

## 135°C Use, Miniature, Low ESR Capacitors

GREEN CAP

Low ESR

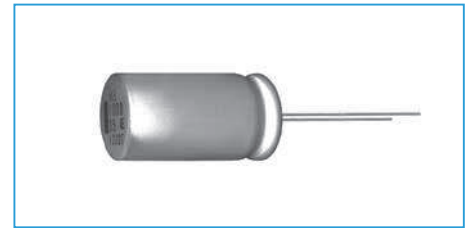
135°C  
3000hours

Anti-cleaning solvent

- High temperature guaranteed and low ESR series for automotive.
- Guarantees 3000 hours at 135°C. ( $\phi 10$  : 2000 hours)



High temperature



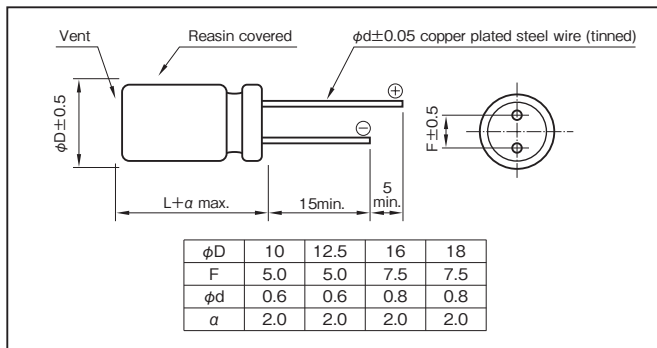
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### Specifications

Item	Performance								
Category temperature range (°C)	-40 to +135								
Tolerance at rated capacitance (%)	±20 (20°C, 120Hz)								
Leakage current ( $\mu\text{A}$ ) (max.)	0.01CV or 3 whichever is larger (after 2 minutes) C : Rated capacitance ( $\mu\text{F}$ ), V : Rated voltage (V) (20°C)								
Tangent of loss angle ( $\tan\delta$ )	Rated voltage (V)	10	16	25	35	50	63	80	100
	$\tan\delta$ (max.)	0.20	0.16	0.14	0.12	0.10	0.10	0.08	0.08
0.02 is added to every 1000 $\mu\text{F}$ increase over 1000 $\mu\text{F}$ . (20°C, 120Hz)									
Characteristics at high and low temperature	Rated voltage (V)	10	16	25	35	50	63	80	100
	Impedance ratio (max.) Z-40°C/Z+20°C	4	3	3	3	3	3	3	3
(120Hz)									
Endurance (135°C) (Applied ripple current)	Test time	3000 hours ( $\phi 10$ : 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							
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 ( $\mu\text{F}$ ) \backslash 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

### Part numbering system (example : 10V1000 $\mu\text{F}$ )

RKB	—	10	V	102	M	H5	#	—	
Series code		Rated voltage symbol		Rated capacitance symbol	Capacitance tolerance symbol	Casing symbol			Taping(Forming) symbol

Standard Ratings

Rated voltage (V)	Item	10				16				25				35			
		Case φD × L (mm)	Casing symbol	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Casing symbol	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Casing symbol	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Casing symbol	ESR (Ω max.)	Rated ripple current (mArms)
220	—	—	—	—	10×12.5	H3	0.098	725	10×12.5	H3	0.098	725	10×12.5	H3	0.098	725	
													10×16	H4	0.075	951	
330	10×12.5	H3	0.098	725	10×12.5	H3	0.098	725	10×12.5	H3	0.098	725	10×16	H4	0.075	951	
									10×16	H4	0.075	951	10×20	H5	0.057	1130	
470	10×12.5	H3	0.098	725	10×16	H4	0.075	951	10×16	H4	0.075	951	10×20	H5	0.057	1130	
									10×20	H5	0.057	1130	12.5×20	I5	0.040	1550	
1000	10×20	H5	0.057	1130	10×20	H5	0.057	1130	12.5×20	I5	0.040	1550	12.5×25	I6	0.032	1880	
	12.5×15	I4	0.059	1130	12.5×20	I5	0.040	1550	12.5×25	I6	0.032	1880					
1200	—	—	—	—	—	—	—	—	12.5×20	I5	0.040	1550	12.5×30	I7	0.029	2160	
													16×20	J5	0.032	2020	
1500	—	—	—	—	—	—	—	—	—	—	—	—	12.5×35	I8	0.023	2580	
													12.5×40	I9	0.020	2920	
1800	—	—	—	—	—	—	—	—	12.5×25	I6	0.032	1880	16×25	J6	0.024	2550	
									16×20	J5	0.032	2020	16×31.5	J7	0.020	3040	
2200	12.5×25	I6	0.032	1880	12.5×25	I6	0.032	1880	12.5×30	I7	0.029	2160	16×31.5	J7	0.020	3040	
	16×20	J5	0.032	2020	16×25	J6	0.024	2550	16×25	J6	0.024	2550	16×35.5	J8	0.019	3280	
2700	—	—	—	—	—	—	—	—	12.5×35	I8	0.023	2580	16×35.5	J8	0.019	3280	
									16×25	J6	0.024	2550	18×31.5	K7	0.018	3410	
3300	16×25	J6	0.024	2550	16×31.5	J7	0.020	3040	12.5×40	I9	0.020	2920	16×40	J9	0.017	3630	
	18×20	K5	0.029	2320	18×25	K6	0.022	2880	16×31.5	J7	0.020	3040	18×35.5	K8	0.017	3710	
4700	16×31.5	J7	0.020	3040	16×35.5	J8	0.019	3280	16×35.5	J8	0.019	3280	18×40	K9	0.016	4000	
	18×25	K6	0.022	2880	18×31.5	K7	0.018	3410	18×31.5	K7	0.018	3410					
5600	—	—	—	—	—	—	—	—	16×40	J9	0.017	3630	—	—	—	—	
6800	—	—	—	—	—	—	—	—	18×40	K9	0.016	4000	—	—	—	—	

Rated voltage (V)	Item	50				63				80				100			
		Case φD × L (mm)	Casing symbol	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Casing symbol	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Casing symbol	ESR (Ω max.)	Rated ripple current (mArms)	Case φD × L (mm)	Casing symbol	ESR (Ω max.)	Rated ripple current (mArms)
220	10×20	H5	0.098	930	—	—	—	—	—	—	—	—	16×20	J5	0.131	1070	
330	—	—	—	—	—	—	—	—	16×20	J5	0.131	1070	16×25	J6	0.097	1350	
470	12.5×20	I5	0.070	1170	16×20	J5	0.099	1230	16×25	J6	0.097	1350	16×35.5	J8	0.077	1740	
560	—	—	—	—	—	—	—	—	18×25	K6	0.088	1530	16×40	J9	0.069	1940	
820	12.5×30	I7	0.047	1680	16×31.5	J7	0.062	1850	18×35.5	K8	0.069	1980	18×40	K9	0.066	2120	
1000	16×25	J6	0.039	1990	16×35.5	J8	0.058	2010	18×40	K9	0.066	2120	—	—	—	—	
1800	18×31.5	K7	0.030	2670	18×40	K9	0.053	2350	—	—	—	—	—	—	—	—	
2200	18×35.5	K8	0.028	2900	—	—	—	—	—	—	—	—	—	—	—	—	

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