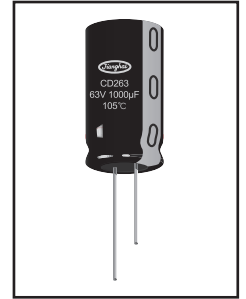
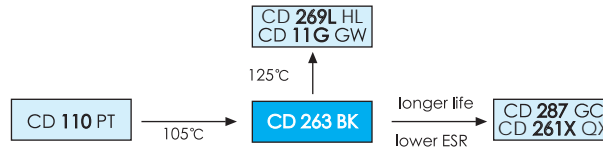


2000h at 105°C

- Standard 105°C

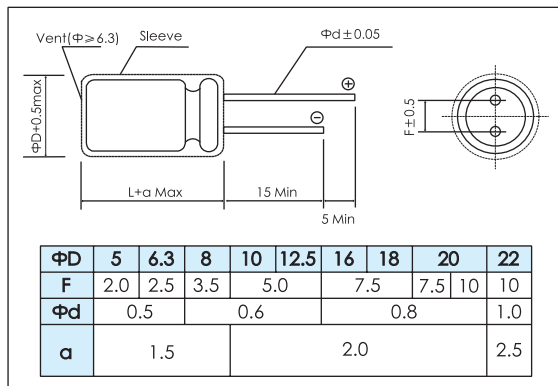


Items	Characteristics	
Operating Temperature Range (°C)	-40 ~ +105	-25 ~ +105
Voltage Range (V)	6.3 ~ 250	315 ~ 500
Capacitance Range (μF)	0.1 ~ 15000	
Capacitance Tolerance (20°C, 120Hz)	± 20%	
Leakage Current (μA)	6.3 ~ 100V	160 ~ 500V
	After 2 minutes at 20°C application of rated voltage, leakage current is not more than 0.01 CV or 3, whichever is greater.	After 1 minute at 20°C application of rated voltage, leakage current is not more than: CV ≤ 1000 : 0.1CV + 40 CV > 1000 : 0.04CV + 100
C: Nominal Capacitance (μF) V: Rated Voltage (V)		
Dissipation Factor (20°C, 120Hz)	Rated Voltage (V)	6.3 10 16 25 35 50 63 100 160 200 250 315 350 400 420 450 500
	Tan δ (max)	0.22 0.19 0.16 0.14 0.12 0.10 0.09 0.08 0.15 0.20
When nominal capacitance is over 1000μF tan δ shall be added 0.02 to the listed value with increase of every 1000μF		
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	6.3 10 16 25 35 50 63 100 160 200 250 315 350 400 420 450 500
	$Z_{-25°C} / Z_{+20°C}$	4 3 2 3 6
	$Z_{-40°C} / Z_{+20°C}$	8 6 4 3 8 -

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	3000h	>100000h	2000h	2000h	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 ± 20% of initial value	Within ± 20% of initial value	Within ± 20% of initial value
Dissipation Factor	Not more than 300% of specified value		Not more than 200% of specified value	Not more than 150% of specified value	Not more than 200% of specified value
Condition: Applied Voltage Applied Current Applied Temperature	U_R I_R 105°C	U_R $1.4 \times I_R$ 40°C	U_R I_R 105°C	U_R $I_R = 0$ 105°C	$U_R = 0$ $I_R = 0$ 105°C After test: U_R to be applied for 30min >24h before measurement

Dimensions

mm



Frequency Coefficient

Rated Voltage (V)	Frequency Cap (μF)	50/60Hz	120Hz	1kHz	10kHz	50kHz	100kHz
		6.3 ~ 100	0.1 ~ 4.7	0.32	0.4	0.7	0.8
	10 ~ 47	0.40	0.5	0.8	0.9	0.96	1.0
	100 ~ 220	0.56	0.7	0.9	0.9	0.96	1.0
	330 ~ 1000	0.64	0.8	0.9	1.0	1.0	1.0
	2200 ~ 15000	0.72	0.9	1.0	1.0	1.0	1.0
160 ~ 500	0.47 ~ 10	0.80	1.0	1.75	2.0	2.4	2.5
	22 ~ 56	0.80	1.0	1.6	1.8	1.9	2.0
	68 ~ 220	0.80	1.0	1.3	1.4	1.6	1.65

