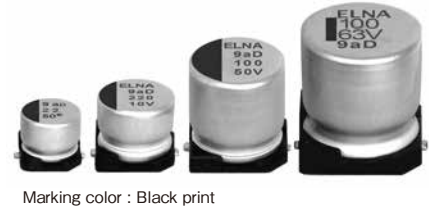


Code in front of series have been extracted from product code, which describes the segment of products, such as type and features.

- Compatible with surface mounting, low ESR, long life capacitors.
- Environmental : GREEN CAP™ , RoHS compliance.
- Supplied with carrier taping.
- Guaranteed 2000 hours at 105°C.  
(6.3V to 50V 10.0L,10.5L:5000 hours)  
(φ12.5 : 5000 hours)

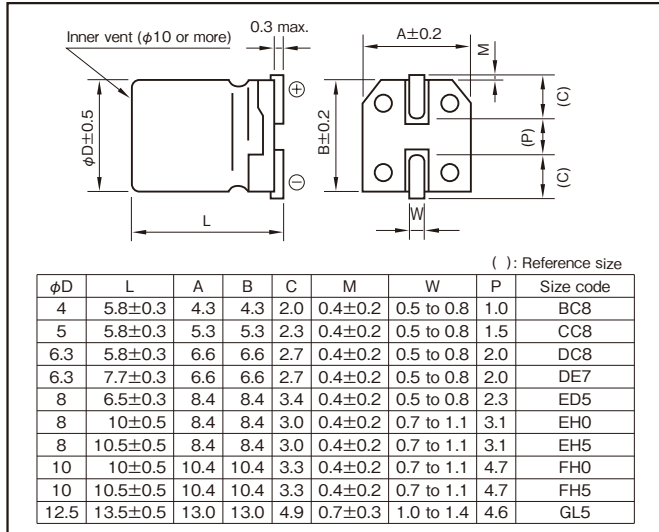


### Specifications

Item	Performance																																						
Category temperature range (°C)	-55 to +105																																						
Tolerance at rated capacitance (%)	±20 (20°C,120Hz)																																						
Leakage current (μA) (max.)	0.01CV or 3 whichever is larger (after 2 minutes) C : Rated capacitance (μF) , V : Rated voltage (V) (20°C)																																						
Tangent of loss angle (tanδ)	<table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>tanδ (max.)</td> <td>0.26</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.08</td> <td>0.08</td> <td>0.07</td> </tr> </tbody> </table> <p>0.02 is added to every 1000μF increase over 1000μF. (20°C,120Hz)</p>	Rated voltage (V)	6.3	10	16	25	35	50	63	80	100	tanδ (max.)	0.26	0.19	0.16	0.14	0.12	0.10	0.08	0.08	0.07																		
Rated voltage (V)	6.3	10	16	25	35	50	63	80	100																														
tanδ (max.)	0.26	0.19	0.16	0.14	0.12	0.10	0.08	0.08	0.07																														
Characteristics at high and low temperature	<table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Impedance ratio (max.)</td> <td>Z-25°C/Z+20°C</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> <tr> <td>Z-55°C/Z+20°C</td> <td>8</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table> <p>(120Hz)</p>	Rated voltage (V)	6.3	10	16	25	35	50	63	80	100	Impedance ratio (max.)	Z-25°C/Z+20°C	2	2	2	2	2	2	2	2	Z-40°C/Z+20°C	3	3	3	3	3	3	3	3	Z-55°C/Z+20°C	8	4	4	3	3	3	3	3
Rated voltage (V)	6.3	10	16	25	35	50	63	80	100																														
Impedance ratio (max.)	Z-25°C/Z+20°C	2	2	2	2	2	2	2	2																														
	Z-40°C/Z+20°C	3	3	3	3	3	3	3	3																														
	Z-55°C/Z+20°C	8	4	4	3	3	3	3	3																														
Endurance (105°C) (Applied ripple current)	<table border="1"> <tbody> <tr> <td>Test time</td> <td>2000 hours (φ12.5, 6.3V to 50V 10.0L,10.5L : 5000 hours)</td> </tr> <tr> <td>Leakage current</td> <td>The initial specified value or less</td> </tr> <tr> <td>Percentage of capacitance change</td> <td>Within ±30% of initial value</td> </tr> <tr> <td>Tangent of the loss angle</td> <td>200% or less of the initial specified value (φ12.5, 6.3V to 50V 10.0L,10.5L : 300% or less)</td> </tr> </tbody> </table>	Test time	2000 hours (φ12.5, 6.3V to 50V 10.0L,10.5L : 5000 hours)	Leakage current	The initial specified value or less	Percentage of capacitance change	Within ±30% of initial value	Tangent of the loss angle	200% or less of the initial specified value (φ12.5, 6.3V to 50V 10.0L,10.5L : 300% or less)																														
Test time	2000 hours (φ12.5, 6.3V to 50V 10.0L,10.5L : 5000 hours)																																						
Leakage current	The initial specified value or less																																						
Percentage of capacitance change	Within ±30% of initial value																																						
Tangent of the loss angle	200% or less of the initial specified value (φ12.5, 6.3V to 50V 10.0L,10.5L : 300% or less)																																						
Shelf life (105°C)	Test time : 1000hours ; other items are same as the endurance. Voltage application treatment : According to JIS C5101-4 4.1																																						
Applicable standards	JIS C5101 - 1,- 18 (IEC 60384 - 1,- 18)																																						

