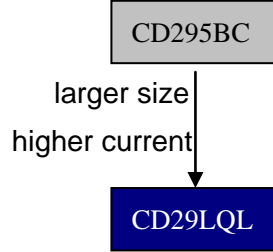


CD 29L QL SERIES



5000h at 85°C

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



Items	Characteristics								
Operating Temperature Range(°C)	-40 ~ +85				-25~+85				
Voltage Range (V)	16~400				450~500				
Capacitance Range(μF)	390~120000								
Capacitance Tolerance (20°C,120Hz)	±20%								
Leakage Current (μA)	After 5Minutes at 20°C application of rated voltage, leakage current is notMore 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)	16	25	35	50	63~10 0	160~2 50	350~4 50	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	50~10 0	160~2 00	250~4 00	450	500		
	Z _{-25°C} /Z _{+20°C}	4	3		4				
	Z _{-40°C} /Z _{+20°C}	15	10	6	8	-			

	Useful Life		Load Life	Endurance Test	Shelf Life
Life Time	7000h	>100000h	5000h	5000h	1000h
Leakage Current	NotMore than specified value		NotMore than specified value	NotMore than specified value	NotMore 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	NotMore than 300% of specified value		NotMore than 200% of specified value	NotMore than200% of specified value	NotMore than 200% of specified value
Condition:					After test: U _R = 0 I _R = 0 85°C U _R to be applied for 30min>24h before measurement
Applied Voltage	U _R	U _R	U _R	U _R	
Applied Current	I _R	1.2×I _R	I _R	I _R = 0	
Applied Temperature	85°C	50°C	85°C	85°C	

Frequency coefficient

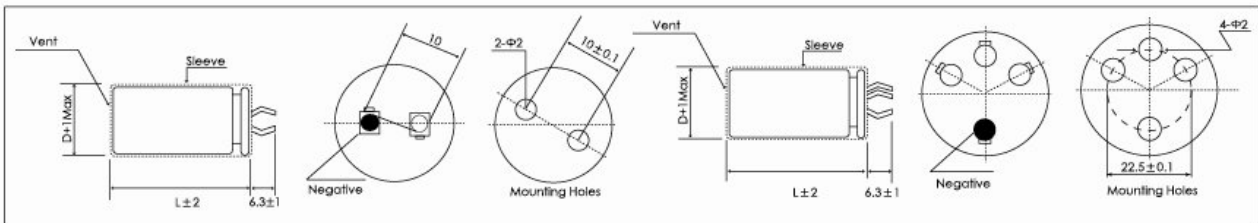
Frequency Rated Voltage(v)	50/60Hz	120Hz	300Hz	1kHz	10kHz	≥ 50kHz
≤50	0.90	1.00	1.07	1.15	1.15	1.15
63~100	0.90	1.00	1.17	1.32	1.45	1.50
≥160	0.80	1.00	1.16	1.30	1.41	1.45