Temperature Coefficient

Rated Voltage (V)	Temperature (°C)		
	+70	+85	+105
6.3 ~ 100	2.0	1.7	1.0
160 ~ 500	1.8	1.4	1.0

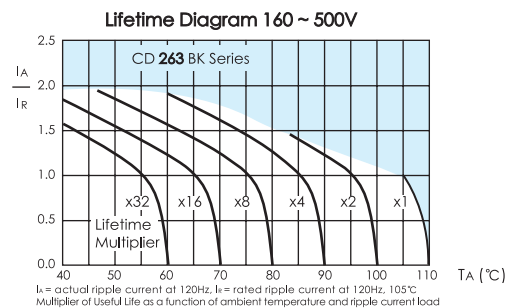
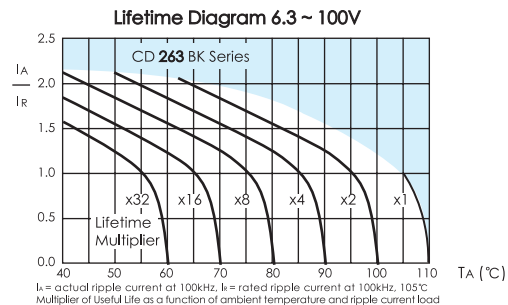
Ratings for CD 263 BK Series

