	2
	-2	29.2	30.6					
	-3	30.2	31.6					
TC33	-1	31.2	32.6	2	1	25	120	2
	-2	32.2	33.6					
	-3	33.2	34.6					

Electrical Characteristics ($T_A = 25^\circ\text{C}$ 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	I _Z (mA)	Max	VR (V)	Max	I _Z (mA)
TC36	-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

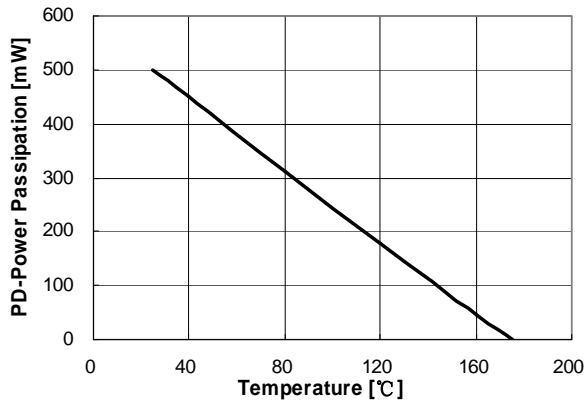


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

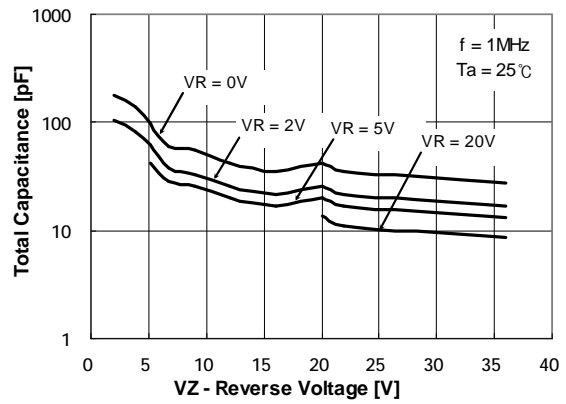


Figure 2. Total Capacitance

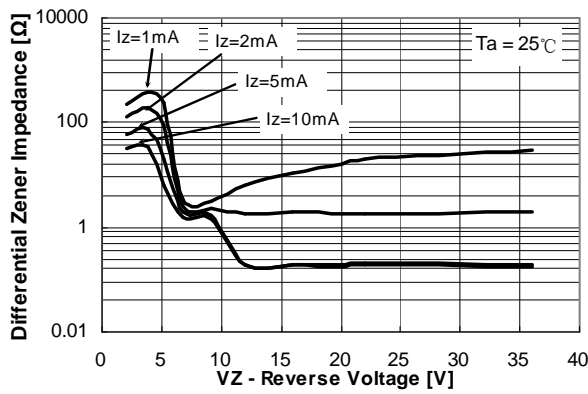


Figure 3. Differential Impedance vs. Zener Voltage

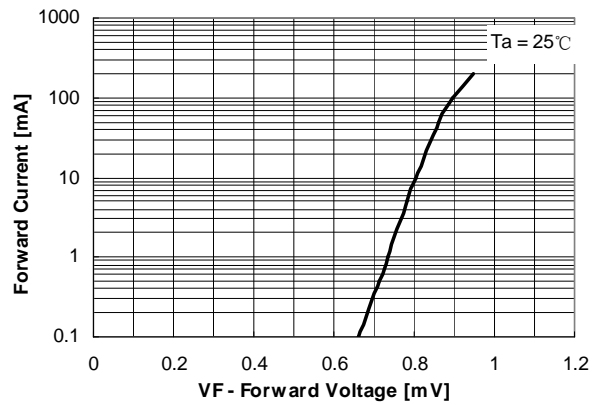


Figure 4. Forward Current vs. Forward Voltage

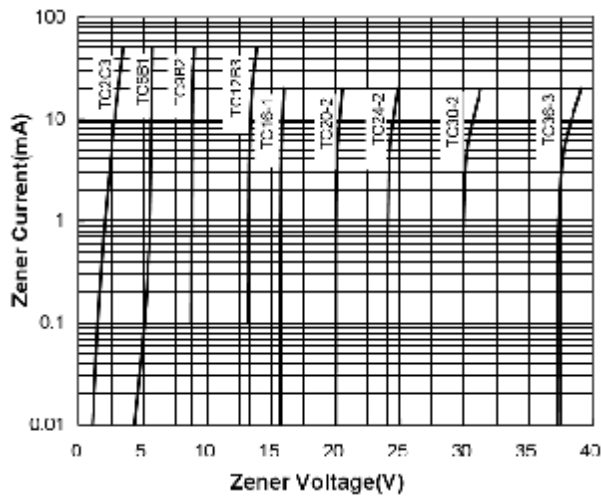
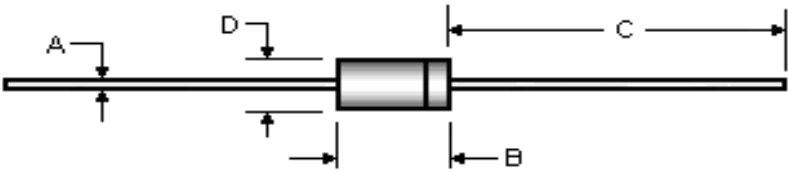


Figure 5. Zener Current vs. Zener Voltage

Package Outline

Package	Case Outline				
DO-35					
	DO-35				
	DIM	Millimeters		Inches	
		Min	Max	Min	Max
	A	0.46	0.55	0.018	0.022
	B	---	5.08	---	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.