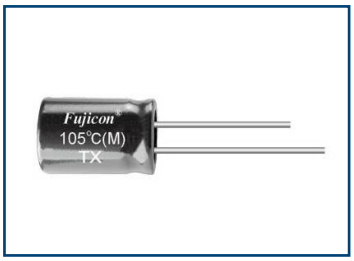
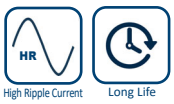
TX Series

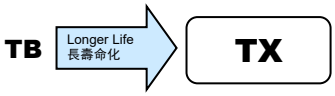
HIGH RIPPLE CURRENT, LONG LIFE

高紋波電流，長壽命品





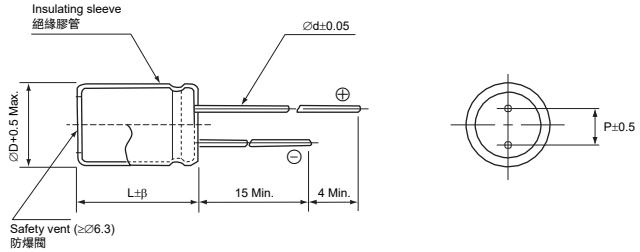
- High ripple current
  高紋波電流
- Endurance 5000~10000 hours
  耐久性 5000~10000 小時
- Suitable for electronic ballast, power supply and LED lighting
  適用於電子鎮流器，電源和 LED 照明
- Comply with the RoHS & REACH
  符合 RoHS 與 REACH



☐ SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性
Category Temperature Range 工作温度範圍	-25 ~ +105°C
Voltage Range 額定工作電壓範圍	160 ~ 450V
Capacitance Range 靜電容量範圍	2.2 ~ 330μF
Capacitance Tolerance 靜電容量允許偏差	±20% at 120Hz, 20°C
Leakage Current 漏電流	Leakage current ≤0.03CV + 15μA (after 5 minutes application of rated voltage at 20°C) 漏電流 ≤0.03CV + 15μA（在 20°C 環境中施加額定工作電壓 5 分鐘後） C: Nominal capacitance (μF) 標稱靜電容量, V: Rated voltage (V) 額定電壓
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: 160 / 200 / 250 / 350 / 400 / 450 tan δ (max.) 最大損耗角正切: 0.15 / 0.15 / 0.15 / 0.20 / 0.20 / 0.20
Stability at Low Temperature 低温特性	Measurement frequency 測試頻率: 120Hz Rated Voltage (V) 額定工作電壓: 160 / 200 / 250 / 350 / 400 / 450 Impedance Ratio 阻抗比 Z(-25°C) / Z(+20°C): 3 / 3 / 3 / 5 / 5 / 6
Endurance 耐久性	The characteristics listed below shall be satisfied when the capacitors are restored to 20°C after subject to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105°C. 在 105°C 環境中的規定時間內施加額定紋波電流（峰值電壓不得超過額定電壓）後，電容器經直流電壓後恢復至 20°C 時，應符合下表參數要求。 Size (mm) 尺寸 / Life time (hours) 壽命（小時）: ∅D8: 5000; ∅D10: 8000; ∅D≥13: 10000 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	When the capacitors are restored to 20°C after leaving under no load at 105°C for 1000 hours, they meet the specified value for endurance characteristics listed above. 在 105°C 環境中無負荷放置 1000 小時後，待電容器恢復至 20°C 時進行測量，電容器的特性符合耐久性特性中所列的規定值。
Marking 標識	Printed with white colour on black sleeve (PVC) or printed with white colour on green sleeve (PET). 黑色膠管白字印刷（PVC）或綠色膠管白字印刷（PET）。

☐ DRAWING 外形圖 (Unit: mm)



∅D	8 (L≤11.5)	8 (L>16)	10	13	16	18
P	3.5		5.0		7.5	
∅d	0.5	0.6			0.8	
β	1.5			2.0		

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

Frequency 頻率		120Hz	1KHz	10KHz	100KHz
Coefficient 系數	2.2 ~ 68μF	0.85	0.90	1.00	1.10
	82 ~ 330μF	0.90	0.95	1.00	1.10

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5~10°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced. 鋁電解電容器在疊加紋波電流後會引起發熱，溫度每上升 5~10°C 壽命會減半。若要保持長壽命性能，請在使用過程中適當降低紋波電流。

