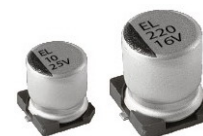
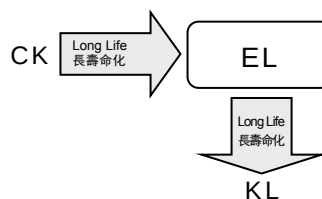


LONG LIFE ASSURANCE

寬溫長壽命品

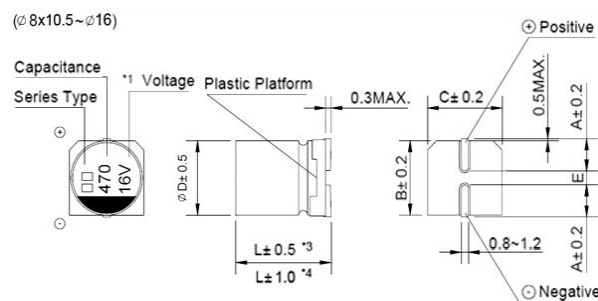
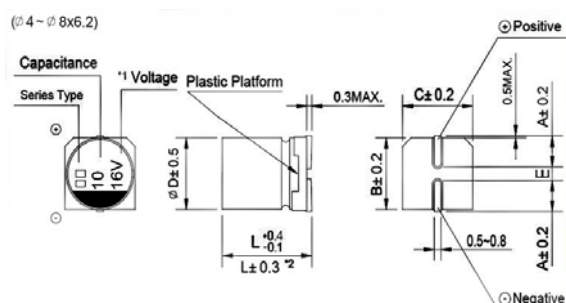
- Wide temperature range -55 ~ +105°C
適用於 -55 ~ +105°C 的寬溫範圍
- Load life of 2000~3000 hours
負荷壽命 2000~3000 小時
- Comply with the RoHS directive
符合 RoHS 指令



SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性																																													
Operation Temperature Range 使用溫度範圍	-55 ~ +105℃																																													
Voltage Range 額定工作電壓範圍	6.3 ~ 50V																																													
Capacitance Range 靜電容量範圍	0.1 ~ 1500μF																																													
Capacitance Tolerance 靜電容量允許偏差	±20% at 120Hz, 20℃																																													
Leakage Current 漏電流	Leakage current (Ø4~Ø10) ≒ 0.01CV or 3μA, whichever is greater (after 2 minutes application of rated voltage) Leakage current (Ø12.5~Ø16) ≒ 0.03CV or 4μA, whichever is greater (after 1 minute application of rated voltage) 漏電流 (Ø4~Ø10) ≒ 0.01CV 或 3μA，取較大值（施加額定工作電壓 2 分鐘後） 漏電流 (Ø12.5~Ø16) ≒ 0.03CV 或 4μA，取較大值（施加額定工作電壓 1 分鐘後）																																													
Dissipation Factor (tan δ) 損耗角正切	<table><tr><td colspan="2">Measurement frequency 測試頻率: 120Hz, Temperature 溫度: 20℃</td></tr><tr><td>Rated Voltage (V) 額定工作電壓</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>tan δ (max.)</td><td>Ø4~Ø10</td><td>0.28</td><td>0.24</td><td>0.20</td><td>0.16</td><td>0.13</td><td>0.12</td></tr><tr><td>最大損耗角正切</td><td>Ø12.5~Ø16</td><td>0.38</td><td>0.34</td><td>0.30</td><td>0.26</td><td>0.22</td><td>0.18</td></tr></table>							Measurement frequency 測試頻率: 120Hz, Temperature 溫度: 20℃		Rated Voltage (V) 額定工作電壓	6.3	10	16	25	35	50	tan δ (max.)	Ø4~Ø10	0.28	0.24	0.20	0.16	0.13	0.12	最大損耗角正切	Ø12.5~Ø16	0.38	0.34	0.30	0.26	0.22	0.18														
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Stability at Low Temperature 低溫特性	<table><tr><td colspan="2">Measurement frequency 測試頻率: 120Hz</td></tr><tr><td colspan="2">Rated Voltage (V) 額定工作電壓</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td rowspan="2">Impedance Ratio 阻抗比</td><td rowspan="2">Ø4~Ø10</td><td>Z(-25℃) / Z(20℃)</td><td>3</td><td>3</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-55℃) / Z(20℃)</td><td>8</td><td>5</td><td>4</td><td>3</td><td>3</td></tr><tr><td rowspan="2">ZT/Z20 (max.)</td><td rowspan="2">Ø12.5~Ø16</td><td>Z(-25℃) / Z(20℃)</td><td>5</td><td>4</td><td>3</td><td>2</td><td>2</td></tr><tr><td>Z(-55℃) / Z(20℃)</td><td>12</td><td>10</td><td>8</td><td>5</td><td>4</td><td>3</td></tr></table>							Measurement frequency 測試頻率: 120Hz		Rated Voltage (V) 額定工作電壓		6.3	10	16	25	35	50	Impedance Ratio 阻抗比	Ø4~Ø10	Z(-25℃) / Z(20℃)	3	3	2	2	2	Z(-55℃) / Z(20℃)	8	5	4	3	3	ZT/Z20 (max.)	Ø12.5~Ø16	Z(-25℃) / Z(20℃)	5	4	3	2	2	Z(-55℃) / Z(20℃)	12	10	8	5	4	3
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		Z(-55℃) / Z(20℃)	12	10	8	5	4	3																																						
Load Life 高溫負荷特性	After 3000 hrs. (2000 hrs. for Ø4~Ø6.3×5.4 Ø6.3×7.7&Ø8×6.2) application of the rated voltage at 105℃, they meet the characteristics listed below. 在 105℃ 環境中施加額定工作電壓 3000 小時（Ø4~Ø6.3×5.4 Ø6.3×7.7 和 Ø8×6.2 為 2000 小時）後，電容器的特性符合下表的要求。 <table><tr><td>Capacitance Change 靜電容量變化率</td><td>Within ±25% of initial value 初始值的±25%以內</td></tr><tr><td>Dissipation Factor 損耗角正切</td><td>200% or less of initial specified value 不大於規範值的 200%</td></tr><tr><td>Leakage Current 漏電流</td><td>initial specified value or less 不大於規範值</td></tr></table>							Capacitance Change 靜電容量變化率	Within ±25% of initial value 初始值的±25%以內	Dissipation Factor 損耗角正切	200% or less of initial specified value 不大於規範值的 200%	Leakage Current 漏電流	initial specified value or less 不大於規範值																																	
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Shelf Life 高溫貯存特性	After leaving capacitors under no load at 105℃ for 1000 hours, they meet the specified value for load life characteristics listed above. 在 105℃ 環境中無負荷放置 1000 小時後，電容器的特性符合高溫負荷特性中所列的規定值。																																													
Resistance to Soldering Heat 耐焊接熱特性	After reflow soldering and restored at room temperature, they meet the characteristics listed below. 經過回流焊並冷卻至室溫後，電容器的特性符合下表的要求。 <table><tr><td>Capacitance Change 靜電容量變化率</td><td>Within ±10% of initial value 初始值的±10%以內</td></tr><tr><td>Dissipation Factor 損耗角正切</td><td>initial specified value or less 不大於規範值</td></tr><tr><td>Leakage Current 漏電流</td><td>initial specified value or less 不大於規範值</td></tr></table>							Capacitance Change 靜電容量變化率	Within ±10% of initial value 初始值的±10%以內	Dissipation Factor 損耗角正切	initial specified value or less 不大於規範值	Leakage Current 漏電流	initial specified value or less 不大於規範值																																	
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Leakage Current 漏電流	initial specified value or less 不大於規範值																																													
Marking 標示	Black print on the case top. 鋁殼頂部黑字印刷。																																													

DRAWING (Unit: mm) 外形圖



- *1. Voltage mark for 6.3V is [6V] 6.3V 的產品標識為 [6V]
 *2. Applicable to ∅6.3×7.7 適用於 ∅6.3×7.7
 *3. Applicable to ∅8×10.5~∅10 適用於 ∅8×10.5~∅10
 *4. Applicable to ∅12.5~∅16 適用於 ∅12.5~∅16

