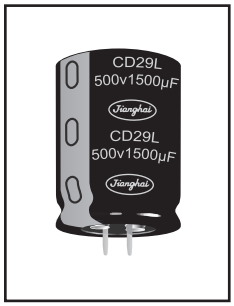
CD 29L QL SERIES

5000h at 85℃

- Larger Size Components
- Long Useful Life
- High Ripple Current
- Industrial Power Supplies

CD **295** BC
larger size
higher current
CD 29L QL



Items	Characteristics	
Operating Temperature Range (℃)	-40 ~ +85	-25 ~ +85
Voltage Range (V)	16 ~ 400	450 ~ 500
Capacitance Range (μF)	390 ~ 120000	
Capacitance Tolerance (20℃, 120Hz)	± 20%	
Leakage Current (μA)	After 5 minutes at 20℃ 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℃, 120Hz)

Rated Voltage (V)	16	25	35	50	63~100	160~250	350~450	500
Tan δ (max)	0.60	0.50	0.40	0.30	0.20	0.15		

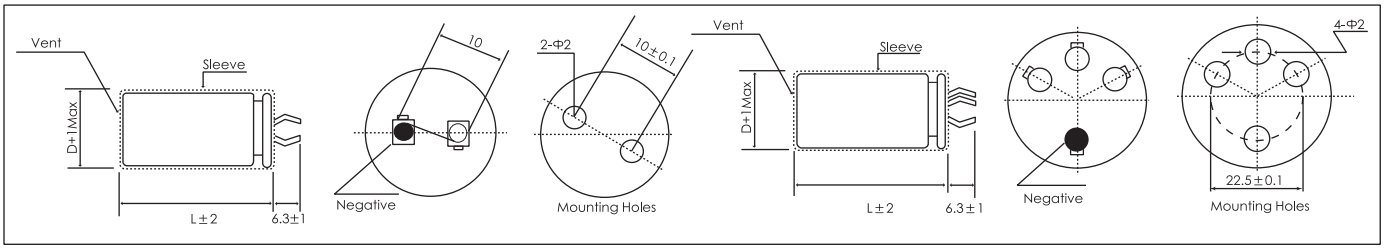
Stability at Low Temperature (Impedance Ratio at 120Hz)

Rated Voltage (V)	16~35	50~100	160~200	250~400	450	500
$Z_{-25℃} / Z_{+20℃}$	4	3		4		
$Z_{-40℃} / Z_{+20℃}$	15	10	6	8	-	

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	7000h	>100000h	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_R I_R 85℃	U_R 1.2 x I_R 40℃	U_R I_R 85℃	U_R I_R = 0 85℃	U_R = 0 I_R = 0 85℃ After test: U_R to be applied for 30min >24h before measurement

Dimensions

mm



Temperature Coefficient

Temperature(℃)		+40	+55	+70	+85
Coefficient	<160V	2.1	1.8	1.5	1.0
	≥160V	1.7	1.5	1.3	1.0

Frequency Coefficient

Rated Voltage (V) \ Frequency	50/60Hz	120Hz	300Hz	1kHz	10kHz	≥50kHz
≤ 50	0.90	1.00	1.07	1.15	1.15	1.15
63 ~ 100	0.90	1.00	1.17	1.32	1.45	1.50
≥ 160	0.80	1.00	1.16	1.30	1.41	1.45

