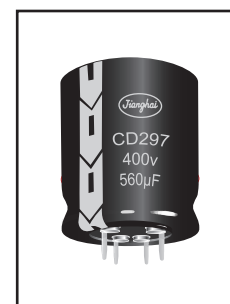
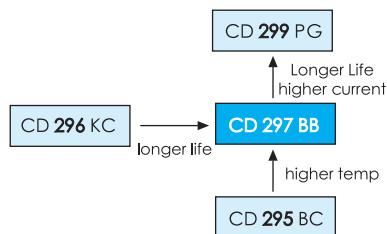


# CD 297 BB SERIES



5000h at 105°C

- Extended Lifetime at 105°C
- High Ripple Current
- High Professional Switch Mode Power Supplies
- Frequency Converters

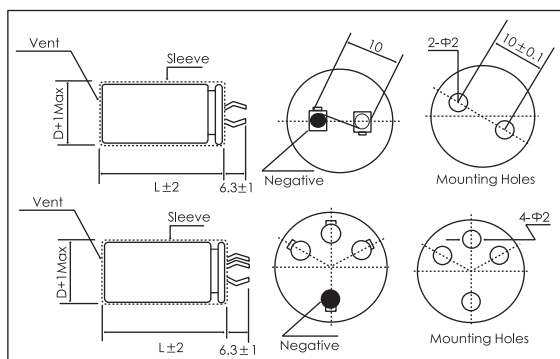


Items	Characteristics	
Operating Temperature Range (°C)	-40 ~ +105	-25 ~ +105
Voltage Range (V)	10 ~ 100	160 ~ 550
Capacitance Range (µF)	47 ~ 56000	
Capacitance Tolerance (20°C, 120Hz)	± 20%	
Leakage Current (µA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0.01CV or 1.5mA, whichever is smaller. C: Nominal Capacitance (µF) V: Rated Voltage (V)	
Dissipation Factor (20°C, 120Hz)	Rated Voltage (V)	10 16 25 35 50 63 80 100 160~400 450~550
	Tan δ (max)	0.55 0.50 0.45 0.40 0.35 0.30 0.25 0.20 0.15 0.20
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	10~100 160~250 315~500
	Z <sub>-25°C</sub> / Z <sub>+20°C</sub>	4 3 8
	Z <sub>-40°C</sub> / Z <sub>+20°C</sub>	15 - -

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	7000h	>200000h	5000h	5000h	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 200% of specified value	Not more than 200% of specified value
Condition: Applied Voltage Applied Current Applied Temperature	U <sub>R</sub> I <sub>R</sub> 105°C	U <sub>R</sub> 1.6 x I <sub>R</sub> 40°C	U <sub>R</sub> I <sub>R</sub> 105°C	U <sub>R</sub> I <sub>R</sub> = 0 105°C	U <sub>R</sub> = 0 I <sub>R</sub> = 0 105°C After test: U <sub>R</sub> to be applied for 30min >24h before measurement

## Dimensions

mm



## Frequency Coefficient

Rated Voltage (V)	Frequency					
	50/60Hz	120Hz	500Hz	1kHz	10kHz	≥40kHz
10 ~ 100	0.90	1.00	1.10	1.15	1.15	1.15
160 ~ 250	0.80	1.00	1.20	1.30	1.45	1.50
≥315	0.80	1.00	1.20	1.30	1.42	1.45

## Temperature Coefficient

Temperature(°C)	+40	+55	+70	+80	+105
Coefficient	2.7	2.5	2.1	1.7	1.0

Ratings for CD 297 BB Series

Table with columns: U\_R (Surge Voltage) Code, Rated Capacitance, Max ESR 20°C, 120Hz, Typ ESR 20°C, 120Hz, Rated Ripple Current 105°C, 120Hz, Size ΦD x L, P/N. Rows include series 10 (13) 1A, 16 (20) 1C, 25 (32) 1E, and 35 (44) 1V.

Table with columns: U\_R (Surge Voltage) Code, Rated Capacitance, Max ESR 20°C, 120Hz, Typ ESR 20°C, 120Hz, Rated Ripple Current 105°C, 120Hz, Size ΦD x L, P/N. Rows include series 50 (63) 1H, 63 (79) 1J, 80 (100) 1K, 100 (125) 2A, and 160 (200) 2C.

