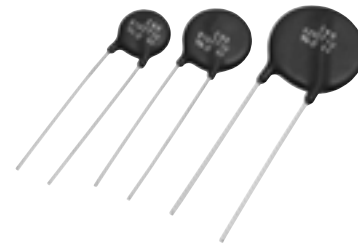


“ZNR” Transient/Surge Absorbers

Type: **D**

Series: **E**



“ZNR” Transient/Surge Absorber, Series E, Type D features large surge current and energy handling capability for absorbing transient overvoltage in a compact size.

■ Features

- Large withstanding surge current capability in compact sizes
- Large “Energy Handling Capability” absorbing transient overvoltages in compact sizes
- Wide range of varistor voltages
- The standard products shown below have received UL and VDE standards
Varistor voltage 200V over : UL, VDE
- RoHS compliant

■ Applicable Standards

- UL1449 Ed.3
- VDE IEC61051-1, -2, -2-2, IEC60950-1 Ed.2 Annex.Q
- Type designation(UL), Style reference(VDE)
Are not registered by product Part No..
(Refer to pages 2 and 12 for the details)

■ Recommended Applications

- Transistor, diode, IC, thyristor or triac semiconductor protection
- Surge protection in consumer electronic equipment
- Surge protection in communication, measuring or controller electronics
- Surge protection in electronic home appliances, gas or petroleum appliances

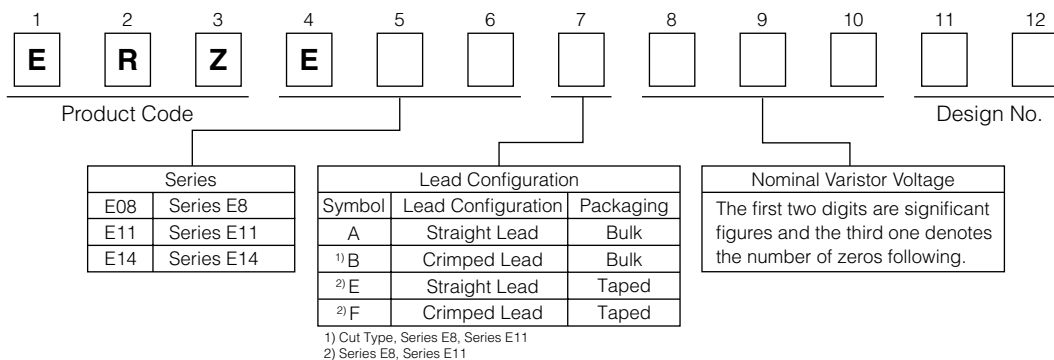
■ Handling Precautions

Please see Related Information (Pages 15 to 17)

■ Minimum Quantity / Packing Unit

Please see Related Information (Page 18)

