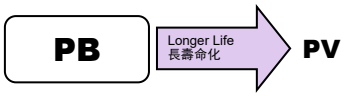
PB Series

RADIAL LEAD TYPE, STANDARD
引線式，標準品





- Operating with wide temperature range -55~+105°C
  適用於-55~+105°C 的寬溫範圍
- Low ESR, high ripple current
  低等效串聯電阻，高紋波電流
- Endurance 2000 hours
  耐久性 2000 小時
- RoHS & REACH compliant, Halogen-free
  符合 RoHS 與 REACH，無鹵

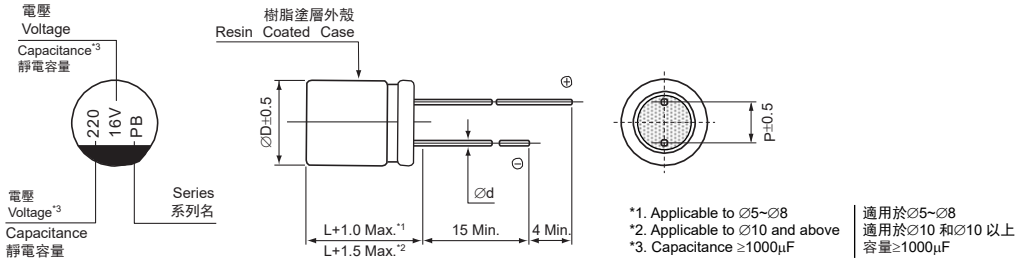


☐ SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性
Category Temperature Range 工作温度範圍	-55 ~ +105°C
Voltage Range 額定工作電壓範圍	2.5 ~ 50V
Capacitance Range 靜電容量範圍	15 ~ 3900μF
Capacitance Tolerance 靜電容量允許偏差	±20% at 120Hz, 20°C
Leakage Current 漏電流 (*1)	≤Specified value (after 2 minutes application of rated voltage at 20°C). ≤規範值(在 20°C 環境中施加額定工作電壓 2 分鐘後)。
Dissipation Factor (tan δ) 損耗角正切	≤Specified value at 120Hz, 20°C. ≤規範值（在 20°C 120Hz 環境下)。
ESR 等效串聯電阻(*2)	≤Specified value at 100KHz, 20°C. ≤規範值（在 20°C 100KHz 環境下)。
Stability at Low Temperature 低溫特性	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 ZT/Z20 (max.): Z(-25°C)/Z(+20°C) ≤1.15; Z(-55°C)/Z(+20°C) ≤1.25
Bias Humidity Test 耐濕負荷特性	When the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 60°C, 90~95% RH, they meet the characteristics listed below. 在 60°C 和相對濕度 90~95%環境下施加額定工作電壓 1000 小時並恢復至 20°C 後，電容器的特性符合下表要求。 Capacitance Change 靜電容量變化率: Within ±20% of initial value 為初始值的±20%以內 (*3) Dissipation Factor 損耗角正切: 150% or less of initial specified value 不大於規範值的 150% ESR 等效串聯電阻 (*2): 150% or less of initial specified value 不大於規範值的 150% Leakage Current 漏電流: Initial specified value or less 不大於規範值
Endurance 耐久性	When the capacitors are restored to 20°C after 2000 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 小時後，待電容器恢復至 20°C 時進行測量，電容器的特性符合下表要求。 Capacitance Change 靜電容量變化率: Within ±20% of initial value 為初始值的±20%以內 (*3) Dissipation Factor 損耗角正切: 150% or less of initial specified value 不大於規範值的 150% ESR 等效串聯電阻 (*2): 150% or less of initial specified value 不大於規範值的 150% Leakage Current 漏電流: Initial specified value or less 不大於規範值
Resistance to Soldering Heat 耐焊接熱特性 (Please refer page 25 for soldering conditions) (焊接條件請查閱第 25 頁)	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要求。 Capacitance Change 靜電容量變化率: Within ±10% of initial value 初始值的±10%以內 (*3) Dissipation Factor 損耗角正切: 130% or less of initial specified value 不大於規範值的 130% ESR 等效串聯電阻 (*2): 130% or less of initial specified value 不大於規範值的 130% Leakage Current 漏電流: Initial specified value or less 不大於規範值
Marking 標識	Red print on the case top. 鋁殼頂部紅色字體印刷。