SNAP-IN/UG

# CD 297 BB SERIES



## Ratings for CD 297 BB Series

U <sub>R</sub> (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
160 (200) 2C	390	510	357	0.97	25 x 30	ECS2CBB391M□□250030
		510	357	1	30 x 25	ECS2CBB391M□□300025
	470	424	296	1.11	22 x 40	ECS2CBB471M□□220040
		424	296	1.14	25 x 35	ECS2CBB471M□□250035
		424	296	1.17	30 x 30	ECS2CBB471M□□300030
	560	355	249	1.26	22 x 45	ECS2CBB561M□□220045
		293	205	1.44	22 x 50	ECS2CBB681M□□220050
	680	293	205	1.43	25 x 40	ECS2CBB681M□□250040
		293	205	1.5	30 x 35	ECS2CBB681M□□300035
		243	170	1.63	25 x 45	ECS2CBB821M□□250045
	820	243	170	1.66	30 x 40	ECS2CBB821M□□300040
		243	170	1.63	35 x 30	ECS2CBB821M□□350030
		199	139	1.89	30 x 45	ECS2CBB102M□□300045
	1000	199	139	1.89	35 x 35	ECS2CBB102M□□350035
		166	116	2.16	30 x 50	ECS2CBB122M□□300050
	1200	166	116	2.23	35 x 40	ECS2CBB122M□□350040
		1500	133	93	2.61	35 x 45
	1800	111	77	2.97	35 x 50	ECS2CBB182M□□350050
180 (225) 2K	220	905	633	0.63	22 x 25	ECS2KBB221M□□220025
		737	516	0.76	22 x 30	ECS2KBB271M□□220030
	270	737	516	0.76	25 x 25	ECS2KBB271M□□250025
		603	422	0.9	22 x 35	ECS2KBB331M□□220035
	330	603	422	0.9	25 x 30	ECS2KBB331M□□250030
		510	357	1.03	22 x 40	ECS2KBB391M□□220040
	390	510	357	1.06	25 x 35	ECS2KBB391M□□250035
		510	357	1.02	30 x 25	ECS2KBB391M□□300025
		424	296	1.17	22 x 45	ECS2KBB471M□□220045
	470	424	296	1.17	30 x 30	ECS2KBB471M□□300030
		355	249	1.32	22 x 50	ECS2KBB561M□□220050
	560	355	249	1.32	25 x 40	ECS2KBB561M□□250040
		355	249	1.33	30 x 35	ECS2KBB561M□□300035
		293	205	1.51	25 x 45	ECS2KBB681M□□250045
	680	293	205	1.49	35 x 30	ECS2KBB681M□□350030
		243	170	1.71	25 x 50	ECS2KBB821M□□250050
	820	243	170	1.74	30 x 40	ECS2KBB821M□□300040
		243	170	1.75	35 x 35	ECS2KBB821M□□350035
199		139	2.01	30 x 45	ECS2KBB102M□□300045	
1000	199	139	2.07	35 x 40	ECS2KBB102M□□350040	
	166	116	2.25	30 x 50	ECS2KBB122M□□300050	
1200	166	116	2.23	35 x 45	ECS2KBB122M□□350045	
	1500	133	93	2.76	35 x 50	ECS2KBB152M□□350050
200 (250) 2D	180	1106	774	0.57	22 x 25	ECS2DBB181M□□220025
		905	633	0.7	22 x 30	ECS2DBB221M□□220030
	220	737	516	0.83	22 x 35	ECS2DBB271M□□220035
		737	516	0.76	25 x 25	ECS2DBB271M□□250025
	330	603	422	0.96	22 x 40	ECS2DBB331M□□220040
		603	422	0.9	25 x 30	ECS2DBB331M□□250030
	390	510	357	1.06	25 x 35	ECS2DBB391M□□250035
		510	357	1.02	30 x 25	ECS2DBB391M□□300025
	470	424	296	1.17	22 x 45	ECS2DBB471M□□220045
		424	296	1.22	25 x 40	ECS2DBB471M□□250040
		424	296	1.17	30 x 30	ECS2DBB471M□□300030
	560	355	249	1.39	25 x 45	ECS2DBB561M□□250045
		355	249	1.38	30 x 35	ECS2DBB561M□□300035
	680	293	205	1.58	25 x 50	ECS2DBB681M□□250050
		293	205	1.61	30 x 40	ECS2DBB681M□□300040
		293	205	1.49	35 x 30	ECS2DBB681M□□350030
	820	243	170	1.85	30 x 45	ECS2DBB821M□□300045
		243	170	1.75	35 x 35	ECS2DBB821M□□350035
199		139	2.11	30 x 50	ECS2DBB102M□□300050	
1000	199	139	2.07	35 x 40	ECS2DBB102M□□350040	
	166	116	2.38	35 x 45	ECS2DBB122M□□350045	
1500	133	93	2.76	35 x 50	ECS2DBB152M□□350050	

