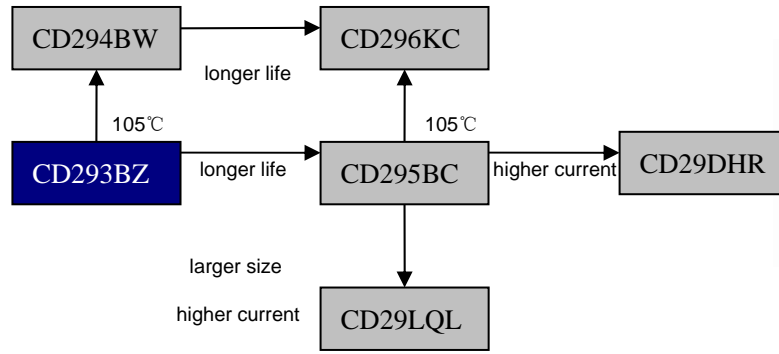


2000h at 85°C

■ Standard 85°C

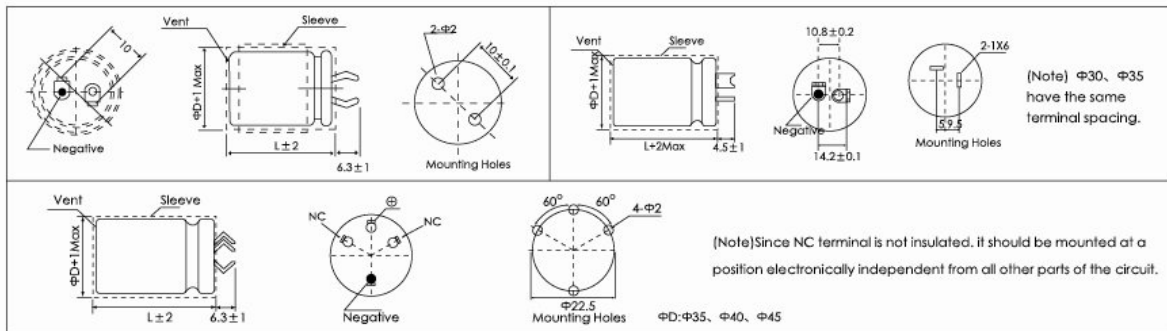


Items	Characteristics																																								
Operating Temperature Range (°C)	-40 ~ +85	-25 ~ +85																																							
Voltage Range (V)	10 ~ 400	420 ~ 500																																							
Capacitance Range (µF)	68 ~ 82000																																								
Capacitance Tolerance (20°C, 120Hz)	± 20%																																								
Leakage Current (µA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0.01CV or 1.5mA, whichever is smaller. C: Nominal Capacitance (µF) V: Rated Voltage (V)																																								
Dissipation Factor (20°C, 120Hz)	<table border="1"> <thead> <tr> <th>Rated Voltage (V)</th> <th>10-16</th> <th>25</th> <th>35-50</th> <th>63</th> <th>80-100</th> </tr> </thead> <tbody> <tr> <td>Cap (µF) &lt; 2700</td> <td>-</td> <td>-</td> <td>0.20</td> <td>0.15</td> <td>0.15</td> </tr> <tr> <td>3300 ~ 4700</td> <td>-</td> <td>0.35</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> </tr> <tr> <td>5400 ~ 6800</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.20</td> <td>0.20</td> </tr> <tr> <td>&gt; 8200</td> <td>0.40</td> <td>0.35</td> <td>0.35</td> <td>0.25</td> <td>-</td> </tr> </tbody> </table>	Rated Voltage (V)	10-16	25	35-50	63	80-100	Cap (µF) < 2700	-	-	0.20	0.15	0.15	3300 ~ 4700	-	0.35	0.25	0.20	0.15	5400 ~ 6800	0.40	0.35	0.30	0.20	0.20	> 8200	0.40	0.35	0.35	0.25	-	<table border="1"> <thead> <tr> <th>Rated Voltage (V)</th> <th>160-200</th> <th>250-500</th> </tr> </thead> <tbody> <tr> <td>Φ (mm) 22-30</td> <td>0.10</td> <td>0.15</td> </tr> <tr> <td>35</td> <td>0.12</td> <td>0.15</td> </tr> </tbody> </table>	Rated Voltage (V)	160-200	250-500	Φ (mm) 22-30	0.10	0.15	35	0.12	0.15
	Rated Voltage (V)	10-16	25	35-50	63	80-100																																			
Cap (µF) < 2700	-	-	0.20	0.15	0.15																																				
3300 ~ 4700	-	0.35	0.25	0.20	0.15																																				
5400 ~ 6800	0.40	0.35	0.30	0.20	0.20																																				
> 8200	0.40	0.35	0.35	0.25	-																																				
Rated Voltage (V)	160-200	250-500																																							
Φ (mm) 22-30	0.10	0.15																																							
35	0.12	0.15																																							
Stability of Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	10	10-35	50-100	160-200	250-400	420-500																																		
	$Z_{-25°C} / Z_{+25°C}$	5	4	3	3	4	4																																		
	$Z_{-40°C} / Z_{+25°C}$	18	15	10	6	8	-																																		

