

Description:

The ZVL Series of low voltage leaded multilayer varistors (MLVs) is designed to protect sensitive electronic devices operating in the low voltage region against high voltage / current surges. They offer excellent transient energy absorption due to improved energy volume distribution and power dissipation. Low voltage MLVs cover a wide DC operating voltage range from 3 to 56V.



Features:

- AC operating voltage (Vrms) from 2V to 40V
- DC operating voltage (Vdc) from 3V to 56V
- 5 model sizes available 05, 07, 10, 14, 20
- Available with straight or crimped leads
- Broad range of current and energy handling capabilities
- +125°C continuous operating temperature (+150°C for ZVYL)
- Dimensional and weight savings on PC board
- Bi-directional, lower clamping voltages than disc type varistors
- ZVYL high temperature product will have performance characteristics different from the ZVL.
Contact Factory for specific details.

Applications:

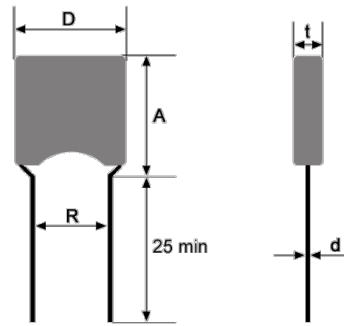
- Suppression of inductive switching or other transient events at the circuit board level
- Provides on-board transient voltage protection for ICs and transistors
- Used to help achieve electromagnetic compliance of end products
- Replace larger TVS Zener diodes in many applications

General Technical Data

General Technical Data		
Operating Temperature - ZVL	-40°C to +125°C	In accordance with CECC 42 000
Operating Temperature - ZVYL	-40°C to +150°C	
Storage Temperature Range	-40°C to +150°C	
Threshold Voltage Temperature Coefficient	< -0.05% / °C	
Insulation Resistance	> 1Gohm	
Isolation Voltage Capability	> 1kV	
Response Time	< 25 nS	

Standard Packaging Options / Quantities

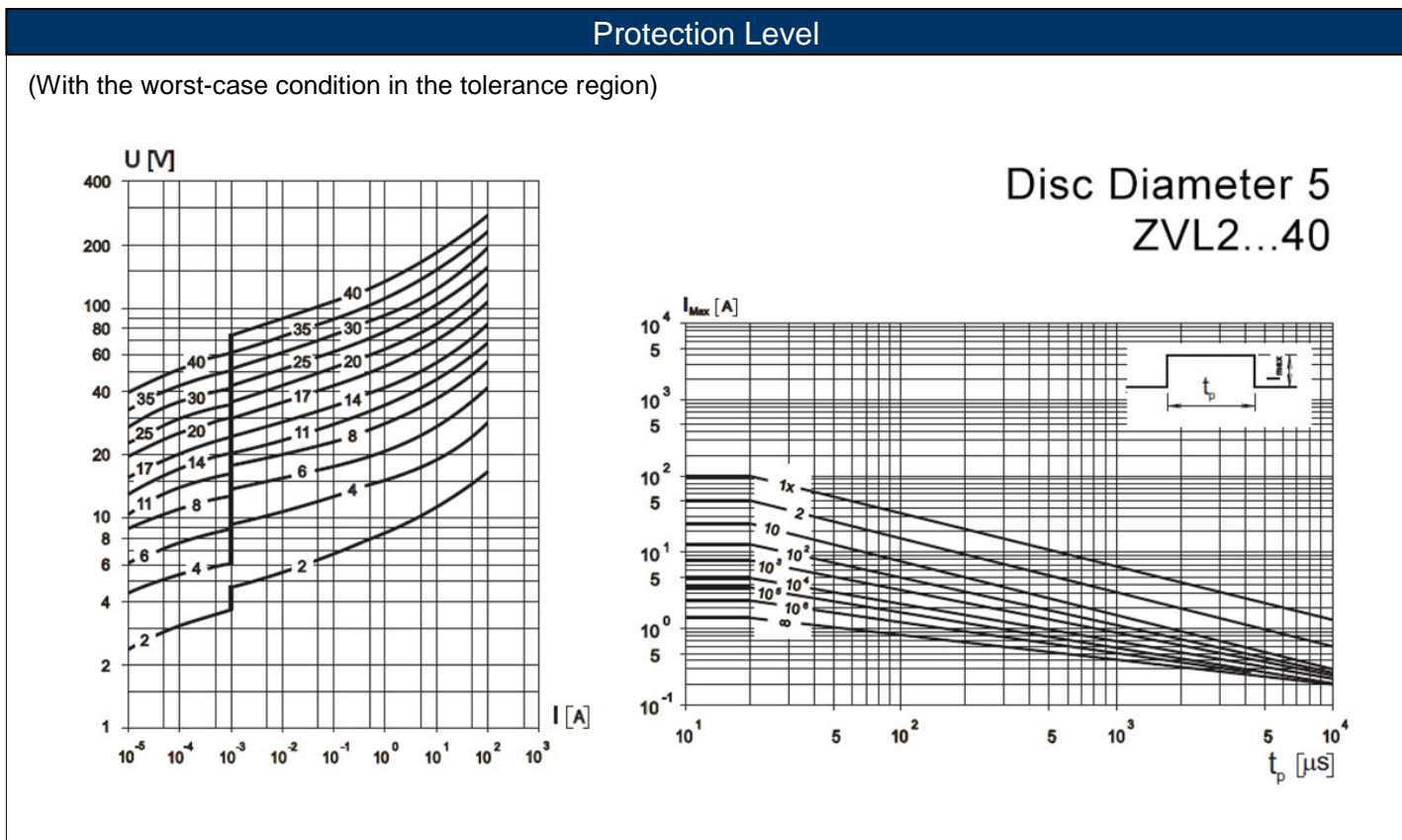
Series	Voltage Range (Vrms)	Model Size	Packaging options 7mm, 10mm, 14mm, 20mm and 23mm		
			B (Bulk)	T (Tape and Reel)	A (Ammo Pack)
ZVL, ZVYL	2 - 40	05	2,000	2,000	2,000
	2 - 40	07	1,500	2,000	2,000
	2 - 40	10	1,000	1,500	1,000
	2 - 40	14	700	1,500	1,000
	2 - 40	20	500	1,500	800



