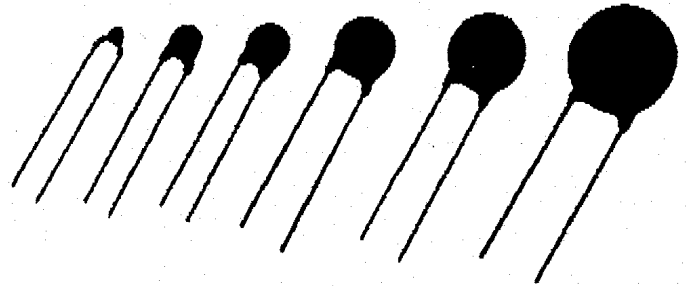


"ZNR" Transient/Surge Absorbers General Purpose

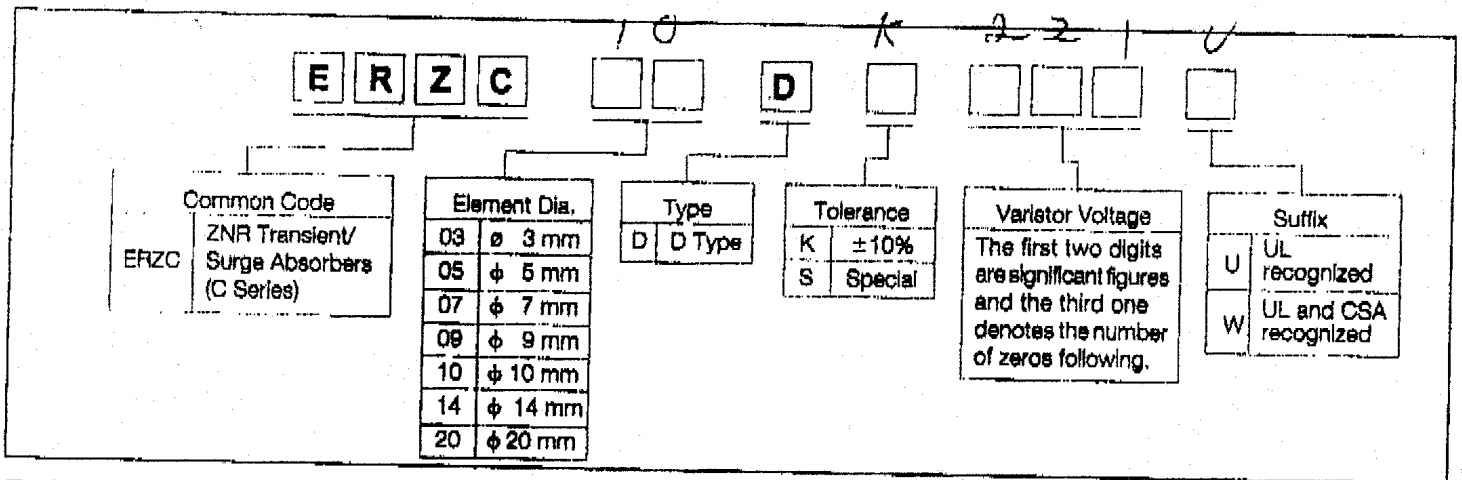
ERZ-C(D) Series

Features

- Fast response to rapidly rising surge voltage
- High performance clamping voltage characteristics
- Broad products range:
Varistor voltage: 18V to 1.8 kV
- UL and CSA recognized models are available



Explanation of Part Numbers (Type D)



Reference Guide to Standard Products (Type D)

