

GM

(CD11)

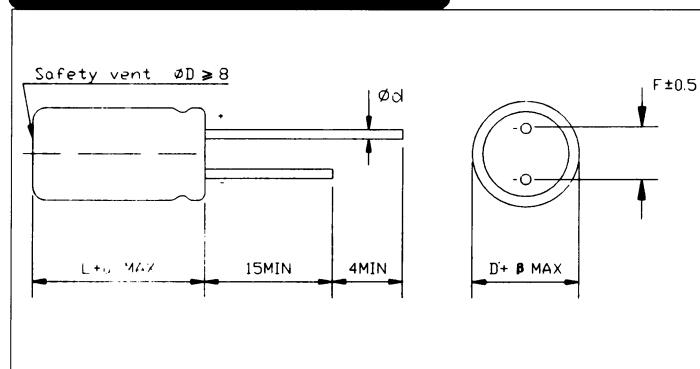
- For general purpose
- Used in white-black TVs, radio, telephone circuits, etc

Specifications

Item	Performance Characteristics																																																
Operating temperature range	-40 ~ +85℃					-25 ~ +85℃																																											
Rated voltage range	6.3 ~ 100V					160 ~ 450V																																											
Nominal capacitance range	0.1~33000μF																																																
Capacitance tolerance	± 20% (100Hz, +20℃)																																																
Leakage current	I≤0.02CV (μA) 5μA (1 minute) (Whichever is greater)					I≤0.03CV (μA)+40μA (1 minute)																																											
(tg δ) Dissipation factor	<table><tr><td>U_R (V)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr><tr><td>tg δ</td><td>0.28</td><td>0.24</td><td>0.20</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.10</td></tr></table> <table><tr><td>U_R (V)</td><td>160</td><td>200</td><td>250</td><td>400</td><td>450</td></tr><tr><td>tg δ</td><td>0.20</td><td>0.20</td><td>0.20</td><td>0.25</td><td>0.25</td></tr></table> (+20℃, 100Hz)										U _R (V)	6.3	10	16	25	35	50	63	100	tg δ	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.10	U _R (V)	160	200	250	400	450	tg δ	0.20	0.20	0.20	0.25	0.25									
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Temperature Characteristics (Impedance ratio at 100Hz)	<table><tr><td>U_R (V)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr><tr><td>Z-25℃ / Z+20℃</td><td>5</td><td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z-40℃ / Z+20℃</td><td>12</td><td>10</td><td>8</td><td>5</td><td>4</td><td>3</td><td>3</td><td>3</td></tr></table> <table><tr><td>U_R (V)</td><td>160</td><td>200</td><td>250</td><td>400</td><td>450</td></tr><tr><td>Z-25℃ / Z+20℃</td><td>3</td><td>3</td><td>4</td><td>8</td><td>10</td></tr></table> For capacitance value >1000μF, add 0.02 per another 1000μF										U _R (V)	6.3	10	16	25	35	50	63	100	Z-25℃ / Z+20℃	5	4	3	2	2	2	2	2	Z-40℃ / Z+20℃	12	10	8	5	4	3	3	3	U _R (V)	160	200	250	400	450	Z-25℃ / Z+20℃	3	3	4	8	10
U _R (V)	6.3	10	16	25	35	50	63	100																																									
Z-25℃ / Z+20℃	5	4	3	2	2	2	2	2																																									
Z-40℃ / Z+20℃	12	10	8	5	4	3	3	3																																									
U _R (V)	160	200	250	400	450																																												
Z-25℃ / Z+20℃	3	3	4	8	10																																												
Load life	For capacitance value > 1000μF,Add 0.5 per another 1000μF for Z-25℃/ Z+20℃ For capacitance value >1000μF,Add 1.0 per another 1000μF for Z-40℃/ Z+20℃ After applying rated voltage for 1000 hours at +85℃ and then resumed 16 hours: Capacitance change : ±20% Initial measured value Leakage current : ≤ Initial specified value Dissipation factor : ≤2 Initial specified value																																																
Shelf life	After storage for 500 hours at +85℃ and then resumed 16 hours Capacitance change : ±20% Initial measured value Leakage current : ≤2 Initial specified value Dissipation factor : ≤2 Initial specified value																																																

Case size table

Unit: mm



D	5	6	8	10	12	13	14	16	19	22	25
F	2	2.5	3.5	5.0				7.5	10	12.5	
d	0.5		0.5, 0.6	0.6				0.8			1.