U <sub>R</sub> (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦD x L	P/N	
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-	
250 (300) 2E	150	1327	929	0.52	22 x 25	ECS2EBB151M□□220025	
		1106	774	0.64	22 x 30	ECS2EBB181M□□220030	
	180	1106	774	0.62	25 x 25	ECS2EBB181M□□250025	
		905	633	0.76	22 x 35	ECS2EBB221M□□220035	
	220	905	633	0.76	25 x 30	ECS2EBB221M□□250030	
		737	516	0.88	22 x 40	ECS2EBB271M□□220040	
		737	516	0.9	25 x 35	ECS2EBB271M□□250035	
	270	737	516	0.85	30 x 25	ECS2EBB271M□□300025	
		603	422	1.01	22 x 45	ECS2EBB331M□□220045	
		603	422	1	30 x 30	ECS2EBB331M□□300030	
	330	510	357	1.13	22 x 50	ECS2EBB391M□□220050	
		510	357	1.13	25 x 40	ECS2EBB391M□□250040	
		510	357	1.15	30 x 35	ECS2EBB391M□□300035	
	470	424	296	1.29	25 x 45	ECS2EBB471M□□250045	
		424	296	1.24	35 x 30	ECS2EBB471M□□350030	
	560	355	249	1.45	25 x 50	ECS2EBB561M□□250050	
		355	249	1.48	30 x 40	ECS2EBB561M□□300040	
		355	249	1.49	35 x 35	ECS2EBB561M□□350035	
	680	293	205	1.71	30 x 45	ECS2EBB681M□□300045	
		293	205	1.74	35 x 40	ECS2EBB681M□□350040	
		243	170	1.94	30 x 50	ECS2EBB821M□□300050	
	1000	199	139	2.2	35 x 45	ECS2EBB102M□□350045	
	315 (365) 2F	68	2927	1610	0.32	22 x 25	ECS2FBB680M□□220025
			2427	1334	0.38	22 x 30	ECS2FBB820M□□220030
100		1990	1095	0.41	25 x 25	ECS2FBB101M□□250025	
		1659	912	0.48	22 x 35	ECS2FBB121M□□220035	
120		1659	912	0.49	25 x 30	ECS2FBB121M□□250030	
		1327	730	0.56	22 x 40	ECS2FBB151M□□220040	
150		1327	730	0.51	30 x 25	ECS2FBB151M□□300025	
		1106	608	0.63	22 x 45	ECS2FBB181M□□220045	
		1106	608	0.62	25 x 35	ECS2FBB181M□□250035	
180		1106	608	0.63	30 x 30	ECS2FBB181M□□300030	
		905	498	0.72	22 x 50	ECS2FBB221M□□220050	
		905	498	0.71	25 x 40	ECS2FBB221M□□250040	
220		905	498	0.74	30 x 35	ECS2FBB221M□□300035	
		737	406	0.81	25 x 45	ECS2FBB271M□□250045	
		737	406	0.85	30 x 40	ECS2FBB271M□□300040	
270		737	406	0.82	35 x 30	ECS2FBB271M□□350030	
		603	332	0.92	25 x 50	ECS2FBB331M□□250050	
		693	332	0.9	35 x 35	ECS2FBB331M□□350035	
330		510	281	1.04	30 x 45	ECS2FBB391M□□300045	
		510	281	1.05	35 x 40	ECS2FBB391M□□350040	
470		424	233	1.15	30 x 50	ECS2FBB471M□□300050	
		424	233	1.18	35 x 45	ECS2FBB471M□□350045	
		355	196	1.34	35 x 50	ECS2FBB561M□□350050	
350 (400) 2V		68	2927	1610	0.34	22 x 25	ECS2VBB680M□□220025
	2427		1334	0.4	22 x 30	ECS2VBB820M□□220030	
	100	1990	1095	0.47	25 x 25	ECS2VBB101M□□250025	
		1659	912	0.52	22 x 35	ECS2VBB121M□□220035	
	120	1659	912	0.53	25 x 30	ECS2VBB121M□□250030	
		1659	912	0.53	30 x 25	ECS2VBB121M□□300025	
	150	1327	730	0.59	22 x 40	ECS2VBB151M□□220040	
		1327	730	0.6	25 x 35	ECS2VBB151M□□250035	
		1106	608	0.68	22 x 45	ECS2VBB181M□□220045	
	180	1106	608	0.7	25 x 40	ECS2VBB181M□□250040	
		1106	608	0.71	30 x 30	ECS2VBB181M□□300030	
		905	498	0.78	22 x 50	ECS2VBB221M□□220050	
	220	905	498	0.82	25 x 45	ECS2VBB221M□□250045	
		905	498	0.82	30 x 35	ECS2VBB221M□□300035	
		737	406	0.94	25 x 50	ECS2VBB271M□□250050	
	270	737	406	0.93	30 x 40	ECS2VBB271M□□300040	
		737	406	0.9	35 x 30	ECS2VBB271M□□350030	
		603	332	1.05	30 x 45	ECS2VBB331M□□300045	
	330	603	332	1.01	35 x 35	ECS2VBB331M□□350035	