■ Explanation of Part Numbers



NEW

■ Reference Guide to Standard Products

Part No.	Applicable Standards		Varistor Voltage at 1 mA (V)	Maximum Allowable Voltage		Clamping Voltage at 8/20μs		Maximum Peak Current at 8/20μs(A)		Recommended Applications	
	Standard Registration No.	Approvals		ACrms (V)	DC (V)	max.(V)	I _p (A)	1 time	2 times		
ERZE08A201	E8201	○☆	200 (185 to 225)	130	170	340	25	3500	2500	AC 100 V Line-Line Applications	
ERZE11A201	E11201	◎◎☆☆				340	50	6000	5000		
ERZE14A201	E14201	◎◎☆☆				340	100	10000	7000		
ERZE08A221	E8221	○☆	220 (198 to 242)	140	180	360	25	3500	2500		
ERZE11A221	E11221	◎◎☆☆				360	50	6000	5000		
ERZE14A221	E14221	◎◎☆☆				360	100	10000	7000		
ERZE08A241	E8241	○☆	240 (216 to 264)	150	200	395	25	3500	2500	AC 100 V to 120 V, Line-Line Applications	
ERZE11A241	E11241	◎◎☆☆				395	50	6000	5000		
ERZE14A241	E14241	◎◎☆☆				395	100	10000	7000		
ERZE08A271	E8271	○☆	270 (247 to 303)	175	225	455	25	3500	2500		
ERZE11A271	E11271	◎◎☆☆				455	50	6000	5000		
ERZE14A271	E14271	◎◎☆☆				455	100	10000	7000		
ERZE08A331	E8331	○☆	330 (297 to 363)	210	270	545	25	3500	2500	AC 100 V to 120 V, Line-Line Applications	
ERZE11A331	E11331	◎◎☆☆				545	50	6000	4500		
ERZE14A331	E14331	◎◎☆☆				545	100	10000	7000		
ERZE08A361	E8361	○☆	360 (324 to 396)	230	300	595	25	3500	2500		Telephone Line Applications, (For DC 250 V Insulation Resistance Test)
ERZE11A361	E11361	◎◎☆☆				595	50	6000	4500		
ERZE14A361	E14361	◎◎☆☆				595	100	10000	6500		
ERZE08A391	E8391	○☆	390 (351 to 429)	250	320	650	25	3500	2500		
ERZE11A391	E11391	◎◎☆☆				650	50	6000	4500		
ERZE14A391	E14391	◎◎☆☆				650	100	10000	6500		
ERZE08A431	E8431	○☆	430 (387 to 473)	275	350	710	25	3500	2500	AC 100 V to 220 V, Line-Line and Line-Ground Applications	
ERZE11A431	E11431	◎◎☆☆				710	50	6000	4500		
ERZE14A431	E14431	◎◎☆☆				710	100	10000	6500		
ERZE08A471	E8471	○●☆☆	470 (423 to 517)	300	385	775	25	3500	2500		
ERZE11A471	E11471	◎◎☆☆				775	50	6000	4500		
ERZE14A471	E14471	◎◎☆☆				775	100	10000	6500		
ERZE08A511	E8511	○●☆☆	510 (459 to 561)	320	410	845	25	3500	2500	AC 100 V to 240 V, Line-Line and Line-Ground Applications	
ERZE11A511	E11511	◎◎☆☆				845	50	6000	4500		
ERZE14A511	E14511	◎◎☆☆				845	100	10000	6500		
ERZE08A561	E8561	○●☆☆	560 (504 to 616)	350	450	930	25	3500	2500		
ERZE11A561	E11561	◎◎☆☆				930	50	6000	4500		
ERZE14A561	E14561	◎◎☆☆				930	100	7500	6500		
ERZE08A621	E8621	○●☆☆	620 (558 to 682)	385	505	1025	25	3500	2500	AC 100 V to 240 V, Line-Line and Line-Ground Applications	
ERZE11A621	E11621	◎◎☆☆				1025	50	5000	4500		
ERZE14A621	E14621	◎◎☆☆				1025	100	7500	6500		
ERZE08A681	E8681	○●☆☆	680 (612 to 748)	420	560	1120	25	3500	2500		
ERZE11A681	E11681	◎◎☆☆				1120	50	5000	4500		
ERZE14A681	E14681	◎◎☆☆				1120	100	7500	6500		
ERZE08A751	E8751	○●☆☆	750 (675 to 825)	460	615	1240	25	3500	2500	AC 380 V, Line-Line and Line-Ground Applications (For DC 500 V Insulating Test)	
ERZE11A751	E11751	◎◎☆☆				1240	50	5000	4500		
ERZE14A751	E14751	◎◎☆☆				1240	100	7500	6500		
ERZE11A821	E11821	◎◎☆☆	820 (738 to 902)	510	670	1355	50	5000	4500		
ERZE14A821	E14821	◎◎☆☆				1355	100	7500	6500		
ERZE11A911	E11911	◎◎☆☆	910 (819 to 1001)	550	745	1500	50	5000	4500		AC 415 V, Line-Line and Line-Ground Applications (For DC 500 V Insulating Test)
ERZE14A911	E14911	◎◎☆☆				1500	100	7500	6500		
ERZE11A102	E11102	◎◎☆☆	1000 (900 to 1100)	625	825	1650	50	5000	4500	AC 480 V, Line-Line and Line-Ground Applications (For DC 500 V Insulating Test)	
ERZE14A102	E14102	◎◎☆☆				1650	100	7500	6500		
ERZE11A112	E11112	◎◎☆☆	1100 (990 to 1210)	680	895	1815	50	5000	4500		
ERZE14A112	E14112	◎◎☆☆				1815	100	7500	6500		

○ : UL1449 Ed.3, ● : UL1449 Type3 (or Code-Connected and Direct plug-in), ◎ : UL1449 Type2 (or Permanently Connected), ☆ : VDE (IEC61051-1, -2, -2-2), ★ : VDE (IEC60950-1 Ed.2 Annex.Q)
 ※ Approval number (File No.) of safety regulations are subject to revision without notice. Ask factory for a copy of the latest file 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.

Series E8

■ Ratings and Characteristics

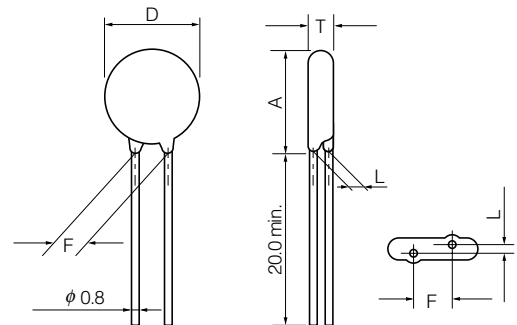
● Operating Temperature Range : -40 to 85 °C ● Storage Temperature Range : -40 to 125 °C

Part No.	Varistor Voltage	Maximum Allowable Voltage		Clamping Voltage (max.) *Ip	Rated Power	Maximum Energy		Maximum Peak Current (8/20 μs)		Capacitance (max.) at 1 kHz (pF)
						(10/1000 μs)	(2 ms)	1 time	2 times	
	V _{1 mA} (V)	ACrms (V)	DC (V)	(V)	(W)	(J)	(J)	(A)	(A)	
ERZE08A201	200(185 to 225)	130	170	340	0.4	35	25	3500	2500	390
ERZE08A221	220(198 to 242)	140	180	360	0.4	39	27.5	3500	2500	380
ERZE08A241	240(216 to 264)	150	200	395	0.4	42	30	3500	2500	360
ERZE08A271	270(247 to 303)	175	225	455	0.4	49	35	3500	2500	330
ERZE08A331	330(297 to 363)	210	270	545	0.4	58	42	3500	2500	300
ERZE08A361	360(324 to 396)	230	300	595	0.4	65	45	3500	2500	280
ERZE08A391	390(351 to 429)	250	320	650	0.4	70	50	3500	2500	260
ERZE08A431	430(387 to 473)	275	350	710	0.4	80	55	3500	2500	230
ERZE08A471	470(423 to 517)	300	385	775	0.4	85	60	3500	2500	180
ERZE08A511	510(459 to 561)	320	410	845	0.4	92	67	3500	2500	150
ERZE08A561	560(504 to 616)	350	450	930	0.4	92	67	3500	2500	150
ERZE08A621	620(558 to 682)	385	505	1025	0.4	92	67	3500	2500	140
ERZE08A681	680(612 to 748)	420	560	1120	0.4	92	67	3500	2500	130
ERZE08A751	750(675 to 825)	460	615	1240	0.4	100	70	3500	2500	130