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	4000h	> 65000h	2000h	3000h	1000h
Leakage Current	Not more than specified value		Not more than specified value	Not more than specified value	Not more than specified value
Capacitance Change	Within ± 30% of initial value		Within ± 15% of initial value	Within ± 20% of initial value	Within ± 15% of initial value
Dissipation Factor	Not more than 300% of specified value		Not more than 150% of specified value	Not more than 200% of specified value	Not more than 150% of specified value
Condition: Applied Voltage Applied Current Applied Temperature	$U_R$ $I_R$ 85°C	$U_R$ $1.2 \times I_R$ 40°C	$U_R$ $I_R$ 85°C	$U_R$ $I_R = 0$ 85°C	After test: $U_R$ to be applied for 30min >24h before measurement

## Dimensions

mm



# CD 293 BZ Series



## Ratings for CD293 BZ Series

U <sub>R</sub> (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size Φ D x L	P/N	
(v)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-	
10 (13) 1A	10000	54	43	2.5	22X25	ECS1ABZ103M□□220025	
	12000	45	36	2.9	22X25	ECS1ABZ123M□□220025	
	15000	36	29	3.2	22X30	ECS1ABZ 153M□□220030	
		36	29	3.1	25X25	ECS1ABZ 153M□□250025	
	18000	30	24	3.6	22X35	ECS1ABZ183M□□220035	
		30	24	3.6	25X30	ECS1ABZ183M□□250030	
	22000	25	20	4	22X40	ECS1ABZ223M□□220040	
		25	20	4.1	25X35	ECS 1ABZ223M□□250035	
		25	20	4.1	30X25	ECS 1ABZ223M□□300025	
	33000	17	13	4.6	25X40	ECS1ABZ333M□□250040	
		17	13	4.8	30X30	ECS1ABZ333M□□300030	
		17	13	4.8	35X25	ECS 1ABZ333M□□350025	
	39000	14	10.9	5.2	25X45	ECS1ABZ393M□□250045	
		14	10.9	5.3	30X35	ECS 1ABZ393M□□300035	
	47000	12	9.1	5.8	25X50	ECS 1ABZ473M□□250050	
		12	9.1	6	30X40	ECS1ABZ473M□□300040	
		12	9.1	6	35X30	ECS 1ABZ473M□□350030	
	56000	9.5	7.6	6.7	30X45	ECS1ABZ563M□□300045	
		9.5	7.6	6.8	35X35	ECS 1ABZ563M□□350035	
	68000	7.9	6.3	7.5	30X50	ECS 1ABZ683M□□300050	
		7.9	6.3	7.7	35X40	ECS1ABZ683M□□350040	
	82000	6.5	5.2	8.7	35X45	ECS 1ABZ823M□□350045	
	16 (20) 1C	8200	65	52	2.2	22X25	ECS 1CBZ822M□□220025
		10000	54	43	2.6	22X30	ECS 1CBZ103M□□220030
54			43	2.6	25X25	ECS 1CBZ103M□□250025	
12000		45	36	2.9	22X35	ECS1CBZ123M□□220035	
15000		36	29	3.3	22X40	ECS 1CBZ153M□□220040	
		36	29	3.3	25X30	ECS 1CBZ153M□□250030	
		36	29	3.4	30X25	ECS 1CBZ153M□□300025	
18000		30	24	3.8	22X45	ECS 1CBZ183M□□220045	
		30	24	3.7	25X35	ECS1CBZ 183M□□250035	
22000		25	20	4.2	22X50	ECS 1CBZ223M□□220050	
		25	20	4.2	25X40	ECS 1CBZ223M□□250040	
		25	20	4.2	30X30	ECS 1CBZ223M□□300030	
		25	20	4.4	35X25	ECS 1CBZ223M□□350025	
27000		20	16	5	25X45	ECS 1CBZ273M□□250045	
		20	16	5	30X35	ECS 1CBZ273M□□300035	
33000		17	13	5.6	30X40	ECS 1CBZ333M□□300040	
		17	13	5.6	35X30	ECS 1CBZ333M□□350030	
39000		14	11	6.2	30X45	ECS 1CBZ393M□□300045	
		14	11	6.3	35X35	ECS 1CBZ393M□□350035	
47000		12	9.1	7	30X50	ECS 1CBZ473M□□300050	
		12	9.1	7.2	35X40	ECS 1CBZ473M□□350040	
56000		9.5	7.6	8	35X45	ECS 1CBZ563M□□350045	
25 (32) 1E		5600	83	67	2	22X25	ECS 1EBZ562M□□220025
		6800	69	55	2.3	22X30	ECS 1EBZ682M□□220030
	69		55	2.3	25X25	ECS 1EBZ682M□□250025	
	8200	57	46	2.6	22X35	ECS 1EBZ822M□□220035	
	10000	47	38	2.9	22X40	ECS1EBZ103M□□220040	
		47	38	2.8	25X30	ECS1EBZ103M□□250030	
		47	38	3	30X25	ECS1EBZ103M□□300025	
	12000	39	31	3.3	22X45	ECS1EBZ123M□□220045	
		39	31	3.2	25X35	ECS1EBZ123M □□250035	
	15000	39	31	3.4	30X30	ECS1EBZ123M□□300030	
		31	25	3.7	25X40	ECS1EBZ153M□□250040	
	31	25	3.9	35X25	ECS1EBZ153M□□350025		