Temperature Coefficient

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

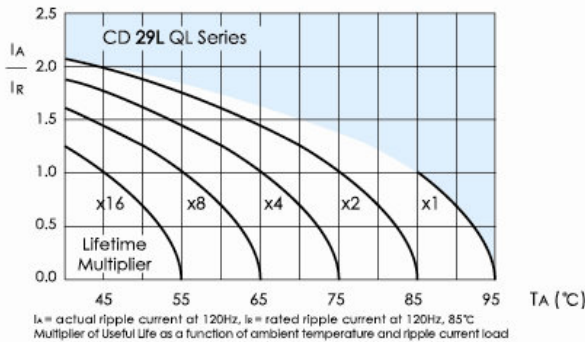
Dimensions

mm

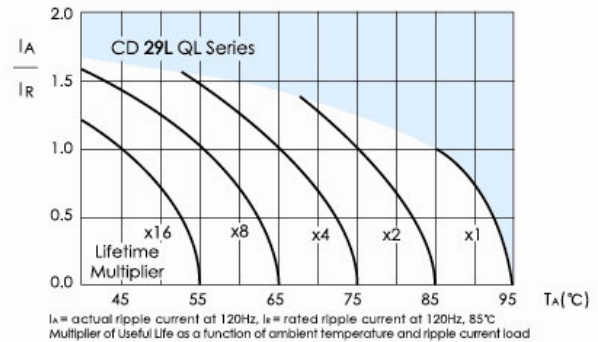


Lifetime Diagram

Lifetime Diagram $U_r < 160V$



Lifetime Diagram $U_r \geq 160V$



Ratings for CD 29L QL Series

U_r (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120kHz	Size Φ D x L	P/N
(v)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
16 (20) 1C	56000	14	10	10.4	30x45	ECS1CQL563M□□300045
		14	10	9.8	40x40	ECS1CQL563M□□400040
	68000	12	8	10.8	35X50	ECS1CQL683M□□350050
		12	8	11.5	40x50	ECS1CQL683M□□400050
	82000	10	7	11.8	35x60	ECS1CQL823M□□350060
		10	7	11.8	40x50	ECS1CQL823M□□400050
	100000	8	6	13.2	35x80	ECS1CQL104M□□350080
		8	6	13.5	40x60	ECS1CQL104M□□400060
	120000	7	5	15.3	35X105	ECS1CQL124M□□350105
		7	5	14.8	40x80	ECS1CQL124M□□400080
25 (32) 1E	33000	20	14	8.1	35x40	ECS1EQL333M□□350040
		20	14	8.7	40x40	ECS1EQL333M□□400040
	39000	17	12	9.0	35x45	ECS1EQL393M□□350045

U_r (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120KHz	Size Φ D x L	P/N
(v)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
160 (200) 2C	2200	91	63	4.9	35X45	ECS2CQL222M□□350045
	2700	74	52	5.3	35X50	ECS2CQL272M□□350050
	3300	60	42	5.5	35X70	ECS2CQL332M□□350070
		60	42	5.5	40X60	ECS2CQL332M□□400060
	3900	51	36	5.9	35X80	ECS2CQL392M□□350080
	4700	42	30	7.3	40X80	ECS2CQL472M□□400080
	200 (250) 2D	1500	133	93	4.3	35X40
1800		111	77	4.7	35X45	ECS2DQL182M□□350045
2200		91	63	5.4	35X50	ECS2DQL222M□□350050
		91	63	5.4	40X40	ECS2DQL222M□□400040
2700		74	52	5.9	35X60	ECS2DQL272M□□350060
		74	52	5.9	40X50	ECS2DQL272M□□400050
3300		60	42	6.5	35X80	ECS2DQL332M□□350080