Part No.	Maximum Allowable Voltage		Varistor Voltage* (V)	Clamping Voltage @ Test Current (8/20 ms)		Maximum Energy (J)		Maximum Peak Current (8/20 µs)	
	ACrms(V)	DC(V)		V _{KA} (V)	I _p (A)	10/1000µs	2 ms	1 times (A)	2 times (A)
ERZC06DK180 ERZC07DK180 ERZC10DK180 ERZC14DK180 ERZC20DK180	11	14	18(18-20)	40	1	0.4	0.3	100	50
36				2.5	0.9	0.8	250	125	
36				5	2.1	1.6	500	250	
36				10	4.0	3.5	1000	500	
36				20	11	10	2000	1000	
ERZC03DK220 ERZC05DK220 ERZC07DK220 ERZC10DK220 ERZC14DK220 ERZC20DK220	14	18	22(20-24)	48	0.5	—	0.18	50	25
48				1	0.5	0.4	100	50	
43				2.5	1.1	0.9	250	125	
43				5	2.5	2.0	500	250	
43				10	5.0	4.0	1000	500	
43				20	14	13	2000	1000	
ERZC03DK270 ERZC05DK270 ERZC07DK270 ERZC10DK270 ERZC14DK270 ERZC20DK270	17	22	27(24-30)	80	0.5	—	0.2	50	25
60				1	0.8	0.6	100	50	
53				2.5	1.4	1.0	250	125	
53				5	3.0	2.5	500	250	
53				10	6.0	5.0	1000	500	
53				20	18	15	2000	1000	
ERZC05DK330 ERZC07DK330 ERZC10DK330 ERZC14DK330 ERZC20DK330	20	28	33(30-38)	73	1	0.8	0.8	100	50
65				2.5	1.7	1.2	250	125	
65				5	4.0	3.0	500	250	
65				10	7.5	6.0	1000	500	
65				20	23	20	2000	1000	
ERZC03DK390 ERZC05DK390 ERZC07DK390 ERZC10DK390 ERZC14DK390 ERZC20DK390	25	31	39(35-43)	88	0.5	—	0.32	50	25
88				1	0.9	0.8	100	50	
77				2.5	2.1	1.5	250	125	
77				5	4.8	3.5	500	250	
77				10	8.6	7.0	1000	500	
77				20	26	24	2000	1000	

