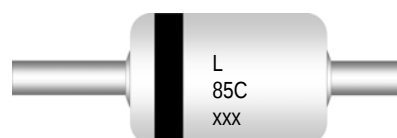


1.3 Watt DO-41 Hermetically Sealed Glass Zener Voltage Regulators



DEVICE MARKING DIAGRAM



L : Logo
Device Code : TCBZX85C3V3

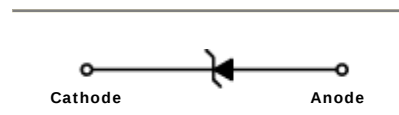
Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Value	Units
Power Dissipation	1.3	W
Storage Temperature Range	-65 to +200	$^\circ\text{C}$
Operating Junction Temperature	+200	$^\circ\text{C}$

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

Specification Features:

- Zener Voltage Range 3.3 to 56 Volts
- Through-Hole Device Type Mounting
- Hermetically Sealed Glass
- Compression Bonded Construction
- All External Surfaces Are Corrosion Resistant And Leads Are Readily Solderable
- Solder Hot Dip Tin (Sn) Terminal Finish
- Cathode Indicated By Polarity Band



ELECTRICAL SYMBOL

Ordering Information

Device	Description	Electrical Characteristic
TCBZX85C3V3 through TCBZX85C56	▪ RoHS Compliant	Both are compliant with below electrical characteristics
TCBZX85C3V3HF through TCBZX85C56HF	▪ RoHS Compliant	
	▪ Halogen Free	

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Device Type	$V_Z @ I_{ZT}$ (Volts)		I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	I_{ZK} (mA)	$Z_{ZK} @ I_{ZK}$ (Ω) Max	$I_R @ V_R$ (μA) Max	V_R (Volts)
	V_Z Min	V_Z Max						
TCBZX85C 3V3	3.1	3.5	80	20	1	400	40	1
TCBZX85C 3V6	3.4	3.8	60	20	1	500	20	1
TCBZX85C 3V9	3.7	4.1	60	15	1	500	20	1
TCBZX85C 4V3	4.0	4.6	50	13	1	500	3	1
TCBZX85C 4V7	4.4	5.0	45	13	1	500	3	1
TCBZX85C 5V1	4.8	5.4	45	10	1	500	1	1.5
TCBZX85C 5V6	5.2	6.0	45	7	1	400	1	2
TCBZX85C 6V2	5.8	6.6	35	4	1	300	1	3
TCBZX85C 6V8	6.4	7.2	35	3.5	1	300	1	4
TCBZX85C 7V5	7.0	7.9	35	3	0.5	200	1	4.5
TCBZX85C 8V2	7.7	8.7	25	5	0.5	200	1	6.2

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Device Type	$V_Z @ I_{ZT}$ (Volts)		I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	I_{ZK} (mA)	$Z_{ZK} @ I_{ZK}$ (Ω) Max	$I_R @ V_R$ (μA) Max	V_R (Volts)
	V_Z Min	V_Z Max						
TCBZX85C 9V1	8.5	9.6	25	5	0.5	200	1	6.9
TCBZX85C 10	9.4	10.6	25	7	0.5	200	0.5	7.5
TCBZX85C 11	10.4	11.6	20	8	0.5	300	0.5	8.2
TCBZX85C 12	11.4	12.7	20	9	0.5	350	0.5	9.1
TCBZX85C 13	12.4	14.1	20	10	0.5	400	0.5	10
TCBZX85C 15	13.8	15.6	15	15	0.5	500	0.5	11
TCBZX85C 16	15.3	17.1	15	15	0.5	500	0.5	12
TCBZX85C 18	16.8	19.1	15	20	0.5	500	0.5	13
TCBZX85C 20	18.8	21.2	10	24	0.5	600	0.5	15
TCBZX85C 22	20.8	23.3	10	25	0.5	600	0.5	16
TCBZX85C 24	22.8	25.6	10	25	0.5	600	0.5	18
TCBZX85C 27	25.1	28.9	8	30	0.25	750	0.5	20
TCBZX85C 30	28	32	8	30	0.25	1000	0.5	22
TCBZX85C 33	31	35	8	35	0.25	1000	0.5	24
TCBZX85C 36	34	38	8	40	0.25	1000	0.5	25
TCBZX85C 39	37	41	6	45	0.25	1000	0.5	27
TCBZX85C 43	40	46	6	50	0.25	1000	0.5	30
TCBZX85C 47	44	50	4	90	0.25	1500	0.5	33
TCBZX85C 51	48	54	4	115	0.25	1500	0.5	36
TCBZX85C 56	52	60	4	120	0.25	2000	0.5	39

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

Notes:
1. TOLERANCE AND TYPE NUMBER DESIGNATION (V_Z)

The type numbers listed have zener voltage min/max limits as shown.

2. SPECIALS AVAILABLE INCLUDE

Nominal zener voltages between the voltages shown and tighter voltage, for detailed information on price, availability and delivery, contact you nearest Tak Cheong representative.

3. ZENER VOLTAGE (V_Z) MEASUREMENT

The zener voltage (V_Z) is tested under pulse conditions such that T_J is no more than 2°C above T_A .

4. ZENER IMPEDANCE (Z_Z) DERIVATION

The zener impedance is derived from the 60 cycle AC voltage, which results when an AC current having an RMS value equal to 10% of the DC zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} .

