

EM Series



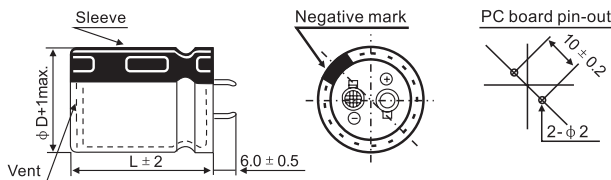
- Over voltage vent operation facility
- Endurance with ripple current : 105°C 2,000 hours
- RoHS Compliant

■ 規格表 SPECIFICATIONS

項目 Items	特性參數 Characteristics					
使用溫度範圍 Category Temperature Range	-25 ~ +105°C					
額定工作電壓範圍 Rated Voltage Range	200 ~ 450V					
電容量允許偏差 Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)					
漏電流 Leakage Current	$I \leq 3\sqrt{CV}$ after application of rated voltage for 5 minutes. 施加額定工作電壓5分鐘後讀數。 I: 漏電流 (µA)、C: 靜電容量 (µF)、額定電壓 (V)					
損耗角正切值 tan δ Dissipation Factor	200~250V : 0.15 max. (0.20 max. for ΦD=35mm) 400~450V : 0.15 max. 標稱容量超過1000 µF, 則每增加1000 µF, 損耗角正切值增加0.02. When nominal capacitance exceeds 1000 µF, add 0.02 to the value above for each 1000 µF increase. (at 20°C, 120Hz)					
低溫特性 Low Temperature Characteristics (Max. Impedance Ratio)	電容器低溫的阻抗比值, 不應超過下表所列出的值 <table border="1" style="margin-left: 20px;"> <tr> <td>Rated voltage(V)</td> <td>200 ~ 450</td> </tr> <tr> <td>Z(-25°C)/Z(+20°C)</td> <td>4</td> </tr> </table> (at 120Hz)		Rated voltage(V)	200 ~ 450	Z(-25°C)/Z(+20°C)	4
Rated voltage(V)	200 ~ 450					
Z(-25°C)/Z(+20°C)	4					
ESL 串聯等效電感	50nH max. (at 20°C, 1MHz)					
耐久性 Endurance	施加額定工作電壓和額定紋波電流, 恢復到20°C後, 產品性能應滿足以下要求 The following specifications shall be satisfied when the capacitors are restored to 20°C after application of rated voltage with rated ripple current.					
	Capacitance change	≅ ±20% of the initial value				
	D.F. (tan δ)	≅ 200% of the specified value				
	Leakage current	≅ The specified value				
高溫儲存特性 Shelf Life	105°C 放置1000小時, 恢復20°C後, 產品性能應滿足以下要求 The following specifications shall be satisfied when the capacitors are restored at 20°C after exposing them for 1000 hours at 105°C without voltage applied.					
	Capacitance change	≅ ±15% of the initial value				
	D.F. (tan δ)	≅ 150% of the specified value				
	Leakage current	≅ The specified value				

■ 外形圖 DIMENSIONS (mm)

- Standard Terminal Type: (Φ22 ~ Φ35)



■ 紋波電流補正係數 RATED RIPPLE CURRENT COEFFICIENT

- 頻率係數 Frequency Coefficient

Frequency (Hz)	50	120	300	1k	10k	50K
200 ~ 450V	0.76	1.00	1.15	1.31	1.42	1.45

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■ 尺寸與最大紋波電流一覽表 STANDARD RATINGS

WV(V) Cap(μF)	200(2D)				250(2E)			
120					22×20 0.68			
180	22×20 0.81				22×25 0.87	25×20 0.92		
220	22×25 0.89				22×30 1.01			
270	22×25 1.01				22×35 1.15	25×25 1.12	30×20 1.24	
330	22×30 1.19	25×25 1.19			22×40 1.27	25×30 1.28	30×25 1.29	
390	22×30 1.36	25×25 1.36			22×45 1.41	25×35 1.45	30×25 1.51	
470	22×35 1.45	25×30 1.45	30×25 1.47			25×40 1.63	30×30 1.66	
560	22×40 1.61	25×30 1.59	30×25 1.59			25×45 1.81	30×35 1.86	35×25 1.98
680		25×35 1.81	30×30 1.8	35×25 1.85			30×40 2.11	3.5×30 2.18
820		25×45 2.12	30×35 2.12	35×25 2.12			30×45 2.38	35×35 2.41
1,000			30×35 2.41	35×30 2.41				
1,200			30×45 2.68	35×35 2.64				

WV(V) Cap(μF)	400(2G)				450(2W)			
56	22×20 0.45							
68	22×20 0.52							
82	22×25 0.59							
100	22×30 0.65	25×25 0.65						
120	22×30 0.77	25×25 0.77						
150	22×35 0.86	25×30 0.86	30×25 0.86					
180	22×40 0.93	25×35 0.94	30×25 0.94		25×45 0.99	30×35 0.99		
220		25×35 1.25	30×30 1.25	35×25 1.25	25×50 1.21	30×40 1.21		
270		25×45 1.29	30×35 1.29	35×30 1.29		30×50 1.38	35×45 1.38	
330			30×40 1.48	35×35 1.48		30×55 1.55	35×50 1.55	
390							35×55 1.60	

Case size ΦDXL(mm)  
Rated ripple current(Arms)at105°C,120Hz

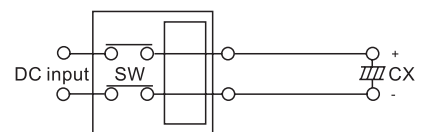
◆ DC OVERVOLTAGE TEST CON DI TIONS

The vent will operate and the capacitor shall be come an open circuit without burning materials  
When the following test DC voltage is applied

● Test DC voltage

Rated Voltage	Nominal Capacitance	Current Limit	Test Voltage
200Vdc	<330	4A	330/375Vdc
	330uF ≤ Cap. < 470uF	5A	
	≥ 470uF	7A	
250Vdc	<330	4A	350/450Vdc
	330uF ≤ Cap. < 470uF	5A	
	≥ 470uF	7A	
400Vdc	<100	2A	500/600Vdc
	100uF ≤ Cap. < 220uF	4A	
	≥ 220uF	7A	
450Vdc	<100	2A	550/675Vdc
	100uF ≤ Cap. < 220uF	4A	
	≥ 220uF	7A	

● Test Circuit



Constant DC voltage/current power supply