CD 29L QL SERIES



35 (44) 1V	47000	17	12	9.6	40x40	ECS1EQL393M□□400040	250 (300) 2E	3900	60	42	6.5	40X60	ECS2DQL332M□□400060			
		14	10	9.6	35X50	ECS1EQL473M□□350050			4700	51	36	7.0	40X80	ECS2DQL392M□□400080		
	56000	12	8	10.3	35x60	ECS1EQL563M□□350060		350 (400) 2V	1000	42	30	9.2	40X90	ECS2DQL472M□□400090		
		12	8	10.8	40x50	ECS1EQL563M□□400050				1200	199	139	3.7	35X40	ECS2EQL102M□□350040	
	68000	10	7	11.3	35x80	ECS1EQL683M□□350080			400 (450) 2G	1500	1200	166	116	3.8	35X45	ECS2EQL122M□□350045
		10	7	11.8	40x60	ECS1EQL683M□□400060					133	93	4.4	35X50	ECS2EQL152M□□350050	
82000	8	6	13.5	40x80	ECS1EQL823M□□400080	450 (500) 2W	1800			133	93	4.5	40X40	ECS2EQL152M□□400040		
	8	6	13.5	40x80	ECS1EQL823M□□400080					111	77	5.0	35X70	ECS2EQL182M□□350070		
35 (44) 1V	27000	20	14	8.2	35X45		ECS1VQL273M□□350045	450 (500) 2W		1800	111	77	5.0	40X50	ECS2EQL182M□□400050	
		20	14	8.0	40x40		ECS1VQL273M□□400040				2200	91	63	5.4	35X70	ECS2EQL222M□□350070
	33000	16	11	8.7	35X50		ECS1VQL333M□□350050		450 (500) 2W	2700	74	52	6.9	40X80	ECS2EQL272M□□400080	
		14	10	10.3	35x60		ECS1VQL393M□□350060				680	293	205	3.6	35X45	ECS2VQL681M□□350045
	47000	11	8	11.4	35x80	ECS1VQL473M□□350080	450 (500) 2W			820		293	205	3.6	40X40	ECS2VQL681M□□400040
		11	8	10.8	40x60	ECS1VQL473M□□400060					243	170	4.5	35X60	ECS2VQL821M□□350060	
50 (63) 1H	56000	10	7	12.1	40x70	ECS1VQL563M□□400070		450 (500) 2W		820	243	170	4.3	40X50	ECS2VQL821M□□400050	
		8	6	14.2	40x80	ECS1VQL683M□□400080					1000	199	139	5.2	35X70	ECS2VQL102M□□350070
	68000	8	6	14.2	40x80	ECS1VQL683M□□400080			450 (500) 2W	1000		199	139	4.9	40X60	ECS2VQL102M□□400060
		27	19	7.7	35X40	ECS1HQL153M□□350040					1200	166	116	5.5	35X80	ECS2VQL122M□□350080
	15000	27	19	8.1	40x40	ECS1HQL153M□□400040	450 (500) 2W			1200		166	116	5.6	40X70	ECS2VQL122M□□400070
		22	16	8.3	35x45	ECS1HQL183M□□350045					1500	133	93	6.5	40X80	ECS2VQL152M□□400080
18000	22	16	8.3	40x40	ECS1HQL183M□□400040	450 (500) 2W		1500		133		93	6.2	45X70	ECS2VQL152M□□450070	
	18	13	9.1	35x50	ECS1HQL223M□□350050					1800	111	77	7.9	40X100	ECS2VQL182M□□400100	
22000	18	13	9.4	40x50	ECS1HQL223M□□400050			450 (500) 2W	1800		111	77	7.1	45X70	ECS2VQL182M□□450070	
	15	10	11.2	35x80	ECS1HQL273M□□350080					2200	91	63	8.7	40x100	ECS2VQL222M□□400100	
27000	15	10	10.8	40x60	ECS1HQL273M□□400060		450 (500) 2W		2200		91	63	8.7	40x100	ECS2VQL222M□□400100	
	12	8	13.4	35X80	ECS1HQL333M□□350080					560	355	249	3.2	35X50	ECS2GQL561M□□350050	
33000	12	8	13.4	40x70	ECS1HQL333M□□400070	450 (500) 2W			560		355	249	2.8	40X40	ECS2GQL561M□□400040	
	39000	10	7	15.5	40x80					ECS1HQL393M□□400080	680	293	205	3.7	35X60	ECS2GQL681M□□350060
63 (79) 1J	12000	22	16	8.7	35X50			ECS1JQL123M□□350050	450 (500) 2W	680		293	205	3.8	40X50	ECS2GQL681M□□400050
		22	16	8.6	40x40			ECS1JQL123M□□400040			820	243	170	4.2	35X60	ECS2GQL821M□□350060
	15000	18	12	10.2	35X70		ECS1JQL153M□□350070	450 (500) 2W		820		243	170	4.1	40X50	ECS2GQL821M□□400050
		18	12	9.5	40x50		ECS1JQL153M□□400050				1000	199	139	4.9	35X70	ECS2GQL102M□□350070
	18000	15	10	11.2	35X80	ECS1JQL183M□□350080	450 (500) 2W			1000		199	139	4.8	40X60	ECS2GQL102M□□400060
		15	10	10.7	40x60	ECS1JQL183M□□400060					1200	166	116	5.8	35X80	ECS2GQL122M□□350080
27000	10	7	12.7	40x80	ECS1JQL273M□□400080	450 (500) 2W			1200	166		116	5.5	40X60	ECS2GQL122M□□400060	
	8200	32	23	6.9	35x50					ECS1KQL822M□□350050	1500	133	93	6.9	40X90	ECS2GQL152M□□400090
80 (100) 1K	10000	27	19	8.7	35X60			ECS1KQL103M□□350060	450 (500) 2W	1500		133	93	6.6	45X70	ECS2GQL152M□□450070
		22	16	9.7	35X70			ECS1KQL123M□□350070			1800	133	93	6.8	45X80	ECS2GQL152M□□450080
	12000	22	16	9.0	40x50		ECS1KQL123M□□400050	450 (500) 2W		1800		111	77	7.9	40x100	ECS2GQL182M□□400100
		18	12	10.5	35x80		ECS1KQL153M□□350080				2200	111	77	7.3	45X80	ECS2GQL182M□□450080
	15000	18	12	10.2	40x60	ECS1KQL153M□□400060	450 (500) 2W			2200		91	63	8.8	40X110	ECS2GQL222M□□400100
		18000	15	10	12.3	40x80					ECS1KQL183M□□400080	470	424	296	3.0	35X50
100 (125) 2A	5600	47	33	7.0	35x45	ECS2AQL562M□□350045			450 (500) 2W	470	424		296	3.0	40x40	ECS2WQL471M□□400040
		47	33	7.4	40x40	ECS2AQL562M□□400040					560	355	249	3.1	35X50	ECS2WQL561M□□350050
	6800	39	27	8.0	35x50	ECS2AQL682M□□350050		450 (500) 2W		560		355	249	3.3	35X60	ECS2WQL561M□□350060
		39	27	8.9	40x50	ECS2AQL682M□□400050					680	355	249	3.4	40X50	ECS2WQL561M□□400050
	8200	32	23	9.6	35X70	ECS2AQL822M□□350070	450 (500) 2W			680		293	205	3.5	35X60	ECS2WQL681M□□350060
		32	23	9.6	40x60	ECS2AQL822M□□400060					820	293	205	3.8	35X70	ECS2WQL681M□□350070
10000	27	19	10.4	35X80	ECS2AQL103M□□350080	450 (500) 2W			820	293		205	3.8	40X60	ECS2WQL681M□□400060	
	27	19	10.2	40x60	ECS2AQL103M□□400060					820	243	170	4.6	35X80	ECS2WQL821M□□350080	
12000	22	16	12.3	40x80	ECS2AQL123M□□400080			820	243		170	4.4	40X60	ECS2WQL821M□□400060		

