

## 105°C Use, High-Reliability, Low Impedance Capacitors

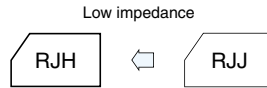
GREEN  
CAP

Low  
Impedance

105°C  
5000hours

Anti-  
cleaning  
solvent

- The capacitor of this Series achieves high reliability under the environmental loading prevailing in a piece of equipment on which it is mounted.
- Guarantees 5000 hours at 105°C.  
(ø 5 to 6.3: 2000 hours ; ø 8 to 10: 3000 hours)



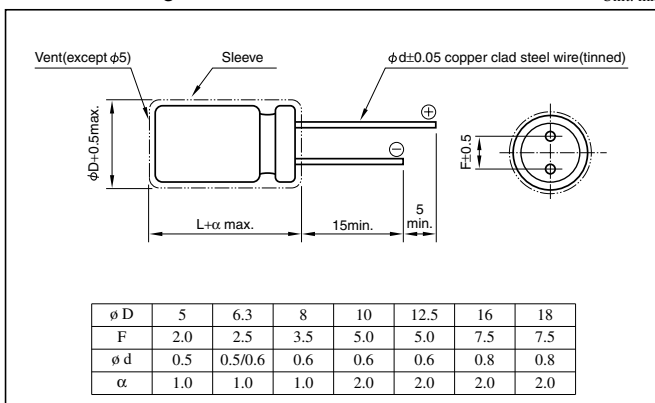
Marking color : White print on a black sleeve

### Specifications

Item	Performance																										
Category temperature range (°C)	-55 to +105																										
Tolerance at rated capacitance (%)	±20 <span style="float: right;">(20°C, 120Hz)</span>																										
Leakage current (µA)	Less than 0.01CV + 2 (after 2 minutes) C: Rated capacitance(µF); V: Rated voltage(V) <span style="float: right;">(20°C)</span>																										
Tangent of loss angle (tanδ)	<table border="1" style="width: 100%; border-collapse: collapse; font-size: 8px;"> <tr> <td style="text-align: center;">Rated voltage (V)</td> <td style="text-align: center;">6.3</td> <td style="text-align: center;">10</td> <td style="text-align: center;">16</td> <td style="text-align: center;">25</td> <td style="text-align: center;">35</td> <td style="text-align: center;">50</td> <td style="text-align: center;">63</td> <td style="text-align: center;">100</td> </tr> <tr> <td style="text-align: center;">tanδ (max.)</td> <td style="text-align: center;">0.22</td> <td style="text-align: center;">0.19</td> <td style="text-align: center;">0.16</td> <td style="text-align: center;">0.14</td> <td style="text-align: center;">0.12</td> <td style="text-align: center;">0.10</td> <td style="text-align: center;">0.08</td> <td style="text-align: center;">0.07</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	63	100	tanδ (max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.08	0.07								
	Rated voltage (V)	6.3	10	16	25	35	50	63	100																		
tanδ (max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.08	0.07																			
0.02 is added to every 1000µF increase over 1000µF. <span style="float: right;">(20°C, 120Hz)</span>																											
Characteristics at high and low temperature	<table border="1" style="width: 100%; border-collapse: collapse; font-size: 8px;"> <tr> <td style="text-align: center;">Rated voltage (V)</td> <td style="text-align: center;">6.3</td> <td style="text-align: center;">10</td> <td style="text-align: center;">16</td> <td style="text-align: center;">25</td> <td style="text-align: center;">35</td> <td style="text-align: center;">50</td> <td style="text-align: center;">63</td> <td style="text-align: center;">100</td> </tr> <tr> <td rowspan="2" style="text-align: center;">Impedance ratio (max.)</td> <td style="text-align: center;">Z-25°C / Z+20°C</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">Z-55°C / Z+20°C</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">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	2	2	2	2	2	2	2	Z-55°C / Z+20°C	3	3	3	3	3	3	3
	Rated voltage (V)	6.3	10	16	25	35	50	63	100																		
Impedance ratio (max.)	Z-25°C / Z+20°C	2	2	2	2	2	2	2																			
	Z-55°C / Z+20°C	3	3	3	3	3	3	3																			
(120Hz)																											
Endurance (105°C) (Applied ripple current)	<table border="1" style="width: 100%; border-collapse: collapse; font-size: 8px;"> <tr> <td style="text-align: center;">Test time</td> <td style="text-align: center;">5000 hours (ø 5 to 6.3: 2000 hours) (ø 8 to 10 : 3000 hours)</td> </tr> <tr> <td style="text-align: center;">Leakage current</td> <td style="text-align: center;">The initial specified value or less</td> </tr> <tr> <td style="text-align: center;">Percentage of capacitance change</td> <td style="text-align: center;">Within ±20% of initial value</td> </tr> <tr> <td style="text-align: center;">Tangent of the loss angle</td> <td style="text-align: center;">200% or less of the initial specified value</td> </tr> </table>	Test time	5000 hours (ø 5 to 6.3: 2000 hours) (ø 8 to 10 : 3000 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																		
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Shelf life (105°C)	<table border="1" style="width: 100%; border-collapse: collapse; font-size: 8px;"> <tr> <td style="text-align: center;">Test time</td> <td style="text-align: center;">1000 hours</td> </tr> <tr> <td style="text-align: center;">Leakage current</td> <td style="text-align: center;">The initial specified value or less</td> </tr> <tr> <td style="text-align: center;">Percentage of capacitance change</td> <td style="text-align: center;">Within ±15% of initial value</td> </tr> <tr> <td style="text-align: center;">Tangent of the loss angle</td> <td style="text-align: center;">150% or less of the initial specified value</td> </tr> </table>	Test time	1000 hours	Leakage current	The initial specified value or less	Percentage of capacitance change	Within ±15% of initial value	Tangent of the loss angle	150% or less of the initial specified value																		
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Tangent of the loss angle	150% or less of the initial specified value																										
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 capacitance(µF)	Frequency(Hz)			
	120	1k	10k	100k
0.47 to 4.7	0.40	0.68	0.78	1
5.6 to 47	0.50	0.76	0.87	1
56 to 270	0.70	0.85	0.90	1
330 to 1000	0.80	0.93	0.98	1
1200 to 15000	0.90	0.95	1	1

