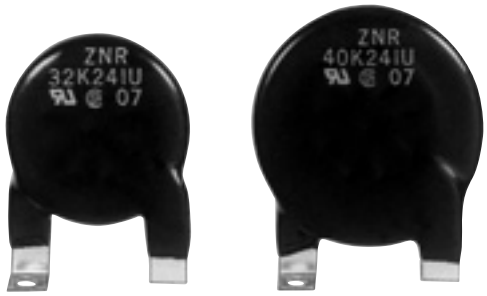
UL and CSA Recognized "ZNR" Transient/Surge Absorbers with Tabs

Type: **CK**



ZNR Transient/Surge Absorber with Tabs is a heavy duty type ZNR with very unique tab terminals which bring forth a higher reliability.
These tabs are used as electrical connecting terminals and also its mounting legs. This type of ZNR is meant for applications in power supplies or transient voltage surge suppressor units where large surge current or high surge energy absorption is required.

■ Features

- UL and CSA recognized components
- High energy handling capability (210 to 750 joules)
- Large withstanding peak current (25 to 30 kA, 8/20 μs, 1 time)
- Common terminals for electrical connection and mounting
- RoHS compliant

■ Recommended Applications

- Power suppliers for OA, FA, telecommunication or industrial equipment
- Power strips
- Transient voltage surge suppressor units

Note: Ask our factory for Product Specification before use.

■ Handling Precautions and Minimum Quantity / Packing Unit

Please see Related Information

■ Related Standards

Standard No.	UL1449	CSA C22.2 No.1 Class 2221 01
Title	Surge Protective Devices	Accessories and Parts for Electronic Products (Varistor for Across-The-Line use as transient protection on 120V ac nominal system)
File No.	E321499	LR-92226

- Each type designation is not registered by Part Number.
  Please contact us for further questions regarding type designation.

■ Explanation of Part Numbers

1	2	3	4	5	6	7	8	9	10	11	12
E	R	Z	C			C	K				

Product Code	Series	Element Size	Type	Tolerance	Nominal Varistor Voltage	Design No.

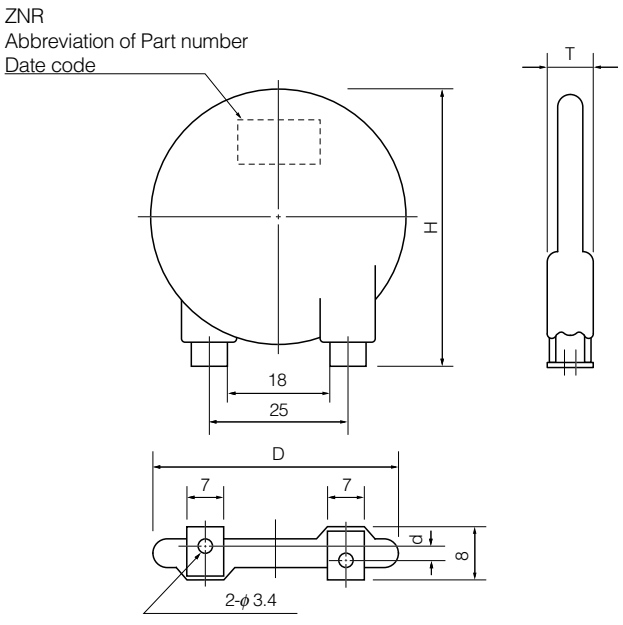
Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.
Should a safety concern arise regarding this product, please be sure to contact us immediately.

