

5000 HOURS LONG LIFE ASSURANCE

5000 小時長壽命品

Wide temperature range -55~+105°C

適用於 -55~+105°C 的寬溫範圍

Load life of 3000~5000 hours

負荷壽命3000~5000 小時

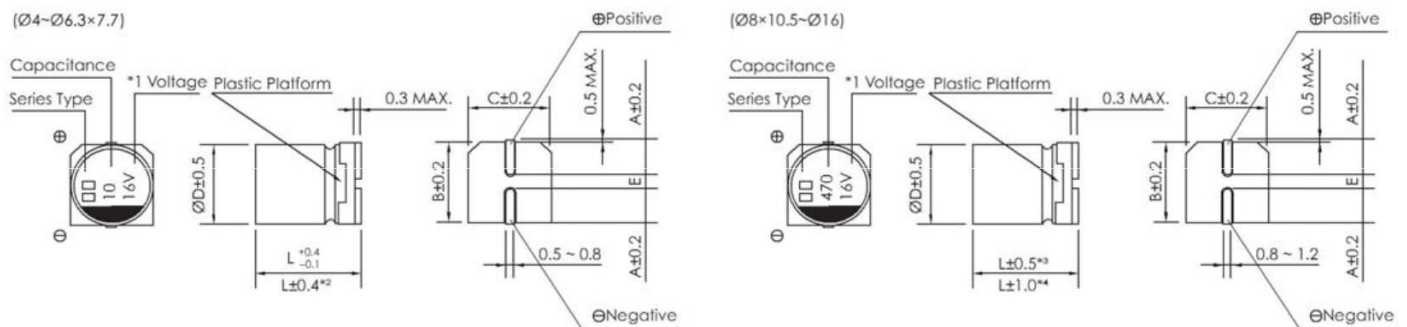
Comply with the RoHS directive

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 ~ 100V																																				
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 (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	Measurement frequency 測試頻率: 120Hz, Temperature 溫度: 20°C <table border="1"> <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>50~100</td> </tr> <tr> <td>tan δ (max.) 最大損耗角正切</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></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>	Rated Voltage (V) 額定工作電壓	6.3	10	16	25	35	50~100	tan δ (max.) 最大損耗角正切	Ø4~Ø10	0.28	0.24	0.20	0.16	0.13	0.12		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	Measurement frequency 測試頻率: 120Hz <table border="1"> <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>50~100</td> </tr> <tr> <td rowspan="2">Impedance Ratio 阻抗比</td> <td rowspan="2">Ø4~Ø10</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>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 rowspan="2">Ø12.5~Ø16</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>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> </table>	Rated Voltage (V) 額定工作電壓	6.3	10	16	25	35	50~100	Impedance Ratio 阻抗比	Ø4~Ø10	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.)	Ø12.5~Ø16	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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Load Life 高溫負荷特性	After 5000 hrs. (3000 hrs. for Ø4~Ø6.3Ø5.8) 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5000 小時 (Ø4~Ø6.3Ø5.8 為 3000 小時) 後, 電容器的特性符合下表的要求。 <table border="1"> <tr> <td>Capacitance Change 靜電容量變化率</td> <td>Within ±30% of initial value 初始值的±30%以內</td> </tr> <tr> <td>Dissipation Factor 損耗角正切</td> <td>300% or less of initial specified value 不大於規範值的300%</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 ±30% of initial value 初始值的±30%以內	Dissipation Factor 損耗角正切	300% or less of initial specified value 不大於規範值的300%	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"> <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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Marking 標識	Black print on the case top. 鋁殼頂部黑字印刷。																																				

DRAWING (Unit: mm) 外形圖



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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 10.5	10 x 10.5	10 x 13.5	12.5 x 13.5	12.5 x 16	16 x 16.5
A	2.0	2.2	2.6	2.6	3.0	3.3	3.3	4.9	4.9	5.8
B	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0
C	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0
E± 0.2	1.0	1.4	1.9	1.9	3.1	4.7	4.7	4.7	4.7	6.4
L	5.8	5.8	5.8	7.7	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

