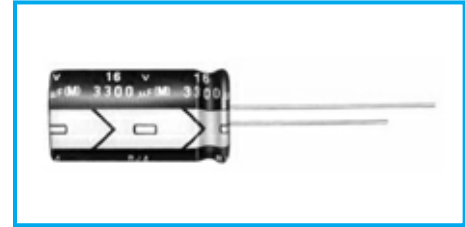
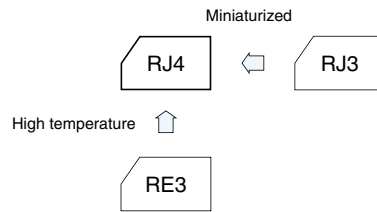


## 105°C Miniature Capacitors Series RJ4

- Case size is one rank smaller than Series RJ3.
- Guarantees 1000 hours at 105°C.



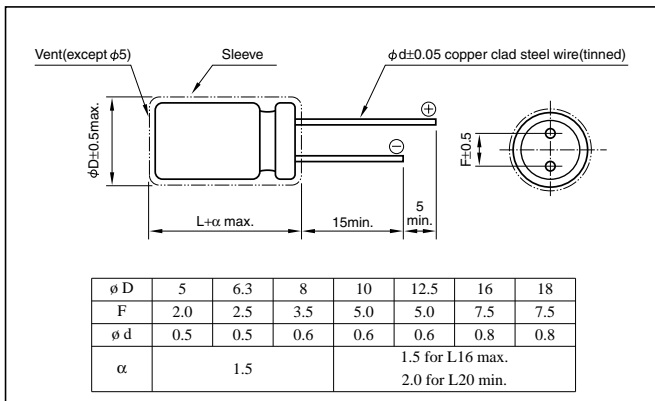
Marking color : White print on a black sleeve or  
White print on a brown sleeve

### Specifications

Item	Performance																																					
Category temperature range (°C)	-55 to +105	-40 to +105																																				
Rated voltage (V)	6.3 to 100	160 to 450																																				
Tolerance at rated capacitance (%)	±20 (20°C, 120Hz)	±20 (20°C, 120Hz)																																				
Leakage current (µA)	Less than 0.03CV or 4 whichever is larger(after 1 minute) Less than 0.01CV or 3 whichever is larger(after 2 minutes) (20°C)	CV≤1000: Less than 0.1CV+40(after 1 minute) CV>1000: Less than 0.04CV+100(after 1 minute) (20°C)																																				
C: Rated capacitance(µF) V: Rated voltage(V)																																						
Tangent of loss angle (tanδ)	<table border="1"> <tr> <th>Rated voltage (V)</th> <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> <th>tanδ (max.)</th> <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>0.08</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	63	100	tanδ (max.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	<table border="1"> <tr> <th>Rated voltage (V)</th> <td>160</td><td>200</td><td>250</td><td>315</td><td>350</td><td>400</td><td>450</td> </tr> <tr> <th>tanδ (max.)</th> <td>0.20</td><td>0.20</td><td>0.20</td><td>0.24</td><td>0.24</td><td>0.24</td><td>0.24</td> </tr> </table>	Rated voltage (V)	160	200	250	315	350	400	450	tanδ (max.)	0.20	0.20	0.20	0.24	0.24	0.24	0.24		
	Rated voltage (V)	6.3	10	16	25	35	50	63	100																													
tanδ (max.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08																														
Rated voltage (V)	160	200	250	315	350	400	450																															
tanδ (max.)	0.20	0.20	0.20	0.24	0.24	0.24	0.24																															
0.02 is added to every 1000µF increase over 1000µF (20°C, 120Hz)																																						
Characteristics at high and low temperature	<table border="1"> <tr> <th>Rated voltage (V)</th> <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> <th rowspan="2">Impedance ratio (max.)</th> <td>Z-25°C / Z+20°C</td> <td>5</td><td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>10</td><td>8</td><td>6</td><td>4</td><td>3</td><td>3</td><td>3</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	63	100	Impedance ratio (max.)	Z-25°C / Z+20°C	5	4	3	2	2	2	2	Z-40°C / Z+20°C	10	8	6	4	3	3	3	<table border="1"> <tr> <th>Rated voltage (V)</th> <td>160 to 250</td><td>315 to 450</td> </tr> <tr> <th rowspan="2">Impedance ratio (max.)</th> <td>Z-25°C / Z+20°C</td> <td>4</td><td>4</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>15</td><td>10</td> </tr> </table>	Rated voltage (V)	160 to 250	315 to 450	Impedance ratio (max.)	Z-25°C / Z+20°C	4	4	Z-40°C / Z+20°C	15	10
	Rated voltage (V)	6.3	10	16	25	35	50	63	100																													
Impedance ratio (max.)	Z-25°C / Z+20°C	5	4	3	2	2	2	2																														
	Z-40°C / Z+20°C	10	8	6	4	3	3	3																														
Rated voltage (V)	160 to 250	315 to 450																																				
Impedance ratio (max.)	Z-25°C / Z+20°C	4	4																																			
	Z-40°C / Z+20°C	15	10																																			
(120Hz)																																						
Endurance (105°C) (Applied ripple current)	Test time	1000 hours																																				
	Leakage current	The initial specified value or less																																				
	Percentage of capacitance change	Within ±20% of initial value																																				
	Tangent of the loss angle	200% or less of the initial specified value																																				
Shelf life (105°C)	Test time : 1000 hours; other items are the same as those for the endurance. Voltage application treatment																																					
Applicable standards	JIS C5101-1, -4 1998 (IEC 60384-1 1992, -4 1985)																																					