U <sub>R</sub> (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size Φ D x L	P/N	
(v)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-	
50 (63) 1H	4700	71	57	2.4	22X40	ECS1HBZ472M□□220040	
		71	57	2.4	25X35	ECS1HBZ472M□□250035	
	5600	72	57	2.5	22X50	ECS1HBZ562M□□220050	
		72	57	2.5	25X40	ECS1HBZ562M□□250040	
		72	57	2.5	30X30	ECS1HBZ562M□□300030	
		72	57	2.6	35X25	ECS1HBZ562M□□350025	
	6800	59	47	2.8	25X45	ECS1HBZ682M□□250045	
		59	47	2.8	30X35	ECS1HBZ682M□□300035	
	8200	57	46	3.2	25X50	ECS1HBZ822M□□250050	
		57	46	3	30X40	ECS1HBZ822M□□300040	
		57	46	3	35X30	ECS1HBZ822M□□350030	
	10000	47	38	3.4	30X45	ECS1HBZ 103M□□300045	
		47	38	3.4	35X35	ECS1HBZ 103M□□350035	
	12000	39	31	3.8	30X50	ECS1HBZ 123M□□300050	
		39	31	3.8	35X40	ECS1HBZ 123M□□350040	
	15000	31	25	4.5	35X50	ECS1HBZ 153M□□350050	
	63 (79) 1J	1500	135	107	1.6	22X25	ECS 1JBZ152M□□220025
		1800	110	89	1.8	22X30	ECS 1JBZ182M□□220030
		2200	91	73	2	22X30	ECS 1JBZ222M□□220030
			91	73	2	25X25	ECS 1JBZ222M□□250025
		2700	74	59	2.2	22X35	ECS 1JBZ272M□□220035
			74	59	2.3	25X30	ECS 1JBZ272M□□250030
		3300	81	65	2.3	22X40	ECS 1JBZ332M□□220040
			81	65	2.3	25X35	ECS 1JBZ332M□□250035
81			65	2.3	30X25	ECS 1JBZ332M□□300025	
3900		69	55	2.5	22X45	ECS 1JBZ392M□□220045	
		69	55	2.6	25X40	ECS 1JBZ392M□□250040	
		69	55	2.6	30X30	ECS 1JBZ392M□□300030	
		69	55	2.7	35X25	ECS 1JBZ392M□□350025	
5600		48	38	3.1	25X45	ECS 1JBZ562M□□250045	
		48	38	3.2	30X35	ECS 1JBZ562M□□300035	
		48	38	3.3	35X30	ECS 1JBZ562M□□350030	
6800		40	32	3.6	30X40	ECS 1JBZ682M□□300040	
		40	32	3.7	35X35	ECS 1JBZ682M□□350035	
8200		41	33	3.7	30X50	ECS 1JBZ822M□□300050	
		41	33	3.8	35X40	ECS 1JBZ822M□□350040	
10000		34	27	4.3	35X45	ECS1JBZ103M□□350045	
12000		28	23	4.8	35X50	ECS1JBZ123M□□350050	
80 (100) 1K		1000	200	160	1.3	22X25	ECS1KBZ102M□□220025
		1200	165	133	1.5	22X30	ECS1KBZ122M□□220030
	1500	133	107	1.7	25X25	ECS1KBZ152M□□250025	
	1800	111	89	1.9	22X35	ECS1KBZ182M□□220035	
		111	89	1.9	25X30	ECS1KBZ182M□□250030	
	2200	91	73	2.1	22X40	ECS1KBZ222M□□220040	
		91	73	2.2	25X35	ECS1KBZ222M□□250035	
		91	73	2.2	30X25	ECS1KBZ222M□□300025	
	2700	74	59	2.5	22X50	ECS 1KBZ272M□□220050	
		74	59	2.5	25X40	ECS1KBZ272M□□250040	
		74	59	2.5	30X30	ECS1KBZ272M□□300030	
		74	59	2.5	35X25	ECS1KBZ272M□□350025	
	3300	61	49	2.8	25X45	ECS1KBZ332M□□250045	
		61	49	2.8	30X35	ECS1KBZ332M□□300035	
	3900	52	41	3.1	25X50	ECS1KBZ392M□□250050	
		52	41	3.2	30X40	ECS1KBZ392M□□300040	
	4700	52	41	3.2	35X30	ECS1KBZ392M□□350030	
		43	34	3.6	30X45	ECS1KBZ472M□□300045	