Typical Characteristics

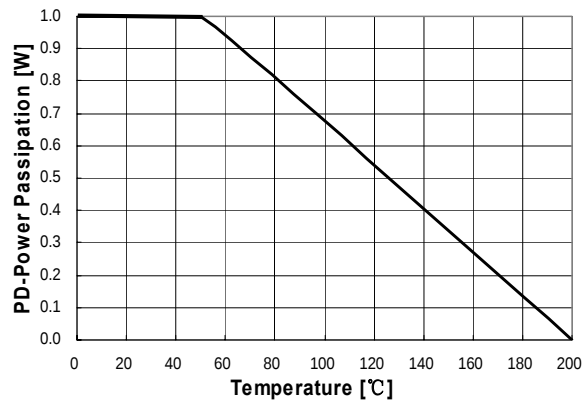


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

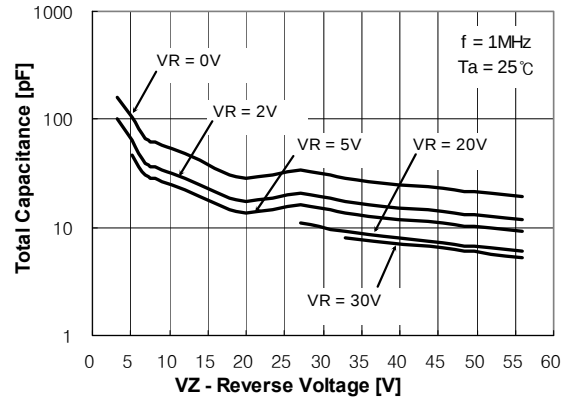


Figure 2. Total Capacitance

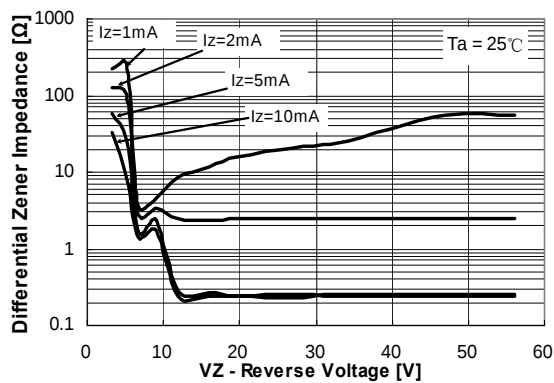


Figure 3. Differential Impedance vs. Zener Voltage

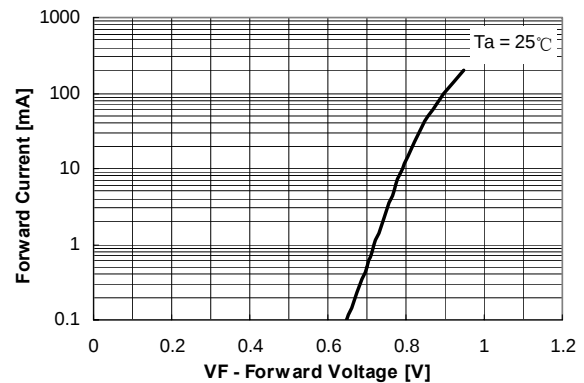


Figure 4. Forward Current vs. Forward Voltage

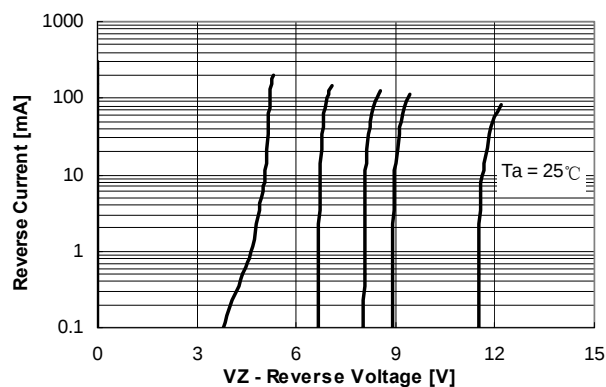


Figure 5. Reverse Current vs. Reverse Voltage

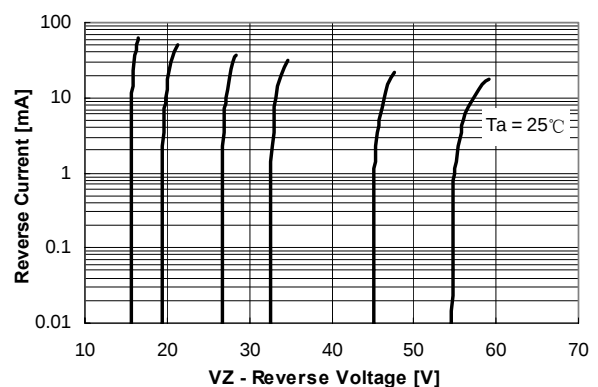
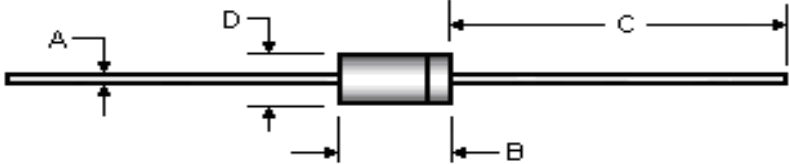


Figure 6. Reverse Current vs. Reverse Voltage

Package Outline

Package	Case Outline			
DO-41				
	DIM	D0-41		
		Millimeters		Inches
		Min	Max	Min Max
	A	0.68	0.81	0.027 0.032
	B	3.70	4.25	0.146 0.167
	C	25.40	---	1.000 ---
	D	2.10	2.60	0.083 0.102

Notes:

- DO41 polarity denoted by cathode band.