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。

TX Series

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

WV / Parameter 參數 / μF		160 (2C)			200 (2D)		
		Case size ØD×L (mm) 尺寸	Ripple current (mA rms) 紋波電流		Case size ØD×L (mm) 尺寸	Ripple current (mA rms) 紋波電流	
			105°C, 120Hz	105°C, 100KHz		105°C, 120Hz	105°C, 100KHz
10	100	10 × 16	125	313	10 × 16	140	350
22	220	10 × 20	200	500	10 × 20	200	500
33	330	10 × 20	250	625	10 × 20	260	650
47	470	10 × 20	300	750	13 × 21	390	975
68	680	13 × 21	470	1175	13 × 21	470	1175
82	820	13 × 21	510	1275	16 × 20	550	1375
100	101	13 × 25 (16 × 20)	620 (630)	1395 (1418)	16 × 20	630	1418
150	151	16 × 25	770	1733	16 × 31	840	1890
220	221	16 × 31	1020	2295	18 × 31	1050	2363
330	331	18 × 35	1390	3128	18 × 40	1430	3218

WV / Parameter 參數 / μF		250 (2E)			350 (2V)		
		Case size ØD×L (mm) 尺寸	Ripple current (mA rms) 紋波電流		Case size ØD×L (mm) 尺寸	Ripple current (mA rms) 紋波電流	
			105°C, 120Hz	105°C, 100KHz		105°C, 120Hz	105°C, 100KHz
2.2	2R2	8 × 11.5	75	130	8 × 11.5	80	165
3.3	3R3	8 × 11.5	80	145	10 × 12	90	185
4.7	4R7	8 × 11.5	96	180	10 × 12	100	210
6.8	6R8	8 × 16 (10 × 12)	105 (120)	235 (250)	10 × 16	125	275
10	100	10 × 20	140	350	10 × 20	140	650
22	220	10 × 20	200	500	16 × 20	360	900
47	470	13 × 21	390	975	16 × 20	430	1075
68	680	16 × 20	520	1300	16 × 31 (18 × 25)	560 (550)	1400 (1375)
82	820	16 × 25	550	1375	18 × 31	610	1525
100	101	16 × 25 (16 × 31) (18 × 25)	620 (680) (650)	1450 (1530) (1500)	18 × 31	700	1575
150	151	18 × 31	860	1935	18 × 40	960	2160
220	221	18 × 40	1130	2543			

WV / Parameter 參數 / μF		400 (2G)			450 (2W)		
		Case size ØD×L (mm) 尺寸	Ripple current (mA rms) 紋波電流		Case size ØD×L (mm) 尺寸	Ripple current (mA rms) 紋波電流	
			105°C, 120Hz	105°C, 100KHz		105°C, 120Hz	105°C, 100KHz
2.2	2R2	8 × 11.5 (10 × 12)	80 (85)	165 (175)			
3.3	3R3	10 × 12	90	185	10 × 12	60	165
4.7	4R7	10 × 12	100	210	10 × 16	70	185
5.6	5R6	10 × 12	105	200			
6.8	6R8	10 × 12 (10 × 16)	111 (125)	230 (275)	10 × 20	110	275
10	100	10 × 16 (10 × 20)	120 (140)	320 (350)	13 × 21	180	450
22	220	13 × 21	260	650	16 × 20	290	725
33	330	13 × 25 (16 × 20)	280 (360)	698 (900)	16 × 25	390	975
39	390	16 × 20	380	950			
47	470	16 × 25 (18 × 20)	470 (450)	1175 (1125)	18 × 25	480	1200
68	680	18 × 25	585	1463	18 × 31	630	1575
82	820	18 × 31	610	1525	18 × 35	715	1788
100	101	18 × 35	765	1721	18 × 40	800	1800

- Please refer to page 21 “Taping Specifications” & page 23 “Lead Forming & Cutting” about the taped or formed product spec. 編帶與引線成型標準請查閱第 21 頁“編帶標準”及第 23 頁“引線成型與剪腳”。
- Please refer to page 22 “Packaging Specifications” for the minimum package quantity. 最小包裝數量請查閱第 22 頁“包裝標準”。
- Please refer to page 18 for the Part Number System. 產品編碼規則請查閱第 18 頁。

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