

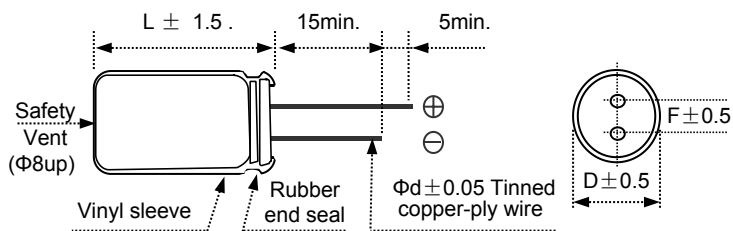
**RA Series**

- 9mm height, mini-sized
- RoHS2.0 Compliant

◆ **规格表 Specifications**

项目 Items	特性参数 Characteristics											
使用温度范围 Category Temperature Range	-40 ~ +105°C (6.3 ~ 100V.DC)						-25 ~ +105°C (160~450V.DC)					
额定工作电压范围 Rated Voltage Range	6.3 ~ 450V.DC											
静电容量允许偏差 Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)											
漏电流 Leakage Current	6.3 ~ 100V.DC						160 ~ 450V.DC					
	I ≤ 0.01CV or 3μA, 二者取大值 (施加额定工作电压2分钟后) Whichever is greater (After 2 minute application of rated voltage)						I ≤ 0.02CV + 10(μA) (施加额定工作电压2分钟后) (After 2 minute application of rated voltage)					
Note: I=Max.leakage current (μA), C=Nominal capacitance(μF), V=Rated voltage(V) (at 20°C)												
损耗角正切值 tanδ Dissipation Factor	Rated voltage(V)	10	16	25	35	50	160	200	250	400	450	
	tanδ(Max.)	0.26	0.2	0.18	0.14	0.12	0.2	0.2	0.2	0.2	0.25	
	标称容量超过1000 μF, 则每增加1000 μF, 损耗角正切值增加0.02 When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase. (at 20°C, 120Hz)											
低温特性 LOW Temperature Characteristics (Max, Impedance Ratio)	阻抗比值不得超过下表中列出的值 The impedance ratio shall not exceed the values listed in the below table. (at 120Hz)											
	Rated voltage(V)	10	16	25	35	50	160	200	250	400	450	
	Z(-25°C)/Z(+20°C)	3	2	2	2	2	3	3	3	6	6	
	Z(-40°C)/Z(+20°C)	6	4	4	3	3	4	4	4	-	-	
耐久性 Endurance	在105°C环境中, 不超过额定电压的范围内叠加最大允许纹波电流, 连续加载右表时间, 经恢复到20°C后, 电容器满足以下各项要求。 The following specifications shall be satisfied when the capacitors are restored to 20°C after applied within maximum allowable ripple current and not over rated voltage range for the time in the table at 105°C.											
	Capacitance change	≤ ±25% of the initial value						ΦD				
	D.F.(tanδ)	≤ 200% of the initial specified value						时间 (Hrs)				
	Leakage current	≤ The initial specified value						6.3 2000 8 3000 10 5000				
高温储存特性 Shelf Life	在105°C环境中, 不施加电压条件下储存1000小时, 经恢复到20°C后, 电容器满足以下各项要求。 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.											
	Rated voltage	6.3 ~ 450V.DC										
	capacitance change	≤ ±25% of the initial value										
	D.F.(tanδ)	≤ 200% of the initial specified value										
	Leakage current	≤ 200% of the initial specified value										

◆ **尺寸图 (单位: mm) DIMENSIONS (Unit:mm)**



ΦD	6.3	8	10
F	2.5	3.5	5.0
Φd	0.5	0.5	0.6

◆ **纹波电流修正系数 Rated Ripple Current Coefficient**

● **频率系数 Frequency Coefficient**

Rated Voltage(V)	Frequency(Hz)						
	Case code	60(50)	120	500	1K	10K	100K
6.3~450	1.5~6.8 μF	0.65	1.00	1.20	1.30	1.75	2.00
	10~68 μF	0.8	1.00	1.20	1.30	1.50	1.90
	100~470 μF	0.8	1.00	1.10	1.15	1.30	1.70

## RA Series

## ◆ 标准品一览表 Standard Ratings

WV (Vdc)	Cap ( $\mu$ F)	Case size $\Phi$ D*L(mm)	Rated ripple current (mA <sub>rms</sub> / 105°C,120Hz)
6.3	330	6.3X9	230
	470	8x9	270
10	150	6.3X9	130
	220	6.3X9	180
	330	6.3X9	230
	470	8x9	270
16	150	6.3X9	130
	220	6.3X9	180
	330	8x9	230
	470	8x9	270
25	100	6.3X9	100
	150	6.3X9	130
	220	8x9	240
	330	10x9	310
	470	10x9	350
35	100	6.3X9	100
	150	8x9	220
	220	10x9	260
	330	10x9	310
50	100	8x9	182
	150	10x9	290

WV (Vdc)	Cap ( $\mu$ F)	Case size $\Phi$ D*L(mm)	Rated ripple current (mA <sub>rms</sub> / 105°C,120Hz)
160	4.7	6.3X9	56
	6.8	8x9	60
	10	10X9	72
200	3.3	6.3X9	45
	4.7	8x9	54
	6.8	8x9	60
250	2.2	6.3X9	30
	3.3	8X9	42
	4.7	8x9	54
	6.8	10x9	69
400	1.5	6.3X9	17
	2.2	8x9	35
	3.3	10x9	40
	4.7	10x9	49
450	1.5	8x9	19
	2.2	10x9	29

※铝电解电容器由于在纹波电流叠加时自我发热、温度上升而老化，中心温度每升温5°C寿命减少一半。要想保持长寿命请在使用过程中降低纹波电流。  
The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.