(*1) If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minutes at 105°C.
如未能確定，在 105°C 環境下連續施加額定工作電壓 120 分鐘後測量漏電流。
(*2) Should be measured at both of the terminal ends closest to the capacitor body.
測試應為靠近兩個端子的末端。
(*3) The value before test of examination of resistance to soldering.
焊接測試前的值。

☐ DRAWING 外形圖 (Unit: mm)



*1. Applicable to ∅5~∅8
*2. Applicable to ∅10 and above
*3. Capacitance ≥1000μF

適用於∅5~∅8
適用於∅10 和∅10 以上
容量≥1000μF

Dimension table in next page.
尺寸表見下一頁。

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PB Series

☐ DIMENSIONS 尺寸表 (Unit: mm)

ØD × L	5 × 8	6.3 × 6/8	6.3 × 11/12	6.3 × 14/18	8 × 8/9	8 × 11/12/16	10 × 12	10 × 16
P	2.0	2.5	2.5	2.5	3.5	3.5	5.0	5.0
Ød	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
L	8.0	6.0/8.0	11.0/12.0	14.0/18.0	8.0/9.0	11.0/12.0/16.0	12.0	16.0

☐ DIMENSIONS & STANDARD RATINGS 規格尺寸及標準參數

WV (V) / Parameter 參數 / Cap. 容量 (μF)		2.5 (0E)					4 (0G)				
		Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100K~300KHz 等效串聯電阻	Ripple current (mA rms) 105°C, 100KHz 紋波電流	Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100K~300KHz 等效串聯電阻	Ripple current (mA rms) 105°C, 100KHz 紋波電流
330	331						6.3 x 6	0.12	264	22	2200
560	561	6.3 x 6	0.12	280	13	3600	6.3 x 8	0.12	448	7	5000
820	821	6.3 x 8 (8 x 8)	0.12 (0.12)	410 (410)	7 (7)	5900 (5900)	8 x 8	0.12	656	6	6100
1000	102	6.3 x 8	0.12	500	7	5600					
1200	122						8 x 12	0.12	960	7	5700
1500	152	8 x 8	0.12	750	7	6100					
2200	222	8 x 12	0.12	1100	8	6700	10 x 12	0.12	1760	7	6100
3900	392	10 x 12	0.12	1950	8	7000					

WV (V) / Parameter 參數 / Cap. 容量 (μF)		6.3 (0J)					10 (1A)				
		Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100K~300KHz 等效串聯電阻	Ripple current (mA rms) 105°C, 100KHz 紋波電流	Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100K~300KHz 等效串聯電阻	Ripple current (mA rms) 105°C, 100KHz 紋波電流
220	221	6.3 x 6 (5 x 8)	0.12 (0.12)	277 (277)	15 (15)	3200 (3200)	6.3 x 6 (5 x 8)	0.12 (0.12)	440 (440)	25 (25)	2500 (2500)
330	331	6.3 x 6	0.12	415	15	3200	6.3 x 8 (8 x 8)	0.12 (0.12)	660 (660)	15 (12)	4500 (4620)
470	471	6.3 x 8	0.12	592	8	5000	6.3 x 8	0.12	940	13	4800
560	561	6.3 x 8	0.12	705	8	5000	6.3 x 11	0.12	1120	12	5000
680	681	6.3 x 8	0.12	856	9	5900	8 x 8	0.12	1360	11	5100
1000	102	6.3 x 11 (8 x 8)	0.12 (0.12)	1260 (1260)	10 (8)	5100 (5700)	8 x 9 (8 x 12)	0.12 (0.12)	2000 (2000)	12 (10)	5000 (5800)
1200	122	6.3 x 14 (8 x 12)	0.12 (0.12)	1512 (1512)	8 (9)	5600 (5900)					
1500	152	8 x 12	0.12	1890	7	5700	10 x 12	0.12	3000	9	6200
2200	222	10 x 12	0.12	2772	8	6600	10 x 12	0.12	4400	9	6500