α MAX	(L < 20) 1.5
	(L ≥ 20) 2.0

β MAX	(D < 20) 0.5
	(D ≥ 20) 1.0

DIMENSIONS

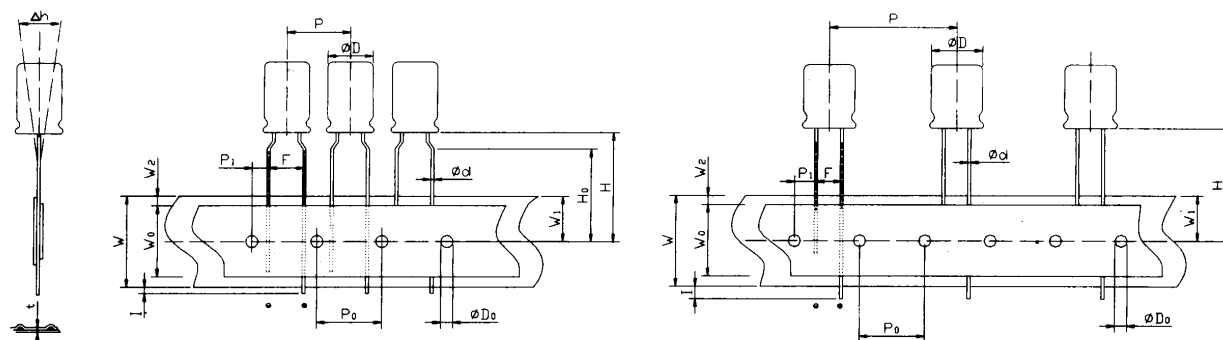
ØD × L(mm)

U _R		6.3V	10V	16V	25V	35V	50V	63V	100V	160V
C _R (μF)	Code	0J	1A	1C	1E	1V	1H	1J	2A	2C
0.1	0R1						5×11	5×11		
0.22	R22						5×11	5×11		
0.33	R33						5×11	5×11		
0.47	R47						5×11	5×11		
1	010						5×11	5×11	5×11	5×11
2.2	2R2						5×11	5×11	5×11	6×11
3.3	3R3				5×11	5×11	5×11	5×11	5×11	8×11
4.7	4R7			5×11	5×11	5×11	5×11	5×11	5×11	8×11
10	100			5×11	5×11	5×11	5×11	5×11	6×11	10×13
22	220		5×11	5×11	5×11	5×11	5×11 6×11	6×11	8×11	10×16
33	330	5×11	5×11	5×11	5×11	5×11	6×11	8×11	8×14	10×20
47	470	5×11	5×11	5×11	5×11	6×11	6×12	8×12	10×13	13×20
100	101	5×11	5×11	5×11 6×11	6×11	8×11	8×12	10×13	10×20	16×25
120	121				6×11					
150	151				8×11					
220	221	5×11	5×12 6×11	6×11	8×11	8×16 10×13	10×16	10×20	13×25	19×30
330	331	6×11	6×11	8×11	8×12	10×14	10×20	12×20	16×25	19×40
470	471	6×12	6×12 8×11	8×11	8×14 8×16	10×16	12×20	12×25 13×25	16×30	22×40
680	681		8×12							
1000	102	8×12	8×12	8×17 10×13	10×17 10×20	13×20	13×25 14×25	16×25	19×40	25×50
1500	152	8×16	10×14	10×20			16×25			
2200	222	10×14	10×20	10×23 13×17	12×25 13×20	16×25	16×35 19×30	19×35	22×50 25×40	
3300	332	10×20	12×20	12×25	16×20 16×25	19×30	19×35	22×40	25×50	
4700	472	12×20	12×25	16×25	16×30	19×30 19×35 22×30	22×40 22×42	22×50		
6800	682	12×25	14×25	16×30	19×30	22×40	22×50 25×40	25×50		
10000	103	16×25	16×25	16×35	19×40	22×50 25×40	25×50			
15000	153	16×25	19×35	22×35 25×30	22×50 25×40	25×50				
22000	223	19×40	22×35	22×50	25×50					
33000	333	22×50 25×40	22×50 25×40	25×50						

ØD × L(mm)

U _R		200V	250V	400V	450V
C _R (μF)	Code	2D	2E	2G	2W
0.1	0R1				
0.22	R22				
0.33	R33				
0.47	R47	6×11	6×11		
1	010	6×11	6×11	8×12	8×12
2.2	2R2	6×11	6×11	10×12	10×12
3.3	3R3	6×11	8×12	10×12	10×16
4.7	4R7	8×12	8×12	10×16	10×20
10	100	10×12	10×16	13×20	13×20
22	220	10×20	13×20	16×25	16×25
33	330	13×20	13×20	16×30	16×35
47	470	13×20	13×25	16×35	19×40 22×30
100	101	16×30	16×30	22×40 25×30	22×40
220	221	19×35	18×40 22×30	25×50	
330	331	22×40 25×30	22×50 25×30		
470	471	22×50 25×40	25×50		