### Part numbering system (example: 10V5600µF)

RJH	—	10	V	562	M	J7	#
Series code		Rated voltage symbol		Rated capacitance symbol	Capacitance tolerance symbol	Casing symbol	

- The electric characteristics are described on page 108.

Standard Ratings

Rated voltage(V)		6.3					10					
Case ø DxL(mm)	Casing symbol	Item	Rated capacitance	ESR	Impedance Ω/100kHz		Rated ripple current	Rated capacitance	ESR	Impedance Ω/100kHz		Rated ripple current
			μF	Ω	20°C	-10°C	mArms	μF	Ω	20°C	-10°C	mArms
5x11.5	E3		100	3.65	0.65	1.46	175	82	3.84	0.65	1.46	175
5x15	E4		150	2.43	0.46	1.04	235	100	3.15	0.46	1.04	235
6.3x11.5	F3		220	1.66	0.31	0.70	290	180	1.75	0.31	0.70	290
6.3x15	F4		330	1.11	0.20	0.45	400	220	1.43	0.20	0.45	400
8x12	G3		470	0.777	0.17	0.38	488	330	0.956	0.17	0.38	488
8x15	G4		680	0.537	0.13	0.29	617	470	0.671	0.13	0.29	617
8x20	G5		1000	0.365	0.095	0.21	800	680	0.464	0.095	0.21	800
10x12.5	H3		680	0.537	0.1	0.23	625	470	0.671	0.10	0.23	625
10x16	H4		820	0.446	0.08	0.18	825	560	0.563	0.080	0.18	825
10x20	H5		1200	0.305	0.062	0.14	1010	1000	0.316	0.062	0.14	1010
10x25	H6		1500	0.244	0.052	0.12	1190	1200	0.263	0.052	0.12	1190
10x30	H7		2200	0.181	0.044	0.099	1440	1500	0.211	0.044	0.099	1440
12.5x15	I4	•	1200	0.305	0.062	0.14	1010	• 1000	0.316	0.062	0.14	1010
12.5x20	I5		2200	0.181	0.042	0.095	1400	1800	0.176	0.042	0.095	1400
12.5x25	I6		2700	0.148	0.034	0.076	1690	2200	0.159	0.034	0.076	1690
12.5x30	I7		3900	0.111	0.023	0.068	1950	2700	0.130	0.030	0.068	1950
12.5x35	I8		4700	0.099	0.024	0.054	2220	3300	0.116	0.024	0.054	2220
12.5x40	I9		5600	0.089	0.021	0.047	2390	3900	0.098	0.021	0.047	2390
16x16	J4	•	2700	0.148	0.046	0.10	1310	• 1800	0.176	0.046	0.10	1310
16x20	J5	•	4700	0.099	0.034	0.077	1660	• 3300	0.116	0.034	0.077	1660
16x25	J6		5600	0.089	0.028	0.063	2070	3900	0.098	0.028	0.063	2070
16x31.5	J7		6800	0.079	0.025	0.056	2350	5600	0.080	0.025	0.056	2350
16x35.5	J8		8200	0.073	0.022	0.050	2550	6800	0.071	0.022	0.050	2550
16x40	J9		12000	0.059	0.018	0.041	2970	8200	0.067	0.018	0.041	2970
18x16	K4	•	3300	0.131	0.043	0.097	1460	• 2200	0.159	0.043	0.097	1460
18x20	K5	•	5600	0.089	0.030	0.068	1850	• 3900	0.098	0.030	0.068	1850
18x25	K6	•	6800	0.079	0.027	0.061	2120	• 4700	0.089	0.027	0.061	2120
18x31.5	K7		10000	0.064	0.023	0.052	2410	6800	0.071	0.023	0.052	2410
18x35.5	K8		12000	0.059	0.019	0.043	2680	8200	0.067	0.019	0.043	2680
18x40	K9		15000	0.054	0.017	0.038	3010	10000	0.059	0.017	0.038	3010

