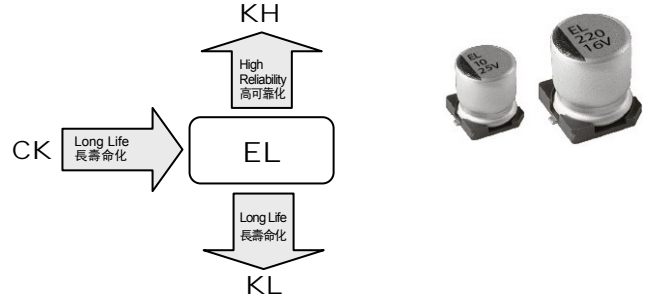


LONG LIFE ASSURANCE

寬溫長壽命品

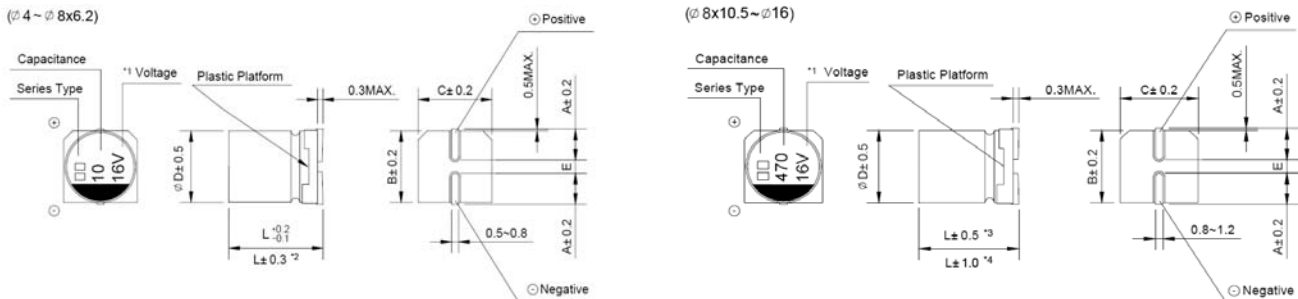
- Wide temperature range -55 ~ +105°C
適用於 -55 ~ +105°C 的寬溫範圍
- Load life of 2000~3000 hours
負荷壽命 2000~3000 小時
- Comply with the RoHS directive
符合 RoHS 指令



□ SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性																																							
Operation Temperature Range 使用溫度範圍	-55 ~ +105°C																																							
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°C																																							
Leakage Current 漏電流	Leakage current (∅4~∅10) ≅ 0.01CV or 3μA, whichever is greater (after 2 minutes application of rated voltage) Leakage current (∅12.5~∅16) ≅ 0.03CV or 4μA, whichever is greater (after 1 minute application of rated voltage) 漏電流 (∅4~∅10) ≅ 0.01CV 或 3μA, 取較大值 (施加額定工作電壓 2 分鐘後) 漏電流 (∅12.5~∅16) ≅ 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	Measurement frequency 測試頻率: 120Hz, Temperature 溫度: 20°C <table border="1"> <thead> <tr> <th>Rated Voltage (V) 額定工作電壓</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>tan δ (max.) 最大損耗角正切</td> <td>∅4~∅10</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></td> <td>∅12.5~∅16</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> </tbody> </table>	Rated Voltage (V) 額定工作電壓	6.3	10	16	25	35	50	tan δ (max.) 最大損耗角正切	∅4~∅10	0.28	0.24	0.20	0.16	0.13	0.12		∅12.5~∅16	0.38	0.34	0.30	0.26	0.22	0.18																
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Stability at Low Temperature 低溫特性	Measurement frequency 測試頻率: 120Hz <table border="1"> <thead> <tr> <th colspan="2">Rated Voltage (V) 額定工作電壓</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Impedance Ratio 阻抗比</td> <td>∅4~∅10</td> <td>Z(-25°C) / Z(20°C)</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td></td> <td>Z(-55°C) / Z(20°C)</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>∅12.5~∅16</td> <td>Z(-25°C) / Z(20°C)</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> </tr> <tr> <td></td> <td>Z(-55°C) / Z(20°C)</td> <td>12</td> <td>10</td> <td>8</td> <td>5</td> <td>4</td> <td>3</td> </tr> </tbody> </table>	Rated Voltage (V) 額定工作電壓		6.3	10	16	25	35	50	Impedance Ratio 阻抗比	∅4~∅10	Z(-25°C) / Z(20°C)	3	3	2	2	2		Z(-55°C) / Z(20°C)	8	5	4	3	3	ZT/Z20 (max.)	∅12.5~∅16	Z(-25°C) / Z(20°C)	5	4	3	2	2		Z(-55°C) / Z(20°C)	12	10	8	5	4	3
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		Z(-55°C) / Z(20°C)	12	10	8	5	4	3																																
Load Life 高溫負荷特性	After 3000 hrs. (2000 hrs. for ∅4~∅6.3x5.4 & ∅8x6.2) application of the rated voltage at 105°C, they meet the characteristics listed below. 在 105°C 環境中施加額定工作電壓 3000 小時 (∅4~∅6.3x5.4 和 ∅8x6.2 為 2000 小時) 後, 電容器的特性符合下表的要求。 <table border="1"> <tbody> <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> </tbody> </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°C for 1000 hours, they meet the specified value for load life characteristics listed above. 在 105°C 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 border="1"> <tbody> <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> </tbody> </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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Marking 標示	Black print on the case top. 鉛殼頂部黑字印刷。																																							

