ZV Series — Low Voltage Leaded Varistors

Description

The ZV Series of low voltage leaded multilayer varistors (MLVs) is designed to protect sensitive electronics 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, 10, 14, 20
- Available with straight or crimped leads
- Broad range of current and energy handling capabilities
- +125°C continuous operating temperature
- Dimensional and weight savings on PC board
- Bi-directional, lower clamping voltages than disc type varistors

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 may applications

General Technical Data

Operating Temperature	-40°C to +125°C	In accordance with CECC 42 000
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	

How to Order

ZV	1	14	K	10	R
SEI Type	Lead style	Vrms	Tolerance	Chip Size	Packaging

Model size	Version
05, 07, 10	1 = Outward Crimped Leads
14	1 = Straight Leads
14	5 = Straight Leads, Kinked
20	1 = Inward Crimped Leads

Code	Tolerance
K	10%
L	15%
M	20%

Size (mm)
05
07
10
14
20

Code	Description
B	Bulk
R	Reel
A	Ammo Pack

Standard Packaging Options / Quantities

Series	Voltage Range (Vrms)	Model Size	Packaging options 7mm, 10mm, 14mm, 20mm, and 23mm		
			B = Bulk; R = Reel; A = Ammo Pack		
			B	R	A
ZV	2 – 40	05	2,000	2,000	2,000
	2 – 40	07	1,500	2,000	2,000
	2 – 40	10	1,000	1,000	1,000
	2 – 40	14	700	1,000	1,000
	2 – 40	20	500	800	800

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Device Ratings and Dimensions