CD 29L QL SERIES

Ratings for CD **29L** QL Series

U_R (Surge Voltage) Code	Rated Capa-citance	Max ESR 20℃, 120Hz	Typ ESR 20℃, 120Hz	Rated Ripple Current 85℃, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
16 (20) 1C	56000	14	10	10.4	30×45	ECS1CQL563M□□300045
		14	10	9.8	40×40	ECS1CQL563M□□400040
	68000	12	8	10.8	35×50	ECS1CQL683M□□350050
		12	8	11.5	40×50	ECS1CQL683M□□400050
	82000	10	7	11.8	35×60	ECS1CQL823M□□350060
		10	7	11.8	40×50	ECS1CQL823M□□400050
	100000	8	6	13.2	35×80	ECS1CQL104M□□350080
		8	6	13.5	40×60	ECS1CQL104M□□400060
	120000	7	5	15.3	35×105	ECS1CQL124M□□350105
		7	5	14.8	40×80	ECS1CQL124M□□400080
25 (32) 1E	33000	20	14	8.1	35×40	ECS1EQL333M□□350040
		20	14	8.7	40×40	ECS1EQL333M□□400040
	39000	17	12	9.0	35×45	ECS1EQL393M□□350045
		17	12	9.6	40×40	ECS1EQL393M□□400040
	47000	14	10	9.6	35×50	ECS1EQL473M□□350050
	56000	12	8	10.3	35×60	ECS1EQL563M□□350060
		12	8	10.8	40×50	ECS1EQL563M□□400050
	68000	10	7	11.3	35×80	ECS1EQL683M□□350080
		10	7	11.8	40×60	ECS1EQL683M□□400060
	82000	8	6	13.5	40×80	ECS1EQL823M□□400080
35 (44) 1V	27000	20	14	8.2	35×45	ECS1VQL273M□□350045
		20	14	8.0	40×40	ECS1VQL273M□□400040
	33000	16	11	8.7	35×50	ECS1VQL333M□□350050
	39000	14	10	10.3	35×60	ECS1VQL393M□□350060
		14	10	9.6	40×50	ECS1VQL393M□□400050
	47000	11	8	11.4	35×80	ECS1VQL473M□□350080
		11	8	10.8	40×60	ECS1VQL473M□□400060
	56000	10	7	12.1	40×70	ECS1VQL563M□□400070
	68000	8	6	14.2	40×80	ECS1VQL683M□□400080
50 (63) 1H	15000	27	19	7.7	35×40	ECS1HQL153M□□350040
		27	19	8.1	40×40	ECS1HQL153M□□400040
	18000	22	16	8.3	35×45	ECS1HQL183M□□350045
		22	16	8.3	40×40	ECS1HQL183M□□400040
	22000	18	13	9.1	35×50	ECS1HQL223M□□350050
		18	13	9.4	40×50	ECS1HQL223M□□400050
	27000	15	10	11.2	35×80	ECS1HQL273M□□350080
		15	10	10.8	40×60	ECS1HQL273M□□400060
	33000	12	8	13.4	35×80	ECS1HQL333M□□350080
		12	8	13.4	40×70	ECS1HQL333M□□400070
	39000	10	7	15.5	40×80	ECS1HQL393M□□400080
63 (79) 1J	12000	22	16	8.7	35×50	ECS1JQL123M□□350050
		22	16	8.6	40×40	ECS1JQL123M□□400040
	15000	18	12	10.2	35×70	ECS1JQL153M□□350070
		18	12	9.5	40×50	ECS1JQL153M□□400050
	18000	15	10	11.2	35×80	ECS1JQL183M□□350080
		15	10	10.7	40×60	ECS1JQL183M□□400060
	27000	10	7	12.7	40×80	ECS1JQL273M□□400080
80 (100) 1K	8200	32	23	6.9	35×50	ECS1KQL822M□□350050
	10000	27	19	8.7	35×60	ECS1KQL103M□□350060
	12000	22	16	9.7	35×70	ECS1KQL123M□□350070
		22	16	9.0	40×50	ECS1KQL123M□□400050
	15000	18	12	10.5	35×80	ECS1KQL153M□□350080
		18	12	10.2	40×60	ECS1KQL153M□□400060
	18000	15	10	12.3	40×80	ECS1KQL183M□□400080
100 (125) 2A	5600	47	33	7.0	35×45	ECS2AQL562M□□350045
		47	33	7.4	40×40	ECS2AQL562M□□400040
	6800	39	27	8.0	35×50	ECS2AQL682M□□350050
		39	27	8.9	40×50	ECS2AQL682M□□400050
	8200	32	23	9.6	35×70	ECS2AQL822M□□350070
		32	23	9.6	40×60	ECS2AQL822M□□400060
	10000	27	19	10.4	35×80	ECS2AQL103M□□350080
		27	19	10.2	40×60	ECS2AQL103M□□400060
	12000	22	16	12.3	40×80	ECS2AQL123M□□400080