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Part No.	Maximum Allowable Voltage		Varistor Voltage* (V)	Clamping Voltage @ Test Current (8/20 μ s)		Maximum Energy (J)		Maximum Peak Current (8/20 μ s)	
	ACrms(V)	DC(V)		V _{cl} (V)	I _p (A)	10/1000 μ s	2 ms	1 times (A)	2 times (A)
ERZC05DK470 ERZC07DK470 ERZC10DK470 ERZC14DK470 ERZC20DK470	30	38	47(42-52)	104	1	1.1	1.0	100	50
93				2.5	2.5	1.8	250	125	
93				5	5.6	4.5	500	250	
93				10	10	8.5	1000	500	
93				20	33	30	2000	1000	
ERZC05DK580 ERZC07DK580 ERZC10DK580 ERZC14DK580 ERZC20DK580	35	45	58(50-82)	123	1	1.3	1.0	100	50
110				2.5	3.1	2.2	250	125	
110				5	7.0	5.5	500	250	
110				10	11	10	1000	500	
110				20	41	35	2000	1000	
ERZC06DK680 ERZC07DK680 ERZC10DK680 ERZC14DK680 ERZC20DK680	40	55	68(61-75)	150	1	1.8	1.2	100	50
135				2.5	3.5	2.5	250	125	
135				5	8.2	5.5	500	250	
135				10	14	12	1000	500	
135				20	46	40	2000	1000	
ERZC03DK820 ERZC05DK820 ERZC07DK820 ERZC10DK820 ERZC14DK820 ERZC20DK820	50	65	82(74-90)	145	2.5	—	0.88	200	100
145				5	2.5	1.7	400	200	
135				10	5.5	3.5	1200	600	
135				25	12	8.0	2500	1250	
135				50	22	14	4500	2500	
135				100	38	27	6500	4000	
ERZC05DK101 ERZC07DK101 ERZC10DK101 ERZC14DK101 ERZC20DK101	80	85	100(90-110)	175	5	3.0	2.0	400	200
165				10	5.5	4.0	1200	600	
165				25	15	10	2500	1250	
165				50	28	18	4500	2500	
165				100	45	30	6500	4000	
ERZC03DK121 ERZC05DK121 ERZC07DK121 ERZC10DK121 ERZC14DK121 ERZC20DK121	75	100	120(108-132)	210	2.5	—	1.0	200	100
210				5	4.0	2.5	400	200	
200				10	7.8	5.0	1200	600	
200				25	18	12	2500	1250	
200				50	32	20	4500	2500	
200				100	55	40	6500	4000	
ERZC05DK151 ERZC07DK151 ERZC10DK151 ERZC14DK151 ERZC20DK151	95	125	150(135-165)	260	5	4.8	3.0	400	200
260				10	9.7	6.5	1200	600	
260				25	22	18	2500	1250	
260				50	40	25	4500	2500	
260				100	70	50	6500	4000	
ERZC05DK201 ERZC07DK201 ERZC10DK201 ERZC14DK201 ERZC20DK201	130	170	200(185-225)	355	5	6.5	4.0	400	200
340				10	13	10	1200	600	
340				25	30	20	2500	1250	
340				50	57	35	4500	2500	
340				100	95	70	6500	4000	
ERZC05DK221 ERZC07DK221 ERZC10DK221 ERZC14DK221 ERZC20DK221	140	180	220(198-242)	380	5	7.0	4.5	400	200
380				10	14	10	1200	600	
380				25	32	23	2500	1250	
380				50	60	40	4500	2500	
380				100	100	75	6500	4000	
ERZC03DK241 ERZC05DK241 ERZC07DK241 ERZC10DK241 ERZC14DK241 ERZC20DK241	150	200	240(216-264)	415	2.5	—	2.0	200	100
415				5	8.0	5.0	400	200	
395				10	15	10	1200	600	
395				25	35	25	2500	1250	
395				50	63	40	4500	2500	
395				100	108	80	6500	4000	
ERZC05DK271 ERZC07DK271 ERZC10DK271 ERZC14DK271 ERZC20DK271	175	225	270(247-303)	475	5	8.5	5.0	400	200
455				10	18	12	1200	600	
455				25	40	30	2500	1250	
455				50	70	50	4500	2500	
455				100	127	90	6500	4000	
ERZC05DK361 ERZC07DK361 ERZC10DK361 ERZC14DK361 ERZC20DK361	230	300	360(324-396)	620	5	10	7.5	400	200
595				10	26	15	1200	600	
595				25	47	35	2500	1250	
595				50	93	65	4500	2500	
595				100	163	120	6500	4000	
ERZC05DK391 ERZC07DK391 ERZC10DK391 ERZC14DK391 ERZC20DK391	280	320	390(351-429)	675	5	12	8.0	400	200
650				10	25	17	1200	600	
650				25	50	40	2500	1250	
650				50	100	70	4500	2500	
650				100	180	130	6500	4000	

