TAK CHEONG ®

SEMICONDUCTOR

500 mW LL-34 Hermetically Sealed Glass Zener Voltage Regulators



SURFACE MOUNT
LL34

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.

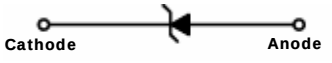
DEVICE MARKING DIAGRAM



Cathode Band Color : Blue

Specification Features:

- Zener Voltage Range 2.0 to 75 Volts
- LL-34 (Mini-MELF) Package
- Surface Device Type Mounting
- Hermetically Sealed Glass
- Compression Bonded Construction
- All External Surfaces Are Corrosion Resistant And Terminals Are Readily Solderable
- RoHS Compliant
- Matte Tin (Sn) Terminal Finish
- Color band Indicates Negative Polarity



ELECTRICAL SYMBOL

Electrical Characteristics

T_A = 25°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						
TCBZV55C 2V0	1.88	2.11	5	100	1	600	50	1
TCBZV55C 2V2	2.08	2.33	5	100	1	600	50	1
TCBZV55C 2V4	2.28	2.56	5	85	1	600	50	1
TCBZV55C 2V7	2.51	2.89	5	85	1	600	10	1
TCBZV55C 3V0	2.8	3.2	5	85	1	600	4	1
TCBZV55C 3V3	3.1	3.5	5	85	1	600	2	1
TCBZV55C 3V6	3.4	3.8	5	85	1	600	2	1
TCBZV55C 3V9	3.7	4.1	5	85	1	600	2	1
TCBZV55C 4V3	4	4.6	5	75	1	600	1	1
TCBZV55C 4V7	4.4	5	5	60	1	600	0.5	1
TCBZV55C 5V1	4.8	5.4	5	35	1	550	0.1	1
TCBZV55C 5V6	5.2	6	5	25	1	450	0.1	1
TCBZV55C 6V2	5.8	6.6	5	10	1	200	0.1	2
TCBZV55C 6V8	6.4	7.2	5	8	1	150	0.1	3
TCBZV55C 7V5	7	7.9	5	7	1	50	0.1	5
TCBZV55C 8V2	7.7	8.7	5	7	1	50	0.1	6.2
TCBZV55C 9V1	8.5	9.6	5	10	1	50	0.1	6.8
TCBZV55C 10	9.4	10.6	5	15	1	70	0.1	7.5
TCBZV55C 11	10.4	11.6	5	20	1	70	0.1	8.2
TCBZV55C 12	11.4	12.7	5	20	1	90	0.1	9.1

Electrical Characteristics

T_A = 25°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)
	Min	Max						
TCBZV55C 15	13.8	15.6	5	30	1	110	0.1	11
TCBZV55C 16	15.3	17.1	5	40	1	170	0.1	12
TCBZV55C 18	16.8	19.1	5	50	1	170	0.1	13
TCBZV55C 20	18.8	21.1	5	55	1	220	0.1	15
TCBZV55C 22	20.8	23.3	5	55	1	220	0.1	16
TCBZV55C 24	22.8	25.6	5	80	1	220	0.1	18
TCBZV55C 27	25.1	28.9	5	80	1	220	0.1	20
TCBZV55C 30	28	32	5	80	1	220	0.1	22
TCBZV55C 33	31	35	5	80	1	220	0.1	24
TCBZV55C 36	34	38	5	80	1	220	0.1	27
TCBZV55C 39	37	41	2.5	90	0.5	500	0.1	28
TCBZV55C 43	40	46	2.5	90	0.5	600	0.1	32
TCBZV55C 47	44	50	2.5	110	0.5	700	0.1	35
TCBZV55C 51	48	54	2.5	125	0.5	700	0.1	38
TCBZV55C 56	52	60	2.5	135	0.5	1000	0.1	42
TCBZV55C 62	58	66	2.5	150	0.5	1000	0.1	47
TCBZV55C 68	64	72	2.5	160	0.5	1000	0.1	51
TCBZV55C 75	70	80	2.5	170	0.5	1000	0.1	56