U_R (Surge Voltage) Code	Rated Capa-citance	Max ESR 20℃, 120Hz	Typ ESR 20℃, 120Hz	Rated Ripple Current 85℃, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
160 (200) 2C	2200	91	63	4.9	35×45	ECS2CQL222M□□350045
	2700	74	52	5.3	35×50	ECS2CQL272M□□350050
	3300	60	42	5.5	35×70	ECS2CQL332M□□350070
		60	42	5.5	40×60	ECS2CQL332M□□400060
	3900	51	36	5.9	35×80	ECS2CQL392M□□350080
	4700	42	30	7.3	40×80	ECS2CQL472M□□400080
200 (250) 2D	1500	133	93	4.3	35×40	ECS2DQL152M□□350040
	1800	111	77	4.7	35×45	ECS2DQL182M□□350045
	2200	91	63	5.4	35×50	ECS2DQL222M□□350050
		91	63	5.4	40×40	ECS2DQL222M□□400040
	2700	74	52	5.9	35×60	ECS2DQL272M□□350060
		74	52	5.9	40×50	ECS2DQL272M□□400050
	3300	60	42	6.5	35×80	ECS2DQL332M□□350080
		60	42	6.5	40×60	ECS2DQL332M□□400060
	3900	51	36	7.0	40×80	ECS2DQL392M□□400080
	4700	42	30	9.2	40×90	ECS2DQL472M□□400090
250 (300) 2E	1000	199	139	3.7	35×40	ECS2EQL102M□□350040
	1200	166	116	3.8	35×45	ECS2EQL122M□□350045
	1500	133	93	4.4	35×50	ECS2EQL152M□□350050
		133	93	4.5	40×40	ECS2EQL152M□□400040
	1800	111	77	5.0	35×70	ECS2EQL182M□□350070
		111	77	5.0	40×50	ECS2EQL182M□□400050
	2200	91	63	5.4	35×70	ECS2EQL222M□□350070
	2700	74	52	6.9	40×80	ECS2EQL272M□□400080
350 (400) 2V	680	293	205	3.6	35×45	ECS2VQL681M□□350045
		293	205	3.6	40×40	ECS2VQL681M□□400040
	820	243	170	4.5	35×60	ECS2VQL821M□□350060
		243	170	4.3	40×50	ECS2VQL821M□□400050
	1000	199	139	5.2	35×70	ECS2VQL102M□□350070
		199	139	4.9	40×60	ECS2VQL102M□□400060
	1200	166	116	5.5	35×80	ECS2VQL122M□□350080
		166	116	5.6	40×70	ECS2VQL122M□□400070
	1500	133	93	6.5	40×80	ECS2VQL152M□□400080
		133	93	6.2	45×70	ECS2VQL152M□□450070
	1800	111	77	7.9	40×100	ECS2VQL182M□□400100
		111	77	7.1	45×70	ECS2VQL182M□□450070
	2200	91	63	8.7	40×100	ECS2VQL222M□□400100
400 (450) 2G	560	355	249	3.2	35×50	ECS2GQL561M□□350050
		355	249	2.8	40×40	ECS2GQL561M□□400040
	680	293	205	3.7	35×60	ECS2GQL681M□□350060
		293	205	3.8	40×50	ECS2GQL681M□□400050
	820	243	170	4.2	35×60	ECS2GQL821M□□350060
		243	170	4.1	40×50	ECS2GQL821M□□400050
	1000	199	139	4.9	35×70	ECS2GQL102M□□350070
		199	139	4.8	40×60	ECS2GQL102M□□400060
		199	139	4.6	45×50	ECS2GQL102M□□450050
	1200	166	116	5.8	35×80	ECS2GQL122M□□350080
		166	116	5.5	40×60	ECS2GQL122M□□400060
	1500	133	93	6.9	40×90	ECS2GQL152M□□400090
		133	93	6.6	45×70	ECS2GQL152M□□450070
		133	93	6.8	45×80	ECS2GQL152M□□450080
	1800	111	77	7.9	40×100	ECS2GQL182M□□400100
		111	77	7.3	45×80	ECS2GQL182M□□450080
	2200	91	63	8.8	40×110	ECS2GQL222M□□400100
		91	63	8.3	45×90	ECS2GQL222M□□450090
450 (500) 2W	470	424	296	3.0	35×50	ECS2WQL471M□□350050
		424	296	3.0	40×40	ECS2WQL471M□□400040
	560	355	249	3.1	35×50	ECS2WQL561M□□350050
		355	249	3.3	35×60	ECS2WQL561M□□350060
		355	249	3.4	40×50	ECS2WQL561M□□400050
	680	293	205	3.5	35×60	ECS2WQL681M□□350060
		293	205	3.8	35×70	ECS2WQL681M□□350070
		293	205	3.8	40×60	ECS2WQL681M□□400060
	820	243	170	4.6	35×80	ECS2WQL821M□□350080
		243	170	4.4	40×60	ECS2WQL821M□□400060