*Ip Measuring current of clamping voltage : 25 A

■ Dimensions in mm (not to scale)

Part No.	D max.	T max.	F±1.0	A max.	L±1.0
ERZE08A201	10.5	5.1	7.5	13.5	1.9
ERZE08A221	10.5	5.2	7.5	13.5	2.0
ERZE08A241	10.5	5.3	7.5	13.5	2.1
ERZE08A271	10.5	5.5	7.5	13.5	2.3
ERZE08A331	10.5	5.9	7.5	13.5	2.6
ERZE08A361	10.5	6.1	7.5	13.5	2.8
ERZE08A391	10.5	6.3	7.5	13.5	2.9
ERZE08A431	10.5	6.5	7.5	13.5	3.1
ERZE08A471	10.5	7.3	7.5	13.5	3.6
ERZE08A511	10.5	7.8	7.5	13.5	4.0
ERZE08A561	10.5	8.1	7.5	13.5	4.3
ERZE08A621	11.5	8.7	7.5	14.5	4.7
ERZE08A681	11.5	9.0	7.5	14.5	5.0
ERZE08A751	11.5	9.7	7.5	14.5	5.6



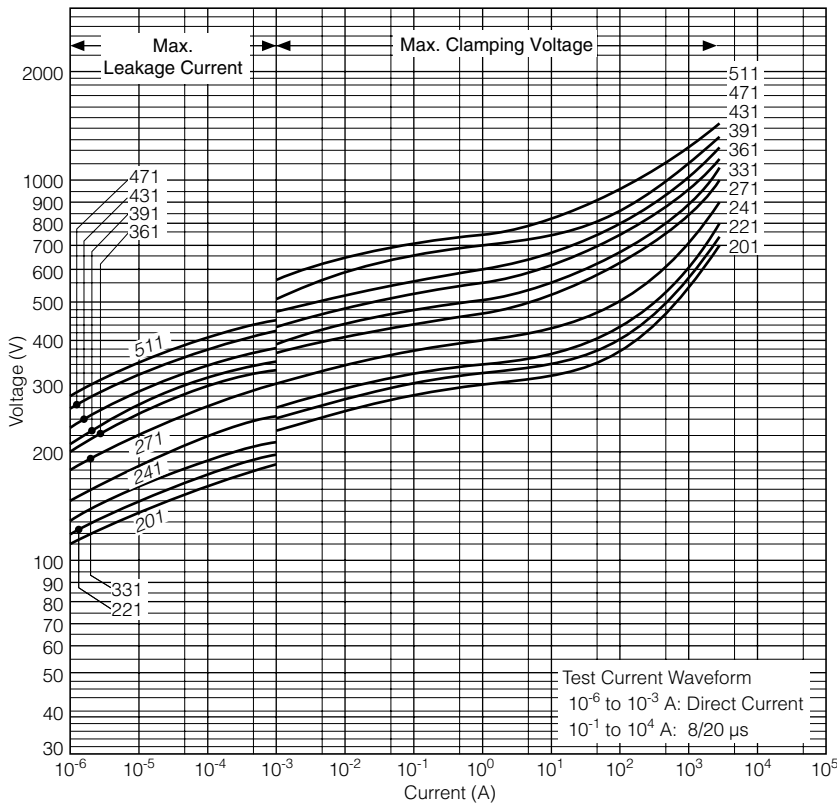
Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use. Should a safety concern arise regarding this product, please be sure to contact us immediately.

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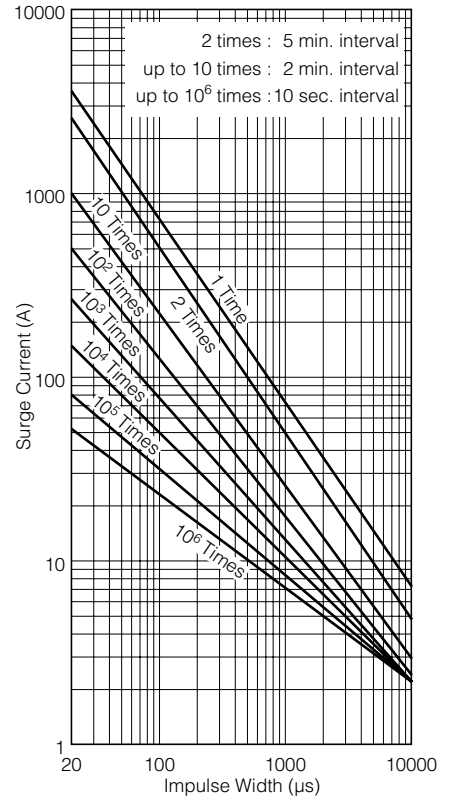
■ Typical Characteristics
Voltage vs. Current

Impulse Derating (Relation between impulse width and impulse current multiple)