■ Ratings and Characteristics

- Operating Temperature Range: −40 to 85 °C
- Storage Temperature Range: −40 to 125 °C

Part Number (UL/CSA Recognized)	Type Designation	Varistor Voltage	Maximum Allowable Voltage		Maximum Clamping Voltage		Energy (2 ms, 1 time)	Maximum Peak Current (8/20 µs)	
								1 time	2 times
		$V_{1\ mA}$ (V)	ACrms (V)	DC (V)	V_{XA} (V)	Ip (A)	(J)	(kA)	(kA)
ERZC32CK201W	32K201U	200 (185 to 225)	130	170	340	200	210	25	20
ERZC32CK241W	32K241U	240 (216 to 264)	150	200	395	200	240	25	20
ERZC32CK271W	32K271U	270 (247 to 303)	175	225	455	200	255	25	20
ERZC32CK361W	32K361U	360 (324 to 396)	230	300	595	200	325	25	20
ERZC32CK391W	32K391U	390 (351 to 429)	250	320	650	200	350	25	20
ERZC32CK431W	32K431U	430 (387 to 473)	275	350	710	200	400	25	20
ERZC32CK471W	32K471U	470 (423 to 517)	300	385	775	200	405	25	20
ERZC32CK511W	32K511U	510 (459 to 561)	320	415	845	200	405	25	20
ERZC32CK621W	32K621U	620 (558 to 682)	385	505	1025	200	415	25	20
ERZC32CK681W	32K681U	680 (612 to 748)	420	560	1120	200	450	25	20
ERZC32CK751W	32K751U	750 (645 to 825)	460	615	1240	200	500	25	20
ERZC32CK781W	32K781U	780 (702 to 858)	485	640	1290	200	520	25	20
ERZC32CK821W	32K821U	820 (738 to 902)	510	670	1355	200	545	25	20
ERZC32CK911W	32K911U	910 (819 to 1001)	550	745	1500	200	600	25	20
ERZC32CK951W	32K951U	950 (855 to 1045)	575	765	1570	200	600	25	20
ERZC40CK201W	40K201U	200 (185 to 225)	130	170	340	250	260	30	25
ERZC40CK241W	40K241U	240 (216 to 264)	150	200	395	250	300	30	25
ERZC40CK271W	40K271U	270 (247 to 303)	175	225	455	250	340	30	25
ERZC40CK361W	40K361U	360 (324 to 396)	230	300	595	250	405	30	25
ERZC40CK391W	40K391U	390 (351 to 429)	250	320	650	250	435	30	25
ERZC40CK431W	40K431U	430 (387 to 473)	275	350	710	250	500	30	25
ERZC40CK471W	40K471U	470 (423 to 517)	300	385	775	250	505	30	25
ERZC40CK511W	40K511U	510 (459 to 561)	320	415	845	250	505	30	25
ERZC40CK621W	40K621U	620 (558 to 682)	385	505	1025	250	515	30	25
ERZC40CK681W	40K681U	680 (612 to 748)	420	560	1120	250	560	30	25
ERZC40CK751W	40K751U	750 (645 to 825)	460	615	1240	250	625	30	25
ERZC40CK781W	40K781U	780 (702 to 858)	485	640	1290	250	650	30	25
ERZC40CK821W	40K821U	820 (738 to 902)	510	670	1355	250	680	30	25
ERZC40CK911W	40K911U	910 (819 to 1001)	550	745	1500	250	750	30	25
ERZC40CK951W	40K951U	950 (855 to 1045)	575	765	1570	250	750	30	25

■ Dimensions in mm (not to scale)



