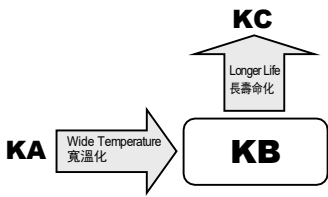


WIDE TEMPERATURE

寬溫品

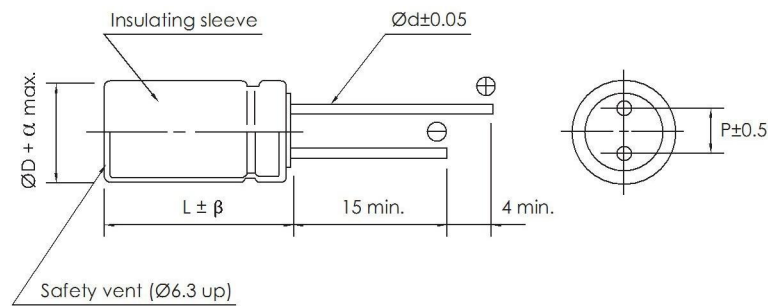
- Wide temperature range of -40~+105°C
適用於 -40~+105°C 的寬溫範圍
- Standard series for general purposes
標準品通用型
- Load life of 2000 hours at 105°C
在 105°C 環境中負荷壽命 2000 小時
- Comply with the RoHS directive
符合RoHS 指令



£ SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性	
Operation Temperature Range 使用溫度範圍	-40 ~ +105°C	-25 ~ +105°C
Voltage Range 額定工作電壓範圍	6.3 ~ 100V	160 ~ 450V
Capacitance Range 靜電容量範圍	0.47 ~ 15000µF	0.47 ~ 470µF
Capacitance Tolerance 靜電容量允許偏差	±20% at 120Hz, 20°C	
Leakage Current 漏電流	Leakage current = 0.01CV or 3µA, whichever is greater (after 2 minutes application of rated voltage) 漏電流 = 0.01CV 或 3µA, 取較大值 (施加額定工作電壓 2 分鐘後)	Leakage current = 0.02CV + 15µA (after 5 minutes application of rated voltage) 漏電流 = 0.02CV + 15µA (施加額定工作電壓 5 分鐘後)
Dissipation Factor (tan δ) 損耗角正切	When nominal capacitance is over 1000µF, tan δ shall be added 0.02 to the listed value with increase of every 1000µF. 當標稱靜電容量大於 1000µF, 其標稱靜電容量每增加 1000µF, 損耗角正切增加 0.02。 Measurement frequency 測試頻率: 120Hz, Temperature 溫度: 20°C	
Stability at Low Temperature 低溫特性	Rated Voltage (V) 額定工作電壓	6.3 10 16 25 35 50 63 100 160~250 350~450
	tan δ (max.) 最大損耗角正切	0.24 0.20 0.16 0.14 0.12 0.10 0.09 0.08 0.15 0.20
	Measurement frequency 測試頻率: 120Hz	
Load Life 高溫負荷特性	Rated Voltage (V) 額定工作電壓	6.3 10 16 25~100 160~350 400,450
	Impedance Ratio 阻抗比	Z(-25°C) / Z(20°C) 4 3 2 2 3 8
	Z(-40°C) / Z(20°C)	8 6 4 3 4 —
Shelf Life 高溫貯存特性	After 2000 hours (Ø5~Ø8 products are for 1000 hours) 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 2000 小時 (Ø5~Ø8 產品為 1000 小時) 後, 電容器的特性符合下表的要求。	
Marking 標識	Capacitance Change 靜電容量變化率	Within ±20% of initial measured value 初始值的±20%以內
	Dissipation Factor 損耗角正切	≤ 200% of initial specified value 不大於規範值的 200%
	Leakage Current 漏電流	≤ initial specified value 不大於規範值
Marking 標識	Printed with white colour on black sleeve (PET) or printed with white colour on green sleeve (PVC). 黑色膠管白字印刷 (PET) 或綠色膠管白字印刷 (PVC)。	

£ DRAWING (Unit: mm) 外形圖



ØD	5	6.3	8 (L≤11.5)	8 (L≥16)	10	13	16	18	22	25
P	2.0	2.5	3.5		5.0		7.5		10.0	12.5
Ød	0.5			0.6			0.8			
β	1.5					2.0				
α	0.5								1.0	