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☐ DIMENSIONS (Unit: mm) 尺寸表

ØD x L	4 x 5.8	5 x 5.8	6.3 x 5.8	6.3 x 7.7	8 x 6.2	8 x 10.5	10 x 10.5	10 x 12.5	12.5 x 13.5	12.5 x 16	16 x 16.5
A	2.0	2.2	2.6	2.6	3.3	3.0	3.2	3.2	4.6	4.6	5.8
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	12.8	12.8	17.0
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	12.8	12.8	17.0
E ± 0.2	1.0	1.5	2.1	2.1	2.2	3.1	4.6	4.6	4.6	4.6	6.4
L	5.8	5.8	5.8	7.7	6.2	10.5	10.5	13.5	13.5	16.0	16.5

☐ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT 規格尺寸及最大允許紋波電流

µF	WV Code 代碼	6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
0.1	0R1											4 x 5.8	1
0.22	R22											4 x 5.8	2
0.33	R33											4 x 5.8	3
0.47	R47											4 x 5.8	5
1	010											4 x 5.8	10
2.2	2R2											4 x 5.8	16
3.3	3R3											4 x 5.8	16
4.7	4R7							4 x 5.8	13	4 x 5.8	14	5 x 5.8	23
10	100					4 x 5.8	18	5 x 5.8	20	5 x 5.8	21	6.3 x 5.8	35
22	220	4 x 5.8	22	5 x 5.8	25	5 x 5.8	27	6.3 x 5.8	36	6.3 x 5.8	38	6.3 x 7.7 (8 x 6.2)	70 (70)
33	330	5 x 5.8	27	5 x 5.8	30	6.3 x 5.8	40	6.3 x 5.8	60	6.3 x 7.7 (8 x 6.2)	84 (84)	8 x 10.5	90
47	470	5 x 5.8	33	6.3 x 5.8	41	6.3 x 5.8	48	6.3 x 7.7 (8 x 6.2)	90 (91)	8 x 10.5	98	8 x 10.5	90
100	101	6.3 x 5.8	50	6.3 x 5.8 (8 x 6.2)	53 (110)	6.3 x 5.8	60	6.3 x 7.7 8 x 10.5	95 130	8 x 10.5	130	10 x 10.5	100
150	151	6.3 x 5.8	55	6.3 x 7.7	105	6.3 x 7.7	95	8 x 10.5	140	10 x 10.5	315	10 x 10.5	100
220	221	6.3 x 7.7	100	8 x 10.5	210	8 x 10.5	210	10 x 10.5	190	10 x 10.5	315	10 x 12.5 (10 x 10.5)	250 (100)
330	331	8 x 10.5	210	8 x 10.5	210	8 x 10.5	210	10 x 10.5	315	10 x 10.5	315	12.5 x 13.5	400
470	471	8 x 10.5	210	10 x 10.5	315	10 x 10.5	315	10 x 10.5	315	12.5 x 13.5 (10 x 12.5)	500 (360)	16 x 16.5 (12.5 x 16)	650 (500)
680	681	8 x 10.5	210	10 x 10.5	315	10 x 10.5	315	10 x 12.5	380	12.5 x 13.5	500		
1000	102	10 x 10.5	315	10 x 12.5 (10 x 10.5)	360 (315)	12.5 x 13.5 (10 x 12.5) (10 x 10.5)	450 (350) (315)	12.5 x 13.5	550	16 x 16.5 (12.5 x 16)	700 (550)		
1500	152	10 x 12.5 (10 x 10.5)	450 (315)	12.5 x 13.5	500	12.5 x 13.5	500	12.5 x 16	800				
2200	222	12.5 x 13.5	620	12.5 x 16 (12.5 x 13.5)	650 (600)	16 x 16.5	900	16 x 16.5	1000			Case size 尺寸	Ripple current 紋波電流
3300	332	12.5 x 16	750	16 x 16.5	950								

• Case size ØD x L (mm), ripple current (mA rms) at 105°C 120Hz • 尺寸 ØD x L (mm), 紋波電流 (mA rms) 於 105°C 120Hz

☐ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT 紋波電流頻率補償系數

Frequency 頻率			50Hz	120Hz	300Hz	1KHz	10KHz~
Coefficient 系數	Ø4 ~ Ø10	0.1 ~ 100µF	0.70	1.00	1.17	1.36	1.50
		150 ~ 1500µF	0.85	1.00	1.08	1.20	1.30
	Ø12.5 ~ Ø16	~ 470µF	0.75	1.00	1.35	1.57	2.00
		680 ~ 3300µF	0.85	1.00	1.23	1.34	1.50

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