Rated voltage(V)		16					25					
Case ø DxL(mm)	Casing symbol	Item	Rated capacitance	ESR	Impedance Ω/100kHz		Rated ripple current	Rated capacitance	ESR	Impedance Ω/100kHz		Rated ripple current
			μF	Ω	20°C	-10°C	mArms	μF	Ω	20°C	-10°C	mArms
5x11.5	E3		56	4.74	0.65	1.46	175	39	5.96	0.65	1.46	175
5x15	E4		82	3.24	0.46	1.04	235	56	4.15	0.46	1.04	235
6.3x11.5	F3		120	2.21	0.31	0.70	290	82	2.83	0.31	0.70	290
6.3x15	F4		180	1.48	0.20	0.45	400	120	1.94	0.20	0.45	400
8x12	G3		270	0.983	0.17	0.38	488	180	1.29	0.17	0.38	488
8x15	G4		330	0.805	0.13	0.29	617	220	1.06	0.13	0.29	617
8x20	G5		470	0.565	0.095	0.21	800	330	0.704	0.095	0.21	800
10x12.5	H3		330	0.805	0.10	0.23	625	220	1.06	0.10	0.23	625
10x16	H4		390	0.681	0.080	0.18	825	270	0.861	0.080	0.18	825
10x20	H5		680	0.391	0.062	0.14	1010	470	0.495	0.062	0.14	1010
10x25	H6		820	0.324	0.052	0.12	1190	560	0.415	0.052	0.12	1190
10x30	H7		1200	0.222	0.044	0.099	1440	820	0.284	0.044	0.099	1440
12.5x15	I4	•	680	0.391	0.062	0.14	1010	• 470	0.495	0.062	0.14	1010
12.5x20	I5		1200	0.222	0.042	0.095	1400	820	0.284	0.042	0.095	1400
12.5x25	I6		1500	0.177	0.034	0.076	1690	1000	0.233	0.034	0.076	1690
12.5x30	I7		2200	0.136	0.030	0.068	1950	1500	0.155	0.030	0.068	1950
12.5x35	I8		2700	0.111	0.024	0.054	2220	1800	0.130	0.024	0.054	2220
12.5x40	I9		3300	0.101	0.021	0.047	2390	2200	0.121	0.021	0.047	2390
16x16	J4	•	1500	0.177	0.046	0.10	1310	• 820	0.284	0.046	0.10	1310
16x20	J5	•	2200	0.136	0.034	0.077	1660	• 1500	0.155	0.034	0.077	1660
16x25	J6		2700	0.111	0.028	0.063	2070	1800	0.130	0.028	0.063	2070
16x31.5	J7		3900	0.086	0.025	0.056	2350	2700	0.099	0.025	0.056	2350
16x35.5	J8		4700	0.078	0.022	0.050	2550	3300	0.091	0.022	0.050	2550
16x40	J9		5600	0.072	0.018	0.041	2970	3900	0.077	0.018	0.041	2970
18x16	K4	•	1500	0.177	0.043	0.097	1460	• 1200	0.194	0.043	0.097	1460
18x20	K5	•	2700	0.111	0.030	0.068	1850	• 1800	0.130	0.030	0.068	1850
18x25	K6	•	3900	0.086	0.027	0.061	2120	• 2700	0.099	0.027	0.061	2120
18x31.5	K7		4700	0.078	0.023	0.052	2410	3300	0.091	0.023	0.052	2410
18x35.5	K8		6800	0.064	0.019	0.043	2680	3900	0.077	0.019	0.043	2680
18x40	K9		8200	0.061	0.017	0.038	3010	4700	0.071	0.017	0.038	3010