Device Ratings and Dimensions

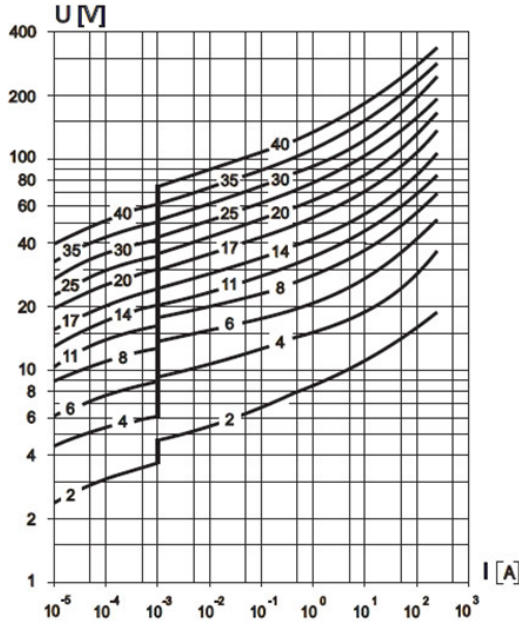
Part Number ZVL/ZVYL	V _{RMS} (volts)	V _{DC} (volts)	V _N (volts)	V _C (volts)	I _C (amps)	W _{MAX} (joules)	P _{MAX} (watts)	I _{MAX} (amps)	C _{TYP} (pF)	D _{MAX} (mm)	t _{MAX} (mm)	R (mm)	d (mm)	h/A _{MAX} (mm)
ZVL2M05	2	3	4	10	1	0.10	0.005	100	1,300	6.00	3.50	5.00	0.60	7.00
ZVL2M07	2	3	4	10	2.5	0.20	0.008	200	5,000	7.00	3.50	5.00	0.60	8.00
ZVL4M05	4	5.5	8	14	1	0.10	0.005	100	1,066	6.00	3.50	5.00	0.60	7.00
ZVL4M07	4	5.5	8	14	2.5	0.30	0.008	200	3,720	7.00	3.50	5.00	0.60	8.00
ZVL4M10	4	5.5	8	14	5	0.40	0.010	300	5,000	7.00	3.50	5.00	0.60	9.00
ZVL4M14	4	5.5	8	14	10	0.80	0.015	500	10,000	8.00	3.50	5.00	0.60	12.00
ZVL4M20	4	5.5	8	14	20	1.50	0.020	1,000	17,000	9.00	3.50	5.00	0.60	12.00
ZVL6M05	6	8	11	21	1	0.20	0.005	100	831	6.00	3.50	5.00	0.60	7.00
ZVL6M07	6	8	11	21	2.5	0.50	0.008	200	2,770	7.00	3.50	5.00	0.60	8.00
ZVL6M10	6	8	11	21	5	0.80	0.010	300	4,070	7.00	3.50	5.00	0.60	9.00
ZVL6M14	6	8	11	21	10	1.00	0.015	500	7,630	8.00	3.50	5.00	0.60	12.00
ZVL6M20	6	8	11	21	20	3.80	0.020	1,000	13,400	9.00	3.50	5.00	0.60	12.00
ZVL8L05	8	11	15	25	1	0.20	0.005	100	650	6.00	3.50	5.00	0.60	7.00
ZVL8L07	8	11	15	25	2.5	0.60	0.008	250	2,020	7.00	3.50	5.00	0.60	8.00
ZVL8L10	8	11	15	25	5	1.10	0.010	500	3,200	7.00	3.50	5.00	0.60	9.00
ZVL8L14	8	11	15	25	10	1.90	0.015	800	6,260	8.00	3.50	5.00	0.60	12.00
ZVL8L20	8	11	15	25	20	4.30	0.020	1,500	11,070	9.00	3.50	5.00	0.60	12.00