MINIATURE

U_r (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Max Imp 20°C, 100kHz	Rated Ripple Current 105°C, 100kHz	Size $\Phi D \times L$	P/N	
(V)	(μF)	(Ω)	(Ω)	(mA _{rms})	(mm)	-	
6.3 (7.2) 0J	33	8.8	2.5	105	5 × 11.5	ECR0JBK330M□□050011	
	47	6.2	1.5	120	5 × 11.5	ECR0JBK470M□□050011	
	100	2.9	1.2	130	5 × 11.5	ECR0JBK101M□□050011	
	220	1.3	0.87	180	6.3 × 11.5	ECR0JBK221M□□063011	
	330	0.9	0.58	220	6.3 × 11.5	ECR0JBK331M□□063011	
	470	0.6	0.39	315	8 × 11.5	ECR0JBK471M□□080011	
	1000	0.29	0.23	500	10 × 12.5	ECR0JBK102M□□100012	
	2200	0.14	0.095	1000	12.5 × 20	ECR0JBK222M□□125020	
	3300	0.105	0.09	1050	12.5 × 20	ECR0JBK332M□□125020	
	4700	0.079	0.061	1670	16 × 25	ECR0JBK472M□□160025	
	6800	0.062	0.056	1740	16 × 25	ECR0JBK682M□□160025	
	10000	0.053	0.045	2110	16 × 31.5	ECR0JBK103M□□180035	
	15000	0.044	0.036	2580	18 × 35.5	ECR0JBK153M□□180035	
	22	11.5	2.5	92	5 × 11.5	ECR1ABK220M□□050011	
	10 (13) 1A	33	7.6	1.9	105	5 × 11.5	ECR1ABK330M□□050011
47		5.4	1.5	120	5 × 11.5	ECR1ABK470M□□050011	
100		2.5	1.2	130	5 × 11.5	ECR1ABK101M□□050011	
220		1.1	0.58	220	6.3 × 11.5	ECR1ABK221M□□063011	
330		0.76	0.47	265	8 × 11.5	ECR1ABK331M□□080011	
470		0.54	0.39	315	8 × 11.5	ECR1ABK471M□□080011	
1000		0.25	0.18	615	10 × 16	ECR1ABK102M□□100016	
2200		0.13	0.09	1050	12.5 × 20	ECR1ABK222M□□125020	
3300		0.09	0.068	1300	12.5 × 20	ECR1ABK332M□□125025	
4700		0.07	0.056	1740	16 × 25	ECR1ABK472M□□160025	
6800		0.06	0.045	2110	16 × 31.5	ECR1ABK682M□□160031	
10000		0.05	0.036	2580	18 × 35.5	ECR1ABK103M□□180035	
16 (20) 1C		10	21.2	2.5	92	5 × 11.5	ECR1CBK100M□□050011
		22	9.7	1.9	105	5 × 11.5	ECR1CBK220M□□050011
		33	6.4	1.5	120	5 × 11.5	ECR1CBK330M□□050011
	47	4.5	1.2	130	5 × 11.5	ECR1CBK470M□□050011	
	100	2.1	0.58	220	6.3 × 11.5	ECR1CBK101M□□063011	
	220	0.97	0.47	290	8 × 11.5	ECR1CBK221M□□080011	
	330	0.64	0.39	315	8 × 11.5	ECR1CBK331M□□080011	
	470	0.45	0.23	500	10 × 12.5	ECR1CBK471M□□100012	
	1000	0.21	0.12	825	10 × 20	ECR1CBK102M□□100020	
	2200	0.11	0.068	1300	12.5 × 25	ECR1CBK222M□□125025	
	3300	0.08	0.056	1740	16 × 25	ECR1CBK332M□□160025	
	4700	0.06	0.045	2110	16 × 31.5	ECR1CBK472M□□160031	
	6800	0.05	0.036	2580	18 × 35.5	ECR1CBK682M□□180035	
	25 (32) 1E	4.7	39.5	3	85	5 × 11.5	ECR1EBK47M□□050011
		10	18.6	2.5	92	5 × 11.5	ECR1EBK100M□□050011
22		8.4	1.9	105	5 × 11.5	ECR1EBK220M□□050011	
33		5.6	1.5	120	5 × 11.5	ECR1EBK330M□□050011	
47		4.0	1.2	130	5 × 11.5	ECR1EBK470M□□050011	
100		1.9	0.58	220	6.3 × 11.5	ECR1EBK101M□□063011	
220		0.84	0.39	315	8 × 11.5	ECR1EBK221M□□080011	
330		0.56	0.23	500	10 × 12.5	ECR1EBK331M□□100025	
470		0.40	0.18	615	10 × 16	ECR1EBK471M□□100016	
1000		0.19	0.09	1050	12.5 × 20	ECR1EBK102M□□125020	
2200		0.10	0.056	1740	16 × 25	ECR1EBK222M□□160025	
3300		0.07	0.045	2110	16 × 31.5	ECR1EBK332M□□160031	
4700		0.06	0.036	2580	18 × 35.5	ECR1EBK472M□□180035	
35 (44) 1V		4.7	33.9	2.5	92	5 × 11.5	ECR1VBK47M□□050011
		10	15.9	1.8	105	5 × 11.5	ECR1VBK100M□□050011
	22	7.2	1.5	120	5 × 11.5	ECR1VBK220M□□050011	
	33	4.8	1.5	130	5 × 11.5	ECR1VBK330M□□050011	
	47	3.4	0.58	220	6.3 × 11.5	ECR1VBK470M□□063011	
	100	1.6	0.39	315	8 × 11.5	ECR1VBK101M□□080011	
	220	0.72	0.23	500	10 × 12.5	ECR1VBK221M□□100012	
	330	0.48	0.18	615	10 × 16	ECR1VBK331M□□100016	
	470	0.34	0.12	825	10 × 20	ECR1VBK471M□□100020	
	1000	0.16	0.068	1300	12.5 × 25	ECR1VBK102M□□125025	
	2200	0.08	0.045	2110	16 × 31.5	ECR1VBK222M□□160031	
	3300	0.06	0.036	2580	18 × 35.5	ECR1VBK332M□□180035	

