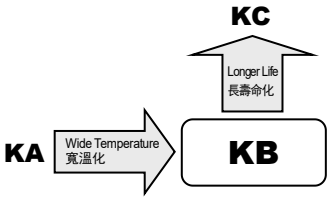
KB Series

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

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

Stability at Low Temperature
低溫特性

Measurement frequency 測試頻率: 120Hz

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	—

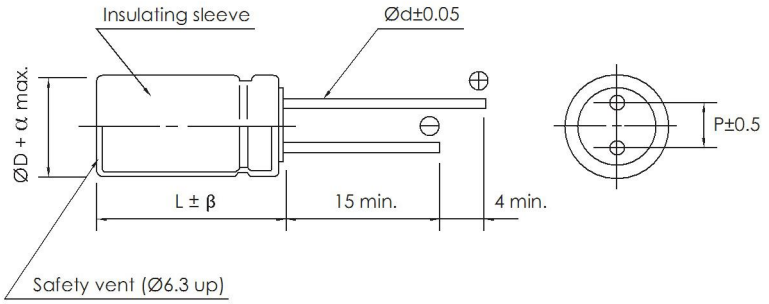
Load Life
高溫負荷特性

After 2000 hours (∅5~∅8 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（∅5~∅8 產品為 1000 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 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

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。
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

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Rev:23

KB Series

□ 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 (6.3x12)	78 (85)	6.3 x 12	86
33	330			5 x 11	60	5 x 11	64	5 x 11	69	5 x 11	75	6.3 x 12	95	6.3 x 12	100
47	470	5 x 11	62	5 x 11	71	5 x 11	80	5 x 11	106	5 x 11 (6.3x12)	106 (110)	6.3 x 12	125	6.3 x 12	130
68	680	5 x 11	80	5 x 11	83	5 x 11	85	5 x 11	114	6.3 x 12	121	8 x 11.5	144	8 x 11.5	128
100	101	5 x 11	95	5 x 11	100	5 x 11 (6.3x12)	120 (135)	5 x 11 (6.3x12)	120 (145)	6.3 x 12 (8x11.5)	150 (180)	8 x 11.5 (10x12)	188 (200)	8 x 11.5 (10x12)	200 (295)
120	121									8 x 11.5	260				
220	221	5 x 11	150	5 x 11 (6.3x12)	155 (175)	6.3 x 12	190	6.3x 12 (8x11.5) 8 x 12	190 (236) 245	8 x 11.5	270	8 x 12 10 x 12 (10x16)	285 345 (370)	10 x 12	390
330	331	6.3 x 12	170	6.3x7 6.3 x 11 6.3 x 12	165 200 200	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	510
470	471	6.3 x 12	230	6.3 x 12 (8x11.5) (10x12)	260 (290) (320)	8 x 11.5	310	8 x 11.5 (8x16) (10x12)	325 (350) (380)	10 x 16 (10x20) 8 x 16 8 x 20	520 (550) 462 495	10 x 20	560		
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)			(16x25)	(800)
820	821					8 x 16	510								
1000	102	8 x 11.5	380	8 x 11.5 (8x16) (10x12)	400 (425) (585)	8 x 20 (10x16) (10x20) 10 x12	580 (645) (700) 605	10 x 16 (10x20)	705 (775)	10 x 20	785	(16x25)	(1080)	16 x 25	930
1500	105														
2200	222	10 x 12 (10x16)	630 (690)	10 x 20	760	10 x 20	735			(16x25)	(1260)	16 x 30 16 x 35 (18x35)	1470 1470 (1530)	16 x 31 (18x35)	1565 (2180)
3300	332	10 x 20	845					16 x 25	1440	16 x 31 (16x35)	1420 (1480)	18 x 35	1770	22 x 40	2510
4700	472					16 x 25	1320	16 x 25 16 x 31	1550 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	16 x 35.5 18 x 35	1950 2160	22 x 40	2216	25 x 40	2530		
10000	103	16 x 31	1920	16 x 35	2220	16 x 35.5 18 x 35	2140 2350	18 x 35	2450						
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 12	12	6.3 x 12	12	6.3 x 12	12
0.68	R68	5 x 11	15	5 x 11	13	5 x 11	13	5 x 11	13	6.3 x 12	13	6.3 x 12	13	8 x 11.5	13
1	010	5 x 11	19	5 x 11	16	5 x 11	16	6.3 x 12	16	6.3 x 12	16	6.3 x 12 (8x11.5)	21 (25)	8 x 11.5	27
2.2	2R2	5 x 11	30	6.3 x 12	23	6.3 x 12	30	6.3 x 12	35	8 x 11.5	38	6.3 x 12 (8x11.5)	32 (39)	8 x 11.5	39
3.3	3R3	5 x 11	32	6.3 x 12	34	6.3 x 12	39	8 x 11.5	42	8 x 11.5	43	6.3 x 12 (8x11.5)	40 (45)	8 x 11.5	45
4.7	4R7	5 x 11	38	6.3 x 12	40	8 x 11.5	46	8 x 11.5 6.3 x 11	45 34	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 12 8 x 16 (10x16)	55 65 (80)	10 x 16	90
10	100	5 x 11 (6.3x12)	66 (73)	8 x 11.5 (10x12)	65 (60)	8 x 11.5 (10x12)	65 (70)	10 x 12 (10x16) 8x 11.5	92 (116) 52	10 x 16	95	8x11.5 8 x 12 10 x 16 (10x20)	55 60 95 (105)	10 x 16 10 x 20	95 105
15	15R											10x 16	115		
													Case size 尺寸	Ripple current 紋波電流	

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

WV / Code 代碼 / μF		100		160		200		250		350		400		450	
		2A		2C		2D		2E		2V		2G		2W	
22	220	6.3 x 12	104	10 x 16	96	10 x 16	140	10 x 17 (10x20)	140 (145)			(16x20)	(185)		
33	330	8 x 11.5	150	10 x 20	155	10 x 20	170					(16x25)	(245)	16 x 20 (16x25)	207 (260)
47	470	8 x 11.5 10 x 12	170 190							16 x 25	285	16 x 25 (16x31)	295 (320)	16 x 25 (16x31)	305 (313)
68	680	10 x 16	239					16 x 25	365	16 x 31	370	16 x 26 16 x 31 (16x35)	305 350 (405)	16 x 35 (18x31)	435 (450)
82	820											18x 25	765		
100	101	10 x 20 10 x 16	320 140			16 x 25	385	16 x 31 18 x 20	485 485	18 x 35	485	18x31 (18x35)	420 (540)	18 x 35 (18x40)	520 (560)
120	121													18 x 35	550
150	151														
220	221			16 x 31	660	16 x 35 (18x31)	695 (755)	18 x 35	760						
330	331	16 x 25	720	18 x 35	820	18 x 35 (18x40)	820 (965)								
470	471	16 x 25	780	18 x 40	975	22 x 40	1050							Case size 尺寸	Ripple current 紋波電流
680	681	16 x 35	1021												
1000	102	18 x 40	1344												

•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

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