



RQL Series

Features

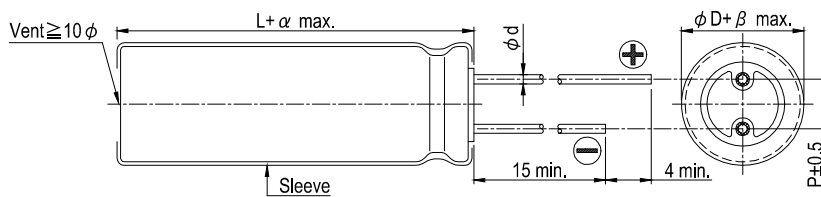
- 105°C, 10,000 hours assured
- 10 φ ~ 18 φ with large permissible ripple current
- Slim type included
- RoHS compliant



Specifications

Items	Performance																							
	Category Temperature Range	400V -40°C ~ +105°C	420 ~ 450V -25°C ~ +105°C																					
Capacitance Tolerance	± 20% (at 120 Hz, 20°C)																							
Leakage Current (at 20°C)	<table border="1"> <tr> <td>Time</td> <td colspan="3">after 5 minutes</td> </tr> <tr> <td rowspan="2">Leakage Current</td> <td>CV ≤ 1,000 I = 0.03CV + 15(µA)</td> <td colspan="2">CV > 1,000 I = 0.02CV + 25(µA)</td> </tr> </table> <p>Where, C = rated capacitance in µF, V = rated DC working voltage in V</p>				Time	after 5 minutes			Leakage Current	CV ≤ 1,000 I = 0.03CV + 15(µA)	CV > 1,000 I = 0.02CV + 25(µA)													
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	Tanδ (at 120 Hz, 20°C)	<table border="1"> <tr> <td>Rated Voltage</td> <td>400</td> <td>420</td> <td colspan="2">450</td> </tr> <tr> <td>Tanδ (max.)</td> <td>0.24</td> <td>0.24</td> <td colspan="2">0.24</td> </tr> </table>				Rated Voltage	400	420	450		Tanδ (max.)	0.24	0.24	0.24										
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Low Temperature Characteristics (at 120 Hz)	<p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <tr> <td colspan="2">Rated Voltage</td> <td>400</td> <td>420</td> <td colspan="2">450</td> </tr> <tr> <td rowspan="2">Impedance Ratio</td> <td>Z(-25°C) / Z(+20°C)</td> <td>5</td> <td>6</td> <td colspan="2">6</td> </tr> <tr> <td>Z(-40°C) / Z(+20°C)</td> <td>6</td> <td>-</td> <td colspan="2">-</td> </tr> </table>				Rated Voltage		400	420	450		Impedance Ratio	Z(-25°C) / Z(+20°C)	5	6	6		Z(-40°C) / Z(+20°C)	6	-	-				
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Endurance	<table border="1"> <tr> <td>Test Time</td> <td colspan="4">10,000 Hrs</td> </tr> <tr> <td>Capacitance Change</td> <td colspan="4">Within ± 20% of initial value</td> </tr> <tr> <td>Tanδ</td> <td colspan="4">Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td colspan="4">Within specified value</td> </tr> </table> <p>* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied with rated ripple current for 10,000 hours at 105°C.</p>				Test Time	10,000 Hrs				Capacitance Change	Within ± 20% of initial value				Tanδ	Less than 200% of specified value				Leakage Current	Within specified value			
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Shelf Life Test	<table border="1"> <tr> <td>Test Time</td> <td colspan="4">1,000 Hrs</td> </tr> <tr> <td>Capacitance Change</td> <td colspan="4">Within ± 20% of initial value</td> </tr> <tr> <td>Tanδ</td> <td colspan="4">Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td colspan="4">Within specified value</td> </tr> </table> <p>* The above specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. The rated voltage shall be applied to the capacitors before the measurements (Refer to JIS C 5101-4 4.1).</p>				Test Time	1,000 Hrs				Capacitance Change	Within ± 20% of initial value				Tanδ	Less than 200% of specified value				Leakage Current	Within specified value			
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Ripple Current and Frequency Multipliers	<table border="1"> <tr> <td>Frequency (Hz)</td> <td>60</td> <td>120</td> <td>500</td> <td>1k</td> <td>10k up</td> </tr> <tr> <td>Multipliers</td> <td>0.80</td> <td>1.00</td> <td>1.25</td> <td>1.40</td> <td>1.50</td> </tr> </table>				Frequency (Hz)	60	120	500	1k	10k up	Multipliers	0.80	1.00	1.25	1.40	1.50								
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Diagram of Dimensions



Lead Spacing and Diameter Unit: mm

	10	12.5	16	18
φ D	10	12.5	16	18
P	5.0	5.0	7.5	7.5
φ d	0.6		0.8	
α	2.0			
β	0.5			



Dimension: $\phi D \times L(\text{mm})$

Dimension and Permissible Ripple Current

Ripple Current: mA/rms at 105°C

Rated Voltage (V _{DC})	Cap. (μF)	10 φ			12.5 φ			16 φ			18 φ		
		φ D×L	Ripple Current		φ D×L	Ripple Current		φ D×L	Ripple Current		φ D×L	Ripple Current	
			120 Hz	100k Hz		120 Hz	100k Hz		120 Hz	100k Hz		120 Hz	100k Hz
400V (2G)	33	10×40	315	475									
	39	10×45	360	545									
	47	10×50	420	630	12.5×30	440	660						
	56				12.5×35	500	750						
	68				12.5×40	580	870	16×31.5	530	795			
	82				12.5×50	625	935	16×35.5	615	920			
	100							16×40	715	1,070			
	120							16×40	800	1,200	18×35.5	790	1,185
								16×45	840	1,260	18×40	870	1,305
								16×50	990	1,485	18×45	985	1,475
										18×50	1,120	1,685	
420V (2P)	33	10×40	370	555									
	39	10×45	410	615	12.5×30	390	585						
	47	10×50	465	700	12.5×35	450	675						
	56				12.5×40	520	780	16×31.5	500	750			
	68				12.5×45	580	870	16×35.5	580	870			
	82				12.5×50	660	990	16×35.5	730	1,095			
								16×40	675	1,010			
	100							16×40	750	1,125	18×35.5	725	1,085
								16×45	755	1,130			
								16×50	865	1,300	18×40	835	1,250
										18×45	880	1,320	
										18×50	1,030	1,550	
450V (2W)	33	10×45	330	495	12.5×30	370	555						
	39	10×50	380	570	12.5×35	420	630						
	47				12.5×40	480	720						
	53				12.5×45	500	750						
	56				12.5×45	530	795	16×31.5	510	765			
	68				12.5×50	620	930	16×35.5	590	885			
	82							16×40	615	920	18×35.5	645	965
	100							16×45	715	1,070	18×40	750	1,125
	120							16×50	820	1,230	18×45	835	1,250
	150										18×50	975	1,465

Remark: Other sizes and specification are available, please contact us for detail.

Part Numbering System

RQL Series 39μF ± 20% 450V Bulk Package Gas Type 10 φ × 50L General Purpose

RQL **390** **M** **2W** **BK** - **1050**

Series Name Capacitance Capacitance Tolerance Rated Voltage Lead Configuration and Package Rubber Type Case Size Application

Note: For more details, please refer to "Part Numbering System - Radial Type" on page 139.