CS Series

STANDARD

標準品

- Operating with general temperature range -40 ~ +85°C
  適用於 -40 ~ +85°C 的常規溫度範圍
- Load life of 2000 hours
  負荷壽命 2000 小時
- Comply with the RoHS directive
  符合 RoHS 指令

CS → Wide Temp. 寬溫化 → CK

☐ SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性
Operation Temperature Range 使用溫度範圍	-40 ~ +85°C
Voltage Range 額定工作電壓範圍	4 ~ 100V
Capacitance Range 靜電容量範圍	0.1 ~ 6800μF
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 温度: 20°C

Rated Voltage (V) 額定工作電壓		4	6.3	10	16	25	35	50	63	100
tan δ (max.) 最大損耗角正切	∅4~∅10	0.35	0.26	0.20	0.16	0.14	0.12	0.12	0.10	0.10
	∅12.5~∅16	0.42	0.38	0.34	0.30	0.26	0.22	0.18	0.14	0.10

Stability at Low Temperature
低溫特性

Measurement frequency 測試頻率: 120Hz

Rated Voltage (V) 額定工作電壓			4	6.3	10	16	25	35	50~100
Impedance Ratio 阻抗比 ZT/Z20 (max.)	∅4~∅10	Z(-25°C) / Z(20°C)	7	4	3	2	2	2	2
		Z(-40°C) / Z(20°C)	15	8	6	4	4	3	3
	∅12.5~∅16	Z(-25°C) / Z(20°C)	7	5	4	3	2	2	2
		Z(-40°C) / Z(20°C)	17	12	10	8	5	4	3

Load Life
高溫負荷特性

After 2000 hours application of the rated voltage at 85°C, they meet the characteristics listed below.
在 85°C 環境中施加額定工作電壓 2000 小時後，電容器的特性符合下表的要求。

Capacitance Change 靜電容量變化率	Within ±20% of initial value (Within ±30% of initial value for 4V) 初始值的±20%以內（4V 為±30%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

Shelf Life
高溫貯存特性

After leaving capacitors under no load at 85°C for 1000 hours, they meet the specified value for load life characteristics listed above. 在 85°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。

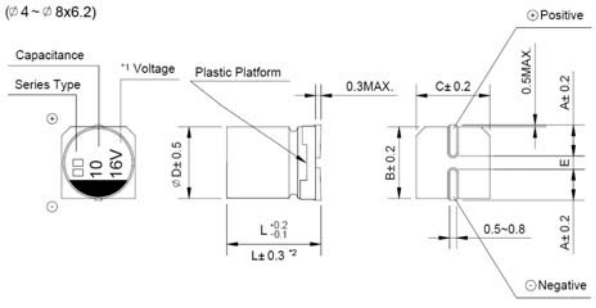
Resistance to Soldering Heat
耐焊接熱特性

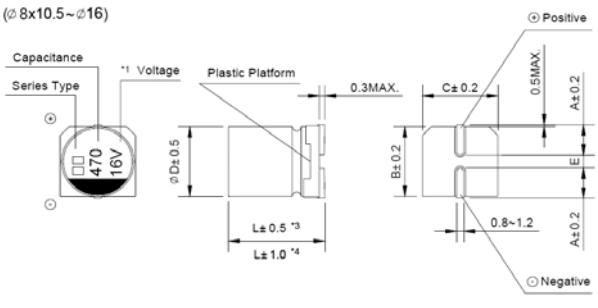
After reflow soldering and restored at room temperature, they meet the characteristics listed below.
經過回流焊並冷卻至室溫後，電容器的特性符合下表的要求。

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

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

ISO/TS 16949 : 2002 Certificate No. 05103
ISO 14001:2004 Certificate No. 7116
ISO 9001:2000 Certificate No. 0506098
BS-OHSAS 18001: 2007 Certificate No. 7116
IECQ QC 080000

CS Series

☐ DIMENSIONS (Unit: mm) 尺寸表

ØD x L	4 x 5.4	5 x 5.4	6.3 x 5.4	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