# CD 293 BZ Series

35 (44) IV	18000	26	21	4.3	25X50	ECS1EBZ183M□□250050
		26	21	4.2	30X35	ECS1EBZ183M□□300035
		26	21	4.4	35X30	ECS1EBZ183M□□350030
	22000	22	17	4.8	30X40	ECS1EBZ223M□□300040
		22	17	5	35X35	ECS1EBZ223M□□350035
	33000	15	12	6.5	35X40	ECS1EBZ333M□□350040
	39000	12	10	7.5	35X45	ECS1EBZ393M□□350045
	3300	100	81	1.8	22X25	ECS1VBZ332M□□220025
		3900	86	69	2.1	22X30
	4700	71	57	2.2	25X25	ECS1VBZ472M□□250025
		5600	72	57	2.3	22X35
			72	57	2.3	25X30
6800	59	47	2.9	22X40	ECS1VBZ682M□□220040	
		47	2.6	25X35	ECS1VBZ682M□□250035	
	59	2.7	30X25	ECS1VBZ682M□□300025		
8200	57	46	2.8	22X50	ECS1VBZ822M□□220050	
		46	2.8	25X40	ECS1VBZ822M□□250040	
	57	2.8	30X30	ECS1VBZ822M□□300030		
10000	47	38	3.1	25X45	ECS1VBZ103M□□250045	
		38	3.2	30X35	ECS1VBZ103M□□300035	
	39	3.5	25X50	ECS1VBZ123M□□250050		
12000	39	31	3.5	30X40	ECS1VBZ123M□□300040	
		31	3.6	35X30	ECS1VBZ123M□□350030	
	31	25	4.1	30X45	ECS1VBZ153M□□300045	
15000	31	25	4.1	35X35	ECS1VBZ153M□□350035	
		26	21	4.6	30X50	ECS1VBZ183M□□300050
18000	26	21	4.7	35X40	ECS1VBZ183M□□350040	
		22	17	5.3	35X45	ECS1VBZ223M□□350045
27000	18	14	7	35X50	ECS1VBZ273M□□350050	
50 (63) 1H	2200	120	97	1.7	22X25	ECS1HBZ222M□□220025
		100	79	1.9	22X30	ECS1HBZ272M□□220030
	2700	100	79	1.9	25X25	ECS1HBZ272M□□250025
		100	81	2	22X35	ECS1HBZ332M□□220035
	3300	86	69	2.1	22X35	ECS1HBZ392M□□220035
		86	69	2.1	25X30	ECS1HBZ392M□□250030
	3900	86	69	2.1	25X30	ECS1HBZ392M□□250030
		86	69	2.4	30X25	ECS1HBZ392M□□300025

100 (125) 2A	5600	43	34	3.6	35X35	ECS1KBZ472M□□350035
		48	38	3.8	30X50	ECS1KBZ562M□□300050
		48	38	3.8	35X40	ECS1KBZ562M□□350040
	6800	40	32	4.1	35X50	ECS1KBZ682M□□350050
	680	293	235	1.1	22X25	ECS2ABZ681M□□220025
		820	243	195	1.2	22X30
	1000	200	160	1.4	25X25	ECS2ABZ102M□□250025
	1200	166	133	1.6	22X35	ECS2ABZ122M□□220035
		166	133	1.6	25X30	ECS2ABZ122M□□250030
	1500	133	107	1.8	22X40	ECS2ABZ152M□□220040
		133	107	1.7	25X35	ECS2ABZ152M□□250035
	1800	133	107	1.8	30X25	ECS2ABZ152M□□300025
			111	89	2.1	22X50
		111	89	2	25X40	ECS2ABZ182M□□250040
	2200	111	89	2.1	30X30	ECS2ABZ182M□□300030
			111	89	2.2	35X25
		91	73	2.2	25X45	ECS2ABZ222M□□250045
	2700	91	73	2.3	30X35	ECS2ABZ222M□□300035
			91	73	2.5	35X30
		74	59	2.6	25X50	ECS2ABZ272M□□250050
	3300	74	59	2.7	30X40	ECS2ABZ272M□□300040
			61	49	3	30X45
	3900	61	49	3.1	35X35	ECS2ABZ332M□□350035
			52	41	3.4	30X50
4700	52	41	3.4	35X40	ECS2ABZ392M□□350040	
		43	34	4	35X50	ECS2ABZ472M□□350050
160 (200) 2C	220	600	483	1.1	22X25	ECS2CBZ221M□□220025
	270	490	393	1.2	22X25	ECS2CBZ271M□□220025
	330	400	322	1.3	22X25	ECS2CBZ331M□□220025
	390	341	273	1.5	22X30	ECS2CBZ391M□□220030
		341	273	1.5	25X25	ECS2CBZ391M□□250025
	470	283	226	1.6	25X30	ECS2CBZ471M□□250030
	560	237	190	1.9	22X35	ECS2CBZ561M□□220035
		237	190	1.9	25X30	ECS2CBZ561M□□250030
		237	190	2	30X25	ECS2CBZ561M□□300025