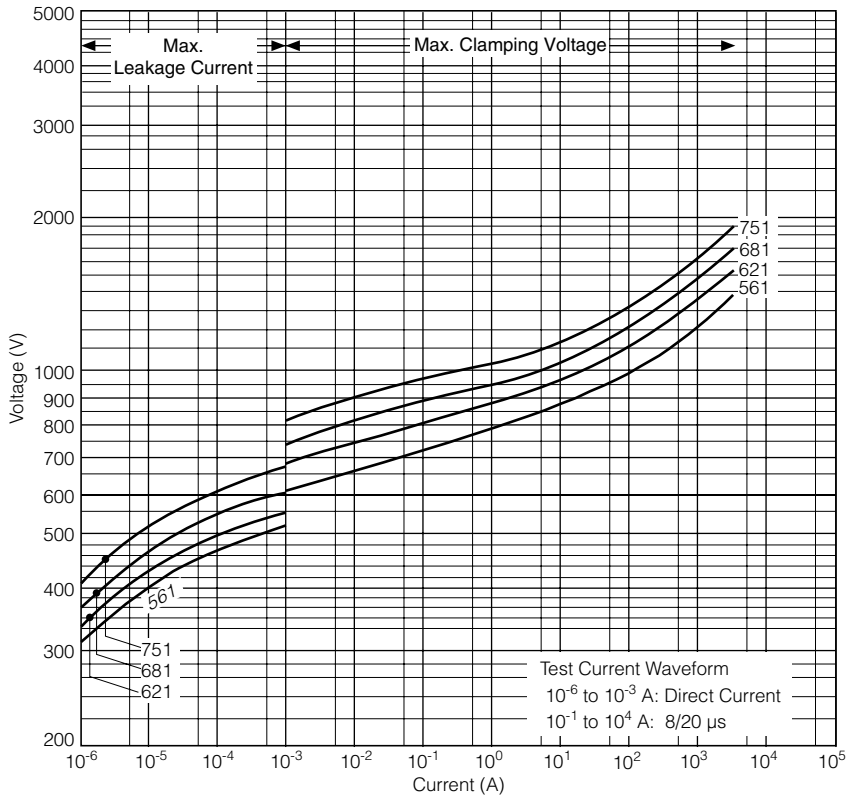
ERZE08A201 to ERZE08A511



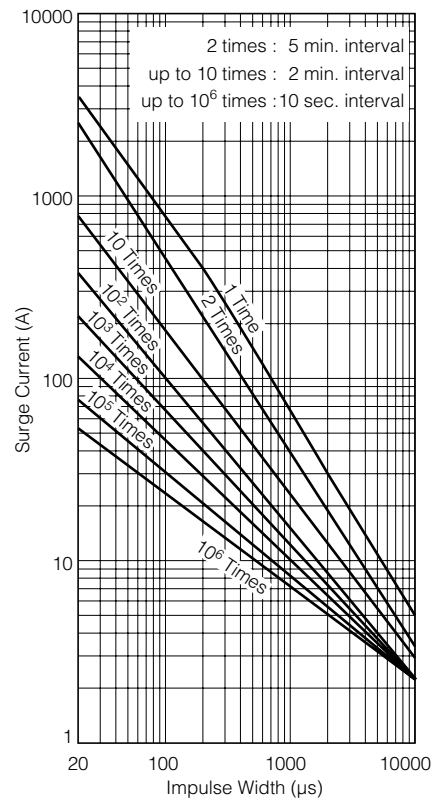
ERZE08A201 to ERZE08A511



ERZE08A561 to ERZE08A751



ERZE08A561 to ERZE08A751



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.

Series E11

■ Ratings and Characteristics

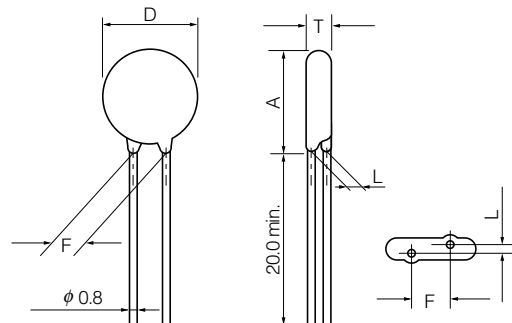
● Operating Temperature Range : -40 to 85 °C ● Storage Temperature Range : -40 to 125 °C