Part Number (UL/CSA Recognized)	Type Designation	D max.	H max.	T max.	d
ERZC32CK201W	32K201U			7.5	5.7±1.0
ERZC32CK241W	32K241U			7.5	5.4±1.0
ERZC32CK271W	32K271U			8.5	5.2±1.0
ERZC32CK361W	32K361U			9.0	4.6±1.0
ERZC32CK391W	32K391U			9.0	4.4±1.0
ERZC32CK431W	32K431U			9.0	4.1±1.0
ERZC32CK471W	32K471U			9.7	3.9±1.0
ERZC32CK511W	32K511U	36	46	9.7	4.5±1.0
ERZC32CK621W	32K621U			9.7	3.9±1.0
ERZC32CK681W	32K681U			9.7	3.6±1.0
ERZC32CK751W	32K751U			10.5	3.3±1.0
ERZC32CK781W	32K781U			10.5	3.1±1.0
ERZC32CK821W	32K821U			10.5	2.9±1.0
ERZC32CK911W	32K911U			11.5	2.5±1.0
ERZC32CK951W	32K951U			11.5	2.3±1.0
ERZC40CK201W	40K201U			7.5	5.7±1.0
ERZC40CK241W	40K241U			7.5	5.4±1.0
ERZC40CK271W	40K271U			8.5	5.2±1.0
ERZC40CK361W	40K361U			9.0	4.6±1.0
ERZC40CK391W	40K391U			9.0	4.4±1.0
ERZC40CK431W	40K431U			9.0	4.1±1.0
ERZC40CK471W	40K471U			9.7	3.9±1.0
ERZC40CK511W	40K511U	44	50	9.7	4.5±1.0
ERZC40CK621W	40K621U			9.7	3.9±1.0
ERZC40CK681W	40K681U			9.7	3.6±1.0
ERZC40CK751W	40K751U			10.5	3.3±1.0
ERZC40CK781W	40K781U			10.5	3.1±1.0
ERZC40CK821W	40K821U			10.5	2.9±1.0
ERZC40CK911W	40K911U			11.5	2.5±1.0
ERZC40CK951W	40K951U			11.5	2.3±1.0

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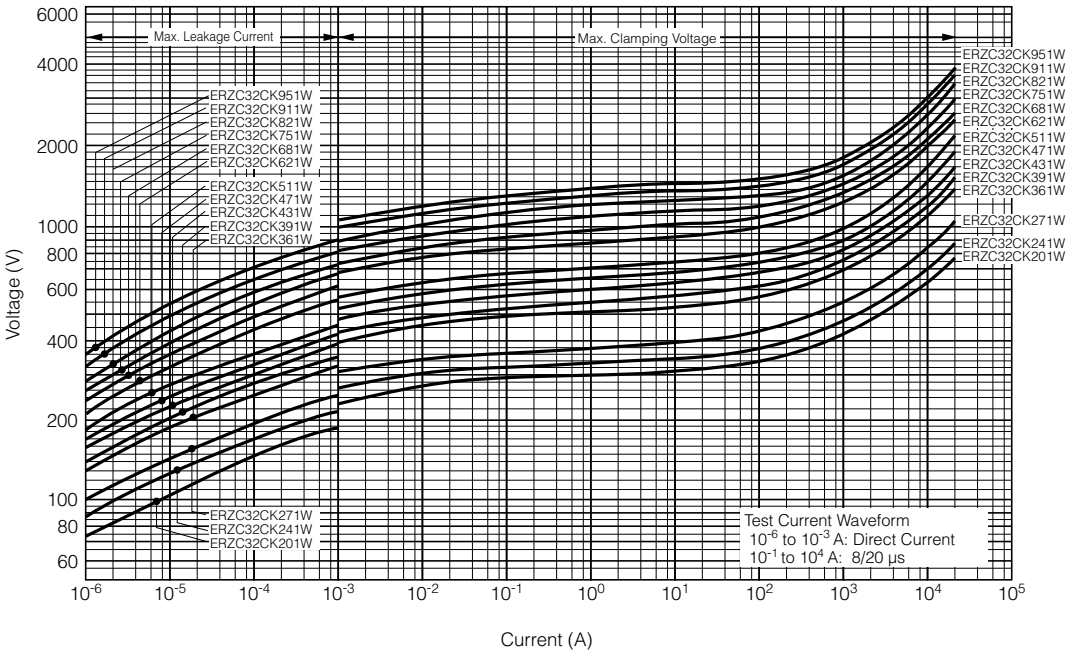
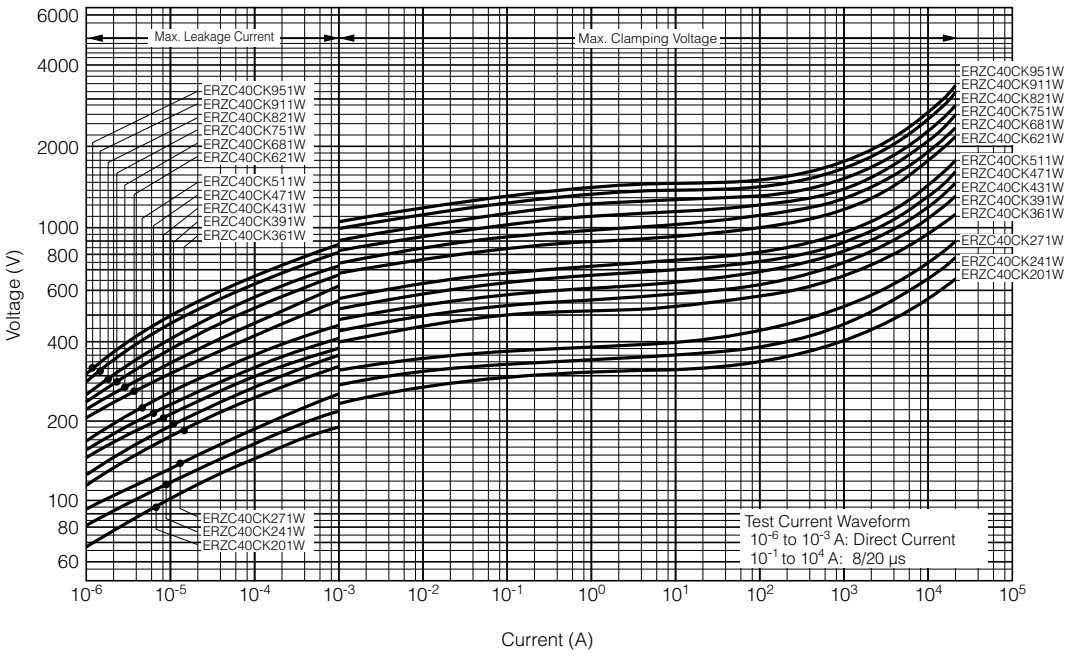
■ Typical Characteristics