## Ratings for CD293 BZ Series

U <sub>r</sub> (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size ΦDxL	P/N
(v)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
160 (200) 2C	680	196	157	2.1	22X40	ECS2CBZ681M□□220040
		196	157	2.2	25X35	ECS2CBZ681M□□250035
	820	162	130	2.5	22X50	ECS2CBZ821M□□220050
		162	130	2.4	25X40	ECS2CBZ821M□□250040
		162	130	2.5	30X30	ECS2CBZ821M□□300030
		195	156	2.4	35X25	ECS2CBZ821M□□350025
		133	107	2.7	25X45	ECS2CBZ102M□□250045
	1000	133	107	2.8	30X35	ECS2CBZ102M□□300035
		160	128	2.7	35X30	ECS2CBZ102M□□350030
	1200	111	89	3.1	25X50	ECS2CBZ122M□□250050
		111	89	3.2	30X40	ECS2CBZ122M□□300040
		133	107	3.0	35X35	ECS2CBZ122M□□350035
1500	89	71	3.7	30X45	ECS2CBZ152M□□300045	
	107	85	3.5	35X40	ECS2CBZ152M□□350040	
1800	89	71	3.9	35X45	ECS2CBZ182M□□350045	
2200	73	58	4.5	35X50	ECS2CBZ222M□□350050	
270	495	393	1.2	22X25	ECS2KBZ271M□□220025	

U <sub>r</sub> (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size ΦDxL	P/N	
(v)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-	
315 (365) 2F	330	603	483	1.4	25x45	ECS2FBZ331M□□250045	
		603	483	1.4	30X35	ECS2FBZ331M□□300035	
	390	511	409	1.6	25x50	ECS2FBZ391M□□250050	
		511	409	1.6	30X40	ECS2FBZ391M□□300040	
		511	409	1.6	35x30	ECS2FBZ391M□□350030	
	470	424	339	1.8	30x45	ECS2FBZ471M□□300045	
		424	339	1.8	35x35	ECS2FBZ471M□□330035	
	560	356	285	2.0	30X50	ECS2FBZ561M□□300050	
		356	285	2.0	35x40	ECS2FBZ561M□□350040	
	680	293	235	2.3	35x45	ECS2FBZ681M□□350045	
	350 (400) 2V	82	2427	1941	0.64	22x25	ECS2VBZ820M□□220025
		100	1990	1592	0.80	22x25	ECS2VBZ101M□□220025
120		1658	1327	0.82	22X30	ECS2VBZ121M□□220030	
		1658	1327	0.81	25x25	ECS2VBZ121M□□250025	
150		1327	1062	0.94	22X35	ECS2VBZ151M□□220035	
		1327	1062	0.94	25x30	ECS2VBZ151M□□250030	
180		1106	885	1.1	22X40	ECS2VBZ181M□□220040	