### Outline Drawing

Unit: mm



### Coefficient of Frequency for Rated Ripple Current

Rated voltage(V)	Rated capacitance(µF)	Frequency(Hz)					
		50 - 60	120	1k	10k	100k	
6.3 to 100	0.1 to 47	0.8	1	1.5	1.7	2.0	
	100 to 220	0.8	1	1.2	1.3	1.4	
	330 to 1000	0.8	1	1.2	1.2	1.3	
	2200 to 22000	0.8	1	1.1	1.1	1.1	
160 to 450	0.47 to 330	0.8	1	1.3	1.4	1.6	

### Part numbering system (example: 16V220µF)

Environmental item	RJ4	—	16	V	222	M	15	#
	Series code		Rated voltage symbol		Rated capacitance symbol	Capacitance tolerance symbol		Casing symbol
Former item	RJ4	—	16	V	222	M	*	
	Series code		Rated voltage symbol		Rated capacitance symbol	Capacitance tolerance symbol		Additional symbol

*	Rated voltage	Additional symbol
	6.3 to 100V	X
	160 to 450V	—

### Casing symbol

Size φ DxL(mm)	Casing Symbol	Size φ DxL(mm)	Casing Symbol
5x11	E3	12.5x25	I 6
6.3x11	F3	16x25	J 6
8x11.5	G3	16x31.5	J 7
10x12.5	H3	16x35.5	J 8
10x16	H4	18x35.5	K8
10x20	H5	18x40	K9
12.5x20	I 5		