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Part No.	Maximum Allowable Voltage		Varistor Voltage*	Clamping Voltage @ Test Current 8/20 μ s		Maximum Energy (J)		Maximum Peak Current (8/20 μ s)	
	ACrms(V)	DC(V)		V_{VA} (V)	I_p (A)	10/1000 μ s	2 ms	1 times	2 times
			(V)					(A)	(A)
ERZC05DK431	275	350	430(387-473)	745	5	13	9.0	400	200
ERZC07DK431				710	10	28	20	1200	800
ERZC10DK431				710	25	85	45	2500	1250
ERZC14DK431				710	50	115	75	4500	2500
ERZC20DK431				710	100	190	140	6500	4000
ERZC05DK471	300	385	470(423-517)	810	5	15	10	400	200
ERZC07DK471				775	10	30	20	1200	800
ERZC10DK471				775	25	70	45	2500	1250
ERZC14DK471				775	50	125	80	4500	2500
ERZC20DK471				775	100	220	150	6500	4000
ERZC10DK821	385	505	620(558-682)	1025	25	70	45	2500	1250
ERZC14DK821				1025	50	125	85	4500	2500
ERZC20DK821				1025	100	220	150	6500	4000
ERZC10DK881	420	560	680(612-748)	1120	25	70	45	2500	1250
ERZC14DK881				1120	50	130	90	4500	2500
ERZC20DK881				1120	100	230	160	6500	4000
ERZC10DK751	460	615	750(675-825)	1240	25	75	50	2500	1250
ERZC14DK751				1240	50	143	100	4500	2500
ERZC20DK751				1240	100	255	175	6500	4000
ERZC10DK781	485	640	780(702-858)	1290	25	80	50	2500	1250
ERZC14DK781				1290	50	148	105	4500	2500
ERZC20DK781				1290	100	265	180	6500	4000
ERZC10DK821	510	670	820(738-902)	1355	25	85	55	2500	1250
ERZC14DK821				1355	50	157	110	4500	2500
ERZC20DK821				1355	100	282	190	6500	4000
ERZC10DK911	550	745	910(819-1001)	1500	25	93	80	2500	1250
ERZC14DK911				1500	50	175	120	4500	2500
ERZC20DK911				1500	100	310	215	6500	4000
ERZC10DK102	525	825	1000(900-1100)	1650	25	102	85	2500	1250
ERZC14DK102				1650	50	190	130	4500	2500
ERZC20DK102				1650	100	342	230	6500	4000
ERZC10DK112	680	895	1100(990-1210)	1815	25	115	70	2500	1250
ERZC14DK112				1815	50	213	140	4500	2500
ERZC20DK112				1815	100	383	250	6500	4000
ERZC14DK182	1000	1465	1800(1820-1980)	2970	50	337	240	4500	2500
ERZC20DK182				2970	100	625	400	6500	4000

- Operating Temperature Range: 40 to 85 °C
- Storage Temperature Range: 40 to 125 °C
- * Varistor Voltage: 3 and 5 Series - $V_{0.1mA}$

Rated Power

7, 10, 14, 20 Series V_1 mA

Part No.	Rated Power (W)	Part No.	Rated Power (W)	Part No.	Rated Power (W)
ERZC03DK220-390	0.004	ERZC14DK180-680	0.1	ERZC07DK820-471	0.25
ERZC05DK180-680	0.01	ERZC20DK180-680	0.2	ERZC10DK820-112	0.4
ERZC07DK180-680	0.02	ERZC03DK820-241	0.04	ERZC14DK820-182	0.6
ERZC10DK180-680	0.05	ERZC05DK820-471	0.1	ERZC20DK820-182	1.0

UL and CSA Recognized

Related Standards

Standard No.	UL1414	UL1449	UL4970	CSA Class 2221 01
Title	Across-The-Line Components (Varistors)	Transient Voltage Surge Suppressors	Secondary Protectors for Communication Circuit	Accessories and Parts For Electronic Products • Varistor for Across-The-Line use as transient Protection on 120Vac nominal system
File No.	E82674 Vol. 5, 10	E88821 Vol. 1	E134178 Vol. 1	LR-92226

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ERZ-C(D) Series

JL and CSA Recognized Components, and The AC Rated Voltage.

Part Number	Max. Allowable Voltage		Rated Voltage (Vrms)		
	ACrms (V)	DC (V)	UL1414	UL1449	CSA (class 2221 01)
ERZC05DK820U ERZC07DK820U ERZC09DK820U ERZC10DK820U ERZC14DK820U ERZC20DK820U	50	65	— (Not Applicable)	45	— (Not Applicable)
ERZC05DK101U ERZC07DK101U ERZC09DK101U ERZC10DK101U ERZC14DK101U ERZC20DK101U	60	85	— (Not Applicable)	55	— (Not Applicable)
ERZC05DK121U ERZC07DK121U ERZC09DK121U ERZC10DK121U ERZC14DK121U ERZC20DK121U	75	100	— (Not Applicable)	68	— (Not Applicable)
ERZC05DK151U ERZC07DK151U ERZC09DK151U ERZC10DK151U ERZC14DK151U ERZC20DK151U	95	125	— (Not Applicable)	86	— (Not Applicable)
ERZC05DK201□ ERZC07DK201□ ERZC09DK201□ ERZC10DK201□ ERZC14DK201□ ERZC20DK201□	130	170	125	118	118
ERZC05DK221□ ERZC07DK221□ ERZC09DK221□ ERZC10DK221□ ERZC14DK221□ ERZC20DK221□	140	180	125	127	127
ERZC05DK241□ ERZC07DK241□ ERZC09DK241□ ERZC10DK241□ ERZC14DK241□ ERZC20DK241□	160	200	125	136	136
ERZC05DK271□ ERZC07DK271□ ERZC09DK271□ ERZC10DK271□ ERZC14DK271□ ERZC20DK271□	175	225	125	159	159