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200 (250) 2D	330	400	322	1.4	22X30	ECS2KBZ331M□□220030	400 (450) 2G	1106	885	1.1	30x25	ECS2VBZ181M□□300025		
	390	340	273	1.5	25X25	ECS2KBZ391M□□250025		220	905	724	1.2	22X45	ECS2VBZ221M□□220045	
	470	283	226	1.7	22X35	ECS2KBZ471M□□220035		220	90S	724	1.2	25x35	ECS2VBZ221M□□250035	
		283	226	1.7	25X30	ECS2KBZ471M□□250030		220	905	724	1.2	30X30	ECS2VBZ221M□□300030	
	560	283	226	1.8	30X25	ECS2KBZ471M□□300025		270	905	724	1.3	35x25	ECS2VBZ221M□□350025	
		237	190	1.9	22X40	ECS2KBZ561M□□220040		270	737	590	1.4	25x45	ECS2VBZ271M□□250045	
	680	237	190	2.0	25X35	ECS2KBZ561M□□250035		330	737	590	1.4	30x35	ECS2VBZ271M□□300035	
		196	157	2.3	22X50	ECS2KBZ681M□□220050		330	603	483	1.6	25x50	ECS2VBZ331M□□250050	
		196	157	2.2	25X40	ECS2KBZ681M□□250040			603	483	1.6	35x30	ECS2VBZ331M□□350030	
		196	157	2.3	30X30	ECS2KBZ681M□□300030		390	511	409	1.7	30x40	ECS2VBZ391M□□300040	
	235	188	2.2	35X25	ECS2KBZ681M□□350025	511			409	1.8	35X35	ECS2VBZ391M□□350035		
	820	162	130	2.5	25X45	ECS2KBZ821M□□250045		470	424	339	2.0	30x45	ECS2VBZ471M□□300045	
		162	130	2.6	30X35	ECS2KBZ821M□□300035			424	339	2.0	35x40	ECS2VBZ471M□□350040	
		195	156	2.5	35X30	ECS2KBZ821M□□350030		560	356	285	2.3	35x45	ECS2VBZ561M□□350045	
	1000	133	107	2.9	25X50	ECS2KBZ102M□□250050		680	293	535	2.6	35X50	ECS2VBZ681M□□350050	
		133	107	2.9	30X40	ECS2KBZ102M□□300040		820	243	195	2.8	35x60	ECS2VBZ821M□□350060	
	1200	111	89	3.3	30X45	ECS2KBZ122M□□300045		68	2926	2341	0.55	22X25	ECS2GBZ680M□□220025	
		133	107	3.1	35X35	ECS2KBZ122M□□350035		82	2427	1941	0.65	22X25	ECS2GBZ820M□□220025	
	1500	107	85	3.6	35X45	ECS2KBZ152M□□350045		100	1990	1592	0.70	22x30	ECS2GBZ101M□□220030	
	1800	89	71	4.1	35X50	ECS2KBZ182M□□350050			1990	1592	0.70	25x25	ECS2GBZ101M□□250025	
220	600	483	1.1	22X25	ECS2DBZ221M□□220025	120	1658	1327	0.79	22x30	ECS2GBZ121M□□220030			
	270	492	393	1.2	22X30	ECS2DBZ271M□□220030	150	1327	1062	0.90	22x35	ECS2GBZ151M□□220035		
330	402	322	1.4	22X30	ECS2DBZ331M□□220030	1327		1062	0.89	25x30	ECS2GBZ151M□□250030			
	402	322	1.4	25X25	ECS2DBZ331M□□250025	180	1106	885	1.0	22x40	ECS2GBZ181M□□220040			
390	341	273	1.6	22X35	ECS2DBZ391M□□220035		1106	885	1.0	25X30	ECS2GBZ181M□□250030			
	341	273	1.6	25X30	ECS2DBZ391M□□250030	220	905	724	1.1	22x50	ECS2GBZ221M□□220050			
470	283	226	1.8	22X40	ECS2DBZ471M□□220040		905	724	1.2	25x40	ECS2GBZ221M□□250040			
	283	226	1.9	30X25	ECS2DBZ471M□□300025	270	737	590	1.3	25x45	ECS2GBZ271M□□250045			
560	237	190	2.0	22X45	ECS2DBZ561M□□220045		737	590	1.5	30x30	ECS2GBZ271M□□300030			
	237	190	2.0	25X35	ECS2DBZ561M□□250035	330	603	483	1.6	25X45	ECS2GBZ331M□□250045			
	237	190	2.1	30X30	ECS2DBZ561M□□300030		603	483	1.7	30x35	ECS2GBZ331M□□300035			