ZVL11K05	11	14	18	33	1	0.30	0.005	100	480	6.00	3.50	5.00	0.60	7.00
ZVL11K07	11	14	18	33	2.5	0.80	0.008	250	1,400	7.00	3.50	5.00	0.60	8.00
ZVL11K10	11	14	18	33	5	1.70	0.010	500	2,420	7.00	3.50	5.00	0.60	9.00
ZVL11K14	11	14	18	33	10	3.30	0.015	1,000	5,000	8.00	3.50	5.00	0.60	12.00
ZVL11K20	11	14	18	33	20	10.50	0.020	2,000	9,270	9.00	3.50	5.00	0.60	12.00
ZVL14K05	14	18	22	38	1	0.40	0.005	100	377	6.00	3.50	5.00	0.60	7.00
ZVL14K07	14	18	22	38	2.5	0.90	0.008	250	1,050	7.00	3.50	5.00	0.60	8.00
ZVL14K10	14	18	22	38	5	2.20	0.010	500	1,770	7.00	3.50	5.00	0.60	9.00
ZVL14K14	14	18	22	38	10	4.20	0.015	1,000	3,850	8.00	3.50	5.00	0.60	12.00
ZVL14K20	14	18	22	38	20	12.00	0.020	2,000	7,670	9.00	3.50	5.00	0.60	12.00
ZVL17K05	17	22	27	44	1	0.50	0.005	100	335	6.00	3.50	5.00	0.60	7.00
ZVL17K07	17	22	27	44	2.5	1.20	0.008	250	850	7.00	3.50	5.00	0.60	8.00
ZVL17K10	17	22	27	44	5	2.60	0.010	500	1,370	7.00	3.50	5.00	0.60	9.00
ZVL17K14	17	22	27	44	10	5.20	0.015	1,000	3,050	8.00	3.50	5.00	0.60	12.00
ZVL17K20	17	22	27	44	20	14.20	0.020	2,000	6,600	9.00	3.50	5.00	0.60	12.00
ZVL20K05	20	26	33	54	1	0.60	0.005	100	325	6.00	4.50	5.00	0.60	7.00
ZVL20K07	20	26	33	54	2.5	1.40	0.008	250	790	7.00	4.50	5.00	0.60	8.00
ZVL20K10	20	26	33	54	5	3.20	0.010	500	1,090	7.00	4.50	5.00	0.60	9.00
ZVL20K14	20	26	33	54	10	6.40	0.015	1,000	2,490	8.00	4.50	5.00	0.60	12.00
ZVL20K20	20	26	33	54	20	18.20	0.020	2,000	5,670	9.00	4.50	5.00	0.60	12.00

