

CS SERIES

STANDARD SERIES 標準品

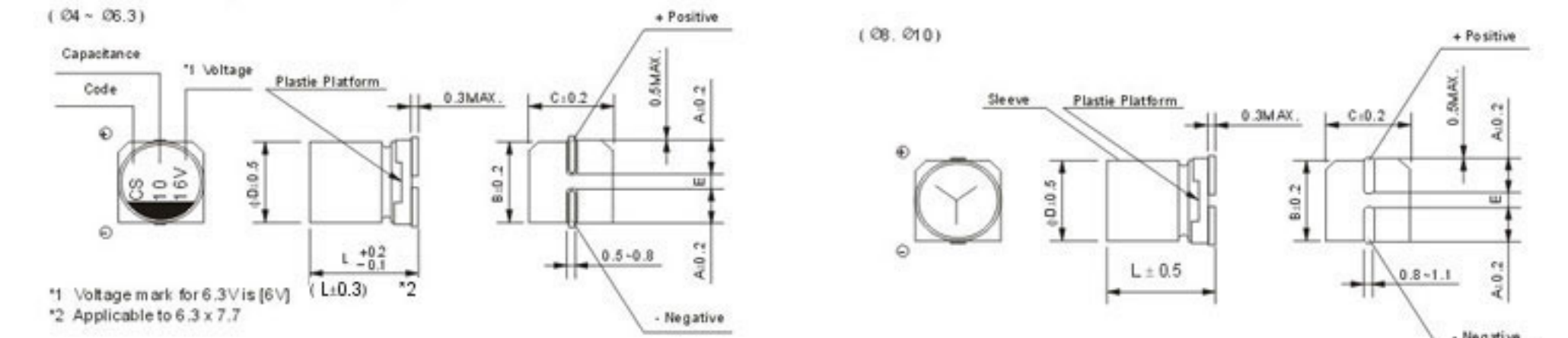
- Designed for surface mounting on high density circuit board
- Emboss carrier tape packing method is available for automatic insertion
- Lead-free soldering product is available subject to customer's request



SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性																																
Operating Temperature Range 使用溫度範圍	-40 ~ 85℃																																
Voltage Range 額定工作電壓範圍	4 ~ 100V																																
Capacitance Range 靜電容量範圍	0.1 ~ 1500 μF																																
Capacitance Tolerance 靜電容量允許範圍	± 20% at 120Hz, 20℃																																
Leakage Current 漏電流	I < 0.01 CV or 3 μA whichever is greater (after 2 min.) 施加額定工作電壓2分鐘: I < 0.01 CV 或 3 μA (取較大者)																																
Tan δ 損耗角正切	Measurement frequency 測試頻率: 120Hz, Temperature 溫度: 20℃ <table><tr><td>Rated voltage(V) 額定工作電壓</td><td>4</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr><tr><td>Tan δ (max) 損耗角正切(最大值)</td><td>0.50</td><td>0.30</td><td>0.24</td><td>0.20</td><td>0.16</td><td>0.14</td><td>0.14</td><td>0.12</td><td>0.12</td></tr></table>	Rated voltage(V) 額定工作電壓	4	6.3	10	16	25	35	50	63	100	Tan δ (max) 損耗角正切(最大值)	0.50	0.30	0.24	0.20	0.16	0.14	0.14	0.12	0.12												
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Low Temperature Characteristics 負溫特性	Measurement frequency 測試頻率: 120Hz <table><tr><td>Rated voltage(V) 額定工作電壓</td><td>4</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr><tr><td>Impedance ratio 阻抗比 ZT/Z20(max.)</td><td colspan="2">Z-25℃/Z+20℃</td><td>7</td><td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td></td><td colspan="2">Z-40℃/Z+20℃</td><td>15</td><td>10</td><td>8</td><td>6</td><td>4</td><td>3</td><td>3</td><td>3</td></tr></table>	Rated voltage(V) 額定工作電壓	4	6.3	10	16	25	35	50	63	100	Impedance ratio 阻抗比 ZT/Z20(max.)	Z-25℃/Z+20℃		7	4	3	2	2	2	2	2		Z-40℃/Z+20℃		15	10	8	6	4	3	3	3
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Load Life 高溫負荷特性	After 2000 hrs application of rated voltage at 85℃, capacitors meet the characteristics requirements listed at right. 在 85℃ 環境中施加額定工作電壓和最大允許紋波電流2000小時後, 電容器的特性符合右表的要求。 <table><tr><td>Capacitance Change 靜電容量變化率</td><td>Within ± 20% of initial value 初期值的 ± 20% 以內 (Within ± 25% of initial value for 4V) (4V 產品為 ± 25% 以內)</td></tr><tr><td>Tan δ 損耗角正切</td><td>200% or less of initial specified value 不大於初期定值的200%</td></tr><tr><td>Leakage Current 漏電流</td><td>Initial specified value or less 不大於初期定值</td></tr></table>	Capacitance Change 靜電容量變化率	Within ± 20% of initial value 初期值的 ± 20% 以內 (Within ± 25% of initial value for 4V) (4V 產品為 ± 25% 以內)	Tan δ 損耗角正切	200% or less of initial specified value 不大於初期定值的200%	Leakage Current 漏電流	Initial specified value or less 不大於初期定值																										
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Shelf Life 高溫貯存特性	After leaving capacitors under no load at 85℃ for 1000 hours, they meet the specified value for load life characteristics listed above. 在85℃ 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 錫焊耐熱性	After reflow soldering according to Reflow Soldering Condition (see page 5) and restored at room temperature, they meet the characteristics requirements listed at right. 經過回流焊 (回流焊條件見第 5 頁) 並冷卻至室溫後, 電容器的特性符合右表的要求。 <table><tr><td>Capacitance Change 靜電容量變化率</td><td>Within ± 10% of initial value 初期值的 ± 10% 以內</td></tr><tr><td>Tan δ 損耗角正切</td><td>Initial specified value or less 不大於初期定值</td></tr><tr><td>Leakage Current 漏電流</td><td>Initial specified value or less 不大於初期定值</td></tr></table>	Capacitance Change 靜電容量變化率	Within ± 10% of initial value 初期值的 ± 10% 以內	Tan δ 損耗角正切	Initial specified value or less 不大於初期定值	Leakage Current 漏電流	Initial specified value or less 不大於初期定值																										
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Applicable Standards 適用標準	JIS C-5141 and JIS C-5102																																

