

# MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

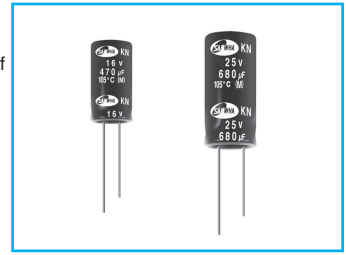


Upgrade



Low Imp., High Ripple Current Series

IZI Low Impedance    M Miniaturized    S Solvent Proof



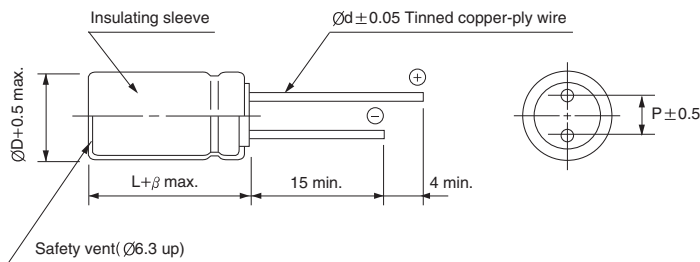
- High ripple current compared with MN series
- Enabled high ripple current by a reduction of impedance at high frequency range
- High reliability withstanding 5000 hours load life at 105°C
- Complied to the RoHS directive

MK → KN  
High Ripple

Item	Characteristics													
Operating temperature range	-40 ~ +105°C													
Leakage current max.	I = 0.01CV or 3µA whichever is greater (after 2 minutes) I = 0.03CV or 4µA whichever is greater (after 1 minute)													
Capacitance tolerance	±20% at 120Hz, 20°C													
Dissipation factor max. (at 120Hz, 20°C)	Capacitance > 1000µF : tanδ increases by 0.02 for each 1000µF from below value.													
	<table border="1"> <tr> <td>WV</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>tanδ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> </tr> </table>	WV	6.3	10	16	25	35	50	tanδ	0.22	0.19	0.16	0.14	0.12
WV	6.3	10	16	25	35	50								
tanδ	0.22	0.19	0.16	0.14	0.12	0.10								
Low temperature characteristics (Impedance ratio at 120Hz)	Z-40°C / Z+20°C													
	Z-25°C / Z+20°C													
Load life	After an application of DC bias voltage plus the rated AC ripple current for 5000 hours at 105°C. The measurement shall meet the following limits. The DC voltage plus the peak AC voltage combined must not exceed the rated voltage.													
	Leakage current	Less than specified value												
	Capacitance change	Within ±25% of initial value												
	tanδ	Less than 200% of specified value												
	<table border="1"> <tr> <td>Case Size</td> <td>∅D ≤ 6.3</td> <td>∅D = 8</td> <td>∅D = 10</td> <td>∅D ≥ 12.5</td> </tr> <tr> <td>Life time</td> <td>2000 hours</td> <td>3000 hours</td> <td>4000 hours</td> <td>5000 hours</td> </tr> </table>	Case Size	∅D ≤ 6.3	∅D = 8	∅D = 10	∅D ≥ 12.5	Life time	2000 hours	3000 hours	4000 hours	5000 hours			
Case Size	∅D ≤ 6.3	∅D = 8	∅D = 10	∅D ≥ 12.5										
Life time	2000 hours	3000 hours	4000 hours	5000 hours										
Shelf life (at 105°C)	After 1000 hours no load test, leakage current, capacitance and tanδ are same as load life value. The measurement shall be performed at 20°C by the KS C IEC 60384 - 4													

## DRAWING

Unit : mm



∅D	5	6.3	8	10	12.5
P	2.0	2.5	3.5	5.0	5.0
∅d	0.5	0.5	0.6	0.6	0.6
β	1.5		2.0		

MINIATURE TYPES

## FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

µF \ Frequency	120Hz	1kHz	10kHz	50kHz	100kHz ≤
22 ~ 47	0.18	0.70	0.90	0.94	1.00
56 ~ 100	0.27	0.73	0.92	0.95	1.00
120 ~ 270	0.49	0.73	0.92	0.96	1.00
330 ~ 680	0.55	0.77	0.94	0.97	1.00
820 ~ 1500	0.60	0.80	0.96	0.98	1.00
2200 ~ 3900	0.70	0.85	0.98	0.99	1.00

# MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

**KN** series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV Item $\mu\text{F}$	10			16			25		
	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance ( $\Omega$ )max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance ( $\Omega$ )max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance ( $\Omega$ )max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz
47							5 × 11	0.150	405
56				5 × 11	0.150	405	6.3 × 11	0.065	760
100	5 × 11	0.150	405	6.3 × 11	0.065	760	8 × 11.5	0.060	850
220	6.3 × 11	0.065	760	8 × 11.5	0.060	850	8 × 11.5	0.036	1000
330	8 × 11.5	0.060	850	8 × 11.5	0.036	1000	8 × 15	0.028	1250
							10 × 12.5	0.027	1430
470	8 × 11.5	0.036	1000	8 × 15	0.028	1250	8 × 20	0.020	1600
				10 × 12.5	0.027	1430	10 × 16	0.020	1820
680	8 × 15	0.028	1250	8 × 20	0.020	1600	10 × 20	0.014	2180
	10 × 12.5	0.027	1430	10 × 16	0.020	1820	12.5 × 16	0.018	2200
820	10 × 12.5	0.025	1500	10 × 16	0.018	2000	10 × 25	0.013	2360
1000	8 × 20	0.020	1600	10 × 20	0.014	2180	12.5 × 20	0.013	2480
	10 × 16	0.020	1820	12.5 × 16	0.018	2200			
1200	10 × 20	0.014	2180	10 × 25	0.013	2360	12.5 × 20	0.013	2600
	12.5 × 16	0.018	2200						
1500	10 × 25	0.013	2360	12.5 × 20	0.013	2480	12.5 × 25	0.012	2900
2200	12.5 × 20	0.013	2480	12.5 × 25	0.012	2900			
3300	12.5 × 25	0.012	3200						

WV Item $\mu\text{F}$	35			50		
	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance ( $\Omega$ )max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance ( $\Omega$ )max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz
33	5 × 11	0.150	405			
47	6.3 × 11	0.100	550	6.3 × 11	0.140	405
56	6.3 × 11	0.065	760	6.3 × 11	0.140	580
100	8 × 11.5	0.050	850	8 × 11.5	0.072	760
150	8 × 11.5	0.036	1000	10 × 12.5	0.061	1030
220	8 × 15	0.028	1250	10 × 16	0.042	1430
	10 × 12.5	0.027	1430			
270	8 × 20	0.020	1600	12.5 × 16	0.042	1700
330	10 × 16	0.020	1820	10 × 20	0.030	1820
470	10 × 20	0.014	2180	12.5 × 20	0.027	2360
	12.5 × 16	0.018	2200			
560	10 × 25	0.013	2360	12.5 × 25	0.020	2500
680	12.5 × 20	0.013	2480			
1000	12.5 × 25	0.012	2900			