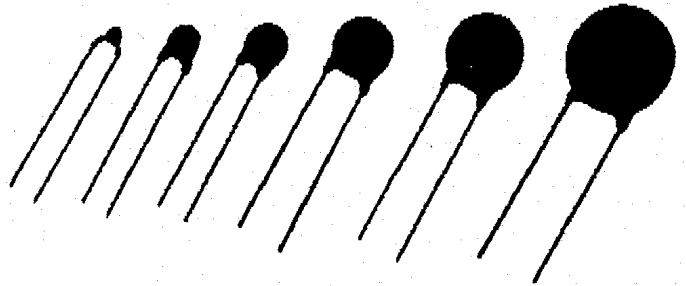


"ZNR" Transient/Surge Absorbers General Purpose

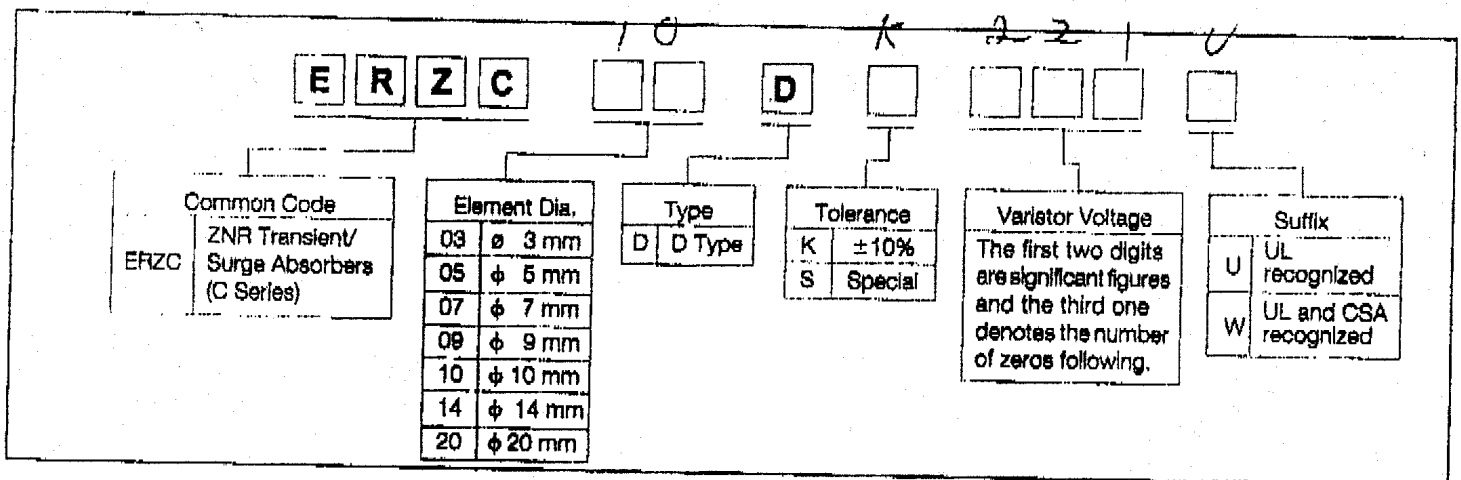
ERZ-C(D) Series

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*	Clamping Voltage @ Test Current (8/20 ms)		Maximum Energy (J)		Maximum Peak Current (8/20 μ s)	
	ACrms(V)	DC(V)		V _{KA} (V)	I _p (A)	10/1000 μ s	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
				66	2.5	1.7	1.2	250	125
				66	5	4.0	3.0	500	250
				66	10	7.5	6.0	1000	500
				66	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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ERZ-C(D) Series