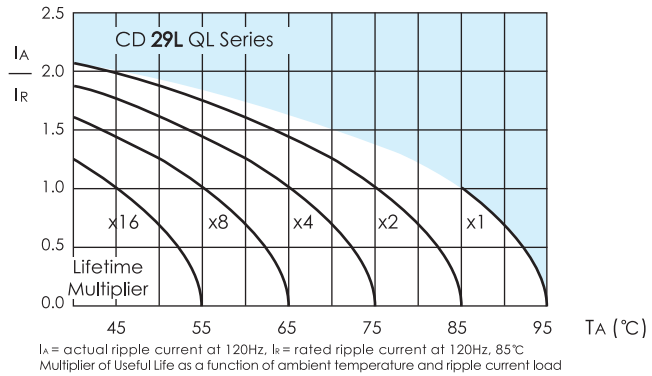
Ratings for CD **29L** QL Series

U_R (Surge Voltage) Code	Rated Capa-citance	Max ESR 20℃, 120Hz	Typ ESR 20℃, 120Hz	Rated Ripple Current 85℃, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
450 (500) 2W	1000	199	139	5.7	35×80	ECS2WQL102M□□350080
		199	139	5.2	40×60	ECS2WQL102M□□400060
	1200	166	116	5.9	40×70	ECS2WQL122M□□400070
		166	116	6.2	45×70	ECS2WQL122M□□450070
	1500	133	93	7.3	40×100	ECS2WQL152M□□400100
		133	93	7.0	45×80	ECS2WQL152M□□450080
	1800	111	77	7.9	45×100	ECS2WQL182M□□450100
500 (550) 2H	390	510	357	1.9	35×50	ECS2HQL391M□□350050
	470	424	296	2.3	35×60	ECS2HQL471M□□350060
	560	355	249	2.5	35×60	ECS2HQL561M□□350060
		355	249	2.7	40×60	ECS2HQL561M□□400060
	680	293	205	3.1	35×80	ECS2HQL681M□□350080
		293	205	2.8	40×70	ECS2HQL681M□□400070
	820	243	170	3.4	35×90	ECS2HQL821M□□350090
		243	170	3.3	40×70	ECS2HQL821M□□400070
	1000	199	139	3.9	40×80	ECS2HQL102M□□400080
		199	139	3.9	45×70	ECS2HQL102M□□450070
	1200	166	116	4.3	40×90	ECS2HQL122M□□400090
	1500	133	93	4.8	40×100	ECS2HQL152M□□400100

Customer products are available on request.

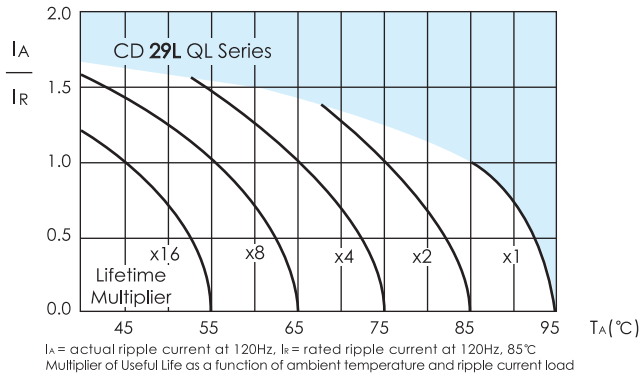
Lifetime Diagram

Lifetime Diagram U_R< 160V



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

Lifetime Diagram $U_R \geqslant 160V$



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