SNAP-IN/LUG

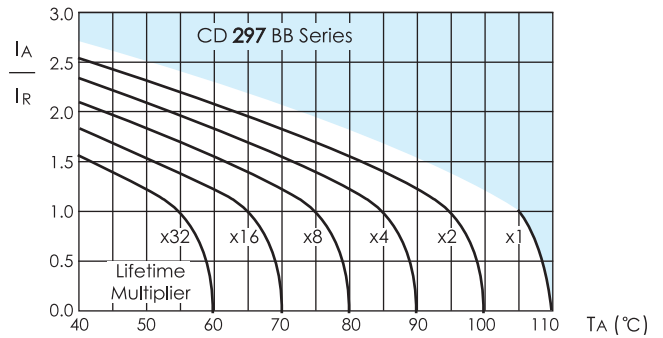
## Ratings for CD 297 BB Series

U <sub>R</sub> (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦD x L	P/N	
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-	
350 (400) 2V	390	6510	281	1.18	30×50	ECS2VBB391M□□300050	
		510	281	1.13	35×40	ECS2VBB391M□□350040	
	470	424	233	1.26	35×45	ECS2VBB471M□□350045	
		560	355	196	1.39	35×50	ECS2VBB561M□□350050
400 (450) 2G	68	2927	1522	0.38	22×30	ECS2GBB680M□□220030	
		82	2427	1262	0.41	25×25	ECS2GBB820M□□250025
		100	1990	1035	0.46	22×35	ECS2GBB101M□□220035
			1990	1035	0.48	25×30	ECS2GBB101M□□250030
	1990		1035	0.48	30×25	ECS2GBB101M□□300025	
	120	1659	863	0.53	22×40	ECS2GBB121M□□220040	
		1659	863	0.55	25×35	ECS2GBB121M□□250035	
		1659	863	0.56	30×30	ECS2GBB121M□□300030	
	150	1327	690	0.63	22×50	ECS2GBB151M□□220050	
		1327	690	0.65	25×40	ECS2GBB151M□□250040	
		1106	575	0.72	25×45	ECS2GBB181M□□250045	
	180	1106	575	0.74	30×35	ECS2GBB181M□□300035	
		220	905	471	0.79	25×50	ECS2GBB221M□□250050
	905		471	0.85	30×40	ECS2GBB221M□□300040	
	905		471	0.89	35×30	ECS2GBB221M□□350030	
	270	737	383	0.98	30×45	ECS2GBB271M□□300045	
		737	383	0.96	35×35	ECS2GBB271M□□350035	
	330	603	314	1.12	30×50	ECS2GBB331M□□300050	
		603	314	1.12	35×40	ECS2GBB331M□□350040	
	390	510	265	1.27	35×45	ECS2GBB391M□□350045	
	470	424	220	1.33	35×50	ECS2GBB471M□□350050	
	450 (500) 2W	68	3903	1951	0.38	22×30	ECS2WBB680M□□220030
			3237	1618	0.44	22×35	ECS2WBB820M□□220035
			3237	1618	0.45	25×30	ECS2WBB820M□□250030
82		3237	1618	0.46	30×25	ECS2WBB820M□□300025	
		2654	1327	0.52	22×40	ECS2WBB101M□□220040	
		2654	1327	0.52	25×35	ECS2WBB101M□□250035	
100		2212	1106	0.58	22×50	ECS2WBB121M□□220050	
		2212	1106	0.58	25×40	ECS2WBB121M□□250040	
		2212	1106	0.58	30×30	ECS2WBB121M□□300030	
150		1769	884	0.66	25×45	ECS2WBB151M□□250045	
		1769	884	0.68	30×35	ECS2WBB151M□□300035	
		1474	737	0.74	25×50	ECS2WBB181M□□250050	
180		1474	737	0.77	30×40	ECS2WBB181M□□300040	
		1474	737	0.77	35×30	ECS2WBB181M□□350030	
220		1206	603	0.88	30×45	ECS2WBB221M□□300045	
		1206	603	0.88	35×35	ECS2WBB221M□□350035	
270		983	491	0.99	30×50	ECS2WBB271M□□300050	
		983	491	1.01	35×40	ECS2WBB271M□□350040	