U_r (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Max Imp 20°C, 100kHz	Rated Ripple Current 105°C, 100kHz	Size $\Phi D \times L$	P/N	
(V)	(μF)	(Ω)	(Ω)	(mA _{rms})	(mm)	-	
50 (63) 1H	0.1	1327	18	10	5 × 11.5	ECR1HBK0R1M□□050011	
	0.22	603	13	15	5 × 11.5	ECR1HBK2R2M□□050011	
	0.33	402	10	18	5 × 11.5	ECR1HBK3R3M□□050011	
	0.47	282	7	23	5 × 11.5	ECR1HBK4R4M□□050011	
	1	133	4.9	35	5 × 11.5	ECR1HBK010M□□050011	
	2.2	60	4.2	53	5 × 11.5	ECR1HBK2R2M□□050011	
	3.3	40	3.9	65	5 × 11.5	ECR1HBK3R3M□□050011	
	4.7	28	3.6	82	5 × 11.5	ECR1HBK4R4M□□050011	
	10	13	2.7	100	5 × 11.5	ECR1HBK100M□□050011	
	22	6	1.9	125	5 × 11.5	ECR1HBK220M□□050011	
	33	4	1.1	195	6.3 × 11.5	ECR1HBK330M□□063011	
	47	2.8	0.9	245	6.3 × 11.5	ECR1HBK470M□□063011	
	100	1.3	0.5	385	8 × 11.5	ECR1HBK101M□□080011	
	220	0.60	0.27	505	10 × 16	ECR1HBK221M□□100016	
	330	0.40	0.18	675	10 × 20	ECR1HBK331M□□100020	
	470	0.28	0.12	895	12.5 × 20	ECR1HBK471M□□125020	
	1000	0.13	0.076	1495	16 × 25	ECR1HBK102M□□160025	
	2200	0.07	0.05	2190	18 × 35.5	ECR1HBK222M□□180035	
	4.7	25	5.8	74	5 × 11.5	ECR1JBK47M□□050011	
	63 (79) 1J	10	12	3.6	95	5 × 11.5	ECR1JBK100M□□050011
		22	5	2.1	130	6.3 × 11.5	ECR1JBK220M□□063011
33		4	1.7	160	6.3 × 11.5	ECR1JBK330M□□063011	
47		2.5	1.2	305	8 × 11.5	ECR1JBK470M□□080011	
100		1.2	0.65	395	10 × 12.5	ECR1JBK101M□□100012	
220		0.54	0.32	505	10 × 20	ECR1JBK221M□□100020	
330		0.36	0.22	660	12.5 × 20	ECR1JBK331M□□125020	
470		0.25	0.16	850	12.5 × 25	ECR1JBK471M□□125025	
1000		0.12	0.098	1430	16 × 31.5	ECR1JBK102M□□160031	
0.47		226	13	30	5 × 11.5	ECR2ABK47M□□050011	
1		106	11	45	5 × 11.5	ECR2ABK010M□□050011	
2.2		48	9.2	60	5 × 11.5	ECR2ABK2R2M□□050011	
3.3		32	7.2	67	5 × 11.5	ECR2ABK3R3M□□050011	
4.7		23	6.3	75	5 × 11.5	ECR2ABK4R4M□□050011	
10		11	3.3	110	6.3 × 11.5	ECR2ABK100M□□063011	
22	5	1.4	165	8 × 11.5	ECR2ABK220M□□080011		
33	3.2	0.94	305	10 × 12.5	ECR2ABK330M□□100012		
47	2.3	0.68	320	10 × 16	ECR2ABK470M□□100016		
100	1.1	0.28	585	12.5 × 20	ECR2ABK101M□□125020		
220	0.48	0.16	1120	16 × 25	ECR2ABK221M□□160025		
330	0.32	0.13	1290	16 × 25	ECR2ABK331M□□160025		
470	0.23	0.11	1350	16 × 31.5	ECR2ABK471M□□160031		