£ 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	0.47 ~ 47µF	0.75	1.00	1.35	1.55	2.00
	68 ~ 680µF	0.80	1.00	1.25	1.34	1.50
	1000 ~ 15000µF	0.85	1.00	1.10	1.13	1.15

Note: All design and specifications are for reference only and is 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，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繫，以便提供技術上的協助。

£ 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		35		50		63	
		0J		1A		1C		1E		1V		1H		1J	
0.47	R47											5 x 11	8	5 x 11	8
0.68	R68											5 x 11	9	5 x 11	9
1	010											5 x 11	11	5 x 11	13
2.2	2R2											5 x 11	20	5 x 11	15
3.3	3R3											5 x 11	30	5 x 11	19
4.7	4R7											5 x 11	33	5 x 11	22
6.8	6R8											5 x 11	42	5 x 11	34
10	100					5 x 11	50	5 x 11	38	5 x 11	41	5 x 11	50	5 x 11	50
22	220			5 x 11	50	5 x 11	54	5 x 11	57	5 x 11	61	5 x 11 (6.3x11.5)	78 (85)	6.3 x 11.5	86
33	330			5 x 11	60	5 x 11	64	5 x 11	69	5 x 11	75	6.3 x 11.5	95	6.3 x 11.5	100
47	470	5 x 11	62	5 x 11	71	5 x 11	80	5 x 11	106	5 x 11 (6.3x11.5)	106 (110)	6.3 x 11.5	125	6.3 x 11.5	130
68	680	5 x 11	80	5 x 11	83	5 x 11	85	5 x 11	114	6.3 x 11.5	121	8 x 11.5	144	8 x 11.5	128
100	101	5 x 11	95	5 x 11	100	5 x 11 (6.3x11.5)	120 (135)	5 x 11 (6.3x11.5)	120 (145)	6.3 x 11.5 (8x11.5)	150 (180)	8 x 11.5 (10x12)	188 (200)	8 x 11.5 (10x12)	200 (295)
220	221	5 x 11	150	5 x 11 (6.3x11.5)	155 (175)	6.3 x 11.5	190	6.3 x 11.5 (8x11.5)	190 (236)	8 x 11.5	270	10 x 12 (10x16)	345 (370)	10 x 12	390
330	331	6.3 x 11.5	170	6.3 x 11.5	200	8 x 11.5	270	8 x 11.5 (10x12)	310 (335)	10 x 12 (8x16)	395 (455)	10 x 16 (10x20)	420 (460)	10 x 20 (13x21)	510 (560)
470	471	6.3 x 11.5	230	6.3 x 11.5 (8x11.5) (10x12)	260 (290) (320)	8 x 11.5	310	8 x 11.5 (8x16) (10x12)	325 (350) (380)	10 x 16 (10x20)	520 (550)	10 x 20	560	13 x 21 (13x25)	650 (700)
680	681	8 x 11.5	314	8 x 11.5 (8x16)	345 (390)	8 x 16 (10x16)	480 (520)	10 x 16	520	10 x 16 (10x20)	550 (590)	13 x 25	720	13 x 25 (16x25)	780 (800)
1000	102	8 x 11.5	380	8 x 11.5 (8x16) (10x12)	400 (425) (585)	8 x 20 (10x16) (10x20)	580 (645) (700)	10 x 16 (10x20) (13x21)	705 (775) (845)	13 x 21 (13x25)	810 (930)	13 x 25 (16x25)	950 (1080)	16 x 25	930
2200	222	10 x 12 (10x16)	630 (690)	10 x 20 (13x21)	760 (815)	10 x 20 (13x21)	735 (760)	13 x 21 (13x25)	890 (1110)	13 x 25 (16x25)	1080 (1260)	16 x 35 (18x35)	1470 (1530)	16 x 31 (18x35)	1565 (2180)
3300	332	10 x 20 (13x21)	845 (920)	13 x 25	1130	13 x 21 (13x25)	980 (1170)	16 x 25	1440	16 x 31 (16x35)	1420 (1480)	18 x 35	1770	22 x 40	2510
4700	472	13 x 25	1240	13 x 25	1280	16 x 25	1320	16 x 31	1650	18 x 35	1900	22 x 40	2340	25 x 40	3000
6800	682	16 x 25	1480	16 x 31	1510	16 x 31	1930	18 x 35	2160	22 x 40	2216	25 x 40	2530		
10000	103	16 x 31	1920	16 x 35	2220	18 x 35	2350								
15000	153	18 x 31	2390												