Part No.	Varistor Voltage	Maximum Allowable Voltage		Clamping Voltage (max.) *Ip	Rated Power	Maximum Energy		Maximum Peak Current (8/20 μs)		Capacitance (max.) at 1 kHz (pF)
		ACrms (V)	DC (V)			(10/1000 μs)	(2 ms)	1 time	2 times	
	V _{1mA} (V)			(V)	(W)	(J)	(J)	(A)	(A)	
ERZE11A201	200(185 to 225)	130	170	340	0.6	70	50	6000	5000	690
ERZE11A221	220(198 to 242)	140	180	360	0.6	78	55	6000	5000	660
ERZE11A241	240(216 to 264)	150	200	395	0.6	84	60	6000	5000	620
ERZE11A271	270(247 to 303)	175	225	455	0.6	99	70	6000	5000	580
ERZE11A331	330(297 to 363)	210	270	545	0.6	115	80	6000	4500	520
ERZE11A361	360(324 to 396)	230	300	595	0.6	130	90	6000	4500	480
ERZE11A391	390(351 to 429)	250	320	650	0.6	140	100	6000	4500	450
ERZE11A431	430(387 to 473)	275	350	710	0.6	155	110	6000	4500	400
ERZE11A471	470(423 to 517)	300	385	775	0.6	175	125	6000	4500	360
ERZE11A511	510(459 to 561)	320	410	845	0.6	190	136	6000	4500	310
ERZE11A561	560(504 to 616)	350	450	930	0.6	190	136	6000	4500	310
ERZE11A621	620(558 to 682)	385	505	1025	0.6	190	136	5000	4500	300
ERZE11A681	680(612 to 748)	420	560	1120	0.6	190	136	5000	4500	290
ERZE11A751	750(675 to 825)	460	615	1240	0.6	210	150	5000	4500	280
ERZE11A821	820(738 to 902)	510	670	1355	0.6	235	165	5000	4500	260
ERZE11A911	910(819 to 1001)	550	745	1500	0.6	255	180	5000	4500	240
ERZE11A102	1000(900 to 1100)	625	825	1650	0.6	280	200	5000	4500	220
ERZE11A112	1100(990 to 1210)	680	895	1815	0.6	310	220	5000	4500	200

*Ip Measuring current of clamping voltage : 50 A

■ Dimensions in mm (not to scale)

Part No.	D max.	T max.	F±1.0	A max.	L±1.0
ERZE11A201	13.0	5.2	7.5	17.0	1.9
ERZE11A221	13.0	5.3	7.5	17.0	2.0
ERZE11A241	13.0	5.4	7.5	17.0	2.1
ERZE11A271	13.0	5.6	7.5	17.0	2.3
ERZE11A331	13.0	5.9	7.5	17.0	2.6
ERZE11A361	13.0	6.1	7.5	17.0	2.8
ERZE11A391	13.0	6.2	7.5	17.0	2.9
ERZE11A431	13.0	6.4	7.5	17.0	3.1
ERZE11A471	13.0	6.6	7.5	17.0	3.3
ERZE11A511	13.0	6.8	7.5	17.0	3.5
ERZE11A561	13.0	7.2	7.5	17.0	3.8
ERZE11A621	14.0	7.5	7.5	18.0	4.2
ERZE11A681	14.0	7.8	7.5	18.0	4.5
ERZE11A751	14.0	8.2	7.5	18.0	4.9
ERZE11A821	14.0	8.5	7.5	18.0	5.2
ERZE11A911	14.0	9.0	7.5	18.0	5.7
ERZE11A102	14.0	9.5	7.5	18.0	6.2
ERZE11A112	14.0	10.1	7.5	18.0	6.8



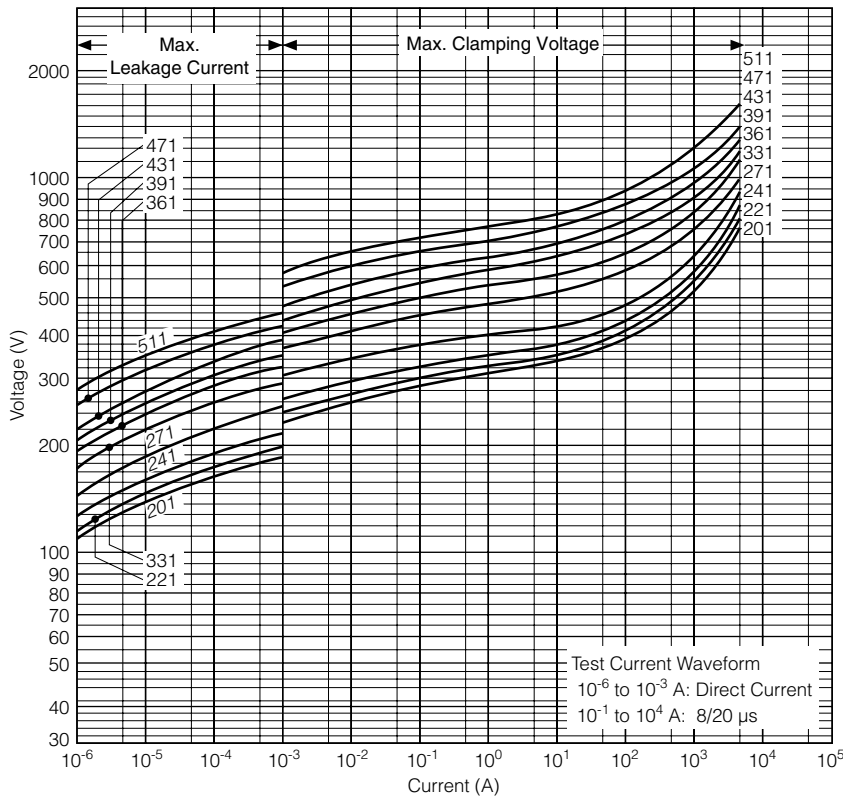
Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use. Should a safety concern arise regarding this product, please be sure to contact us immediately.