V_F Forward Voltage = 1.0 V Maximum @ I_F = 100 mA for all types

Electrical Characteristics

T_A = 25°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)
	Min	Max						
TCBZV55B 2V4	2.35	2.45	5	85	1	600	50	1
TCBZV55B 2V7	2.65	2.75	5	85	1	600	10	1
TCBZV55B 3V0	2.94	3.06	5	85	1	600	4	1
TCBZV55B 3V3	3.23	3.37	5	85	1	600	2	1
TCBZV55B 3V6	3.53	3.67	5	85	1	600	2	1
TCBZV55B 3V9	3.82	3.98	5	85	1	600	2	1
TCBZV55B 4V3	4.21	4.39	5	75	1	600	1	1
TCBZV55B 4V7	4.61	4.79	5	60	1	600	0.5	1
TCBZV55B 5V1	5.00	5.20	5	35	1	550	0.1	1
TCBZV55B 5V6	5.49	5.71	5	25	1	450	0.1	1
TCBZV55B 6V2	6.08	6.32	5	10	1	200	0.1	2
TCBZV55B 6V8	6.66	6.94	5	8	1	150	0.1	3
TCBZV55B 7V5	7.33	7.63	5	7	1	50	0.1	5
TCBZV55B 8V2	8.04	8.36	5	7	1	50	0.1	6.2
TCBZV55B 9V1	8.92	9.28	5	10	1	50	0.1	6.8
TCBZV55B 10	9.80	10.20	5	15	1	70	0.1	7.5
TCBZV55B 11	10.78	11.22	5	20	1	70	0.1	8.2
TCBZV55B 12	11.76	12.24	5	20	1	90	0.1	9.1
TCBZV55B 13	12.74	13.26	5	26	1	110	0.1	10
TCBZV55B 15	14.70	15.30	5	30	1	110	0.1	11
TCBZV55B 16	15.68	16.32	5	40	1	170	0.1	12
TCBZV55B 18	17.64	18.36	5	50	1	170	0.1	13
TCBZV55B 20	19.60	20.40	5	55	1	220	0.1	15
TCBZV55B 22	21.56	22.44	5	55	1	220	0.1	16
TCBZV55B 24	23.52	24.48	5	80	1	220	0.1	18
TCBZV55B 27	26.46	27.54	5	80	1	220	0.1	20
TCBZV55B 30	29.40	30.60	5	80	1	220	0.1	22
TCBZV55B 33	32.34	33.66	5	80	1	220	0.1	24
TCBZV55B 36	35.28	36.72	5	80	1	220	0.1	27
TCBZV55B 39	38.22	39.78	2.5	90	0.5	500	0.1	28
TCBZV55B 43	42.14	43.86	2.5	90	0.5	600	0.1	32

Electrical Characteristics T_A = 25°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)
	Min	Max						
TCBZV55B 47	46.06	47.94	2.5	110	0.5	700	0.1	35
TCBZV55B 51	49.98	52.02	2.5	125	0.5	700	0.1	38
TCBZV55B 56	54.88	57.12	2.5	135	0.5	1000	0.1	42
TCBZV55B 62	60.76	63.24	2.5	150	0.5	1000	0.1	47
TCBZV55B 68	66.64	69.36	2.5	160	0.5	1000	0.1	51
TCBZV55B 75	73.50	76.50	2.5	170	0.5	1000	0.1	56

V_F Forward Voltage = 1.0 V Maximum @ I_F = 100 mA for all types

Notes:

1. The type numbers listed have zener voltage min/max limits as shown.
2. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest Tak Cheong Electronics representative.
3. 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 to I_{ZT} or I_{ZK}.