WV (V) / Parameter 參數 / Cap. 容量 (μF)		16 (1C)					25 (1E)				
		Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100K~300KHz 等效串聯電阻	Ripple current (mA rms) 105°C, 100KHz 紋波電流	Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100K~300KHz 等效串聯電阻	Ripple current (mA rms) 105°C, 100KHz 紋波電流
100	101	6.3 x 6	0.12	320	16	3250	6.3 x 6	0.12	500	49	1300
220	221	6.3 x 8	0.12	704	12	4500	6.3 x 8	0.12	1100	38	2200
270	271	6.3 x 8	0.12	864	12	4500	6.3 x 11	0.12	1100	34	2500
330	331	6.3 x 8 (8 x 8)	0.12 (0.12)	1056 (1056)	12 (10)	4500 (4800)	6.3 x 12 (8 x 12)	0.12 (0.12)	1650 (1650)	(32) 23	(2600) 3600
470	471	6.3 x 11 (8 x 8) (8 x 11)	0.12 (0.12) (0.12)	1504 (1504) (1504)	10 (12) (10)	5000 (4600) (5400)	8 x 12	0.12	2350	22	3800
560	561	8 x 12	0.12	1792	10	5200					
680	681	8 x 12	0.12	2176	10	5200	6.3 x 14 (8 x 12) (8 x 16) (10 x 12)	0.12 (0.12) (0.12) (0.12)	3400 (3400) (3400) (3400)	28 (25) (21) (21)	3200 (3800) (4200) (4200)
820	821	8 x 12 (8 x 6)	0.12 (0.12)	2624 (2624)	11 (8)	6500 (7000)	6.3 x 18	0.12	4100	22	3500
1000	102	6.3 x 14 (8 x 12) (10 x 12)	0.12 (0.12) (0.12)	3200 (3200) (3200)	11 (10) (10)	5400 (6500) (6100)	10 x 12 (8 x 16)	0.12 (0.12)	5000 (5000)	21 (10)	4200 (5800)
1500	152	10 x 12	0.12	4800	10	6100	10 x 16	0.12	7500	10	5800
2200	222	10 x 16	0.12	7040	10	6500					

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PB Series

☐ DIMENSIONS & STANDARD RATINGS 規格尺寸及標準參數

WV (V) / Parameter 參數 / Cap. 容量 (μF)		35 (1V)					50 (1H)				
		Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100K~300KHz 等效串聯電阻	Ripple current (mA rms) 105°C, 100KHz 紋波電流	Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100K~300KHz 等效串聯電阻	Ripple current (mA rms) 105°C, 100KHz 紋波電流
22	220						6.3 x 6	0.12	220	55	1200
33	330						6.3 x 8	0.12	330	45	1800
47	470	6.3 x 6	0.12	329	50	1300	6.3 x 11	0.12	470	40	2100
68	680						8 x 12	0.12	680	29	3300
100	101	6.3 x 8	0.12	700	40	2000	8 x 12	0.12	1000	27	3600
120	121	6.3 x 11	0.12	840	34	2500	10 x 12	0.12	1200	29	3400
150	151	8 x 8	0.12	1050	25	3000	10 x 12	0.12	1500	27	3600
220	221	8 x 12	0.12	1540	24	3600	10 x 12	0.12	2200	23	4000
270	271	6.3 x 14	0.12	1890	24	3100					
330	331	10 x 12	0.12	2310	22	4100	10 x 16	0.12	3300	18	4700
470	471	6.3 x 14 (8 x 16) (10 x 12)	0.12 (0.12) (0.12)	3290 (3290) (3290)	20 (20) (14)	3200 (4100) (4800)					
680	681	10 x 16	0.12	4760	12	5500					

☐ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT 紋波電流頻率補償系數

Frequency 頻率	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz
Coefficient 系數	0.50	0.30	0.70	1.00

- Please refer to page 21 and page 24 about the taped or cutting product spec. 編帶與剪腳標準請查閱第 21 頁和 24 頁。
- Please refer to page 23 for the minimum package quantity. 最小包裝數量請查閱第 23 頁。
- Please refer to page 16 for the Part Number System. 產品編碼規則請查閱第 16 頁。

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