(Note) ESR : 20°C, 120Hz ; Rated ripple current : 105°C, 100kHz  
 • : The black circles in the capacitance column denote semi-standard products.

• The standard ratings follow the next page.

**NOTE**  
 Design, Specifications are subject to change without notice.  
 Ask factory for technical specifications before purchase and/or use.

### Standard Ratings

Rated voltage(V)			35					50				
Case ø DxL(mm)	Casing symbol	Item	Rated capacitance	ESR	Impedance Ω/100kHz		Rated ripple current	Rated capacitance	ESR	Impedance Ω/100kHz		Rated ripple current
			μF	Ω	20°C	-10°C	mArms	μF	Ω	20°C	-10°C	mArms
5x11.5	E3		—	—	—	—	—	0.47	353	3.9	7.8	22
5x11.5	E3		—	—	—	—	—	1	166	3.5	7.0	36
5x11.5	E3		—	—	—	—	—	2.2	75.4	3.0	6.0	54
5x11.5	E3		—	—	—	—	—	3.3	50.3	2.6	5.2	63
5x11.5	E3		—	—	—	—	—	4.7	35.3	2.2	4.4	75
5x11.5	E3		—	—	—	—	—	10	16.6	1.4	2.8	110
5x11.5	E3		27	7.37	0.65	1.46	175	18	9.22	0.95	1.9	120
5x15	E4		39	5.10	0.46	1.04	235	27	6.14	0.66	1.32	135
6.3x11.5	F3		56	3.56	0.31	0.70	290	39	4.25	0.43	0.86	148
6.3x15	F4		82	2.43	0.20	0.45	400	56	2.96	0.33	0.66	153
8x12	G3		120	1.66	0.17	0.38	488	68	2.44	0.20	0.40	360
8x15	G4		180	1.11	0.13	0.29	617	82	2.02	0.18	0.36	460
8x20	G5		220	0.905	0.095	0.21	800	120	1.38	0.13	0.26	670
10x12.5	H3		150	1.33	0.10	0.23	625	82	2.02	0.18	0.36	443
10x16	H4		180	1.11	0.080	0.18	825	100	1.66	0.15	0.30	553
10x20	H5		330	0.604	0.062	0.14	1010	180	0.922	0.085	0.17	676
10x25	H6		390	0.511	0.052	0.12	1190	220	0.754	0.075	0.15	876
10x30	H7		560	0.356	0.044	0.099	1440	330	0.503	0.055	0.110	1010
12.5x15	I4	•	330	0.604	0.062	0.140	1010	• 180	0.922	0.095	0.190	745
12.5x20	I5		560	0.356	0.042	0.095	1400	330	0.503	0.060	0.120	979
12.5x25	I6		680	0.293	0.034	0.076	1690	470	0.353	0.044	0.088	1180
12.5x30	I7		1000	0.200	0.030	0.068	1950	560	0.297	0.040	0.080	1310
12.5x35	I8		1200	0.166	0.024	0.054	2220	680	0.244	0.036	0.072	1470
12.5x40	I9		1500	0.133	0.021	0.047	2390	820	0.203	0.034	0.068	1590
16x16	J4	•	560	0.356	0.046	0.10	1310	• 330	0.503	0.065	0.130	982
16x20	J5	•	1000	0.200	0.034	0.077	1660	• 680	0.244	0.045	0.090	1210
16x25	J6		1200	0.166	0.028	0.063	2070	820	0.203	0.038	0.076	1490
16x31.5	J7		1800	0.111	0.025	0.056	2350	1000	0.166	0.032	0.064	1890
16x35.5	J8		2200	0.106	0.022	0.050	2550	1200	0.139	0.028	0.056	2140
16x40	J9		2700	0.087	0.018	0.041	2970	1500	0.111	0.026	0.052	2410
18x16	K4	•	680	0.293	0.043	0.097	1460	• 470	0.353	0.048	0.096	1180
18x20	K5	•	1200	0.166	0.030	0.068	1850	• 820	0.203	0.036	0.072	1450
18x25	K6	•	1800	0.111	0.027	0.061	2120	• 1000	0.166	0.032	0.064	1720
18x31.5	K7		2200	0.106	0.023	0.052	2410	1500	0.111	0.026	0.052	1970
18x35.5	K8		2700	0.087	0.019	0.043	2680	1800	0.074	0.025	0.050	2310
18x40	K9		3300	0.081	0.017	0.038	3010	2200	0.073	0.024	0.048	2530