### Outline Drawing

Unit : mm



Refer to individual page.  
(Soldering conditions, Land pattern size, The taping specifications)

### Coefficient of Frequency for Rated Ripple Current

Frequency (Hz)	50 · 60	120	1k	10k · 100k
Rated voltage (V)				
6.3 to 100	0.50	0.50	0.75	1

### Product code system (\*For general product)

φ10 or less (example : 16V100μF)

RS*	VVD	101	M	1E	DC8	002	U
Category code	Series code	capacitance code	Cap tol. code	Voltage code	Size code	Taping and packing code	Additional code

φ12.5 (example : 16V1000μF)

RS*	VVD	102	M	1E	GL5	005	T
Category code	Series code	capacitance code	Cap tol. code	Voltage code	Size code	Taping and packing code	Additional code

- If "For Vibration Resistance" type is required, please see the series VTD.
- For details, refer to the various "Product Code System" pages.

Code in front of series have been extracted from product code, which describes the segment of products, such as type and features.

### Standard Ratings

Rated voltage (V)	Item	6.3 (1J)				10 (1L)				16 (1E)			
		Case φD×L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mA <sub>rms</sub> )	Case φD×L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mA <sub>rms</sub> )	Case φD×L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mA <sub>rms</sub> )
10	—	—	—	—	—	—	—	—	4×5.8	BC8	1.35	90	
22	4×5.8	BC8	1.35	90	4×5.8	BC8	1.35	90	4×5.8	BC8	1.35	90	
									5×5.8	CC8	0.70	170	
33	—	—	—	—	4×5.8	BC8	1.35	90	—	—	—	—	
					5×5.8	CC8	0.70	170	—	—	—	—	
47	4×5.8	BC8	1.35	90	—	—	—	—	5×5.8	CC8	0.70	170	
	5×5.8	CC8	0.70	170	—	—	—	—	6.3×5.8	DC8	0.36	250	
100	5×5.8	CC8	0.70	170	—	—	—	—	6.3×5.8	DC8	0.36	250	
	6.3×5.8	DC8	0.36	250	—	—	—	—	—	—	—	—	
220	6.3×5.8	DC8	0.36	250	6.3×7.7	DE7	0.30	300	6.3×7.7	DE7	0.30	300	
					8×6.5	ED5	0.30	300	8×6.5	ED5	0.30	300	
330	6.3×7.7	DE7	0.30	300	8×10	EH0	0.16	600	8×10	EH0	0.16	600	
	8×6.5	ED5	0.30	300									
470	8×10	EH0	0.16	600	8×10	EH0	0.16	600	8×10	EH0	0.16	600	
680	—	—	—	—	8×10	EH0	0.16	600	10×10	FH0	0.090	850	
									10×10.5	FH5	0.080	850	
1000	8×10	EH0	0.16	600	10×10	FH0	0.090	850	125×135	GL5	0.054	1160	
					10×10.5	FH5	0.080	850					
1500	10×10	FH0	0.090	850	125×135	GL5	0.054	1160	125×135	GL5	0.054	1160	
	10×10.5	FH5	0.080	850									
2200	125×135	GL5	0.054	1160	125×135	GL5	0.054	1160	—	—	—	—	