Taping of Aluminum Electrolytic Capacitor and size (Standard products)



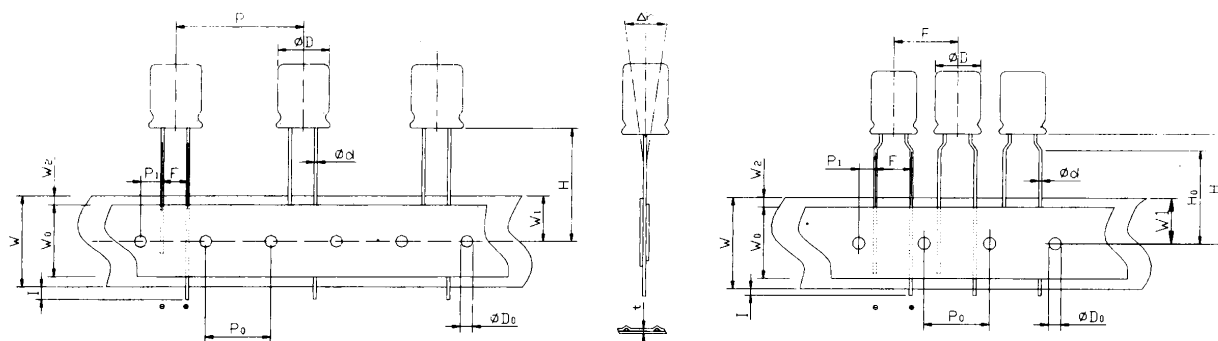
■ Size table

Code	Tol.	Case diameter							Notes
		Ø5	Ø6(Ø6.3)	Ø8	Ø10	Ø12	13	Ø16, Ø19	
d	±0.1	0.5		0.6				0.8	
P	±1.0	12.7				25.4	15.0	30.0	
P ₀	±0.2	12.7				15.0		30.0	
P ₁	±0.5	3.85(5.35)	3.85(5.1)	3.85(4.6)	3.85		5.0	3.75	
F	+0.8 -0.2	5.0(2.0)	5.0(2.5)	5.0(3.5)	5.0			7.5	
W	±0.5	18.0							
W ₁	±0.5	9.0							
W ₂		≤3			≤1.5				
W ₀		≥12							
H	±0.75	18.5							
H ₀	±0.5	16							
D ₀	±0.2	Ø4.0							
l		≤1.0							
t	±0.2	0.6				0.7			
Δ h		≤2.0							Off alignment of body top

■ Packaging Specification

Parts diameter (mm)	Ammunition	Reel	Ammunition packing dimensions (mm)
	Quantity/Box(pcs)	Quantity/Box(pcs)	
Ø5	2000	1000	336 × 282 × 45
Ø6	2000	800	336 × 282 × 45
Ø8	1000	500	327 × 242 × 50
Ø10	500	400	330 × 184 × 55

Taping of Aluminum Electrolytic Capacitor and size (Standard products)



■ Size table

Code	Tol.	Case diameter					Notes
		Ø3	Ø4	Ø5	Ø6	Ø8	
d	±0.1	0.4	0.45			0.5	
P	±1.0	12.7					
P ₀	±0.2	12.7					
P ₁	±0.5	5.1(3.85)				3.85	
F	+0.8 -0.2	2.5(5.0)				5.0	
W	±0.5	18.0					
W ₁	±0.5	9.0					
W ₂		≤3					
W ₀		≥7.0					
H	±0.75	18.5					
H ₀	±0.5	16					
D ₀	±0.2	Ø4.0					
l		≤1.0					
t	±0.2	0.6					
Δ h		≤2.0					off alignment of body top

■ Packaging Specification

Parts diameter (mm)	Ammunition	Reel	Ammunition packing dimensions (mm)
	Quantity/Box(pcs)	Quantity/Box(pcs)	
Ø4 × 5	2000	1500	327 × 235 × 46
Ø4 × 7			328 × 183 × 41
Ø5 × 5	2000	1200	327 × 235 × 46
Ø5 × 7			328 × 183 × 41
Ø6 × 5	2000	1000	327 × 235 × 46
Ø6 × 7			328 × 183 × 41
Ø8 × 5	1000	800	327 × 235 × 46
Ø8 × 7			328 × 183 × 41