Rated voltage(V)			63					100				
Case ø DxL(mm)	Casing symbol	Item	Rated capacitance	ESR	Impedance Ω/100kHz		Rated ripple current	Rated capacitance	ESR	Impedance Ω/100kHz		Rated ripple current
			μF	Ω	20°C	-10°C	mArms	μF	Ω	20°C	-10°C	mArms
5x11.5	E3		12	11.1	1.2	3.6	120	5.6	20.7	1.9	7.6	57
5x15	E4		18	7.37	0.85	2.6	135	8.2	14.2	1.3	5.2	74
6.3x11.5	F3		27	4.92	0.55	1.7	148	12	9.68	1.1	4.4	78
6.3x15	F4		39	3.40	0.38	1.1	153	18	6.45	0.62	2.5	85
8x12	G3		47	2.82	0.32	0.96	360	22	5.28	0.53	2.1	275
8x15	G4		68	1.95	0.24	0.72	469	33	3.52	0.35	1.4	360
8x20	G5		82	1.62	0.17	0.51	682	39	2.98	0.27	1.1	490
10x12.5	H3		56	2.37	0.23	0.69	448	27	4.30	0.47	1.9	319
10x16	H4		68	1.95	0.17	0.51	553	33	3.52	0.32	1.3	424
10x20	H5		120	1.11	0.12	0.36	676	56	2.07	0.25	0.1	499
10x25	H6		150	0.885	0.10	0.30	876	68	1.71	0.18	0.72	634
10x30	H7		180	0.738	0.085	0.26	1020	100	1.16	0.15	0.60	739
12.5x15	I4	•	150	0.885	0.11	0.33	745	• 68	1.71	0.20	0.80	613
12.5x20	I5		220	0.604	0.075	0.23	979	100	1.16	0.13	0.52	805
12.5x25	I6		270	0.492	0.065	0.20	1180	120	0.968	0.11	0.44	857
12.5x30	I7		390	0.341	0.055	0.17	1310	180	0.646	0.090	0.36	1120
12.5x35	I8		470	0.283	0.048	0.14	1470	220	0.528	0.075	0.30	1240
12.5x40	I9		560	0.237	0.042	0.13	1590	270	0.431	0.060	0.24	1330
16x16	J4	•	220	0.604	0.080	0.24	982	• 120	0.968	0.130	0.52	706
16x20	J5	•	390	0.341	0.057	0.17	1210	• 180	0.646	0.11	0.44	916
16x25	J6		470	0.283	0.052	0.16	1490	220	0.528	0.081	0.32	1290
16x31.5	J7		680	0.196	0.042	0.13	1890	330	0.352	0.059	0.23	1630
16x35.5	J8		820	0.162	0.036	0.11	2140	390	0.298	0.052	0.21	1750
16x40	J9		1000	0.133	0.032	0.096	2410	470	0.248	0.045	0.18	1920
18x16	K4	•	330	0.403	0.065	0.20	1200	• 150	0.775	0.12	0.48	871
18x20	K5	•	560	0.237	0.058	0.17	1460	• 270	0.431	0.085	0.34	1170
18x25	K6	•	680	0.196	0.050	0.15	1740	• 330	0.352	0.071	0.28	1500
18x31.5	K7		820	0.162	0.042	0.13	1990	390	0.298	0.058	0.23	1630
18x35.5	K8		1000	0.133	0.035	0.11	2340	560	0.208	0.054	0.22	1920
18x40	K9		1200	0.111	0.032	0.096	2560	680	0.171	0.041	0.16	2100

(Note) ESR : 20°C, 120Hz ; Rated ripple current : 105°C, 100kHz

• : The black circles in the capacitance column denote semi-standard products.