Voltage vs. Current (ERZC32CK201W to ERZC32CK951W)



(ERZC40CK201W to ERZC40CK951W)



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■ UL, CSA Recognized Components and The A.C. Rated Voltage

Part Number (UL/CSA Recognized)	Maximum Allowable Voltage		Rated Voltage (Vrms)	
	ACrms (V)	DC (V)	UL1449	CSA (Class 2221 01)
ERZC32CK201W	130	170	118	118
ERZC32CK241W	150	200	136	136
ERZC32CK271W	175	225	159	159
ERZC32CK361W	230	300	209	209
ERZC32CK391W	250	320	227	227
ERZC32CK431W	275	350	250	250
ERZC32CK471W	300	385	272	272
ERZC32CK511W	320	415	291	291
ERZC32CK621W	385	505	350	350
ERZC32CK681W	420	560	381	381
ERZC32CK751W	460	615	418	418
ERZC32CK781W	485	640	440	440
ERZC32CK821W	510	670	463	463
ERZC32CK911W	550	745	500	500
ERZC32CK951W	575	765	522	522
ERZC40CK201W	130	170	118	118
ERZC40CK241W	150	200	136	136
ERZC40CK271W	175	225	159	159
ERZC40CK361W	230	300	209	209
ERZC40CK391W	250	320	227	227
ERZC40CK431W	275	350	250	250
ERZC40CK471W	300	385	272	272
ERZC40CK511W	320	415	291	291
ERZC40CK621W	385	505	350	350
ERZC40CK681W	420	560	381	381
ERZC40CK751W	460	615	418	418
ERZC40CK781W	485	640	440	440
ERZC40CK821W	510	670	463	463
ERZC40CK911W	550	745	500	500
ERZC40CK951W	575	765	522	522