□: Suffix U for UL recognized components

"W" for UL and CSA recognized components

UL and CSA Recognized Components and The AC Rated Voltage

Part Number	Max. Allowable Voltage		Rated Voltage (Vrms)		
	ACrms (V)	DC (V)	UL1414	UL1449	CSA (class 2221 01)
ERZC05DK361	230	300	125	209	209
ERZC07DK361					
ERZC09DK361					
ERZC10DK361					
ERZC14DK361					
ERZC20DK361					
ERZC05DK391	250	320	125	227	227
ERZC07DK391					
ERZC09DK391					
ERZC10DK391					
ERZC14DK391					
ERZC20DK391					
ERZC05DK431	275	350	125	250	250
ERZC07DK431					
ERZC09DK431					
ERZC10DK431					
ERZC14DK431					
ERZC20DK431					
ERZC05DK471	300	385	125	272	272
ERZC07DK471					
ERZC09DK471					
ERZC10DK471					
ERZC14DK471					
ERZC20DK471					
ERZC10DK821	385	505	125	350	350
ERZC14DK821					
ERZC20DK821					
ERZC10DK881	420	560	125	381	381
ERZC14DK881					
ERZC20DK881					
ERZC10DK751	460	615	125	418	418
ERZC14DK751					
ERZC20DK751					
ERZC10DK781	485	640	125	440	440
ERZC14DK781					
ERZC20DK781					
ERZC10DK821	510	670	125	463	463
ERZC14DK821					
ERZC20DK821					
ERZC10DK911	550	745	125	500	500
ERZC14DK911					
ERZC20DK911					
ERZC10DK102	625	825	125	568	568
ERZC14DK102					
ERZC20DK102					
ERZC10DK112	880	895	125	600	600
ERZC14DK112					
ERZC20DK112					
ERZC14DK182	1000	1465	125	600	600
ERZC20DK182					

||: Suffix U for UL recognized components
 "W" for UL and CSA recognized components

3 Series Dimensions in mm (not to scale)

Part No.	D max.	T max.	W	H max.	L	Shape and Dimensions
ERZC03DK220	7.5	3.5	5.0±1.0	6.5	1.5±1.0	
ERZC03DK270						
ERZC03DK390		4.0				
ERZC03DK820						
ERZC03DK121						
ERZC03DK241		4.5				

5 Series Dimensions in mm (not to scale)

Part No.	D max.	T max.	W	H max.	L	Shape and Dimensions
ERZC05DK180	7.5	4.5	5.0±1.0	10.0	1.5±1.0	
ERZC05DK220						
ERZC05DK270						
ERZC05DK330						
ERZC05DK390						
ERZC05DK470						
ERZC05DK560						
ERZC05DK680	7.0	4.7	5.0±1.0	10.0	1.8±1.0	
ERZC05DK101		4.8			1.8±1.0	
ERZC05DK121		5.0			2.0±1.0	
ERZC05DK151		5.2			2.0±1.0	
ERZC05DK201		5.3			2.1±1.0	
ERZC05DK221		5.4			2.2±1.0	
ERZC05DK241		5.6			2.4±1.0	
ERZC05DK271		6.2			3.0±1.0	
ERZC05DK361		6.4			3.2±1.0	
ERZC05DK391		6.7			3.5±1.0	
ERZC05DK431		7.0			3.8±1.0	
ERZC05DK471						