Electrical Specifications														
Part Number ZVL/ZVYL	V _{RMS} (volts)	V _{DC} (volts)	V _N (volts)	V _C (volts)	I _C (amps)	W _{MAX} (joules)	P _{MAX} (watts)	I _{MAX} (amps)	C _{TYP} (pF)	D _{MAX} (mm)	t _{MAX} (mm)	R (mm)	d (mm)	h/A _{MAX} (mm)
ZVL25K05	25	31	39	65	1	0.70	0.005	100	315	6.00	4.50	5.00	0.60	7.00
ZVL25K07	25	31	39	65	2.5	1.60	0.008	250	790	7.00	4.50	5.00	0.60	8.00
ZVL25K10	25	31	39	65	5	3.80	0.010	500	870	7.00	4.50	5.00	0.60	9.00
ZVL25K14	25	31	39	65	10	7.20	0.015	1,000	1,890	8.00	4.50	5.00	0.60	12.00
ZVL25K20	25	31	39	65	20	22.40	0.020	2,000	4,670	9.00	4.50	5.00	0.60	12.00
ZVL30K05	30	38	47	77	1	0.90	0.005	100	315	6.00	4.50	5.00	0.60	7.00
ZVL30K07	30	38	47	77	2.5	2.20	0.008	250	790	7.00	4.50	5.00	0.60	8.00
ZVL30K10	30	38	47	77	5	4.40	0.010	500	770	7.00	4.50	5.00	0.60	9.00
ZVL30K14	30	38	47	77	10	9.40	0.015	1,000	1,530	8.00	4.50	5.00	0.60	12.00
ZVL30K20	30	38	47	77	20	25.80	0.020	2,000	3,870	9.00	4.50	5.00	0.60	12.00
ZVL35K05	35	45	56	90	1	1.20	0.005	100	315	6.00	4.50	5.00	0.60	7.00
ZVL35K07	35	45	56	90	2.5	2.60	0.008	250	790	7.00	4.50	5.00	0.60	8.00
ZVL35K10	35	45	56	90	5	5.40	0.010	500	680	7.00	4.50	5.00	0.60	9.00
ZVL35K14	35	45	56	90	10	10.20	0.015	1,000	1,260	8.00	4.50	5.00	0.60	12.00
ZVL35K20	35	45	56	90	20	33.40	0.020	2,000	3,470	9.00	4.50	5.00	0.60	12.00
ZVL40K05	40	56	68	110	1	1.40	0.005	100	315	6.00	4.50	5.00	0.60	7.00
ZVL40K07	40	56	68	110	2.5	3.20	0.008	250	790	7.00	4.50	5.00	0.60	8.00
ZVL40K10	40	56	68	110	5	6.40	0.010	500	660	7.00	4.50	5.00	0.60	9.00
ZVL40K14	40	56	68	110	10	13.40	0.015	1,000	1,070	8.00	4.50	5.00	0.60	12.00
ZVL40K20	40	56	68	110	20	37.80	0.020	2,000	3,130	9.00	4.50	5.00	0.60	12.00

