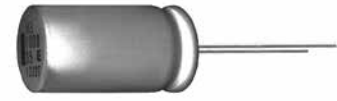
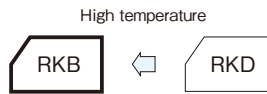


Code in front of series have been extracted from product code, which describes the segment of products, such as type and features.

- Guaranteed 3000 hours at 135°C. ($\phi 10$, 63 to 80V : 2000 hours)
- High temperature guaranteed and low ESR series for automotive.
- Environmental : GREEN CAP™ , RoHS compliance.



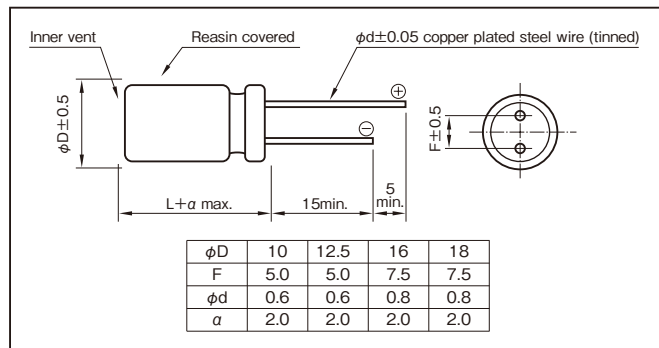
Marking color : Black print

Specifications

Item	Performance																
Category temperature range (°C)	-40 to +135																
Tolerance at rated capacitance (%)	± 20 (20°C, 120Hz)																
Leakage current (μA) (max.)	0.01CV or 3 whichever is larger (after 2 minutes) C : Rated capacitance (μF), V : Rated voltage (V) (20°C)																
Tangent of loss angle ($\tan\delta$)	<table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> </tr> </thead> <tbody> <tr> <td>$\tan\delta$ (max.)</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> <td>0.08</td> </tr> </tbody> </table> <p>0.02 is added to every 1000μF increase over 1000μF. (20°C, 120Hz)</p>	Rated voltage (V)	10	16	25	35	50	63	80	$\tan\delta$ (max.)	0.20	0.16	0.14	0.12	0.10	0.10	0.08
Rated voltage (V)	10	16	25	35	50	63	80										
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Characteristics at high and low temperature	<table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> </tr> </thead> <tbody> <tr> <td>Impedance ratio (max.)</td> <td>Z-40°C/Z+20°C</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table> <p>(120Hz)</p>	Rated voltage (V)	10	16	25	35	50	63	80	Impedance ratio (max.)	Z-40°C/Z+20°C	4	3	3	3	3	3
Rated voltage (V)	10	16	25	35	50	63	80										
Impedance ratio (max.)	Z-40°C/Z+20°C	4	3	3	3	3	3										
Endurance (135°C) (Applied ripple current)	<table border="1"> <tbody> <tr> <td>Test time</td> <td>10V to 50V : 3000 hours ($\phi 10$: 2000 hours) 63V to 80V : 2000 hours</td> </tr> <tr> <td>Leakage current</td> <td>The initial specified value or less</td> </tr> <tr> <td>Percentage of capacitance change</td> <td>Within $\pm 30\%$ of initial value</td> </tr> <tr> <td>Tangent of the loss angle</td> <td>300% or less of the initial specified value</td> </tr> </tbody> </table>	Test time	10V to 50V : 3000 hours ($\phi 10$: 2000 hours) 63V to 80V : 2000 hours	Leakage current	The initial specified value or less	Percentage of capacitance change	Within $\pm 30\%$ of initial value	Tangent of the loss angle	300% or less of the initial specified value								
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Leakage current	The initial specified value or less																
Percentage of capacitance change	Within $\pm 30\%$ of initial value																
Tangent of the loss angle	300% or less of the initial specified value																
Shelf life (135°C)	Test time : 1000hours ; other items are same as the endurance. Voltage application treatment : According to JIS C5101-4 4.1																
Applicable standards	JIS C5101 - 1, - 4 (IEC 60384 - 1, - 4)																

Outline Drawing

Unit : mm



Coefficient of Frequency for Rated Ripple Current

Rated capacitance (μF) \ Frequency (Hz)	50 · 60	120	1k	10k · 100k
220 to 330	0.55	0.65	0.85	1
470 to 1000	0.70	0.75	0.90	1
1200 to 6800	0.80	0.85	0.95	1

Product code system : 10V1000 μF
(*For automotive: powertrain, safety)

RA*	RKB	102	M	1L	F20	300	T
Category code	Series code	capacitance code	Cap tol. code	Voltage code	Size code	Lead-forming and packing code	Additional code

- For details, refer to the various "Product Code System" pages.
 - Lead-forming and packing code on this page are for lead long and standard packing products.
- For standard packing, please refer to the "PACKING" page.