7 Series Dimensions in mm (not to scale)

Part No.	D max.	T max.	W	H max.	L	Shape and Dimensions
ERZC07DK180	9.0	4.5	5.0±1.0	12.0	1.3±1.0	
ERZC07DK220		4.6			1.4±1.0	
ERZC07DK270		4.7			1.5±1.0	
ERZC07DK330		4.9			1.7±1.0	
ERZC07DK390		4.8			1.7±1.0	
ERZC07DK470		4.9			1.8±1.0	
ERZC07DK560		5.0			1.9±1.0	
ERZC07DK680		5.2			2.1±1.0	
ERZC07DK820		4.8			1.8±1.0	
ERZC07DK101		4.7			1.6±1.0	
ERZC07DK121		4.8			1.8±1.0	
ERZC07DK151		5.0			2.0±1.0	
ERZC07DK201		5.2			2.0±1.0	
ERZC07DK221		5.3			2.1±1.0	
ERZC07DK241		5.4			2.2±1.0	
ERZC07DK271		5.6			2.4±1.0	
ERZC07DK361		6.2			3.0±1.0	
ERZC07DK391	6.4	3.2±1.0				
ERZC07DK431	6.7	3.5±1.0				
ERZC07DK471	7.0	3.8±1.0				

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10 Series Dimensions in mm (not to scale)

Part No.	D max.	T max.	W	H max.	L	Shape and Dimensions
ERZC10DK180	13.5	4.8	7.5±1.0	16.5	1.3±1.0	
ERZC10DK220		4.7			1.4±1.0	
ERZC10DK270		4.8			1.5±1.0	
ERZC10DK330		5.0			1.7±1.0	
ERZC10DK390		5.1			1.8±1.0	
ERZC10DK470		5.0			1.7±1.0	
ERZC10DK560		5.1			1.9±1.0	
ERZC10DK680		5.3			2.2±1.0	
ERZC10DK820		5.0			1.8±1.0	
ERZC10DK101		5.1			1.8±1.0	
ERZC10DK121		5.2			2.0±1.0	
ERZC10DK151		5.5			2.2±1.0	
ERZC10DK201		5.8			2.2±1.0	
ERZC10DK221		5.7			2.3±1.0	
ERZC10DK241	5.8	2.4±1.0				
ERZC10DK271	6.1	2.6±1.0				
ERZC10DK361	14.0	6.7	7.5±1.0	17.0	3.2±1.0	
ERZC10DK391		6.8			3.4±1.0	
ERZC10DK431		7.2			3.7±1.0	
ERZC10DK471		7.5			4.0±1.0	
ERZC10DK621		7.2			3.8±1.0	
ERZC10DK881		7.5			4.1±1.0	
ERZC10DK751		7.8			4.4±1.0	
ERZC10DK781		7.9			4.5±1.0	
ERZC10DK821		8.1			4.7±1.0	
ERZC10DK911		8.6			6.2±1.0	
ERZC10DK102		9.0			6.6±1.0	
ERZC10DK112		9.5			8.1±1.0	

14 Series Dimensions in mm (not to scale)

Part No.	D max.	T max.	W	H max.	L	Shape and Dimensions
ERZC14DK180	17.0	4.8	7.5±1.0	20.0	1.3±1.0	
ERZC14DK220		4.7			1.4±1.0	
ERZC14DK270		4.8			1.5±1.0	
ERZC14DK330		5.0			1.7±1.0	
ERZC14DK390		5.1			1.8±1.0	
ERZC14DK470		5.0			1.7±1.0	
ERZC14DK560		5.1			1.9±1.0	
ERZC14DK680		5.3			2.2±1.0	
ERZC14DK820		5.0			1.8±1.0	
ERZC14DK101		5.1			1.8±1.0	
ERZC14DK121		5.2			2.0±1.0	
ERZC14DK151		5.5			2.2±1.0	
ERZC14DK201		5.8			2.2±1.0	
ERZC14DK221		5.7			2.3±1.0	
ERZC14DK241	5.8	2.4±1.0				
ERZC14DK271	6.1	2.6±1.0				
ERZC14DK361	17.5	6.7	7.5±1.0	20.5	3.2±1.0	
ERZC14DK391		6.8			3.4±1.0	
ERZC14DK431		7.2			3.7±1.0	
ERZC14DK471		7.5			4.0±1.0	
ERZC14DK621		7.2			3.8±1.0	
ERZC14DK681		7.5			4.1±1.0	
ERZC14DK751		7.8			4.4±1.0	
ERZC14DK781		7.9			4.5±1.0	
ERZC14DK821		8.1			4.7±1.0	
ERZC14DK911		8.6			6.2±1.0	
ERZC14DK102		9.0			6.6±1.0	
ERZC14DK112		9.5			8.1±1.0	
ERZC14DK182	14.0	15.0±1.0*	22.0	9.5±2.0		