Lifetime Diagram



Ratings for CD 263 BK Series

U _r (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦD x L	P/N	
(V)	(μF)	(Ω)	(mA _{rms})	(mm)	-	
160 (200) 2C	0.47	423.5	12	6.3×11.5	ECR2CBKR47M□□063011	
	1	199.0	18	6.3×11.5	ECR2CBK010M□□063011	
	2.2	90.5	26	6.3×11.5	ECR2CBK2R2M□□063011	
	3.3	60.3	37	8×11.5	ECR2CBK3R3M□□080011	
	4.7	42.3	44	8×11.5	ECR2CBK4R7M□□080011	
	10	19.9	75	10×12.5	ECR2CBK100M□□100012	
	22	9.0	135	10×16	ECR2CBK220M□□100016	
	33	6.0	175	10×20	ECR2CBK330M□□100020	
	47	4.2	230	12.5×20	ECR2CBK470M□□125020	
	100	2.0	330	16×25.5	ECR2CBK101M□□160025	
	220	0.9	500	16×35.5	ECR2CBK221M□□160035	
	0.47	423.5	12	6.3×11.5	ECR2DBKR47M□□063011	
200 (250) 2D	1	199.0	18	6.3×11.5	ECR2DBK010M□□063011	
	2.2	90.5	26	6.3×11.5	ECR2DBK2R2M□□063011	
	3.3	60.3	37	8×11.5	ECR2DBK3R3M□□080011	
	4.7	42.3	50	10×12.5	ECR2DBK4R7M□□100012	
	10	19.9	80	10×16	ECR2DBK100M□□100016	
	22	9.0	135	10×20	ECR2DBK220M□□100020	
	33	6.0	190	12.5×20	ECR2DBK330M□□125020	
	47	4.0	230	12.5×25	ECR2DBK470M□□125025	
	100	2.0	360	16×25.5	ECR2DBK101M□□160025	
	220	0.9	525	18×31.5	ECR2DBK221M□□180031	
	0.47	423.5	12	6.3×11.5	ECR2EBKR47M□□063011	
	250 (300) 2E	1	199.0	18	6.3×11.5	ECR2EBK010M□□063011
2.2		90.5	30	8×11.5	ECR2EBK2R2M□□080011	
3.3		60.3	43	8×11.5	ECR2EBK3R3M□□080011	
4.7		42.3	50	10×12.5	ECR2EBK4R7M□□100012	
10		19.9	90	10×16	ECR2EBK100M□□100016	
22		9.0	155	12.5×20	ECR2EBK220M□□125020	
33		6.0	190	12.5×25	ECR2EBK330M□□125025	
47		4.2	225	16×25.5	ECR2EBK470M□□160025	
100		2.0	340	16×31.5	ECR2EBK101M□□160031	
150		1.3	405	18×25.5	ECR2EBK151M□□180025	
220		0.9	570	18×36	ECR2EBK221M□□180036	
0.47		564.6	11	6.3×11.5	ECR2FBKR47M□□063011	
315 (350) 2F	1	265.4	18	8×11.5	ECR2FBK010M□□080011	
	2.2	120.6	30	10×12.5	ECR2FBK2R2M□□100012	
	3.3	80.4	36	10×12.5	ECR2FBK3R3M□□100012	
	4.7	56.5	47	10×16	ECR2FBK4R7M□□100016	
	10	26.5	95	10×20	ECR2FBK100M□□100020	
	22	12.1	130	12.5×20	ECR2FBK220M□□125020	
	33	8.0	180	12.5×25	ECR2FBK330M□□125025	
	47	5.6	330	16×25.5	ECR2FBK470M□□160025	
	100	2.7	620	18×31.5	ECR2FBK101M□□180031	
	0.47	564.6	11	6.3×11.5	ECR2VBKR47M□□063011	
	350 (400) 2V	1	265.4	18	8×11.5	ECR2VBK010M□□080011
		2.2	120.6	30	10×12.5	ECR2VBK2R2M□□100012
3.3		80.4	36	10×12.5	ECR2VBK3R3M□□100012	
4.7		56.5	47	10×16	ECR2VBK4R7M□□100016	
10		26.5	95	10×20	ECR2VBK100M□□100020	
22		12.1	130	12.5×20	ECR2VBK220M□□125020	
33		8.0	180	12.5×25	ECR2VBK330M□□125025	
47		5.6	330	16×25.5	ECR2VBK470M□□160025	
100		2.7	620	18×31.5	ECR2VBK101M□□180031	
1		265.4	18	8×11.5	ECR2GBK1R1M□□080011	
400 (450) 2G		2.2	120.6	30	10×12.5	ECR2GBK2R2M□□100012
		3.3	80.4	40	10×16	ECR2GBK3R3M□□100016
	4.7	56.5	52	10×20	ECR2GBK4R7M□□100020	
	10	26.5	110	12.5×20	ECR2GBK100M□□125020	
	22	12.1	150	12.5×25	ECR2GBK220M□□125025	
	33	8.0	215	16×25.5	ECR2GBK330M□□160025	
	47	5.6	360	16×25.5	ECR2GBK470M□□160025	
	68	3.9	470	18×25.5	ECR2GBK680M□□180025	
	82	3.2	575	18×31.5	ECR2GBK820M□□180031	
	100	2.7	675	18×36	ECR2GBK101M□□180036	
	120	2.2	735	18×40	ECR2GBK121M□□180040	
	150	1.8	825	20×41	ECR2GBK151M□□200041	
450 (500) 2W	1	265.4	19	10×12.5	ECR2WBK010M□□100012	
	2.2	120.6	29	10×16	ECR2WBK2R2M□□100016	
	3.3	80.4	42	10×20	ECR2WBK3R3M□□100020	
	4.7	56.5	54	10×20	ECR2WBK4R7M□□100020	
	10	26.5	122	10×20	ECR2WBK100M□□100020	
	22	12.1	170	12.5×20	ECR2WBK220M□□125020	
	33	8.0	240	16×25.5	ECR2WBK330M□□160025	
	47	5.6	400	16×31.5	ECR2WBK470M□□160031	
	68	3.9	570	18×31.5	ECR2WBK680M□□180031	
	82	3.2	640	18×31.5	ECR2WBK820M□□180031	
	100	2.7	750	18×36	ECR2WBK820M□□180036	
	120	2.2	820	18×40	ECR2WBK101M□□180036	
150	1.8	920	18×46	ECR2WBK121M□□180040		
150	1.8	920	18×46	ECR2WBK151M□□180046		

