

**CAPACITORS**

**ALUMINIUM ELECTROLYTIC LOW - LEAKAGE CURRENT CLLA**

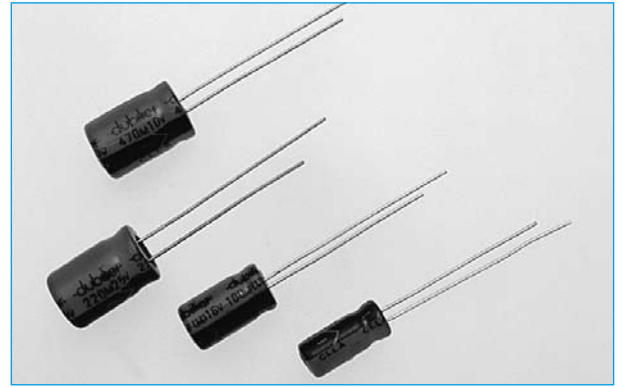
SECTION 1

- Miniature case sizes
- Very low-leakage current
- Extremely low stable leakage current characteristics
- Close capacitance tolerance  $\pm 20\%$  ( $\pm 10\%$  available)

The CLLA is a radial electrolytic capacitor offering very low-leakage currents.

Typical applications include audio and timing circuits.

Product is available loose, taped & boxed.



**SPECIFICATION**

Item	Performance Characteristics					
Operating Temperature Range	-40 to +105 °C					
Rated Working Voltage Range	10 to 50V DC					
Nominal Capacitance Range	0.1 to 220 $\mu$ F					
Capacitance Tolerance	$\pm 20\%$ ( $\pm 10\%$ on request)					
Leakage Current	$I \leq 0.002CV$ or $0.3[\mu A]$ whichever is greater after 2 minutes (30 sec: $\leq 10\mu F$ ) application of rated working voltage at +20 °C					
tan $\delta$ (120Hz +20°C)	Working voltage [V]	10	16	25	50	*0.06 for C $\leq 1\mu F$
	tan $\delta$ max.	0.17	0.13	0.10	*0.08	
High Temperature Loading	Test Conditions					
	Duration	2000 hours				
	Applied voltage	Rated DC working voltage				
	Ambient temperature	+105 °C				
	Post Test Requirements at +20 °C					
	Leakage current	$\leq$ Initial specified value				
Capacitance change	$\leq \pm 20\%$ of initial measured value					
tan $\delta$	$\leq 150\%$ of initial specified value					
Shelf Life	Test Conditions					
	Duration	500 hours				
	Ambient temperature	+105 °C				
	Applied voltage	(None)				
	Post Test Requirements at +20 °C					
	Leakage current	$\leq$ initial specified value				
Capacitance change	$\leq \pm 20\%$ of initial measured value					
tan $\delta$	$\leq 150\%$ of initial specified value					
*Pre-treatment for measurements.						
Measurements shall be conducted after application of DC working voltage for 30 minutes.						

**ORDERING INFORMATION**

<b>CLLA</b>	<b>10</b>	<b>16</b>	<b>TA</b>
Range	Capacitance	Voltage	Options
TA = 5mm Tape/Ammo box			
For others add pitch e.g. TA 2mm = 2mm pitch			
Blank = Loose			

### RANGE

UF/Volts	6.3v	10v	16v	25v	35v	50v	63v	100v
0.47uf						5x11	5x11	5x11
1.0uf						5x11	5x11	5x11
2.2uf						5x11	5x11	5x11
3.3uf						5x11	5x11	5x11
4.7uf				5x11	5x11	5x11	5x11	5x11
10uf		5x11	5x11	5x11	5x11	5x11	5x11	6.3x11
22uf	5x11	5x11	5x11	5x11	5x11	6.3x11	6.3x11	8x11
33uf	5x11	5x11	5x11	5x11	5x11	6.3x11	8x11	10x12
47uf	5x11	5x11	5x11	5x11	6.3x11	6.3x11	8x11	10x16
100uf	5x11	5x11	6.3x11	6.3x11	8x11	10x12	10x12	13x20
220uf	6.3x11	6.3x11	8x11	8x11	10x12.5	10x16	13x20	18x36
330uf	6.3x11	8x11	8x11	10x12	10x16	10x20	13x20	18x40
470uf	8x11.5	8x11	10x12.5	10x16	10x20	13x25	18x36	
1000uf	10x13	10x16	10x20	13x20	18x36	18x40		
2200uf	13x20	13x20	18x36	18x40				
3300uf	13x20	16x36	18x40					
4700uf	18x36	18x40						

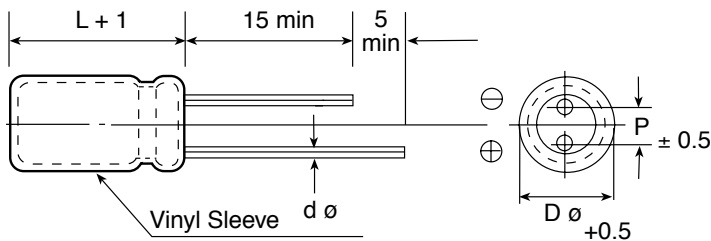
### PERMISSIBLE RIPPLE CURRENT

120 Hz, 85 ° mA, rms)

UF/Volts	6.3v	10v	16v	25v	35v	50v	63v	100v
0.47uf						5	7	5
1.0uf						10	1	10
2.2uf						14	30	18
3.3uf						21	36	24
4.7uf				18	21	45	27	27
10uf		24	30	33	39	42	45	
22uf	33	45	48	97	57	69	78	
33uf	33	48	54	57	63	75	84	102
47uf	45	57	66	69	84	90	114	138
100uf	78	81	105	111	138	250	180	240
220uf	272	198	180	590	222	910	640	1010
330uf	388	198	216	252	294	398	750	1377
470uf	507	234	282	324	384	825	1385	
1000uf	896	378	474	570	1723	2070		
2200uf	1513	660	1100	2174				
3300uf	1902	2155	2250					
4700uf	2272	2560						

Additional case sizes may be available please ask.

### OUTLINE DRAWING



D $\varnothing$	5	6.3	8	10
P	2.0	2.5	3.5	5.0
d $\varnothing$	0.5		0.6	