330		804	402	1.15	35×45	ECS2WBB331M□□350045	
390		681	340	1.28	35×50	ECS2WBB391M□□350050	
470		565	282	1.50	35×55	ECS2WBB471M□□350055	
500 (500) 2H		47	5647	2823	0.41	22×30	ECS2HBB470M□□220030
			56	4739	2370	0.47	22×30
		68	3903	1951	0.54	22×35	ECS2HBB680M□□220035
	3903		1951	0.54	25×30	ECS2HBB680M□□250030	
	82	3237	1618	0.62	22×40	ECS2HBB820M□□220040	
		3237	1618	0.62	25×35	ECS2HBB820M□□250035	
	100	2654	1327	0.67	22×45	ECS2HBB101M□□220045	
		2654	1327	0.67	25×40	ECS2HBB101M□□250040	
		2654	1327	0.67	30×30	ECS2HBB101M□□300030	
	120	2212	1106	0.77	22×50	ECS2HBB121M□□220050	
		2212	1106	0.74	25×40	ECS2HBB121M□□250040	
		2212	1106	0.77	30×35	ECS2HBB121M□□300035	
	150	2212	1106	0.80	35×30	ECS2HBB121M□□350030	
		1769	885	0.82	25×45	ECS2HBB151M□□250045	
		1769	885	0.85	30×40	ECS2HBB151M□□300040	
	180	1769	885	0.67	35×30	ECS2HBB151M□□350030	
		1769	885	0.85	35×35	ECS2HBB151M□□350035	
		1474	737	0.98	25×50	ECS2HBB181M□□250050	
	220	1474	737	1.01	30×45	ECS2HBB181M□□300045	
		1206	603	1.12	30×50	ECS2HBB221M□□300050	
		1206	603	0.94	35×35	ECS2HBB221M□□350035	
	270	1206	603	1.12	35×40	ECS2HBB221M□□350040	
		983	492	1.25	30×50	ECS2HBB271M□□300050	
	330	983	492	1.25	35×40	ECS2HBB271M□□350040	
804		402	1.36	35×45	ECS2HBB331M□□350045		
390	681	340	1.54	35×50	ECS2HBB391M□□350050		
470	565	282	1.69	35×60	ECS2HBB471M□□350060		

U <sub>R</sub> (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
550 (600) 2Y	150	1769	885	0.92	30×40	ECS2YBB151M□□300040
		1474	737	1.03	30×50	ECS2YBB181M□□300050
	180	1474	737	1.03	35×35	ECS2YBB181M□□350035
		1206	603	1.15	30×55	ECS2YBB221M□□300055
	220	1206	603	1.15	35×40	ECS2YBB221M□□350040
		983	492	1.30	35×45	ECS2YBB271M□□350045
	330	804	402	1.48	35×50	ECS2YBB331M□□350050
	390	681	340	1.65	35×60	ECS2YBB391M□□350060
	470	565	282	1.92	35×70	ECS2YBB471M□□350070
		560	473	237	2.05	35×80
	473		237	2.05	40×70	ECS2YBB561M□□400070

Customer products are available on request.

## Lifetime Diagram



I<sub>A</sub> = actual ripple current at 120Hz, I<sub>R</sub> = rated ripple current at 120Hz, 105°C  
Multiplier of Useful Life as a function of ambient temperature and ripple current load