Rated voltage (V)	Item	25 (1T)				35 (1G)				50 (1U)			
		Case φD×L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mA <sub>rms</sub> )	Case φD×L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mA <sub>rms</sub> )	Case φD×L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mA <sub>rms</sub> )
4.7	—	—	—	—	4×5.8	BC8	1.35	90	4×5.8	BC8	2.7	60	
10	4×5.8	BC8	1.35	90	4×5.8	BC8	1.35	90	5×5.8	CC8	1.5	90	
					5×5.8	CC8	0.70	170	6.3×5.8	DC8	0.86	170	
22	5×5.8	CC8	0.70	170	5×5.8	CC8	0.70	170	6.3×5.8	DC8	0.86	170	
									6.3×7.7	DE7	0.66	195	
33	5×5.8	CC8	0.70	170	6.3×5.8	DC8	0.36	250	8×6.5	ED5	0.63	200	
	6.3×5.8	DC8	0.36	250									
47	6.3×5.8	DC8	0.36	250	6.3×5.8	DC8	0.36	250	6.3×7.7	DE7	0.66	195	
									8×6.5	ED5	0.63	200	
100	6.3×7.7	DE7	0.30	300	6.3×7.7	DE7	0.30	300	8×10	EH0	0.34	350	
	8×6.5	ED5	0.30	300	8×10	EH0	0.16	600	8×10.5	EH5	0.32	350	
220	8×10	EH0	0.16	600	8×10	EH0	0.16	600	10×10	FH0	0.20	700	
									10×10.5	FH5	0.18	700	
330	8×10	EH0	0.16	600	10×10	FH0	0.090	850	125×135	GL5	0.12	900	
					10×10.5	FH5	0.080	850					
470	10×10	FH0	0.090	850	125×135	GL5	0.054	1160	—	—	—	—	
680	10×10.5	FH5	0.080	850	125×135	GL5	0.054	1160	—	—	—	—	
1000	125×135	GL5	0.054	1160	125×135	GL5	0.054	1160	—	—	—	—	

Rated voltage (V)	Item	63 (4E)				80 (1R)				100 (1H)			
		Case φD×L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mA <sub>rms</sub> )	Case φD×L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mA <sub>rms</sub> )	Case φD×L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mA <sub>rms</sub> )
4.7	5×5.8	CC8	3.0	50	—	—	—	—	—	—	—	—	
10	6.3×5.8	DC8	1.5	80	6.3×7.7	DE7	2.4	60	—	—	—	—	
22	6.3×7.7	DE7	1.2	120	8×10	EH0	0.90	130	8×10	EH0	1.30	130	
33	8×10	EH0	0.65	250	8×10	EH0	0.90	130	10×10	FH0	0.70	200	
47	8×10	EH0	0.65	250	10×10	FH0	0.50	200	—	—	—	—	
68	8×10	EH0	0.65	250	—	—	—	—	—	—	—	—	
100	10×10	FH0	0.35	400	125×135	GL5	0.18	550	—	—	—	—	
	125×135	GL5	0.16	600									
220	125×135	GL5	0.16	600	—	—	—	—	—	—	—	—	

(Note) Rated ripple current : 105°C, 100kHz  
ESR : 20°C, 100kHz

NOTE : Design, Specifications are subject to change without notice.  
It is recommended that you shall obtain technical specifications from ELNA to ensure that the component is suitable for your use.