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 _{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
ERZC05DK560 ERZC07DK560 ERZC10DK560 ERZC14DK560 ERZC20DK560	35	45	56(50-62)	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	1.6	1.2	100	50
				135	2.5	3.5	2.5	250	125
				135	5	8.2	6.5	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	60	65	100(90-110)	175	5	3.0	2.0	400	200
				165	10	6.5	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
ERZC06DK201 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
ERZC06DK221 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
ERZC06DK271 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
ERZC06DK361 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	183	120	6500	4000
ERZC06DK391 ERZC07DK391 ERZC10DK391 ERZC14DK391 ERZC20DK391	260	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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ERZ-C(D) Series

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 _{CA} (V)	I _p (A)	10/1000 μ s	2 ms	1 times (A)	2 times (A)
ERZC05DK431 ERZC07DK431 ERZC10DK431 ERZC14DK431 ERZC20DK431	275	350	430(387-473)	745	5	13	9.0	400	200
				710	10	28	20	1200	600
				710	25	85	45	2500	1250
				710	50	115	75	4500	2500
				710	100	190	140	6500	4000
ERZC05DK471 ERZC07DK471 ERZC10DK471 ERZC14DK471 ERZC20DK471	300	385	470(423-517)	810	5	15	10	400	200
				775	10	30	20	1200	600
				775	25	70	45	2500	1250
				775	50	125	80	4500	2500
				775	100	220	150	6500	4000
ERZC10DK821 ERZC14DK821 ERZC20DK821	385	505	620(558-682)	1025	25	70	45	2500	1250
				1025	50	125	85	4500	2500
				1025	100	220	150	6500	4000
ERZC10DK881 ERZC14DK881 ERZC20DK881	420	560	680(612-748)	1120	25	70	45	2500	1250
				1120	50	130	90	4500	2500
				1120	100	230	160	6500	4000
ERZC10DK751 ERZC14DK751 ERZC20DK751	460	615	750(675-825)	1240	25	75	50	2500	1250
				1240	50	143	100	4500	2500
				1240	100	255	175	6500	4000
ERZC10DK781 ERZC14DK781 ERZC20DK781	485	640	780(702-858)	1290	25	80	50	2500	1250
				1290	50	148	105	4500	2500
				1290	100	265	180	6500	4000
ERZC10DK821 ERZC14DK821 ERZC20DK821	510	670	820(738-902)	1355	25	85	55	2500	1250
				1355	50	157	110	4500	2500
				1355	100	282	190	6500	4000
ERZC10DK911 ERZC14DK911 ERZC20DK911	550	745	910(819-1001)	1500	25	93	60	2500	1250
				1500	50	175	120	4500	2500
				1500	100	310	215	6500	4000
ERZC10DK102 ERZC14DK102 ERZC20DK102	625	825	1000(900-1100)	1650	25	102	65	2500	1250
				1650	50	190	130	4500	2500
				1650	100	342	230	6500	4000
ERZC10DK112 ERZC14DK112 ERZC20DK112	680	895	1100(990-1210)	1815	25	115	70	2500	1250
				1815	50	213	140	4500	2500
				1815	100	383	250	6500	4000
ERZC14DK182 ERZC20DK182	1000	1455	1800(1620-1980)	2970	50	337	240	4500	2500
				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

'ZNR" Transient/Surge Absorbers

General Purpose

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

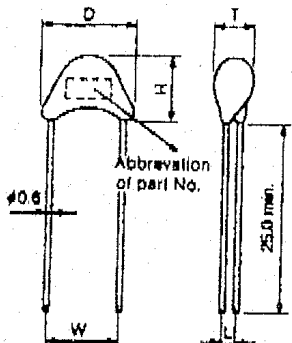
UL and CSA Recognized Components and The AC Rated Voltage