Code in front of series have been extracted from product code, which describes the segment of products, such as type and features.

Standard Ratings

Rated voltage (V)	Item	10 (1L)				16 (1E)				25 (1T)				35 (1G)											
		Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)								
220	—	—	—	—	—	10×12.5	F12	0.098	725	10×12.5	F12	0.098	725	10×12.5	F12	0.098	725	10×16	F16	0.075	951				
330	10×12.5	F12	0.098	725	10×12.5	F12	0.098	725	10×12.5	F12	0.098	725	10×16	F16	0.075	951	10×20	F20	0.057	1130	—	—			
470	10×12.5	F12	0.098	725	10×16	F16	0.075	951	10×16	F16	0.075	951	10×20	F20	0.057	1130	12.5×20	G20	0.040	1550	—	—			
1000	10×20	F20	0.057	1130	10×20	F20	0.057	1130	12.5×20	G20	0.040	1550	12.5×25	G25	0.032	1880	12.5×25	G25	0.032	1880	—	—			
1200	—	—	—	—	—	—	—	—	—	12.5×20	G20	0.040	1550	12.5×30	G30	0.029	2160	16×20	J20	0.032	2020				
1500	—	—	—	—	—	—	—	—	—	—	—	—	—	12.5×35	G35	0.023	2580	16×31.5	J31	0.020	3040				
1800	—	—	—	—	—	—	—	—	—	12.5×25	G25	0.032	1880	12.5×40	G40	0.020	2920	16×20	J20	0.032	2020				
2200	12.5×25	G25	0.032	1880	12.5×25	G25	0.032	1880	12.5×30	G30	0.029	2160	16×25	J25	0.024	2550	16×25	J25	0.024	2550	16×25	J25	0.024	2550	
2700	—	—	—	—	—	—	—	—	—	12.5×35	G35	0.023	2580	16×35.5	J35	0.019	3280	16×35.5	J35	0.019	3280	16×35.5	J35	0.019	3280
3300	16×25	J25	0.024	2550	16×31.5	J31	0.020	3040	12.5×40	G40	0.020	2920	16×25	J25	0.024	2550	16×40	J40	0.017	3630	18×31.5	K31	0.018	3410	
4700	16×31.5	J31	0.020	3040	16×35.5	J35	0.019	3280	16×31.5	J31	0.020	3040	18×31.5	K31	0.018	3410	16×40	J40	0.017	3630	18×35.5	K35	0.017	3710	
5600	—	—	—	—	—	—	—	—	—	16×40	J40	0.017	3630	18×40	K40	0.016	4000	—	—	—	—	—	—		
6800	—	—	—	—	—	—	—	—	—	18×40	K40	0.016	4000	—	—	—	—	—	—	—	—	—	—		

Rated voltage (V)	Item	50 (1U)				63 (4E)				80 (1R)			
		Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Size code	ESR (Ω max.)	Rated ripple current (mArms)
220	10×20	F20	0.081	930	—	—	—	—	—	—	—	—	
330	—	—	—	—	—	—	—	—	16×20	J20	0.19	1100	
470	12.5×20	G20	0.057	1170	16×20	J20	0.19	1100	16×25	J25	0.11	1370	
560	—	—	—	—	—	—	—	—	18×25	K25	0.094	1450	
820	12.5×30	G30	0.038	1680	16×31.5	J31	0.080	1790	18×35.5	K35	0.062	2100	
1000	16×25	J25	0.031	1710	16×35.5	J35	0.066	2010	18×40	K40	0.051	2350	
1800	18×35.5	K31	0.025	2670	18×40	K40	0.051	2350	—	—	—	—	
2200	18×35.5	K35	0.022	2900	—	—	—	—	—	—	—	—	

(Note) Rated ripple current : 135°C , 100kHz ; ESR : 20°C , 100kHz