DRAWING (Unit : mm) 外形圖



DIMENSION 外形尺寸

ΦD x L	4x5.4	5x5.4	6.3 x 5.4	6.3 x 7.7	8 x 10.5	10 x 10.5
A	1.8	2.1	2.4	2.4	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	10.3
E	1.0	1.3	2.2	2.2	3.1	4.5
L	5.4	5.4	5.4	7.7	10.5	10.5

NOTE: All designs and specifications are for reference only and are subject to change without prior notice. If any doubt about safety for your application, please contact us immediately for technical assistance before purchase.
注: 以上所提供的設計及特性參數僅供參考作用, 任何修改不作預先通知。如果在使用上有疑問, 請在採購前與我們聯絡, 以便提供技術上的協助。

CS SERIES

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

容量 Cap. (µF)	WV電壓	4		6.3		10		16		25	
		0G		0J		1A		1C		1E	
4.7	4R7							4x5.4	17	4x5.4	19
10	100							4x5.4	25	5x5.4	28
15	150							4x5.4	28	5x5.4	34
22	150			4x5.4	31	5x5.4	35	5x5.4	39	6.3x5.4	52
33	330	4x5.4	28	5x5.4	39	5x5.4	43	6.3x5.4	57	6.3x5.4	63
47	470	4x5.4	33	5x5.4	47	5x5.4	50	6.3x5.4	68	6.3x5.4	68
56	560	4x5.4	39	5x5.4	54	6.3x5.4	68	6.3x5.4	74	6.3x5.4	82
68	680	5x5.4	45	6.3x5.4	62	6.3x5.4	72	6.3x5.4	80	6.3x5.4	94
100	101	5x5.4	56	6.3x5.4	71	6.3x5.4	76	6.3x5.4	86	6.3x7.7	145
150	151	6.3x5.4	74	6.3x5.4	78	6.3x5.4	88	6.3x7.7	150	8x10.5	190
220	221	6.3x5.4	96	6.3x5.4	95	6.3x7.7	170	6.3x7.7	160	8x10.5	230
330	331	6.3x7.7	150	6.3x7.7	190	8x10.5	250	8x10.5	280	10x10.5	305
470	471	6.3x7.7	200	8x10.5	270	8x10.5	300	10x10.5	330	10x10.5	400
680	681	8x10.5	285	8x10.5	320	10x10.5	380	10x10.5	390		
1000	102	8x10.5	340	10x10.5	400	10x10.5	450	10x10.5	490		
1500	152	10x10.5	390								

容量 Cap. (µF)	WV電壓	35		50		63		100			
		1V		1H		1J		2A			
0.1	0R1			4x5.4	1.0	4x5.4	1.0				
0.22	R22			4x5.4	2.3	4x5.4	2.3				
0.33	R33			4x5.4	3.5	4x5.4	3.5				
0.47	R47			4x5.4	5.0	4x5.4	5.0				
1	010			4x5.4	10	4x5.4	10	4x5.4	10		
1.5	1R5			4x5.4	12	4x5.4	12	6.3x5.4	15		
2.2	2R2			4x5.4	10	4x5.4	15	6.3x5.4	20		
3.3	3R3	4x5.4	18	4x5.4	18	4x5.4	20	6.3x5.4	28		
4.7	4R7	4x5.4	20	5x5.4	23	5x5.4	23	6.3x5.4	35		
10	100	5x5.4	30	6.3x5.4	34	6.3x5.4	34	6.3x7.7	50		
22	220	6.3x5.4	54	6.3x5.4	45	6.3x7.7	70	8x10.5	120		
33	330	6.3x5.4	60	6.3x7.7	85	6.3x7.7	85	10x10.5	190		
47	470	6.3x5.4	70	6.3x7.7	90	8x10.5	170				
56	560	6.3x7.7	80	6.3x7.7	110	8x10.5	200				
68	680	6.3x7.7	110	8x10.5	170	10x10.5	230				
100	101	8x10.5	160	8x10.5	200	10x10.5	280				
150	151	8x10.5	215	10x10.5	240						
220	221	10x10.5	270					Case size	Ripple current		

Case size Φ D x L (mm), ripple current (mA rms) at 85°C, 120Hz

FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT 紋波電流頻率補償係數

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz~
Coefficient	0.70	1.00	1.17	1.36	1.50

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