WV	4		6.3		10		16		25	
μF / Code 代碼	0G		0J		1A		1C		1E	
4.7	4R7								4 × 5.4	19
10	100						4 × 5.4	25	5 × 5.4 (4 × 5.4)	28 (20)
15	150						4 × 5.4	28	5 × 5.4	34
22	220			4 × 5.4	31	5 × 5.4 (4 × 5.4)	35 (28)	5 × 5.4 (4 × 5.4)	39 (28)	6.3 × 5.4 (5 × 5.4)	52 (35)
33	330	4 × 5.4	26	5 × 5.4 (4 × 5.4)	39 (31)	5 × 5.4 (4 × 5.4)	43 (32)	6.3 × 5.4 (5 × 5.4)	57 (40)	6.3 × 5.4 (5 × 5.4)	63 (42)
47	470	4 × 5.4	34	5 × 5.4 (4 × 5.4)	47 (36)	6.3 × 5.4 (5 × 5.4)	59 (43)	6.3 × 5.4 (5 × 5.4)	68 (44)	6.3 × 5.4	68
56	560	4 × 5.4	39	5 × 5.4	46	6.3 × 5.4	57	6.3 × 5.4	74	6.3 × 5.4	82
68	680	5 × 5.4	45	6.3 × 5.4 (5 × 5.4)	62 (52)	6.3 × 5.4	72	6.3 × 5.4	80	6.3 × 5.4	94
100	101	5 × 5.4	61	6.3 × 5.4 (5 × 5.4)	71 (55)	6.3 × 5.4	76	6.3 × 5.4 (8 × 6.2)	86 (200)	6.3 × 7.7 (8 × 6.2)	130 (91)
150	151	6.3 × 5.4	74	6.3 × 5.4	78	6.3 × 5.4	88	6.3 × 7.7	135	8 × 10.5 (6.3 × 7.7)	200 (130)
220	221	6.3 × 5.4	82	6.3 × 5.4	95	6.3 × 7.7 (8 × 6.2)	150 (250)	8 × 10.5 (6.3 × 7.7) (8 × 6.2)	215 (150) (135)	8 × 10.5	250
330	331	6.3 × 7.7	150	6.3 × 7.7 (8 × 6.2)	150 (300)	8 × 10.5	280	8 × 10.5	280	10 × 10.5 (8 × 10.5)	340 (310)
470	471	6.3 × 7.7	150	8 × 10.5 (6.3 × 7.7)	300 (150)	10 × 10.5 (8 × 10.5)	320 (300)	10 × 10.5 (8 × 10.5)	420 (330)	10 × 10.5	400
680	681	8 × 10.5	300	8 × 10.5	300	10 × 10.5	380	10 × 10.5	450	10 × 13.5	550
1000	102	8 × 10.5	330	10 × 10.5 (8 × 10.5)	430 (330)	10 × 10.5	450	12.5 × 13.5 (10 × 13.5) (10 × 10.5)	710 (550) (490)	12.5 × 13.5	820
1500	152	10 × 10.5	450	10 × 13.5 (10 × 10.5)	650 (450)	10 × 13.5	650	12.5 × 13.5	750	12.5 × 16	1000
2200	222	10 × 13.5 (10 × 10.5)	620 (480)	12.5 × 13.5 (10 × 13.5)	890 (720)	12.5 × 13.5	960	16 × 16.5 (12.5 × 16)	1150 (1000)	16 × 16.5	1250
3300	332	10 × 13.5	700	12.5 × 16 (12.5 × 13.5)	1000 (900)	16 × 16.5 (12.5 × 16)	1300 (1050)	16 × 16.5	1350		
4700	472	12.5 × 13.5	850	16 × 16.5	1400	16 × 16.5	1450			Case size 尺寸	Ripple current 紋波電流
6800	682	16 × 16.5 (12.5 × 16)	1350 (900)								