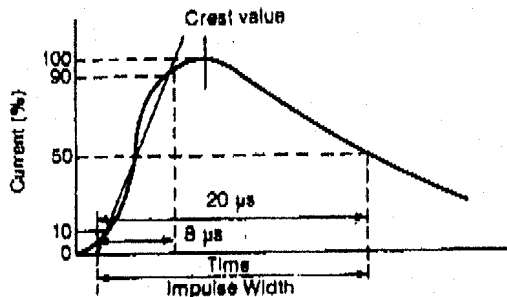
**"ZNR" Transient/Surge Absorbers
General Purpose**

ERZ-C(D) Series

20 Series Dimensions in mm (not to scale)

Part No.	D max.	T max.	W	H max.	L	Shape and Dimensions
ERZC20DK180	23.0	5.1	10.0±10	27.0	1.5±1.0	
ERZC20DK220		5.2			1.6±1.0	
ERZC20DK270		5.3			1.7±1.0	
ERZC20DK330		5.5			1.9±1.0	
ERZC20DK390		5.5			1.9±1.0	
ERZC20DK470		5.8			1.9±1.0	
ERZC20DK560		5.7			2.1±1.0	
ERZC20DK680		5.8			2.4±1.0	
ERZC20DK820		5.5			1.8±1.0	
ERZC20DK101		5.8			2.0±1.0	
ERZC20DK121		6.7			2.2±1.0	
ERZC20DK151		5.9			2.4±1.0	
ERZC20DK201		6.0			2.4±1.0	
ERZC20DK221		6.2			2.6±1.0	
ERZC20DK241		6.3			2.7±1.0	
ERZC20DK271	6.5	2.9±1.0				
ERZC20DK361	24.0	7.2	15.0±1.0*	28.0	3.5±1.0	
ERZC20DK391		7.4			3.7±1.0	
ERZC20DK431		7.7			4.0±1.0	
ERZC20DK471		8.0			4.3±1.0	
ERZC20DK621		7.6			4.1±1.0	
ERZC20DK681		7.9			4.4±1.0	
ERZC20DK751		8.3			4.8±1.0	
ERZC20DK781		8.4			4.9±1.0	
ERZC20DK821		8.6			5.1±1.0	
ERZC20DK911		9.1			5.6±1.0	
ERZC20DK102	9.5	6.0±1.0	*W2			
ERZC20DK112	10.0	6.5±1.0				
ERZC20DK182	25.0	14.0	15.0±1.0*	30.0	9.5±2.0	

Performance Characteristics (Electrical)

Characteristics	Test Methods/Description	Specifications
Standard Test Condition	Environmental conditions under which every measuring is done without doubt about the measuring results. Unless specially specified, temperature, relative humidity are 5 to 35 °C, 45 to 85 % RH.	—
Varistor Voltage	The voltage between two terminals with the specified measuring current I_{mA} DC applied is called V_0 or V_{CmA} . The measurement shall be made as fast as possible to avoid heat affection.	
Maximum Allowable Voltage	The maximum sinusoidal RMS voltage or maximum DC voltage that can be applied continuously in the specified environmental temperature range.	
Clamping Voltage	The maximum voltage between two terminals with the specified standard impulse current (8/20 μ s) illustrated below applied. 	To meet the specified value.