CD 29L QL SERIES



Ratings for CD 29L QL Series

U _R (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120kHz	Size Φ D×L	P/N
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)	-
450 (500) 2W	1000	199	139	5.7	35x80	ECS2WQL102M□□350080
		199	139	5.2	40x60	ECS2WQL102M□□400060
	1200	166	116	5.9	40x70	ECS2WQL122M□□400070
		166	116	6.2	45x70	ECS2WQL122M□□450070
	1500	133	93	7.3	40x100	ECS2WQL152M□□400100
		133	93	7.0	45x80	ECS2WQL152M□□450080
	1800	111	77	7.9	45x100	ECS2WQL182M□□450100
	500 (550) 2H	390	510	357	1.9	35x50
470		424	296	2.3	35x60	ECS2HQL471M□□350060
560		355	249	2.5	35x60	ECS2HQL561M□□350060
		355	249	2.7	40x60	ECS2HQL561M□□400060
680		293	205	3.1	35x80	ECS2HQL681M□□350080
		293	205	2.8	40x70	ECS2HQL681M□□400070
820		243	170	3.4	35x90	ECS2HQL821M□□350090
		243	170	3.3	40x70	ECS2HQL821M□□400070
1000		199	139	3.9	40x80	ECS2HQL102M□□400080
		199	139	3.9	45x70	ECS2HQL102M□□450070
1200		166	116	4.3	40x90	ECS2HQL122M□□400090
1500		133	93	4.8	40x100	ECS2HQL152M□□400100

Customer products are available on request.