Standard Ratings

Rated capacitance (μF)	Rated voltage (V)		6.3			10			16			25			35			50			63			100		
	Item	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	
		φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	
0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5x11	1990	3	—	—	—	5x11	1327	1.5		
0.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5x11	905	6	—	—	—	5x11	603	3.4		
0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5x11	603	9	—	—	—	5x11	402	5		
0.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5x11	424	10	—	—	—	5x11	282	7.1		
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5x11	199	15	—	—	—	5x11	133	15		
2.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5x11	90.5	22	—	—	—	5x11	60.3	21		
3.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5x11	60.3	27	—	—	—	5x11	40.2	29		
4.7	—	—	—	—	—	—	—	—	—	5x11	56.5	27	5x11	49.4	30	5x11	42.4	32	—	—	—	5x11	28.2	32		
10	—	—	—	—	—	—	5x11	33.2	37	5x11	26.5	39	5x11	23.2	43	5x11	19.9	47	5x11	16.6	46	6.3x11	13.3	54		
22	—	—	—	—	—	—	5x11	15.1	54	5x11	12.1	58	5x11	10.6	64	5x11	9.05	70	5x11	7.54	71	6.3x11	6.03	93		
33	—	—	—	—	—	—	5x11	10.1	67	5x11	8.04	71	5x11	7.04	78	5x11	6.03	90	6.3x11	5.03	100	8x11.5	4.02	130		
47	—	—	—	5x11	8.47	72	5x11	7.06	79	5x11	5.65	84	5x11	4.94	90	6.3x11	4.24	115	6.3x11	3.53	120	10x12.5	2.82	165		
100	—	—	—	5x11	3.98	105	5x11	3.32	115	6.3x11	2.65	141	6.3x11	2.32	151	8x11.5	1.99	190	10x12.5	1.66	215	10x20	1.33	265		
220	5x11	2.11	140	6.3x11	1.81	166	6.3x11	1.51	190	8x11.5	1.21	247	10x12.5	1.06	314	10x12.5	0.91	314	10x16	0.75	335	12.5x25	0.60	440		
330	6.3x11	1.41	195	6.3x11	1.21	210	8x11.5	1.01	271	10x12.5	0.81	360	10x12.5	0.70	384	10x16	0.60	421	10x20	0.50	510	12.5x25	0.40	540		
470	6.3x11	0.99	232	8x11.5	0.85	325	8x11.5	0.71	323	10x12.5	0.57	429	10x16	0.50	470	12.5x20	0.42	628	12.5x20	0.35	640	16x25	0.28	715		
1000	8x11.5	0.47	398	10x12.5	0.40	457	10x16	0.33	560	10x20	0.27	705	12.5x20	0.23	857	12.5x25	0.20	1000	16x25	0.17	930	18x40	0.13	985		
2200	10x20	0.23	720	10x20	0.20	761	12.5x20	0.17	961	12.5x25	0.14	1180	16x25	0.12	1380	16x35.5	0.11	1660	—	—	—	—	—	—		
3300	10x20	0.16	882	12.5x20	0.14	1010	12.5x25	0.12	1200	16x25	0.10	1440	16x35.5	0.09	1780	18x35.5	0.08	1990	—	—	—	—	—	—		
4700	12.5x20	0.12	1120	12.5x25	0.11	1250	16x25	0.09	1490	16x31.5	0.08	1880	18x35.5	0.07	2120	—	—	—	—	—	—	—	—	—		
6800	12.5x25	0.09	1380	16x25	0.08	1570	16x35.5	0.07	1830	18x35.5	0.06	2330	—	—	—	—	—	—	—	—	—	—	—	—		
10000	16x25	0.07	1750	16x35.5	0.07	1910	18x35.5	0.06	2220	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
15000	16x35.5	0.06	2040	18x35.5	0.06	2190	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
22000	18x40	0.05	2390	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		

Rated capacitance (μF)	Rated voltage (V)		160			200			250			315			350			400			450		
	Item	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	
		φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	φD x L (mm)	Ω	mArms	
0.47	6.3x11	706	11	6.3x11	706	11	6.3x11	706	11	6.3x11	847	11	6.3x11	847	11	6.3x11	847	11	8x11.5	847	13		
1	6.3x11	332	16	6.3x11	332	16	6.3x11	332	16	6.3x11	398	16	6.3x11	398	16	6.3x11	398	16	8x11.5	398	18		
2.2	6.3x11	151	23	6.3x11	151	23	6.3x11	151	23	8x11.5	181	27	8x11.5	181	27	8x11.5	181	27	10x12.5	181	31		
3.3	6.3x11	101	28	6.3x11	101	28	8x11.5	101	34	10x12.5	121	38	10x12.5	121	38	10x12.5	121	38	10x16	121	42		
4.7	6.3x11	70.6	34	8x11.5	70.6	40	8x11.5	70.6	40	10x12.5	84.7	45	10x12.5	84.7	45	10x16	84.7	50	10x20	84.7	54		
10	8x11.5	33.2	58	10x12.5	33.2	66	10x16	33.2	74	10x20	39.8	79	10x20	39.8	79	12.5x20	39.8	87	12.5x20	39.8	87		
22	10x16	15.1	107	10x20	15.1	120	12.5x20	15.1	130	12.5x20	18.1	129	12.5x25	18.1	140	12.5x25	18.1	140	16x25	18.1	160		
33	10x20	10.1	143	12.5x20	10.1	160	12.5x25	10.1	172	16x25	12.1	196	16x25	12.1	196	16x25	12.1	196	16x31.5	12.1	215		
47	12.5x20	7.06	188	12.5x20	7.06	188	12.5x25	7.06	205	16x25	8.47	234	16x25	8.47	234	16x31.5	8.47	256	16x35.5	8.47	269		
100	12.5x25	3.32	299	16x25	3.32	342	16x31.5	3.32	374	18x31.5	3.98	401	18x31.5	3.98	401	—	—	—	—	—	—	—	—
220	16x31.5	1.51	554	18x35.5	1.51	624	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
330	18x35.5	1.01	764	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Note) ESR : 20°C, 120Hz ; Rated ripple current : 105°C, 120Hz