



**CAPACITOR  
COMPETENCE**  
*since 1958*

ALUMINUM ELECTROLYTIC CAPACITORS

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ALUMINUM ELECTROLYTIC CAPACITORS · SNAP-IN TYPE

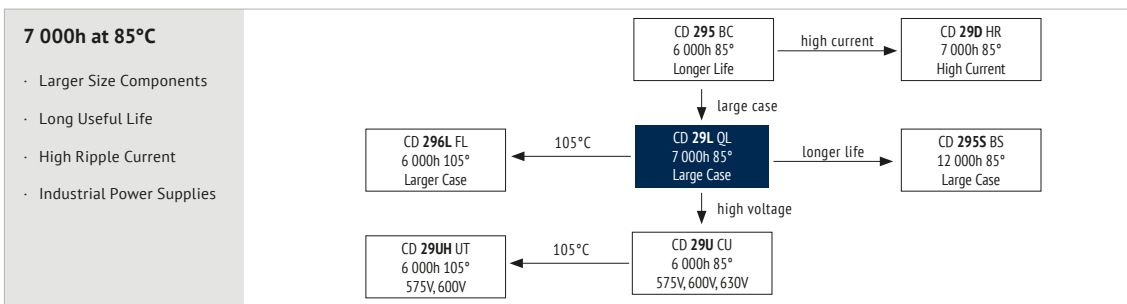
# CD 29L QL SERIES

**JIANGHAI EUROPE**  
Electronic Components GmbH



ENGINEERED SOLUTIONS

v2019.1



### ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-40 ~ +85	-25 ~ +85					
Voltage Range (V)	16 ~ 400	450 ~ 500					
Capacitance Range (µF)	390 ~ 120 000						
Capacitance Tolerance (20°C, 120Hz)	± 20%						
Leakage Current	After 5 minutes at 20°C application of rated voltage, leakage current is not more than specified in table.						
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	16 ~ 35	50 ~ 100	160 ~ 200	250 ~ 400	450	500
	$Z_{-25°C} / Z_{+20°C}$	4	3		4		
	$Z_{-40°C} / Z_{+20°C}$	15	10	6	8	-	
Fast Charge-Discharge	Please contact Jianghai for an appropriate choice of the capacitor or possible technical adaptations, esp. for applications like: Welding, Photoflash, Servo motors, X-Ray						

**The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.**

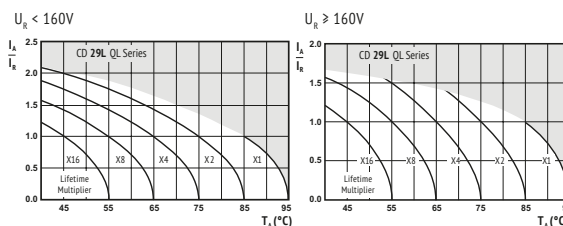
ITEM	USEFUL LIFE		LOAD LIFE	ENDURANCE TEST	SHELF LIFE	
Lifetime	7 000h	> 100 000h	5 000h	5 000h	1 000h	
Leakage Current	Not more than specified value		Not more than specified value	Not more than specified value	Not more than specified value	
Capacitance Change	Within ± 30% of initial value		Within ± 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°C	$U_R$ $1,2 \times I_R$ 40°C	$U_R$ $I_R$ 85°C	$U_R$ $I_R = 0$ 85°C IEC 60384	$U_R = 0$ $I_R = 0$ 85°C	After test: $U_R$ to be applied for 30 min > 24h before measurement

### MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz	>50kHz
Rated Voltage (V) ≤ 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

Multipliers for typical operating conditions.

### MULTIPLIER FOR LIFETIME (LIFETIME DIAGRAM)



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

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

### ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or [www.jianghai-europe.com](http://www.jianghai-europe.com)

### SAFETY FACTOR

This diagram includes a safety margin. In many cases the allowed current capability/lifetime may be increased. For details and approvals please contact the Jianghai Europe sales office.