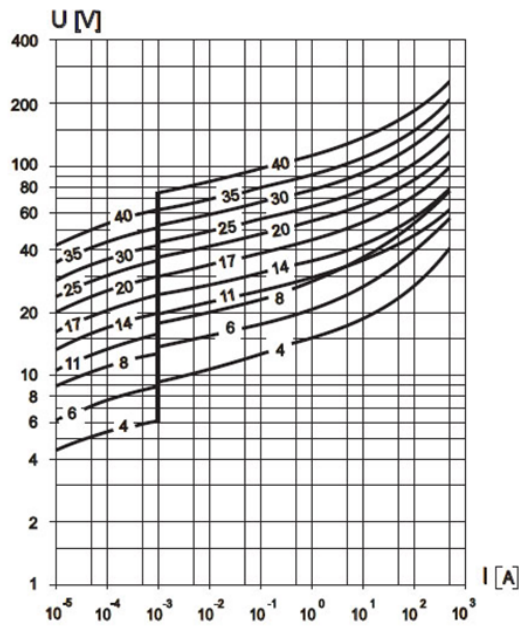
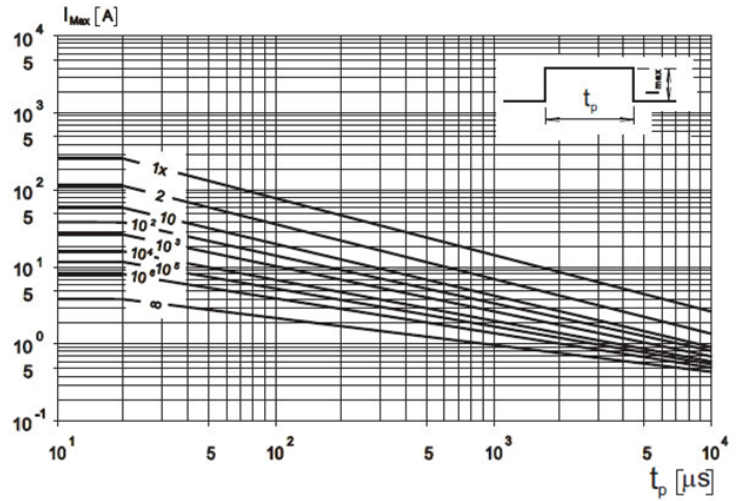


Protection Level

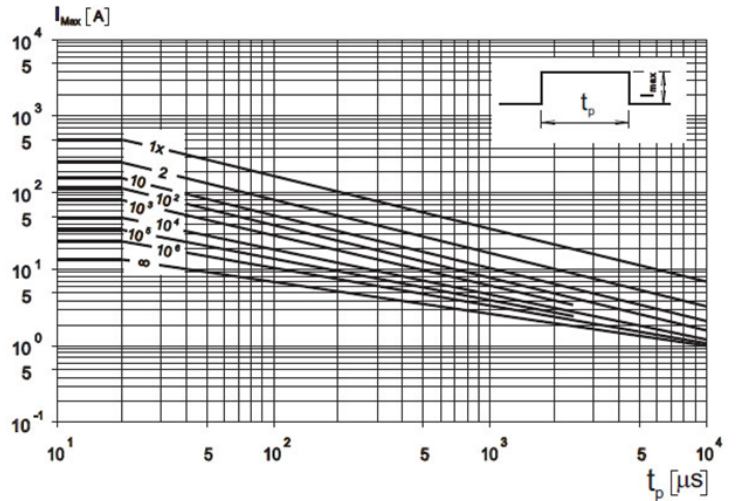
(With the worst-case condition in the tolerance region)



Disc Diameter 7
ZVL2...40



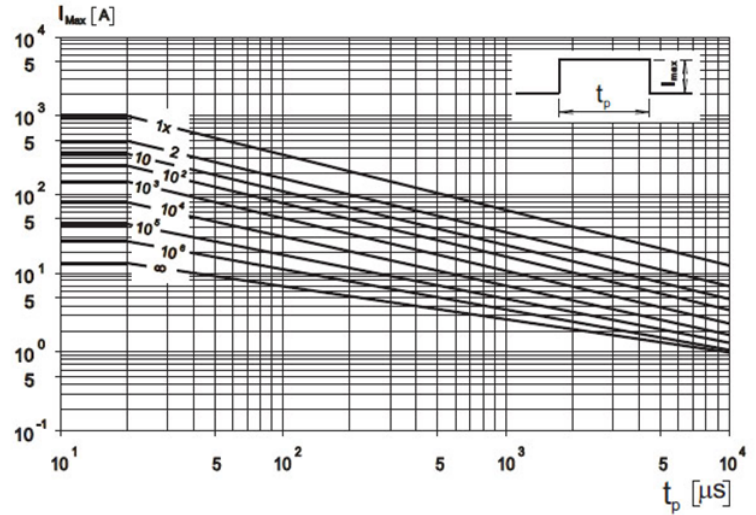
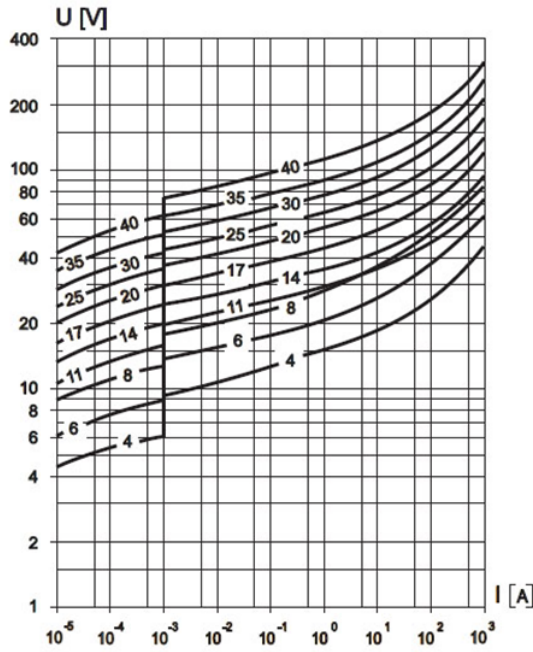
Disc Diameter 10
ZVL4...40



