



## PQ Series

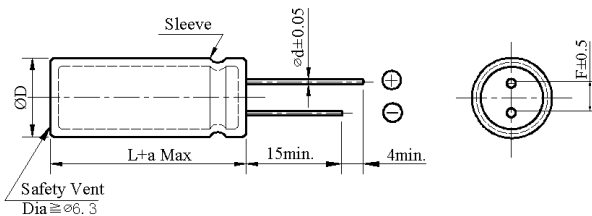
- 105°C Long Life (10,000 hours), Miniature size  
Body diameter of  $\Phi 10\text{mm}$  to  $\Phi 12.5\text{mm}$  with high ripple current capability



### SPECIFICATIONS

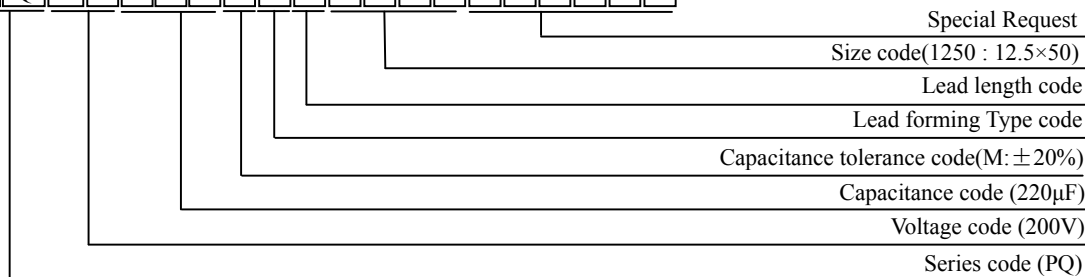
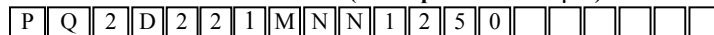
Item	Performance Characteristics														
Category Temperature Range	-25 ~ +105°C														
Working Voltage Range	200 ~ 450Vdc														
Capacitance Range	33 ~ 220 $\mu\text{F}$														
Capacitance Tolerance	$\pm 20\%$ (at 25°C and 120Hz)														
Dissipation Factor (tan $\delta$ ) (at 25°C, 120Hz)	<table border="1"> <tr> <td>Rated Voltage (V)</td> <td>200</td> <td>220</td> <td>250</td> <td>400</td> <td>420</td> <td>450</td> </tr> <tr> <td>tan<math>\delta</math>(Max)</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> <td>0.25</td> <td>0.25</td> </tr> </table>	Rated Voltage (V)	200	220	250	400	420	450	tan $\delta$ (Max)	0.20	0.20	0.20	0.20	0.25	0.25
Rated Voltage (V)	200	220	250	400	420	450									
tan $\delta$ (Max)	0.20	0.20	0.20	0.20	0.25	0.25									
Leakage Current	$I=0.03CV + 10\mu\text{A}$ I : Leakage current ( $\mu\text{A}$ ) C : Rated capacitance ( $\mu\text{F}$ ) V : Rated voltage (V) Impress the rated voltage for 2 minutes														
Low Temperature Characteristics Impedance Ratio(MAX)	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>200~250</td> <td>400</td> <td>420 ~ 450</td> </tr> <tr> <td>Z(-25°C)/Z(+20°C)</td> <td>3</td> <td>5</td> <td>6</td> </tr> </table> (at 120Hz)	Rated voltage (V)	200~250	400	420 ~ 450	Z(-25°C)/Z(+20°C)	3	5	6						
Rated voltage (V)	200~250	400	420 ~ 450												
Z(-25°C)/Z(+20°C)	3	5	6												
Endurance	The following specifications shall be satisfied when the capacitors are restored to 25°C after subjected to DC voltage with the rated ripple current is applied for 10,000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td><math>\cong \pm 20\%</math> of the initial value</td> </tr> <tr> <td>Dissipation factor(tan<math>\delta</math>)</td> <td><math>\cong 200\%</math> of the specified value</td> </tr> <tr> <td>Leakage current</td> <td><math>\cong</math> specified value</td> </tr> </table>	Capacitance change	$\cong \pm 20\%$ of the initial value	Dissipation factor(tan $\delta$ )	$\cong 200\%$ of the specified value	Leakage current	$\cong$ specified value								
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Dissipation factor(tan $\delta$ )	$\cong 200\%$ of the specified value														
Leakage current	$\cong$ specified value														
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 25°C after the rated voltage applied for 1,000 hours at 105°C without voltage applied. <table border="1"> <tr> <td>Capacitance change</td> <td><math>\cong \pm 20\%</math> of the initial value</td> </tr> <tr> <td>Dissipation factor(tan<math>\delta</math>)</td> <td><math>\cong 200\%</math> of the specified value</td> </tr> <tr> <td>Leakage current</td> <td><math>\cong 200\%</math> of the specified value</td> </tr> </table>	Capacitance change	$\cong \pm 20\%$ of the initial value	Dissipation factor(tan $\delta$ )	$\cong 200\%$ of the specified value	Leakage current	$\cong 200\%$ of the specified value								
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Dissipation factor(tan $\delta$ )	$\cong 200\%$ of the specified value														
Leakage current	$\cong 200\%$ of the specified value														
Others	Conforms to JIS-C-5101-4 (1998), characteristic W														

### DIMENSIONS (mm)



$\Phi D$	10	12.5 L < 35	12.5 L $\geq$ 35
$\Phi D$	$\Phi D + 0.5 \text{ Max}$		
$\Phi d$	0.6	0.6	0.8
F	5.0		
a	L + 1.5 Max	$\leq 35 L + 1.5 \text{ Max}$	$\geq 40 L + 2.0 \text{ Max}$

### PART NUMBER SYSTEM (Example : 200V 220 $\mu\text{F}$ )





**PQ Series**

◆ Case size & Permissible rated ripple current: (mA rms) at 105°C / 120Hz

uF \ Vdc	200		220		250	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
68					10×45	505
82			10×45	530	10×50	610
100	10×45	630	10×50	660	12.5×35	690
120	10×55	750	12.5×35	740	12.5×40	790
150	12.5×35	800	12.5×40	860	12.5×45	920
180	12.5×40	920	12.5×45	990		
220	12.5×50	1090				

uF \ Vdc	400		420		450	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
33			10×50	370	10×55	360
					12.5×30	370
39	10×50	400	10×55	410	12.5×35	420
			12.5×30	390		
47	10×55	450	12.5×35	450	12.5×40	480
	12.5×35	440				
56	12.5×40	500	12.5×40	520	12.5×45	530
68	12.5×45	580	12.5×50	580		
82	12.5×55	650				

◆ RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Vdc	Frequency (Hz)				
	60(50)	120	500	1K	≥10K
200 ~ 250	0.80	1.00	1.20	1.30	1.40
400 ~ 450	0.80	1.00	1.25	1.40	1.50