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	250	320	125	227	227
ERZC05DK391					
ERZC07DK391					
ERZC09DK391					
ERZC10DK391					
ERZC14DK391	275	350	125	250	250
ERZC20DK391					
ERZC05DK431					
ERZC07DK431					
ERZC09DK431					
ERZC10DK431	300	385	125	272	272
ERZC14DK431					
ERZC20DK431					
ERZC05DK471					
ERZC07DK471					
ERZC09DK471	385	505	125	350	350
ERZC10DK471					
ERZC14DK471					
ERZC20DK471					
ERZC10DK821					
ERZC14DK821	420	550	125	381	381
ERZC20DK821					
ERZC10DK881					
ERZC14DK881					
ERZC20DK881					
ERZC10DK751	460	615	125	418	418
ERZC14DK751					
ERZC20DK751					
ERZC10DK781					
ERZC14DK781					
ERZC20DK781	510	670	125	463	463
ERZC10DK821					
ERZC14DK821					
ERZC20DK821					
ERZC10DK911					
ERZC14DK911	550	745	125	500	500
ERZC20DK911					
ERZC10DK102					
ERZC14DK102					
ERZC20DK102					
ERZC10DK112	625	825	125	568	568
ERZC14DK112					
ERZC20DK112					
ERZC10DK182					
ERZC14DK182					
ERZC20DK182	1000	1465	125	600	600
ERZC20DK182					

U : 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.	Tmax.	W	H max.	L	Shape and Dimensions	
ERZC03DK220	7.5	3.5	5.0±1.0	6.5	1.5±1.0		
ERZC03DK270		4.0					2.2±1.0
ERZC03DK390							
ERZC03DK820							
ERZC03DK121		4.5					
ERZC03DK241							

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						
ERZC05DK820						
ERZC05DK101	7.0	4.7	5.0±1.0	10.0	1.8±1.0	
ERZC05DK121		4.8			1.8±1.0	
ERZC05DK151		5.0			2.0±1.0	
ERZC05DK201		5.2			2.0±1.0	
ERZC05DK221		5.3			2.1±1.0	
ERZC05DK241		5.4			2.2±1.0	
ERZC05DK271		5.6			2.4±1.0	
ERZC05DK361		6.2			3.0±1.0	
ERZC05DK391		6.4			3.2±1.0	
ERZC05DK431		6.7			3.5±1.0	
ERZC05DK471		7.0			3.8±1.0	

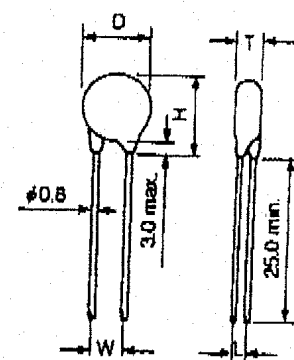
7 Series Dimensions in mm (not to scale)

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		4.8			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			1.8±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	

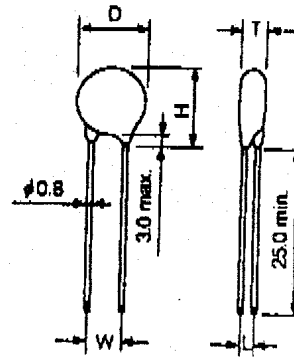
"ZNR" Transient/Surge Absorbers General Purpose

ERZ-C(D) Series

10 Series Dimensions in mm (not to scale)

Part No.	D max.	T max.	W	H max.	L	Shape and Dimensions
ERZC10DK180	13.5	4.6	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			1.6±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	14.0	5.8	7.5±1.0	17.0	2.4±1.0	
ERZC10DK271		6.1			2.6±1.0	
ERZC10DK361		6.7			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			5.2±1.0	
ERZC10DK102		9.0			5.6±1.0	
ERZC10DK112		9.5			6.1±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	4.6	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			1.6±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	17.5	5.8	7.5±1.0	20.5	2.4±1.0	
ERZC14DK271		6.1			2.6±1.0	
ERZC14DK361		6.7			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			5.2±1.0	
ERZC14DK102		9.0			5.6±1.0	
ERZC14DK112		9.5			6.1±1.0	
ERZC14DK182		14.0	* W2	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±1.0	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			2.8±1.0	
ERZC20DK361	24.0	7.2	10.0±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	
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 0mA DC applied is called V_0 or V_{0mA} . 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 μs) illustrated below applied.	To meet the specified value.