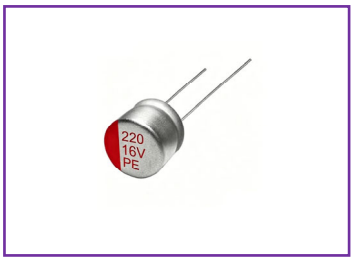
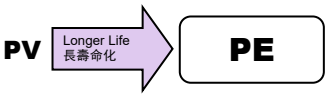
PE Series

RADIAL LEAD TYPE, ULTRA LONG LIFE
引線式，超長壽命品



- Operating with wide temperature range -55~+105°C
  適用於-55~+105°C 的寬溫範圍
- Ultra-low ESR, High Ripple Current
  超低等效串聯電阻，高紋波電流
- Endurance 20000 hours
  耐久性 20000 小時
- RoHS & REACH compliant, Halogen-free
  符合 RoHS 與 REACH，無鹵



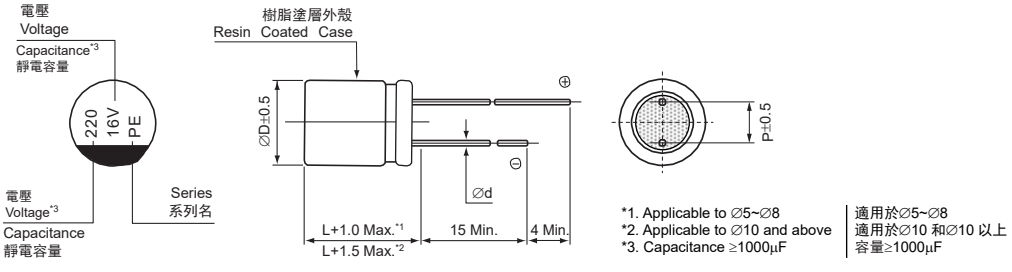


☐ SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性
Category Temperature Range 工作溫度範圍	-55 ~ +105°C
Voltage Range 額定工作電壓範圍	2.5 ~ 50V
Capacitance Range 靜電容量範圍	22 ~ 2700μF
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 20000 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 20000 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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PE Series

☐ DIMENSIONS 尺寸表 (Unit: mm)

ØD × L	6.3 × 6	6.3 × 8	6.3 × 11	8 × 8	8 × 12	8 × 16	8 × 20	10 × 12	10 × 16	10 × 20
P	2.5	2.5	2.5	3.5	3.5	3.5	3.5	5.0	5.0	5.0
Ød	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
L	6.0	8.0	11.0	8.0	12.0	16.0	2.0	12.0	16.0	20.0

☐ 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
470	471						6.3 x 8	0.12	376	15	3800
680	681	6.3 x 8	0.12	340	10	3800					
820	821						8 x 8	0.12	656	13	4000
1000	102	8 x 8	0.10	500	10	5200	8 x 12	0.12	800	11	4300
1200	122	8 x 12	0.12	600	9	5400					
1500	152	10 x 12	0.12	750	10	5500	10 x 12	0.12	1200	10	5000
2200	222						10 x 12	0.12	1760	10	5300
2700	272	10 x 12	0.12	1350	9	5600					

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
330	331						6.3 x 8	0.12	660	15	3400
390	391						8 x 8	0.12	780	15	3700
470	471	6.3 x 8	0.12	592	13	4000	8 x 12	0.12	940	13	3800
560	561	8 x 8	0.12	706	11	4600					
680	681	8 x 12	0.12	857	12	4500	8 x 12	0.12	1360	14	4200
820	821	8 x 12	0.12	1033	11	4800	10 x 12	0.12	1640	15	4300
1000	102	10 x 12	0.12	1260	12	5000	10 x 12	0.12	2000	13	4800
1500	152	10 x 12	0.12	1890	10	5400					

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
68	680						6.3 x 6	0.12	340	35	2200
100	101						6.3 x 8	0.12	500	28	2780
150	151						6.3 x 8	0.12	750	28	2780
180	181						6.3 x 11 (8 x 8) (8 x 12)	0.12 (0.12) (0.12)	900 (900) (900)	26 (18) (16)	2900 (3770) (4650)
220	221	6.3 x 6	0.12	704	20	3200	8 x 8 (8 x 12)	0.12 (0.12)	1100 (1100)	18 (16)	3770 (4650)
270	271	6.3 x 8	0.12	864	15	3800	8 x 8 (8 x 12)	0.12 (0.12)	1350 (1350)	18 (16)	3770 (4650)
330	331	6.3 x 8 (6.3 x 11)	0.12 (0.12)	1056 (1056)	15 (10)	3800 (5080)	8 x 12 (10 x 12)	0.12 (0.12)	1650 (1650)	16 (14)	4650 (5000)
390	391						8 x 12 (10 x 12)	0.12 (0.12)	1950 (1950)	16 (14)	4650 (5000)
470	471	8 x 8 (8 x 12)	0.12 (0.12)	1504 (1504)	16 (8)	4000 (5400)	10 x 12	0.12	2350	14	5000
560	561	8 x 8 (8 x 12)	0.12 (0.12)	1792 (1792)	16 (8)	5400 (6100)	8 x 16 (10 x 12)	0.12 (0.12)	2800 (2800)	14 (14)	5400 (5000)
680	681	8 x 12	0.12	2176	12	5400	10 x 12	0.12	3400	14	5000
820	821	8 x 16 (10 x 12)	0.12 (0.12)	2624 (2624)	8 (12)	7000 (5400)					
1000	102	8 x 16 (8 x 20) (10 x 12)	0.12 (0.12) (0.12)	3200 (3200) (3200)	10 (8) (12)	7000 (7500) (5200)					
1200	122	8 x 20 (10 x 12)	0.12 (0.12)	3840 (3840)	8 (12)	7500 (5400)					
1500	152	8 x 20 (10 x 16)	0.12 (0.12)	4800 (4800)	8 (8)	7500 (7700)					
1800	182	10 x 16 (10 x 20)	0.12 (0.12)	5760 (5760)	8 (8)	7700 (8100)					
2200	222	10 x 20	0.12	7040	8	8100					
2700	272	10 x 20	0.12	8640	8	8100					

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CAT.2026/V2.1

PE 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 8	0.12	220	70	1000
33	330						8 x 8	0.12	330	55	1800
47	470	6.3 x 6	0.12	329	85	800	8 x 12	0.12	470	24	3900
68	680	6.3 x 8	0.12	476	60	1100					
82	820	6.3 x 11	0.12	574	45	1800					
100	101	8 x 8	0.12	700	30	2600	10 x 12	0.12	1000	20	4300
120	121	8 x 12	0.12	840	25	3800					
220	221	10 x 12	0.12	1540	22	4100					

☐ 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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