Typical Characteristics

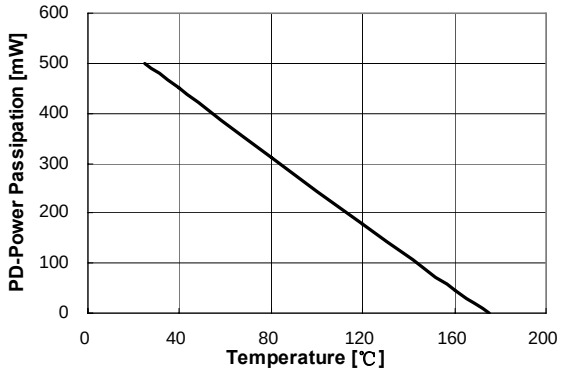


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

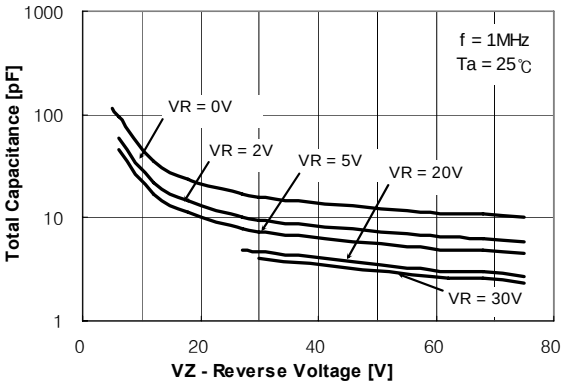


Figure 2. Total Capacitance

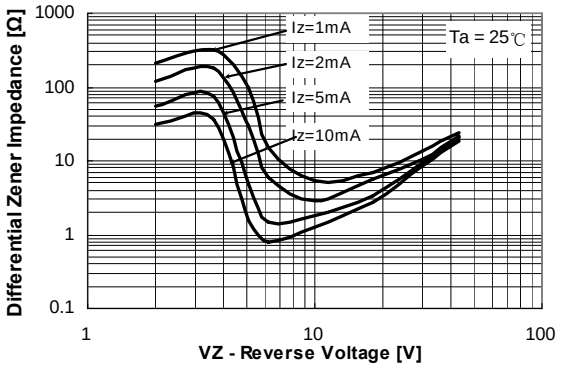


Figure 3. Differential Impedance vs. Zener Voltage

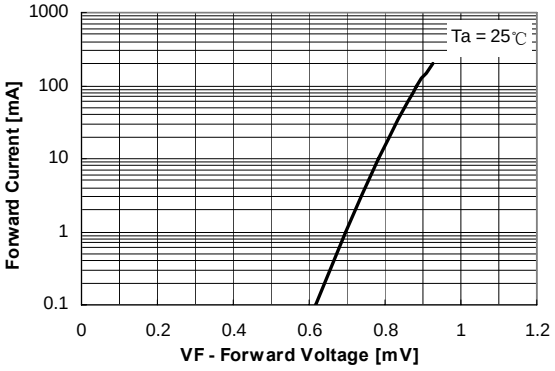


Figure 4. Forward Current vs. Forward Voltage

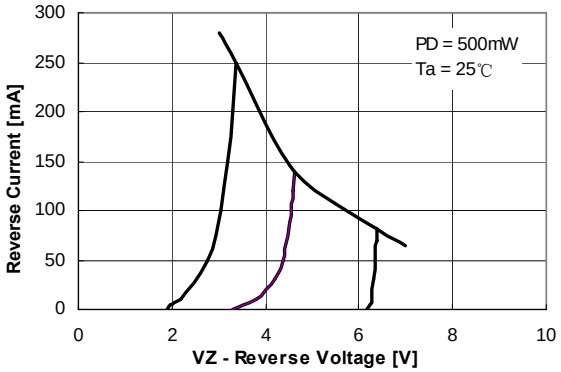


Figure 5. Reverse Current vs. Reverse Voltage

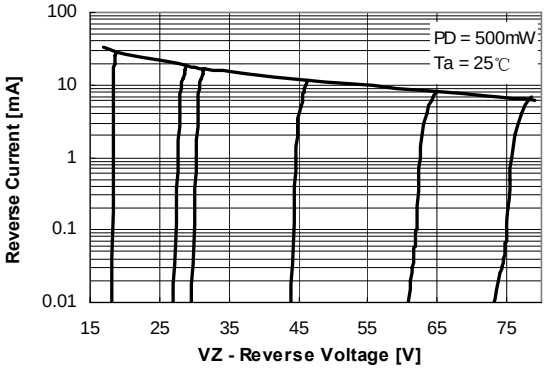
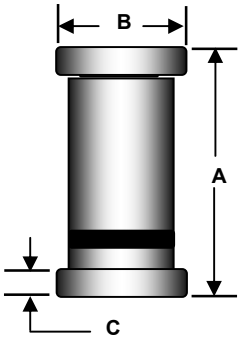


Figure 6. Reverse Current vs. Reverse Voltage

Package Outline

Package	Case Outline
LL34	

DIM	LL-34			
	Millimeters		Inches	
	Min	Max	Min	Max
A	3.302	3.505	0.130	0.138
B	1.397	1.499	0.055	0.059
C	0.350	0.500	0.014	0.020

Notes:

1. All dimensions are within DO213AC JEDEC standard.
2. LL-34 polarity denoted by cathode band.

NOTICE

The information presented in this document is for reference only. Tak Cheong reserves the right to make changes without notice for the specification of the products displayed herein.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Tak Cheong Semiconductor Co., Ltd., or anyone on its behalf, assumes no responsibility or liability for any damagers resulting from such improper use of sale.

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