	285	228	2.0	35X25	ECS2DBZ561M□□350025	390	511	409	1.8	35x30	ECS2GBZ391M□□350030			
680	196	157	2.3	25X40	ECS2DBZ681M□□250040		511	409	1.9	30X40	ECS2GBZ391M□□300040			
	196	157	2.4	30X35	ECS2DBZ681M□□300035	470	424	339	2.1	35x35	ECS2GBZ471M□□350035			
820	162	130	2.6	25X50	ECS2DBZ821M□□250050	560	356	285	2.3	35x40	ECS2GBZ561M□□350040			
	162	130	2.7	30X40	ECS2DBZ821M□□300040	680	293	235	2.7	35x45	ECS2GBZ681M□□350045			
	195	156	2.5	35X30	ECS2DBZ821M□□350030	820	242	194	3.1	35x50	ECS2GBZ821M□□350050			
1000	133	107	3.1	30X45	ECS2DBZ102M□□300045	1000	133	107	3.7	35x65	ECS2GBZ821M□□350065			
	160	128	2.8	35X35	ECS2DBZ102M□□350035	100	1990	1592	0.71	22x30	ECS2XBZ102M□□220030			
1200	111	89	3.4	30X50	ECS2DBZ122M□□300050		1990	1592	0.72	25x25	ECS2XBZ102M□□250025			
	133	107	3.2	35X40	ECS2DBZ122M□□350040	120	1658	1327	0.81	22x35	ECS2XBZ121M□□220035			
1500	107	85	3.8	35X50	ECS2DBZ152M□□350050		1658	1327	0.82	25x30	ECS2XBZ121M□□250030			
250 (300) 2E	100	1990	1592	0.68	22X25	ECS2EBZ101M□□220025	420 (570) 2X	150	1327	1062	0.96	25x30	ECS2XBZ151M□□250030	
	180	1106	885	0.94	22X25	ECS2EBZ181 M□□220025		180	1106	885	1.1	25x35	ECS2XBZ181M□□250035	
	220	905	724	1.1	22X30	ECS2EBZ221M□□220030			1106	885	1.2	30x30	ECS2XBZ181M□□300030	
		905	724	1.1	25X25	ECS2EBZ221M□□250025		220	905	724	1.2	25x40	ECS2XBZ221M□□250040	
	270	737	590	1.2	22X35	ECS2EBZ271M□□220035			905	724	1.3	30x30	ECS2XBZ221M□□250030	
		330	603	483	1.4	22X40		ECS2EBZ331M□□220040	270	737	590	1.3	25x45	ECS2XBZ271M□□250045
	603		483	1.4	25X30	ECS2EBZ331M□□250030		737		590	1.4	30x35	ECS2XBZ271M□□300035	
	603		483	1.5	30X25	ECS2EBZ331M□□300025		330	603	483	1.7	30x40	ECS2XBZ331M□□300040	
	390	511	409	1.6	22X45	ECS2EBZ391M□□220045			390	511	409	1.8	30x45	ECS2XBZ391M□□300045
		511	409	1.6	25X35	ECS2EBZ391 M□□250035		511		409	1.9	35x35	ECS2XBZ391M□□350035	
	470	424	339	1.8	22X50	ECS2EBZ471M□□220050		470	424	339	2.1	30x50	ECS2XBZ471M□□300050	
		424	339	1.8	25X40	ECS2EBZ471 M□□250040			424	339	2.2	35x40	ECS2XBZ471M□□350040	
		424	339	1.8	30X30	ECS2EBZ471M□□300030		560	356	285	2.4	35x45	ECS2XBZ561M□□350045	
		424	339	2.4	35X25	ECS2EBZ471M□□350025			680	293	235	2.8	35x50	ECS2XBZ681M□□350050
	560	356	285	2.0	25X45	ECS2EBZ561 M□□250045		820	242	194	3.2	35x60	ECS2XBZ821M□□350060	
		356	285	2.0	30X35	ECS2EBZ561M□□300035			1000	133	107	4.0	40x60	ECS2XBZ102M□□400060
	680	293	235	2.3	30X40	ECS2EBZ681M□□300040		450 (500) 2W	68	2926	2341	0.57	22x25	ECS2WBZ680M□□220025
		293	235	2.6	35X30	ECS2EBZ681M□□350030			82	2427	1941	0.68	22X30	ECS2WBZ820M□□220030
	820	243	195	2.6	30X45	ECS2EBZ821M□□300045		100	1990	1592	0.73	25x25	ECS2WBZ101M□□250025	
		243	195	2.6	35X35	ECS2EBZ821M□□350035		120	1658	1327	0.80	22X35	ECS2WBZ121M□□220035	