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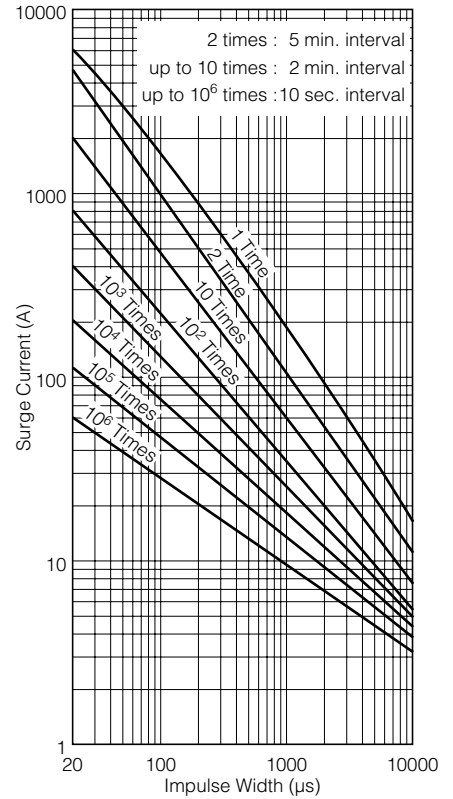
■ Typical Characteristics
Voltage vs. Current

Impulse Derating (Relation between impulse width and impulse current multiple)

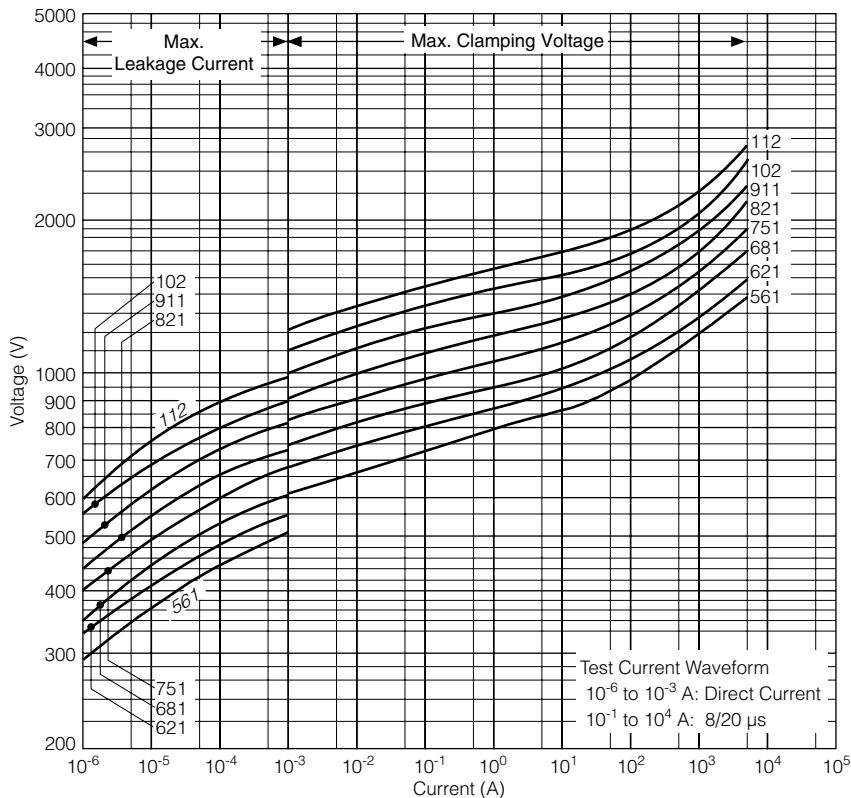
ERZE11A201 to ERZE11A511



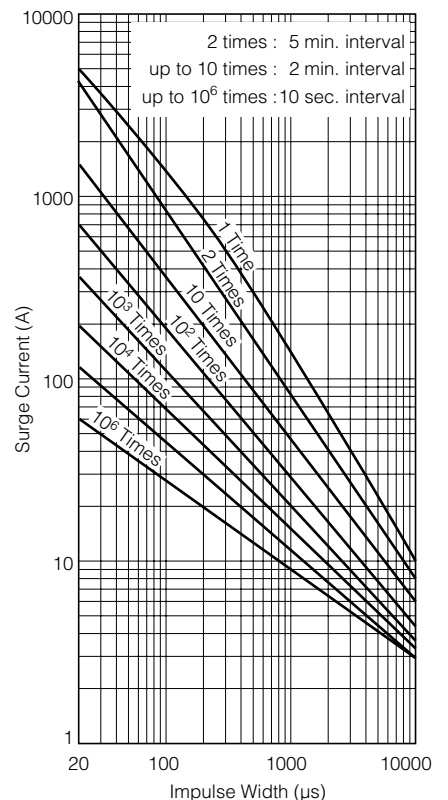
ERZE11A201 to ERZE11A511



ERZE11A561 to ERZE11A112



ERZE11A561 to ERZE11A112



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.

Series E14

■ Ratings and Characteristics

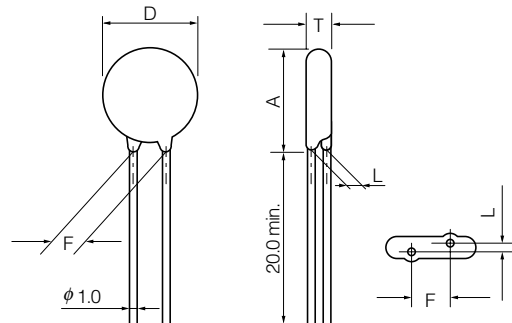
● Operating Temperature Range : -40 to 85 °C ● Storage Temperature Range : -40 to 125 °C