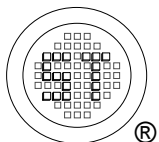
□ DRAWING (Unit: mm) 外形圖



- *1. Voltage mark for 6.3V is [6V] 6.3V 的產品標識為 [6V]
 *2. Applicable to ∅6.3x7.7 適用於 ∅6.3x7.7
 *3. Applicable to ∅8x10.5~∅10 適用於 ∅8x10.5~∅10
 *4. Applicable to ∅12.5~∅16 適用於 ∅12.5~∅16

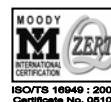
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SEMTECH ELECTRONICS LTD.

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



EL Series

□ DIMENSIONS (Unit: mm) 尺寸表

∅D 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 13.5	12.5 x 13.5	12.5 x 16	16 x 16.5
A	1.8	2.1	2.4	2.4	3.3	2.9	3.2	3.2	4.7	4.7	5.5
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	13.0	13.0	17.0
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	13.0	13.0	17.0
E ± 0.2	1.0	1.3	2.2	2.2	2.2	3.1	4.4	4.4	4.4	4.4	6.7
L	5.4	5.4	5.4	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	8 x 10.5	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 13.5 (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 13.5)	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 13.5	380	12.5 x 13.5	500		
1000	102	10 x 10.5	315	10 x 13.5 (10 x 10.5)	360 (315)	12.5 x 13.5 (10 x 13.5) (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 13.5 (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 ∅D x L (mm), ripple current (mA rms) at 105°C 120Hz • 尺寸 ∅D x L (mm), 紋波電流 (mA rms) 於 105°C 120Hz

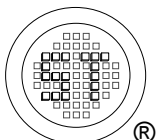
□ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT 紋波電流頻率補償系數

Frequency 頻率		50Hz	120Hz	300Hz	1KHz	10KHz~
Coefficient 系數	∅4 ~ ∅10	0.1 ~ 100μF	0.70	1.00	1.17	1.50
		150 ~ 1500μF	0.85	1.00	1.08	1.30
	∅12.5 ~ ∅16	~ 470μF	0.75	1.00	1.35	2.00
		680 ~ 3300μF	0.85	1.00	1.23	1.50

- Taping specifications are given in page 11. 編帶標準請參閱第 11 頁。
- Please refer to page 12 for the minimum package quantity. 最小包裝數量請參閱第 12 頁。

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ISO/TS 16949:2002
Certificate No. 05103

ISO 14001:2004
Certificate No. 7116

ISO 9001:2000
Certificate No. 006008

BS-OHSAS 18001:2007
Certificate No. 7116

IECQ QC 080000
Certificate No. R618P481