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■ Performance Characteristics (Type CK)

Characteristics			Test Methods/Description	Specifications
Standard Test Condition			Electrical characteristics shall be measured at following conditions (Temperature: 5 to 35 °C, Humidity: Max. 85 %).	———
Electrical	Varistor Voltage		The voltage between two terminals with the specified measuring current CmA DC applied is called V_C or V_{CmA}. The measurement shall be made as fast as possible to avoid heat affection.	To meet the specified value.
	Maximum Allowable Voltage		The maximum sinusoidal wave voltage (rms) or the maximum DC voltage that can be applied continuously.	
	Clamping Voltage		The maximum voltage between two terminals with the specified standard impulse current (8/20 μs).	
	Rated Power		The maximum power that can be applied within the specified ambient temperature.	
	Energy		The maximum energy within the varistor voltage change of ±10 % when one impulse of 2 ms is applied.	
	Maximum Peak Current	2 times	The maximum current within the varistor voltage change of ±10 % with the standard impulse current (8/20 μs) applied two times with an interval of 5 minutes.	
		1 time	The maximum current within the varistor voltage change of ±10 % with the standard impulse current (8/20 μs) applied one time.	
Mechanical	Robustness of Terminations (Tensile)		After gradually applying the force of 19.6 N (2 kgf) and keeping the unit fixed for ten seconds, the terminal shall be visually examined for any damage.	No remarkable damage
	Vibration		After repeatedly applying a single harmonic vibration (amplitude: 0.35 mm): double amplitude: 0.7 mm with 1 minute vibration frequency cycles (10 Hz to 55 Hz to 10 Hz) to each of three perpendicular directions for 2 hours. Thereafter, the unit shall be visually examined.	No remarkable damage
	Solderability		After dipping the terminal to a depth of approximately 3 mm from the body in a soldering bath of 230±5 °C for 5.0±0.5 seconds, the terminal shall be visually examined.	Approximately 95 % of the terminals shall be covered with new solder uniformly.
	Resistance to Soldering Heat		The terminal shall be dipped into a soldering bath having a temperature of 350±10 °C to a point 4.0±0.8 mm from the body of the unit and then be held there for 3.0±0.5 seconds. The change of Vc and mechanical damage shall be examined.	$\Delta V_{CmA}/V_{CmA} \leqq \pm 5$ % No remarkable damage
Environmental	Dry Heat/ High Temperature Storage		The specimen shall be subjected to 125±2 °C for 500 hours in a thermostatic bath without load and then stored at room temperature and humidity for one to two hours. Thereafter, the change of Vc shall be measured.	$\Delta V_{CmA}/V_{CmA} \leqq \pm 5$ %
	Damp Heat/ Humidity (Steady State)		The specimen shall be subjected to 40±2 °C, 90 to 95 %RH for 1000 hours without load and then stored at room temperature and humidity for one to two hours. Thereafter, the change of Vc shall be measured.	
	Temperature Cycle		The temperature cycle shown below shall be repeated five times and then stored at room temperature and humidity for one to two hours. The change of Vc and mechanical damage shall be examined.	$\Delta V_{CmA}/V_{CmA} \leqq \pm 5$ % No remarkable damage
	Dry Heat Load/ High Temperature Load		After being continuously applied the Maximum Allowable Voltage at 85±2 °C for 500 hours, the specimen shall be stored at room temperature and humidity for one to two hours. Thereafter, the change of Vc shall be measured.	$\Delta V_{CmA}/V_{CmA} \leqq \pm 10$ %

Step	Temperature (°C)	Period (minutes)
1	–25±3	30^{+3}_{0}
2	Room Temp.	3 max.
3	85±2	30^{+3}_{0}
4	Room Temp.	3 max.

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