Part No.	Varistor Voltage	Maximum Allowable Voltage		Clamping Voltage (max.) *Ip	Rated Power	Maximum Energy		Maximum Peak Current (8/20 μs)		Capacitance (max.) at 1 kHz (pF)
		ACrms (V)	DC (V)			(10/1000 μs)	(2 ms)	1 time	2 times	
	V _{1mA} (V)			(V)	(W)	(J)	(J)	(A)	(A)	
ERZE14A201	200(185 to 225)	130	170	340	1.0	140	100	10000	7000	1300
ERZE14A221	220(198 to 242)	140	180	360	1.0	155	110	10000	7000	1200
ERZE14A241	240(216 to 264)	150	200	395	1.0	168	120	10000	7000	1100
ERZE14A271	270(247 to 303)	175	225	455	1.0	190	135	10000	7000	1000
ERZE14A331	330(297 to 363)	210	270	545	1.0	228	160	10000	6500	900
ERZE14A361	360(324 to 396)	230	300	595	1.0	255	180	10000	6500	900
ERZE14A391	390(351 to 429)	250	320	650	1.0	275	195	10000	6500	800
ERZE14A431	430(387 to 473)	275	350	710	1.0	303	215	10000	6500	800
ERZE14A471	470(423 to 517)	300	385	775	1.0	350	250	10000	6500	750
ERZE14A511	510(459 to 561)	320	410	845	1.0	382	273	10000	6500	700
ERZE14A561	560(504 to 616)	350	450	930	1.0	382	273	10000	6500	700
ERZE14A621	620(558 to 682)	385	505	1025	1.0	382	273	7500	6500	650
ERZE14A681	680(612 to 748)	420	560	1120	1.0	382	273	7500	6500	600
ERZE14A751	750(675 to 825)	460	615	1240	1.0	420	300	7500	6500	530
ERZE14A821	820(738 to 902)	510	670	1355	1.0	460	325	7500	6500	500
ERZE14A911	910(819 to 1001)	550	745	1500	1.0	510	360	7500	6500	400
ERZE14A102	1000(900 to 1100)	625	825	1650	1.0	565	400	7500	6500	400
ERZE14A112	1100(990 to 1210)	680	895	1815	1.0	620	440	7500	6500	350

*Ip Measuring current of clamping voltage : 100 A

■ Dimensions in mm (not to scale)

Part No.	D max.	T max.	F±1.0	A max.	L±1.0
ERZE14A201	16.5	5.2	10.0	20.0	2.1
ERZE14A221	16.5	5.3	10.0	20.0	2.2
ERZE14A241	16.5	5.4	10.0	20.0	2.3
ERZE14A271	16.5	5.6	10.0	20.0	2.5
ERZE14A331	16.5	5.9	10.0	20.0	2.8
ERZE14A361	16.5	6.1	10.0	20.0	3.0
ERZE14A391	16.5	6.2	10.0	20.0	3.1
ERZE14A431	16.5	6.4	10.0	20.0	3.3
ERZE14A471	16.5	6.6	10.0	20.0	3.5
ERZE14A511	16.5	6.8	10.0	20.0	3.7
ERZE14A561	16.5	7.2	10.0	20.0	4.0
ERZE14A621	17.5	7.5	10.0	20.5	4.4
ERZE14A681	17.5	7.8	10.0	20.5	4.7
ERZE14A751	17.5	8.2	10.0	20.5	5.1
ERZE14A821	17.5	8.5	10.0	20.5	5.4
ERZE14A911	17.5	9.0	10.0	20.5	5.9
ERZE14A102	17.5	9.5	10.0	20.5	6.4
ERZE14A112	17.5	10.1	10.0	20.5	7.2



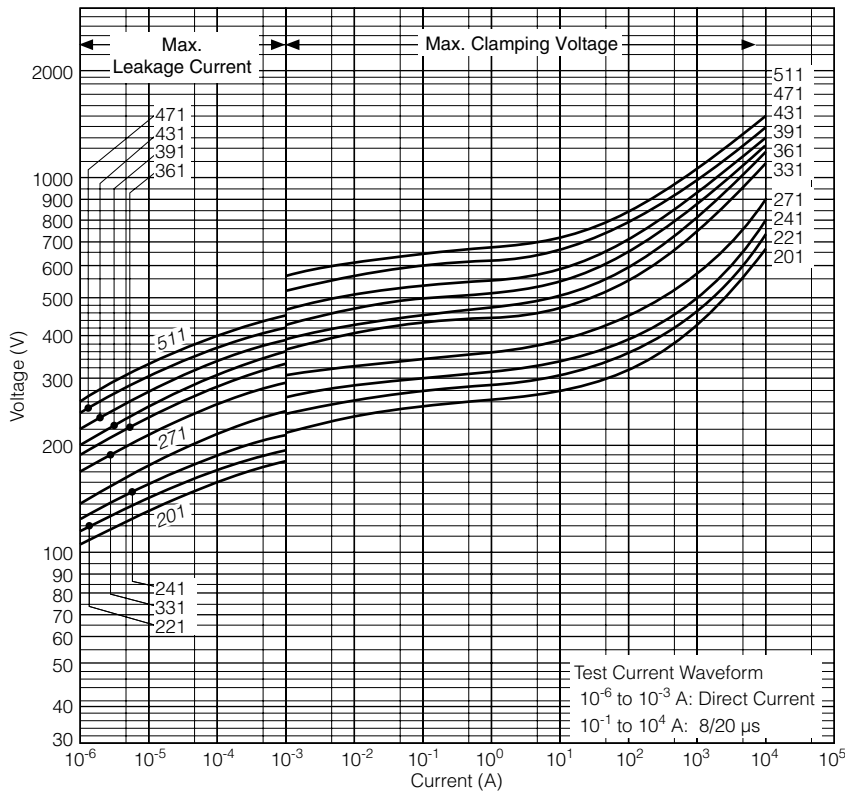
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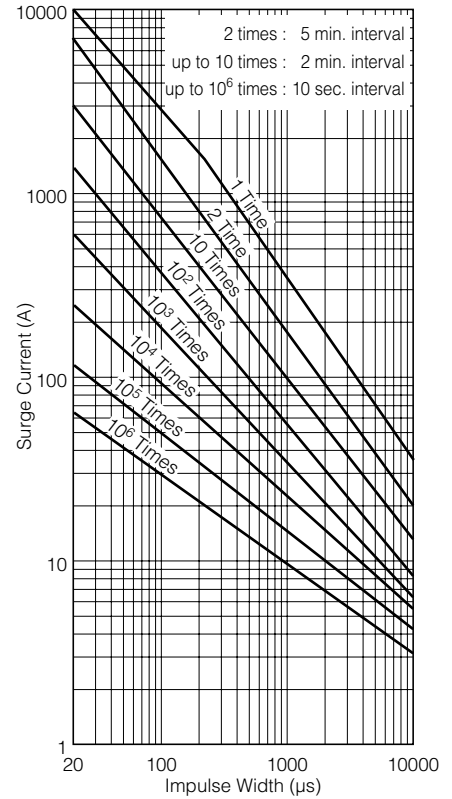
■ Typical Characteristics
Voltage vs. Current