WV Code 代碼	μF	100		160		200		250		350		400		450	
		2A		2C		2D		2E		2V		2G		2W	
0.47	R47	5 x 11	14	5 x 11	12	5 x 11	12	5 x 11	12	6.3 x 11.5	12	6.3 x 11.5	12	6.3 x 11.5	12
0.68	R68	5 x 11	15	5 x 11	13	5 x 11	13	5 x 11	13	6.3 x 11.5	13	6.3 x 11.5	13	8 x 11.5	13
1	010	5 x 11	19	5 x 11	16	5 x 11	16	6.3 x 11.5	16	6.3 x 11.5	16	6.3 x 11.5 (8x11.5)	21 (25)	8 x 11.5	27
2.2	2R2	5 x 11	30	6.3 x 11.5	23	6.3 x 11.5	30	6.3 x 11.5	35	8 x 11.5	38	6.3 x 11.5 (8x11.5)	32 (39)	8 x 11.5	39
3.3	3R3	5 x 11	32	6.3 x 11.5	34	6.3 x 11.5	39	8 x 11.5	42	8 x 11.5	43	6.3 x 11.5 (8x11.5)	40 (45)	8 x 11.5	45
4.7	4R7	5 x 11	38	6.3 x 11.5	40	8 x 11.5	46	8 x 11.5	45	10 x 12	55	8 x 11.5 (10x12)	50 (55)	8 x 11.5 (10x12)	50 (55)
6.8	6R8	5 x 11	52	8 x 11.5	48	8 x 11.5	52	8 x 11.5 (10x12)	52 (57)	10 x 16	62	8 x 16 (10x16)	65 (80)	10 x 16	90
10	100	5 x 11 (6.3x11.5)	66 (73)	8 x 11.5 (10x12)	65 (60)	8 x 11.5 (10x12)	65 (70)	10 x 12 (10x16)	92 (116)	10 x 16	95	10 x 16 (10x20)	95 (105)	13 x 21	125
22	220	6.3 x 11.5	104	10 x 16	96	10 x 16	140	10 x 17 (10x20)	140 (145)	13 x 21	220	13 x 21 (13x25) (16x20)	160 (170) (185)	13 x 25	185
33	330	8 x 11.5	150	10 x 20	155	10 x 20	170	13 x 21	190	13 x 25	215	13 x 25 (16x25)	185 (245)	16 x 20 (16x25)	207 (260)
47	470	10 x 12	190	13 x 21	220	13 x 21	220	13 x 25	250	16 x 25	285	16 x 25 (16x31)	295 (320)	16 x 25 (16x31)	305 (313)
68	680	10 x 16	239	13 x 21	275	13 x 25	270	16 x 25	365	16 x 31	370	16 x 31 (16x35)	350 (405)	16 x 35 (18x31)	435 (450)
100	101	10 x 20	320	13 x 25	355	16 x 25	385	16 x 31	485	18 x 35	485	18x31 (18x35)	420 (540)	18 x 35 (18x40)	520 (560)
220	221	13 x 25	450	16 x 31	660	16 x 35 (18x31)	695 (755)	18 x 35	760						
330	331	13 x 25	625	18 x 35	820	18 x 35 (18x40)	820 (965)								
470	471	16 x 25	780	18 x 40	975	22 x 40	1050								
680	681	16 x 35	1021												
1000	102	18 x 40	1344											Case size 尺寸	Ripple current 紋波電流

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

- Please refer to page 16 "Taping Specifications" & page 18 "Lead Forming & Cutting" about the taped or formed product spec. 編帶與引線成型標準請參閱第16頁“編帶標準”及“第18頁引線成型與剪腳”。

● Please refer to page 17 "Packaging Specifications" for the minimum package quantity. 最小包裝數量請參閱第17頁“包裝標準”。

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