U _r (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(Ω)	(mA _{rms})	(mm)	-
450 (500) 2W	150	1.8	920	20×41	ECR2WBK151M□□200041
	180	1.5	1100	22×41	ECR2WBK181M□□220041
	220	1.2	1200	22×45	ECR2WBK221M□□220045
500 (550) 2H	1	265.4	21	10×12.5	ECR2HBK010M□□100012
	2.2	120.6	35	10×16	ECR2HBK2R2M□□100016
	3.3	80.4	48	10×20	ECR2HBK3R3M□□100020
	4.7	56.5	63	12.5×20	ECR2HBK4R7M□□125020
	10	26.5	120	12.5×25	ECR2HBK100M□□125025
	22	12.1	180	16×25.5	ECR2HBK220M□□160025
	33	8.0	240	16×31.5	ECR2HBK330M□□160031
	47	5.6	405	18×31.5	ECR2HBK470M□□180031
	68	3.9	560	18×36	ECR2HBK680M□□180036
		3.9	560	18×40	ECR2HBK680M□□180040
	82	3.2	610	18×36	ECR2HBK820M□□180036
		3.2	640	18×40	ECR2HBK820M□□180040
	100	2.7	800	20×41	ECR2HBK101M□□200041
		2.7	800	18×46	ECR2HBK101M□□180046
	120	2.2	840	22×45	ECR2HBK121M□□220045
150	1.8	890	22×45	ECR2HBK151M□□220045	

Customer products are available on request.

MINIATURE