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## ALUMINUM ELECTROLYTIC CAPACITORS · SNAP-IN TYPE

U <sub>RDC</sub> (Surge Voltage) Code	C <sub>R</sub> Rated Capacitance	ESR <sub>max</sub> Equivalent Series Resistance 20°C 120Hz	ESR <sub>typ</sub> Equivalent Series Resistance 20°C 120Hz	tanδ Dissipa- tion Factor 20°C 120Hz	I <sub>leak</sub> Leakage Current	I <sub>RAC</sub> Rated Ripple Current 85°C 120Hz	Size øD x L (mm)	ORDER CODE ◇◇ = pin style & length △△ = pin number Details: Page 5
(V)	(µF)	(mΩ)	(mΩ)		(mA)	(Arms)		
<b>450 (500) 2W</b>	1 000	199	139	0,15	1,5	5,7	35 x 80	ECS2WQL102M◇◇△△3580
		199	139	0,15	1,5	5,2	40 x 60	ECS2WQL102M◇◇△△4060
	1 200	166	116	0,15	1,5	5,9	40 x 70	ECS2WQL122M◇◇△△4070
		166	116	0,15	1,5	6,2	45 x 70	ECS2WQL122M◇◇△△4570
	1 500	133	93	0,15	1,5	7,3	40 x 100	ECS2WQL152M◇◇△△40100
		133	93	0,15	1,5	7,0	45 x 80	ECS2WQL152M◇◇△△4580
	1 800	111	77	0,15	1,5	7,9	45 x 100	ECS2WQL182M◇◇△△45100
	<b>500 (550) 2H</b>	390	511	357	0,15	1,5	1,9	35 x 50
470		424	296	0,15	1,5	2,3	35 x 60	ECS2HQL471M◇◇△△3560
560		356	249	0,15	1,5	2,5	35 x 60	ECS2HQL561M◇◇△△3560
		356	249	0,15	1,5	2,7	40 x 60	ECS2HQL561M◇◇△△4060
680		293	205	0,15	1,5	3,1	35 x 80	ECS2HQL681M◇◇△△3580
		293	205	0,15	1,5	2,8	40 x 70	ECS2HQL681M◇◇△△4070
820		243	170	0,15	1,5	3,4	35 x 90	ECS2HQL821M◇◇△△3590
		243	170	0,15	1,5	3,3	40 x 70	ECS2HQL821M◇◇△△4070
1 000		199	139	0,15	1,5	3,9	40 x 80	ECS2HQL102M◇◇△△4080
		199	139	0,15	1,5	3,9	45 x 70	ECS2HQL102M◇◇△△4570
1 200		166	116	0,15	1,5	4,3	40 x 90	ECS2HQL122M◇◇△△4090
1 500		133	93	0,15	1,5	4,8	40 x 100	ECS2HQL152M◇◇△△40100



### ORDER CODE SNAP-IN TYPE

EC	S	2G	QC	221	M	T6	P2	2535	-	JExxxx
Technology	Terminal Type	Rated Voltage Code	Series Code	Capacitance Code	Capacitance Tolerance	Terminal Style	Terminal / Pitch	Dimension (mm)	Material Code	for Specials only
EC Electrolytic Capacitor	Snap-In S	6,3V OJ	CD 293 BZ	0,1 OR1	±20% M	4,0mm Pin Length T/L4	2 Pin P2	22x40 2240	Standard -	
		10V 1A	CD 294 BW	0,47 R47	±10% K	6,3mm Pin Length T/L6	3 Pin P3	30x45 3045	PVC V	
		16V 1C	CD 295 BC	1,0 O10	+30/-10% Q	Soldering Pin S4	4 Pin P4	35x80 3580	PET E	
		20V 1D	CD 295S BS	2,2 2R2	+20/-0% R		5 Pin P5	45x100 45100		
		25V 1E	CD 296 KC	100 101	±15% L	on request: alternative pin types	6 Pin P6	50x105 50105		
		35V 1V	CD 296L FL	1 000 102	+20/-10% V					
		40V 1G	CD 297 BB	10 000 103						
		50V 1H	CD 299 PG							
		63V 1J	CD 29C QC							
		80V 1K	CD 29D HR							
		100V 2A	CD 29G BA							
		125V 2B	CD 29H QH							
		160V 2C	CD 29HD QF							
		180V 2K	CD 29L QL							
		200V 2D	CD 29U CU							
		250V 2E	CD 29UH UT							
		385V 2J	CD 840 ZQ							
		400V 2G	CD 891 ZI							
		415V 2P	CD 892 ZL							
		420V 2X	CD 895 ZK							
		450V 2W								
		500V 2H								
		550V 2Y								
		575V 2Z								
		600V 2S								
		630V J2								

■ = preferred



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