Part Number	V_{RMS} (volts)	V_{DC} (volts)	V_N (volts)	V_C (volts)	I_C (amps)	W_{MAX} (joules)	P_{MAX} (watts)	I_P (amps)	C_{TYP} (pF)	D_{MAX} (mm)	h_{MAX} (mm)	R (mm)	D (mm)	t_{MAX} (mm)
ZV 2 M 05	2	3	4	10	1	0.1	0.005	100	1,300	5	7	5	0.6	4.5
ZV 4 M 05	4	5.5	8	14	1	0.1	0.005	100	1,100	5	7	5	0.6	4.5
ZV 6 M 05	6	8	11	21	1	0.2	0.005	100	900	5	7	5	0.6	4.5
ZV 8 L 05	8	11	15	25	1	0.2	0.005	100	700	5	7	5	0.6	4.5
ZV 11 K 05	11	14	18	33	1	0.3	0.005	100	500	5	7	5	0.6	4.5
ZV 14 K 05	14	18	22	38	1	0.4	0.005	100	400	5	7	5	0.6	4.5
ZV 17 K 05	17	22	27	44	1	0.5	0.005	100	340	5	7	5	0.6	4.5
ZV 20 K 05	20	26	33	54	1	0.6	0.005	100	300	5	7	5	0.6	4.5
ZV 25 K 05	25	31	39	65	1	0.7	0.005	100	510	5	7	5	0.6	4.5
ZV 30 K 05	30	38	47	77	1	0.9	0.005	100	450	5	7	5	0.6	4.5
ZV 35 K 05	35	45	56	90	1	1.2	0.005	100	410	5	7	5	0.6	4.5
ZV 40 K 05	40	56	68	110	1	1.4	0.005	100	370	5	7	5	0.6	4.5
ZV 2 M 07	2	3	4	10	2.5	0.2	0.008	200	5,000	7	9	5	0.6	4.5
ZV 4 M 07	4	5.5	8	14	2.5	0.3	0.008	200	4,300	7	9	5	0.6	4.5
ZV 6 M 07	6	8	11	21	2.5	0.5	0.008	200	3,200	7	9	5	0.6	4.5
ZV 8 L 07	8	11	15	25	2.5	0.6	0.008	200	1,950	7	9	5	0.6	4.5
ZV 11 K 07	11	14	18	33	2.5	0.8	0.008	200	1,300	7	9	5	0.6	4.5
ZV 14 K 07	14	18	22	38	2.5	0.9	0.008	200	950	7	9	5	0.6	4.5
ZV 17 K 07	17	22	27	44	2.5	1.2	0.008	200	740	7	9	5	0.6	4.5
ZV 20 K 07	20	26	33	54	2.5	1.4	0.008	200	620	7	9	5	0.6	4.5
ZV 25 K 07	25	31	39	65	2.5	1.6	0.008	200	1,150	7	9	5	0.6	4.5
ZV 30 K 07	30	38	47	77	2.5	2.2	0.008	200	950	7	9	5	0.6	4.5
ZV 35 K 07	35	45	56	90	2.5	2.6	0.008	200	950	7	9	5	0.6	4.5
ZV 40 K 07	40	56	68	110	2.5	3.2	0.008	200	750	7	9	5	0.6	4.5
ZV 4 M 10	4	5.5	8	14	5	0.4	0.01	300	5,000	7	9	5	0.6	4.5
ZV 6 M 10	6	8	11	21	5	0.8	0.01	300	4,100	7	9	5	0.6	4.5
ZV 8 L 10	8	11	15	25	5	1.1	0.01	500	3,400	7	9	5	0.6	4.5
ZV 11 K 10	11	14	18	33	5	1.7	0.01	500	2,600	7	9	5	0.6	4.5
ZV 14 K 10	14	18	22	38	5	2.2	0.01	500	2,150	7	9	5	0.6	4.5
ZV 17 K 10	17	22	27	44	5	2.6	0.01	500	1,800	7	9	5	0.6	4.5
ZV 20 K 10	20	26	33	54	5	3.2	0.01	500	1,500	7	9	5	0.6	4.5
ZV 25 K 10	25	31	39	65	5	3.8	0.01	500	1,350	7	9	5	0.6	4.5
ZV 30 K 10	30	38	47	77	5	4.4	0.01	500	1,100	7	9	5	0.6	4.5
ZV 35 K 10	35	45	56	90	5	5.4	0.01	500	1,000	7	9	5	0.6	4.5
ZV 40 K 10	40	56	68	110	5	6.4	0.01	500	820	7	9	5	0.6	4.5
ZV 4 M 14	4	5.5	8	14	10	0.8	0.015	500	10,000	8	12	5	0.6	4.5
ZV 6 M 14	6	8	11	21	10	1	0.015	500	7,500	8	12	5	0.6	4.5
ZV 8 L 14	8	11	15	25	10	1.9	0.015	800	6,500	8	12	5	0.6	4.5
ZV 11 K 14	11	14	18	33	10	3.3	0.015	1,000	5,100	8	12	5	0.6	4.5
ZV 14 K 14	14	18	22	38	10	4.2	0.015	1,000	4,000	8	12	5	0.6	4.5
ZV 17 K 14	17	22	27	44	10	5.2	0.015	1,000	3,500	8	12	5	0.6	4.5
ZV 20 K 14	20	26	33	54	10	6.4	0.015	1,000	3,000	8	12	5	0.6	4.5
ZV 25 K 14	25	31	39	65	10	7.2	0.015	1,000	2,500	8	12	5	0.6	4.5
ZV 30 K 14	30	38	47	77	10	9.4	0.015	1,000	2,000	8	12	5	0.6	4.5
ZV 35 K 14	35	45	56	90	10	10.2	0.015	1,000	1,450	8	12	5	0.6	4.5
ZV 40 K 14	40	56	68	110	10	13.4	0.015	1,000	1,100	8	12	5	0.6	4.5
ZV 4 M 20	4	5.5	8	14	20	1.5	0.02	1,000	19,500	9	12	5	0.6	4.5
ZV 6 M 20	6	8	11	21	20	3.8	0.02	1,000	17,000	9	12	5	0.6	4.5
ZV 8 L 20	8	11	15	25	20	4.3	0.02	1,500	16,000	9	12	5	0.6	4.5
ZV 11 K 20	11	14	18	33	20	10.5	0.02	2,000	13,000	9	12	5	0.6	4.5
ZV 14 K 20	14	18	22	38	20	12	0.02	2,000	10,000	9	12	5	0.6	4.5
ZV 17 K 20	17	22	27	44	20	14.2	0.02	2,000	8,000	9	12	5	0.6	4.5
ZV 20 K 20	20	26	33	54	20	18.2	0.02	2,000	6,500	9	12	5	0.6	4.5
ZV 25 K 20	25	31	39	65	20	22.4	0.02	2,000	5,000	9	12	5	0.6	4.5
ZV 30 K 20	30	38	47	77	20	25.8	0.02	2,000	4,000	9	12	5	0.6	4.5
ZV 35 K 20	35	45	56	90	20	33.4	0.02	2,000	3,000	9	12	5	0.6	4.5