ZVE Series

ESD Suppression SMD Varistor

Stackpole Electronics, Inc.
Resistive Product Solutions

Description:

ZVE surface mounted varistors are designed to suppress ESD events, including those specified in IEC 1000-4-2 of other standards used for electromagnetic compliance testing. The ZVE Series is typically applied to protect integrated circuits and other components at the circuit board level operating at 18 Vdc or less.

Fabrication method, design and materials of these devices result in low capacitance characteristics suitable for high-frequency attenuation/low-pass filter circuit functions, providing suppression and filtering in a single device.

Features:

- AC operating voltage (Vrms) from 0V to 14V
- DC operating voltage (Vdc) from 0V to 18V
- Rated for ESD (IEC-1000-4-2)
- Fast response time
- Bi-directional, low clamping voltages
- 4 model sizes available 0603, 0805, 1206, 1210
- Characterized for low inductance and capacitance
- +125°C continuous operating temperature
- Dimensional and weight savings on PC board
- Nickel barrier or AgPd end terminations available
- No plastic coating guarantees better flammability rating
- Available in tape and reel of automatic pick and place
- 100% RoHS compliant and lead free without exemption
- Halogen free
- REACH compliant

Applications:

- Used for part and I/O interface protection in mobile, communication, computer/EDP products, medical products, hand-held/portable devices and industrial equipment
- Suppression of ESD events such as specified in IEC1000-4-2 or MIL-STD 883C, Method 3015.7 for electromagnetic compliance
- Protection of components and circuits sensitive to ESD, transients occurring on power, control and signaling lines.

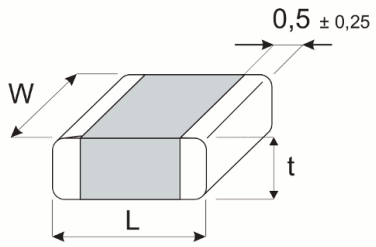
General Technical Data

Operating Temperature	-55 ºC to +125 ºC
Storage Temperature Range	-55 ºC to +150 ºC
Threshold Voltage Temperature Coefficient	<+0.05 %/ºC
Response Time	< 1 ns
Ag/Pd Terminations	Recommended and suitable for Pb-containing soldering
Nickel Barrier Terminations	Recommended and suitable for Pb-contaning and Pb-free soldering

Standard Packaging Options / Quantities

Series	Voltage Range (Vrms)	Chip Size					
		0603			0805		
		K	T	G	K	T	G
		180mm	180mm	330mm	180mm	180mm	330mm
		7"	7"	13"	7"	7"	13"
ZVE	14	1,000	4,000	15,000	1,000	4,000	15,000
	Voltage Range (Vrms)	1206			1210		
		K	T	G	K	T	G
		180mm	180mm	330mm	180mm	180mm	330mm
		7"	7"	13"	7"	7"	13"
	14	1,000	4,000	15,000	1,000	4,000	15,000

Device Ratings and Dimensions



Part Number	V_{RMS} (volts)	V_{DC} (volts)	V_N @ 1 mA (volts)	V_C 8/20 µs (volts)	I_C 8/20 µs (amps)	W_{MAX} 10/1000 µs (joules)	P_{MAX} (watts)	C_{MAX} 1MHz pF	L_{TYP} 100 mA/nS nH	L (mm)	W (mm)	t_{MAX} (mm)
ZVE14S0603	14	18	22 to 28	50	2	0.05	0.003	75	<1.0	1.6 ± 0.20	0.80 ± 0.10	0.95
ZVE14S0805	14	18	22 to 28	50	2	0.1	0.004	100	<1.5	2.0 ± 0.25	1.25 ± 0.20	0.95
ZVE14S1206	14	18	22 to 28	50	2	0.1	0.004	200	<1.8	3.2 ± 0.30	1.60 ± 0.20	1.20
ZVE14S1210	14	18	22 to 28	50	2	0.1	0.004	400	<3.5	3.2 ± 0.30	2.50 ± 0.25	1.30

RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 3). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

RoHS Compliance Status

Standard Product Series	Description	Package / Termination Type	Standard Series RoHS Compliant	Lead-Free Termination Composition	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/WW)
ZVE	ESD Suppression SMD Varistor	SMD	YES	Proprietary Barrier Termination (special designation "N") for lead-free assembly; AgPd for Pb-containing assembly	Always	Always

"Conflict Metals" Commitment

We at Stackpole electronics, Inc. are joined with our industry in opposing the use of metals mined in the "conflict region" of the eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

Compliance to “REACH”

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, “The Registration, Evaluation, Authorization and Restriction of Chemicals”, otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

Environmental Policy

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

How to Order

1	2	3	4	5	6	7	8	9	10	11	12
Z	V	E	1	4	S	1	2	0	6	T	N

Product Series	
ZVE	ESD Suppression

Voltage Range	
Code	Vrms
14	14

Tolerance	
Code	Tol
S	Special

Size
Code
0603
0805
1206
1210

Packaging			
Code	Description	Size	Quantity
K	7" Plastic Reel	180mm	See Standard Packaging Options
T			
G	13" Plastic Reel	330mm	

Termination	
Code	Description
(blank)	Ag/Pd Termination
N	Nickel Barrier Termination