Impulse Derating (Relation between impulse width and impulse current multiple)

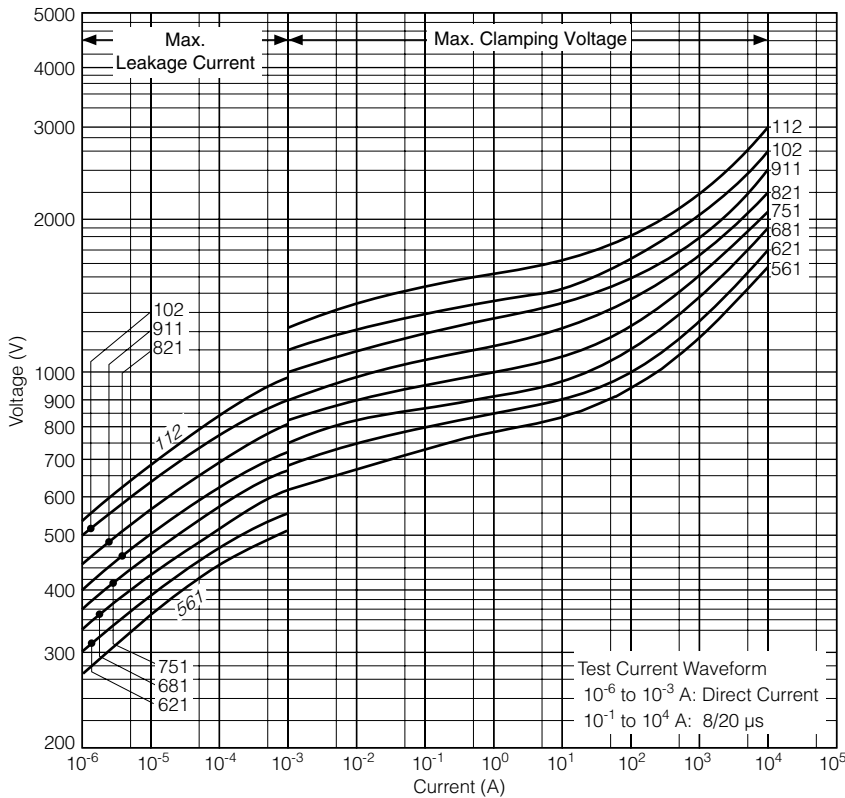
ERZE14A201 to ERZE14A511



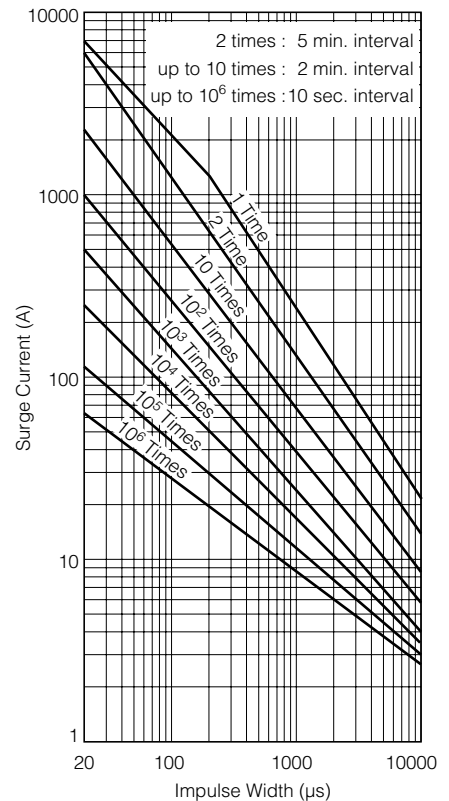
ERZE14A201 to ERZE14A511



ERZE14A561 to ERZE14A112



ERZE14A561 to ERZE14A112



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.

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