

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.



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
- 3 model sizes available 0603, 0805, 1206
- +125°C continuous operating temperature
- Dimensional and weight savings on PC board
- AgPd end terminations
- Non-coated chips guarantee excellent flammability rating

Applications:

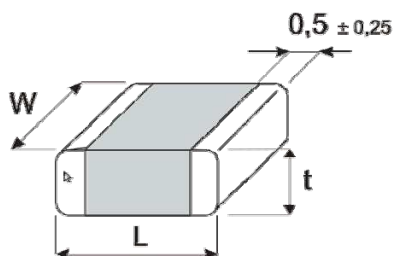
- ESD protection for components sensitive to IEC 1000-4-2, MIL-STD 883C Method 3015.7 and other industry specifications
- Excellent for I/O line protection, operating at high-speed data transfer rates, due to very low capacitance values
- Replaces larger surface mount TVS diodes in many applications

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	
Standard Termination - Ag/Pb	Recommended and suitable for Pb-containing soldering	
Barrier Termination ("N" Type)	Recommended and suitable for Pb-containing and Pb-free soldering	

Standard Packaging Options / Quantities

Type / Code	Voltage Range (Vrms)	Chip Size								
		0603			0805			1206		
		K	T	G	K	T	G	K	T	G
		180mm	180mm	330mm	180mm	180mm	330mm	180mm	180mm	330mm
		7"	7"	13"	7"	7"	13"	7"	7"	13"
ZVX	2 - 14	1,000	4,000	15,000	1,000	4,000	15,000	1,000	4,000	15,000
	17	1,000	3,500	14,000	1,000	3,500	14,000	1,000	2,500	14,000
	20 - 30	1,000	3,500	14,000	1,000	3,500	14,000	1,000	2,500	10,000



Mechanical Specifications

Type / Code	L	W	t Max	Unit
ZVX...0603	0.063 ± 0.008	0.031 ± 0.004	0.035	inches
	1.60 ± 0.20	0.80 ± 0.10	0.90	mm
ZVX...0805	0.079 ± 0.010	0.049 ± 0.008	0.039	inches
	2.00 ± 0.25	1.25 ± 0.20	1.00	mm
ZVX...1206	0.126 ± 0.012	0.063 ± 0.008	0.039	inches
	3.20 ± 0.30	1.60 ± 0.20	1.00	mm

Device Ratings and Characteristics

Type	VRMS (volts)	VDC (volts)	VN (volts)	VC (volts)	IC (amps)	WMAX (joules)	PMAX (watts)	IMAX (amps)	CTYP (pF)	LTYP (nF)
ZVX2S0603...300	2	3.3	4.1 - 6.0	10.0	1	0.1	0.003	30	200	1.0
ZVX2S0805...400	2	3.3	4.1 - 6.0	10.0	1	0.1	0.005	40	500	1.5
ZVX2S1206...400	2	3.3	4.1 - 6.0	10.0	1	0.1	0.008	40	840	1.8
ZVX4S0603...300	4	5.6	7.6 - 9.3	15.5	1	0.1	0.003	30	165	1.0
ZVX4S0805...400	4	5.6	7.6 - 9.3	15.5	1	0.1	0.005	40	340	1.5
ZVX4S1206...400	4	5.6	7.6 - 9.3	15.5	1	0.1	0.008	40	720	1.8
ZVX6S0603...300	6	9	11.0 - 14.0	20.0	1	0.1	0.003	30	145	1.0
ZVX6S0805...400	6	9	11.0 - 14.0	20.0	1	0.1	0.005	40	290	1.5
ZVX6S1206...400	6	9	11.0 - 14.0	20.0	1	0.1	0.008	40	620	1.8
ZVX8S0603...300	8	12	14.0 - 18.3	25.0	1	0.1	0.003	30	135	1.0
ZVX8S0805...400	8	12	14.0 - 18.3	25.0	1	0.1	0.005	40	275	1.5
ZVX8S1206...400	8	12	14.0 - 18.3	25.0	1	0.1	0.008	40	540	1.8
ZVX11S0603...300	11	14	16.5 - 20.3	30.0	1	0.1	0.003	30	120	1.0
ZVX11S0805...400	11	14	16.5 - 20.3	30.0	1	0.1	0.005	40	200	1.5
ZVX11S1206...400	11	14	16.5 - 20.3	30.0	1	0.1	0.008	40	500	1.8
ZVX14S0603...300	14	18	22.9 - 28.0	40.0	1	0.1	0.003	30	110	1.0
ZVX14S0805...400	14	18	22.9 - 28.0	40.0	1	0.1	0.005	40	165	1.5
ZVX14S1206...400	14	18	22.9 - 28.0	40.0	1	0.1	0.008	40	250	1.8
ZVX17S0603...300	17	22	25.2 - 31.3	48.0	1	0.1	0.003	30	100	1.0
ZVX17S0805...400	17	22	25.2 - 31.3	48.0	1	0.1	0.005	40	145	1.5
ZVX17S1206...400	17	22	25.2 - 31.3	48.0	1	0.1	0.008	40	210	1.8
ZVX20S0603...300	20	26	31.0 - 38.0	58.0	1	0.1	0.003	30	100	1.0
ZVX20S0805...400	20	26	31.0 - 38.0	58.0	1	0.1	0.005	40	140	1.5
ZVX20S1206...400	20	26	31.0 - 38.0	58.0	1	0.1	0.008	40	200	1.8
ZVX25S0603...300	25	30	37.0 - 46.9	65.0	1	0.1	0.003	30	90	1.0
ZVX25S0805...400	25	30	37.0 - 46.9	65.0	1	0.1	0.005	40	110	1.5
ZVX25S1206...400	25	30	37.0 - 46.9	65.0	1	0.1	0.008	40	180	1.8
ZVX30S0603...300	30	38	42.3 - 51.7	77.0	1	0.1	0.003	30	80	1.0
ZVX30S0805...400	30	38	42.3 - 51.7	77.0	1	0.1	0.005	40	100	1.5
ZVX30S1206...400	30	38	42.3 - 51.7	77.0	1	0.1	0.008	40	165	1.8

How to Order

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Z	V	X	1	4	S	1	2	0	6	T	4	0	0	N
Product Series		Voltage Range		Tolerance		Size	Packaging				Surge Current		Barrier Termination	
ZVX	Low Energy, Low Capacitance, SMD Varistor	Code	Vrms	Code	Tol	Code	Code	Description	Size	Quantity	Code	Amps	Code	Description
		2 to 30	2 to 30	S	Special	0603	K	7" Plastic Reel	180mm	See Standard Packaging Options	400	400	(blank)	Standard Termination Ag/Pb
						0805	T							
						1206	G	13" Plastic Reel	330mm				N	Barrier Termination

Legacy Part Number (before January 3, 2011):

SEI Type		Vrms	Tolerance		Chip Size	Surge Current (Amps)	Termination Type		Packaging	
ZVX		14	S		1206	400	N		R1	
Type	Description	Code		Tolerance	Size	Code		Type	Code	Description
ZVX	Low Energy, Low Capacitance SMD Varistor	S		Special	0603	N		Barrier Termination	R0, R1	180mm (7") Plastic Reel
					0805	-		PdAg	R2	330mm (13") Plastic Reel
					1206					