WV	35		50		63		100	
μF / Code 代碼	1V		1H		1J		2A	
0.1	0R1		4 × 5.4	1.0	4 × 5.4	1.0		
0.22	R22		4 × 5.4	2.3	4 × 5.4	2.3		
0.33	R33		4 × 5.4	3.5	4 × 5.4	3.5		
0.47	R47		4 × 5.4	5.0	4 × 5.4	5.0		
1	010		4 × 5.4	10	4 × 5.4	10	4 × 5.4	10
1.5	1R5		4 × 5.4	12	4 × 5.4	12	6.3 × 5.4	15
2.2	2R2		4 × 5.4	15	4 × 5.4	15	6.3 × 5.4	20
3.3	3R3	4 × 5.4	18	4 × 5.4	18	5 × 5.4	20	6.3 × 7.7 (6.3 × 5.4) (8 × 6.2)	45 (28) (50)
4.7	4R7	4 × 5.4	20	5 × 5.4 (4 × 5.4)	23 (19)	6.3 × 5.4 (5 × 5.4)	30 (23)	6.3 × 7.7 (6.3 × 5.4) (8 × 6.2)	50 (30) (50)
10	100	5 × 5.4 (4 × 5.4)	30 (20)	6.3 × 5.4 (5 × 5.4)	34 (27)	6.3 × 7.7 (6.3 × 5.4)	55 (34)	8 × 10.5 (6.3 × 7.7) (8 × 6.2)	110 (50) (50)
22	220	6.3 × 5.4	54	6.3 × 5.4 (8 × 6.2)	60 (120)	8 × 10.5 (6.3 × 7.7) (8 × 6.2)	140 (70) (35)	10 × 10.5 (8 × 10.5)	180 (120)
33	330	6.3 × 5.4 (8 × 6.2)	60 (130)	6.3 × 7.7 (8 × 6.2)	85 (65)	8 × 10.5 (6.3 × 7.7)	160 (85)	10 × 10.5	190
47	470	6.3 × 5.4 (8 × 6.2)	70 (165)	10 × 10.5 (8 × 10.5) (6.3 × 7.7)	130 (110) (90)	10 × 10.5 (8 × 10.5)	230 (170)	Case size 尺寸	Ripple current 紋波電流

•Case size ∅D×L(mm), ripple current (mA rms) at 85°C 120Hz •尺寸∅D×L(mm)，紋波電流(mA rms)於 85°C 120Hz

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WV / Code / μF / 代碼		35		50		63		100	
		1V		1H		1J		2A	
56	560	6.3 × 7.7	80	6.3 × 7.7	110	10 × 10.5	250		
68	680	6.3 × 7.7	110	8 × 10.5	170	10 × 10.5	260		
100	101	8 × 10.5 (6.3 × 7.7)	175 (120)	10 × 10.5 (8 × 10.5)	240 (200)	12.5 × 13.5 (10 × 13.5) (10 × 10.5)	380 (290) (280)	12.5 × 13.5	440
150	151	8 × 10.5	220	10 × 10.5	240	10 × 13.5	310		
220	221	10 × 10.5 (8 × 10.5)	310 (270)	10 × 13.5 (10 × 10.5)	400 (320)	12.5 × 13.5 (10 × 13.5)	580 (330)	16 × 16.5	700
330	331	10 × 10.5	350	12.5 × 13.5 (10 × 13.5)	600 (420)	16 × 16.5 (12.5 × 16)	820 (720)		
470	471	12.5 × 13.5 (10 × 13.5) (10 × 10.5)	600 (530) (400)	16 × 16.5 (12.5 × 16)	850 (740)	16 × 16.5	950		
680	681	12.5 × 13.5 (10 × 13.5)	750 (560)	16 × 16.5	950			Case size 尺寸	Ripple current 紋波電流
1000	102	16 × 16.5 (12.5 × 16)	1100 (800)						

•Case size ∅D×L(mm), ripple current (mA rms) at 85°C 120Hz •尺寸∅D×L(mm)，紋波電流(mA rms)於 85°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 ~ 68μF	0.70	1.00	1.17	1.36	1.50
		100 ~ 3300μF	0.85	1.00	1.08	1.20	1.30
	Ø12.5 ~ Ø16	~ 68μF	0.75	1.00	1.35	1.57	2.00
		100 ~ 680μF	0.80	1.00	1.23	1.34	1.50
		1000 ~ 6800μF	0.85	1.00	1.10	1.13	1.15

- 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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