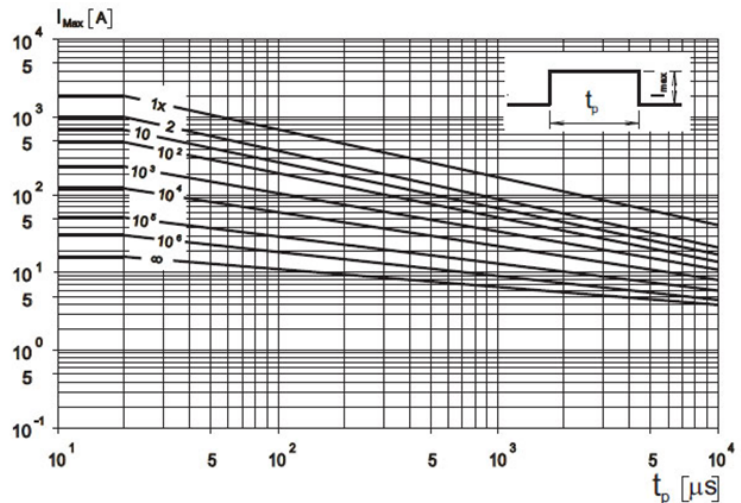
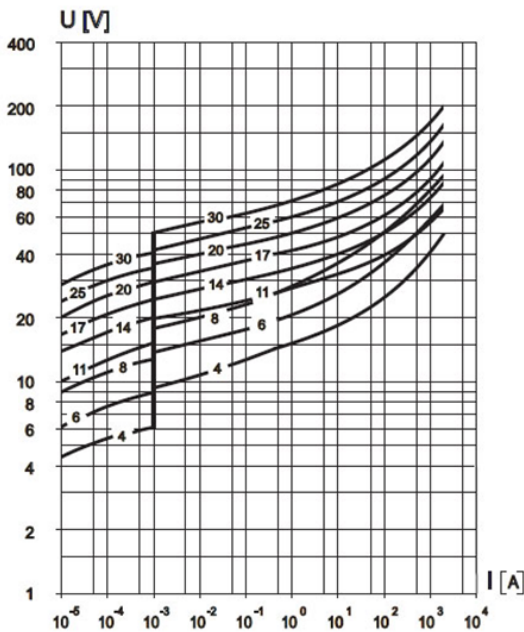
Protection Level

(With the worst-case condition in the tolerance region)

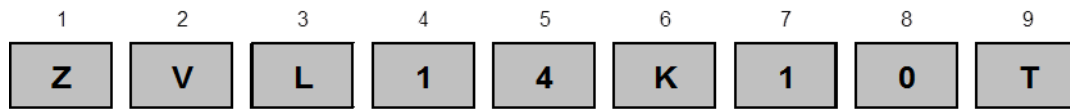
Disc Diameter 14
ZVL4...40



Disc Diameter 20
ZVL4...40



How to Order



Product Series		Vrms Voltage	Tolerance		Disc Diameter Size (mm)	Packaging	
ZVL	Standard		Code	Tol		Code	Description
ZVYL	High Temp	2	K	10%	05	B	Bulk
		4	L	15%	07	T	Tape and Reel
		6	M	20%	10	A	Ammo
		8			14		
		11			20		
		14					
		17					
		20					
		25					
		30					
		35					
		40					