WV Code 代碼	μF	6.3		10		16		25	
		0J		1A		1C		1E	
10	100					4 x 5.8	18	5 x 5.8	27
22	220	4 x 5.8	22	5 x 5.8	30	5 x 5.8	30	6.3 x 5.8	44
33	330	5 x 5.8	35	5 x 5.8	36	6.3 x 5.8	48	6.3 x 5.8	50
47	470	5 x 5.8	38	6.3 x 5.8	50	6.3 x 5.8	50	6.3 x 7.7	63
100	101	6.3 x 5.8	69	6.3 x 7.7	81	6.3 x 7.7	81	8 x 10.5	116
150	151	6.3 x 7.7	85	8 x 10.5	125	8 x 10.5	125	10 x 10.5	320
220	221	6.3 x 7.7	120	8 x 10.5	141	10 x 10.5	216	10 x 10.5	320
330	331	8 x 10.5	290	10 x 10.5	290	10 x 10.5	290	10 x 10.5	320
470	471	10 x 10.5	320	10 x 10.5	320	10 x 10.5	320	12.5 x 13.5 (10 x 13.5)	400 (350)
680	681	10 x 10.5	320	10 x 10.5	320	10 x 13.5	420	12.5 x 13.5	415
1000	102	10 x 10.5	410	10x13.5	390	12.5 x 13.5	550	12.5 x 13.5	460
1500	152	10 x 13.5	450	12.5 x 13.5	480	12.5 x 13.5	650	12.5 x 16	700
2200	222	12.5 x 13.5	680	12.5 x 16 (12.5 x 13.5)	750 (510)	16 x 16.5	800		
3300	332	12.5 x 16 (12.5 x 13.5)	850 (800)	16 x 16.5	800			Case size 尺寸	Ripple current 紋波電流

WV Code 代碼	μF	35		50		63		100	
		1V		1H		1J		2A	
0.1	0R1			4 x 5.8	1.0				
0.22	R22			4 x 5.8	2.6				
0.33	R33			4 x 5.8	3.2				
0.47	R47			4 x 5.8	5				
1	010			4 x 5.8	8				
2.2	2R2			4 x 5.8	12				
3.3	3R3			4 x 5.8	17			6.3 x 7.7	30
4.7	4R7	4 x 5.8	16	5 x 5.8	22			8 x 10.5	50
10	100	5 x 5.8	27	6.3 x 5.8	32	6.3 x 7.7	45	8 x 10.5	55
22	220	6.3 x 5.8	44	6.3 x 7.7	58	8 x 10.5	65	10 x 10.5	70
33	330	6.3 x 7.7	57	8 x 10.5	140	10 x 10.5	80	10 x 10.5	80
47	470	8 x 10.5	92	10 x 10.5	310	10 x 10.5	90	12.5 x 13.5 (10 x 13.5)	250 (150)
100	101	10 x 10.5	151	10 x 10.5	310	10 x 13.5	150	12.5 x 13.5	300
150	151	10 x 10.5	290	10 x 10.5	310			16 x 16.5 (12.5 x 16) (12.5 x 13.5)	600 (420) (380)
220	221	10 x 10.5	375	12.5 x 13.5 (10 x 13.5)	340 (320)	12.5 x 13.5	470		
330	331	12.5 x 13.5 (10 x 13.5)	380 (375)	12.5 x 16 (12.5 x 13.5)	600 (500)	16 x 16.5 (12.5 x 16)	650 (550)		
470	471	12.5 x 13.5	520	16 x 16.5	700				
680	681	12.5 x 13.5	550						
1000	102	16 x 16.5 (12.5 x 16)	750 (600)					Case size 尺寸	Ripple current 紋波電流

Case size ∅DXL(mm), ripple current (mA rms) at 105°C, 120Hz 尺寸∅DXL(mm), 紋波電流(mA rms)於 105°C, 120Hz

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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	0.70	1.00	1.17	1.36	1.50	
	Ø12.5 ~ Ø16	0 ~ 68 μ F	0.75	1.00	1.35	1.57	2.00
		100 ~ 470 μ F	0.80	1.00	1.23	1.34	1.50
		680 ~ 3300 μ F	0.85	1.00	1.10	1.13	1.15

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