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315 (365) 2F	1000	199	160	3.0	35X40	ECS2EBZ102M□□350040
	1200	166	133	3.4	35X45	ECS2EBZ122M□□350045
	100	1990	1592	0.67	22X25	ECS2FBZ101M□□220025
		1327	1062	0.85	22X30	ECS2FBZ151M□□220030
	150	1327	1062	0.85	25X25	ECS2FBZ151M□□250025
		1106	885	0.96	22X35	ECS2FBZ181M□□220035
	180	1106	885	0.96	25X30	ECS2FBZ181M□□250030
		905	724	1.1	22X40	ECS2FBZ221M□□220040
	220	905	724	1.1	25X35	ECS2FBZ221M□□250035
		905	724	1.1	30X25	ECS2FBZ221M□□300025
	270	737	590	1.2	22X45	ECS2FBZ271M□□220045
		737	590	1.3	25X40	ECS2FBZ271M□□250040
737		590	1.3	30X30	ECS2FBZ271M□□300030	
737		590	1.3	35X25	ECS2FBZ271M□□350025	

500 (550) 2H	1658	1327	0.83	25x30	ECS2WBZ121M□□250030	
	150	1327	1062	0.95	22x45	ECS2WBZ151M□□220045
		1327	1062	0.95	25x35	ECS2WBZ151M□□250035
	180	1106	885	1.1	25x40	ECS2WBZ181M□□250040
		1106	885	1.1	30x30	ECS2WBZ181M□□300030
	220	905	724	1.2	25x45	ECS2WBZ221M□□250045
		905	724	1.3	30x35	ECS2WBZ221M□□300035
	270	737	590	1.5	30x40	ECS2WBZ271M□□300040
	330	603	480	1.7	30x45	ECS2WBZ331M□□300045
	390	511	409	1.9	35x40	ECS2WBZ391M□□350040
	470	424	339	2.2	30x50	ECS2WBZ471M□□300050
	560	356	285	2.4	35x50	ECS2WBZ561M□□350050
680	293	235	2.8	35x55	ECS2WBZ681M□□350055	
820	242	194	3.2	35x60	ECS2WBZ821M□□350060	
1000	133	107	4.2	35x80	ECS2WBZ102M□□350080	
	133	107	4.1	40X65	ECS2HBZ102M□□400065	
500 (550) 2H	100	1990	1592	0.90	25X30	ECS2HBZ101M□□250030
	120	1658	1327	1.0	25x35	ECS2HBZ121M□□250035
	150	1327	1062	1.2	30x30	ECS2HBZ151M□□300030
	180	1106	885	1.4	25x45	ECS2HBZ181M□□250045
		1106	885	1.3	30x35	ECS2HBZ181M□□300035
	220	905	724	1.6	25x50	ECS2HBZ221M□□250050
		905	724	1.5	30x40	ECS2HBZ221M□□300040
	270	737	590	1.8	30x45	ECS2HBZ271M□□300045
	330	603	483	2.0	35x35	ECS2HBZ331M□□350035
	390	511	409	2.3	35x40	ECS2HBZ391M□□350040
	470	424	339	2.6	35x50	ECS2HBZ471M□□350050
	560	356	285	2.9	35x55	ECS2HBZ561M□□350055
680	2s93	235	3.2	35x65	ECS2HBZ681M□□350065	

Customer products are available on request.

## Frequency coefficient

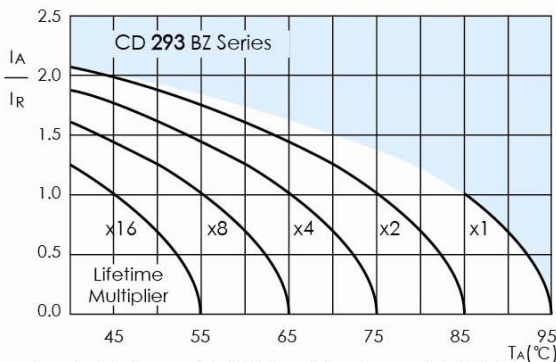
2K Voltage (V)	Frequency						
	50/60Hz	120Hz	300Hz	1kHz	10kHz	> 50kHz	
	< 50	0.88	1.00	1.07	1.15	1.15	1.15
	63 ~ 100	0.80	1.00	1.17	1.32	1.45	1.50
> 160	0.80	1.00	1.16	1.30	1.41	1.43	

## Temperature Coefficient

Temperature(°C)	+40	+55	+70	+85
<160	2.1	1.8	1.5	1.0
≥160	1.7	1.5	1.3	1.0

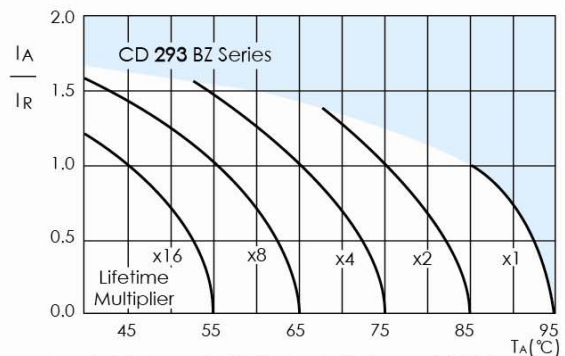
## Lifetime Diagram

Lifetime Diagram  $U_r < 160V$



$I_A$  = actual ripple current at 120Hz,  $I_R$  = rated ripple current at 120Hz, 85°C  
Multiplier of Useful Life as a function of ambient temperature and ripple current load

Lifetime Diagram  $U_r \geq 160V$



$I_A$  = actual ripple current at 120Hz,  $I_R$  = rated ripple current at 120Hz, 85°C  
Multiplier of Useful Life as a function of ambient temperature and ripple current load