

# ZVX Series — Low Energy, Low Capacitance SMD Varistors

## Description

The ZVX Series are low-energy (0.1 joules) varistor chips, designed specifically for the protection of I/O line drivers and other sensitive semiconductor gates from the damaging effects of high voltage, low-energy transients such as ESD events. Unlike other competitive low-energy varistors, the ZVX Series offers all the protection features of standard varistor chips, and exceptionally low values of capacitance. In these applications, as the frequency of data transfer increases, lower capacitance is required to eliminate possible skewing of the data signals due to capacitive loading.

In most cases, the 1KHz capacitance values of the ZVX Series are less than one half that of the competition. Further, this series is offered in 0603, 0805 and 1206 sizes, with an expanded range of voltages from 3V to 38Vdc. The ZVX series offers a circuit design engineer the greatest range of high-frequency, low-energy SMD varistor chips available in the marketplace today.



## Features

- AC operating voltage (Vrms) from 2V to 30V
- DC operating voltage (Vdc) from 3V to 38V
- Bi-directional, low clamping voltages
- Exceptionally low capacitance ratings
- 1 model sizes available 1206
- +125°C continuous operating temperature
- Dimensional and weight savings on PC board
- AgPd end terminations
- Non-coated chips guarantee excellent flammability rating

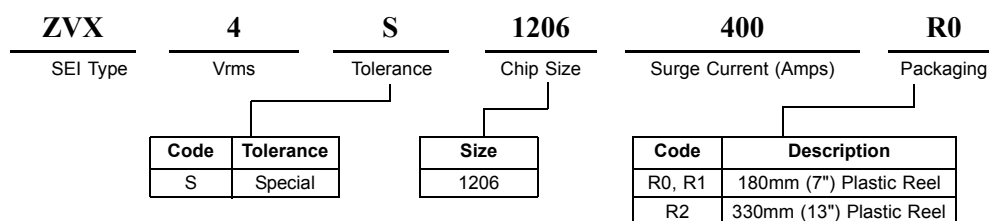
## Applications

- ESD protection for components sensitive to IEC 1000-4-2, MIL-STD 883C Method 3015.7 and other industry specifications
- Excellent for I/O line protection, operating at high-speed data transfer rates, due to very low capacitance values
- Replaces larger surface mount TVS diodes in many applications

## General Technical Data

Operating Temperature	-55°C to +125°C	In accordance with CECC 42 000
Storage Temperature Range	-55°C to +150°C	
Threshold Voltage Temperature Coefficient	<-0.05%/°C	
Response Time	< 1 ns	

## How to Order



## Standard Packaging Options / Quantities

Series	Voltage Range (Vrms)	Chip Size		
		1206		
		R0	R1	R2
		180mm	180mm	330mm
		7"	7"	13"
ZVX	2 – 14	1,000	4,000	15,000
	17	1,000	2,500	14,000
	20 – 30	1,000	2,500	10,000

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## Device Ratings and Dimensions

Part Number	V <sub>RMS</sub> (volts)	V <sub>DC</sub> (volts)	V <sub>n</sub> (volts)	V <sub>c</sub> (volts)	I <sub>c</sub> (amps)	W <sub>max</sub> (joules)	P <sub>MAX</sub> (watts)	I <sub>p</sub> (amps)	C <sub>TYP</sub> (pF)	L <sub>TYP</sub> (nH)	L (mm)	W (mm)	t <sub>MAX</sub> (mm)
ZVX 2 S 1206 400	2	3.3	4.1 - 6.0	10.0	1.0	0.1	0.008	40	840	1.8	3.20 ± 0.30	1.60 ± 0.20	1.0
ZVX 4 S 1206 400	4	5.6	7.6 - 9.3	15.5	1.0	0.1	0.008	40	720	1.8	3.20 ± 0.30	1.60 ± 0.20	1.0
ZVX 6 S 1206 400	6	9	11.0 - 14.0	20.0	1.0	0.1	0.008	40	620	1.8	3.20 ± 0.30	1.60 ± 0.20	1.0
ZVX 8 S 1206 400	8	12	14.0 - 18.3	25.0	1.0	0.1	0.008	40	540	1.8	3.20 ± 0.30	1.60 ± 0.20	1.0
ZVX 11 S 1206 400	11	14	16.5 - 20.3	30.0	1.0	0.1	0.008	40	500	1.8	3.20 ± 0.30	1.60 ± 0.20	1.0
ZVX 14 S 1206 400	14	18	22.9 - 28.0	40.0	1.0	0.1	0.008	40	250	1.8	3.20 ± 0.30	1.60 ± 0.20	1.0
ZVX 17 S 1206 400	17	22	25.2 - 31.3	48.0	1.0	0.1	0.008	40	210	1.8	3.20 ± 0.30	1.60 ± 0.20	1.0
ZVX 20 S 1206 400	20	26	31.0 - 38.0	58.0	1.0	0.1	0.008	40	200	1.8	3.20 ± 0.30	1.60 ± 0.20	1.0
ZVX 25 S 1206 400	25	30	37.0 - 46.9	65.0	1.0	0.1	0.008	40	180	1.8	3.20 ± 0.30	1.60 ± 0.20	1.0
ZVX 30 S 1206 400	30	38	42.3 - 51.7	77.0	1.0	0.1	0.008	40	165	1.8	3.20 ± 0.30	1.60 ± 0.20	1.0