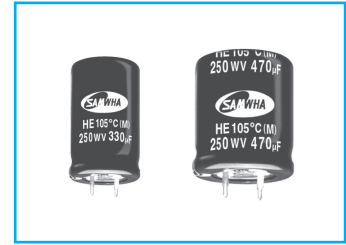
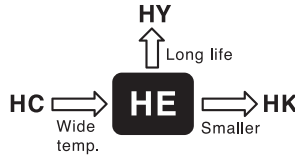


LARGE ALUMINUM ELECTROLYTIC CAPACITORS

HE Wide Temperature Range, Standard Series

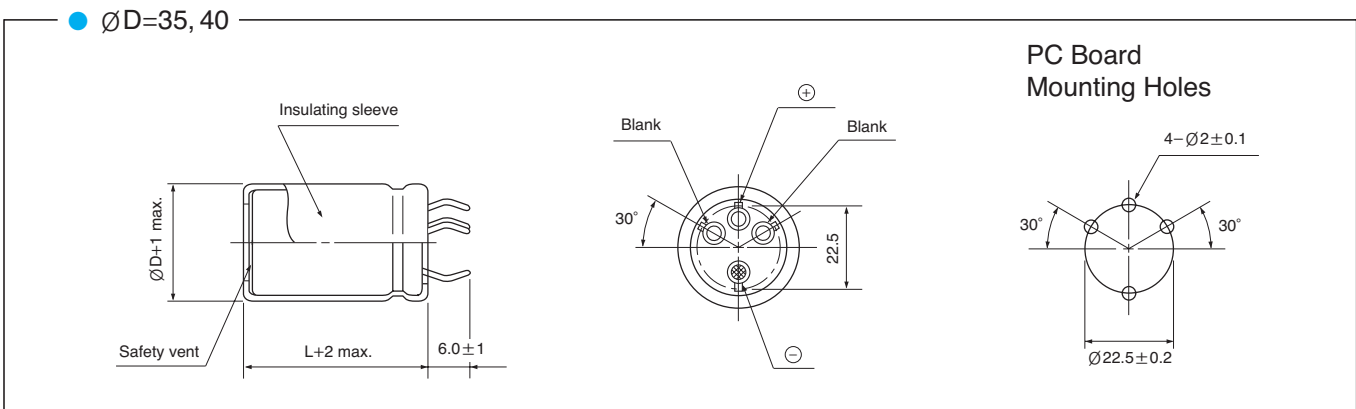
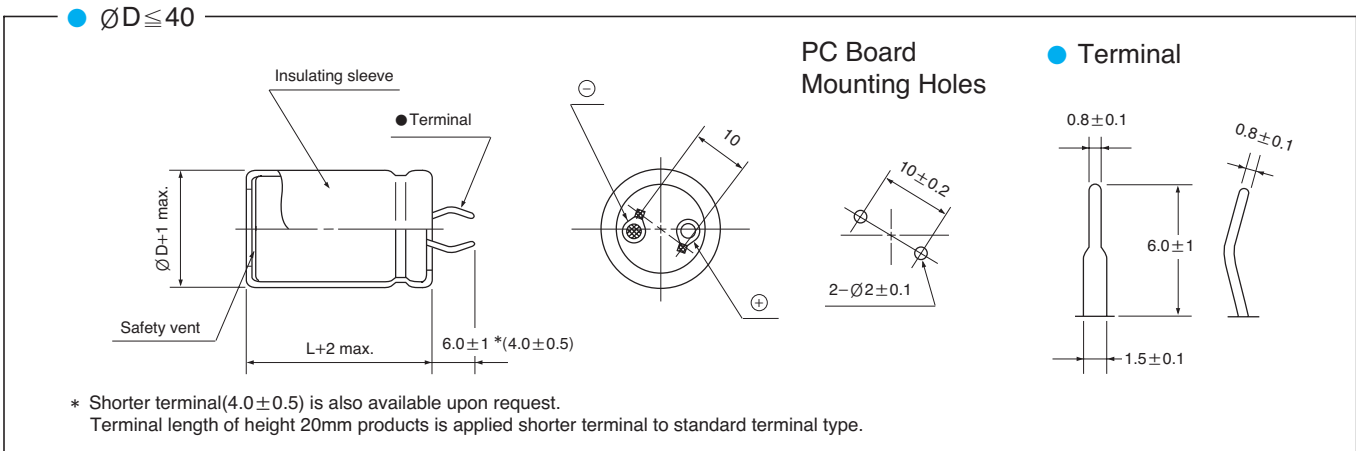
- Wide temperature range of -40(-25) ~ +105°C
- Standard snap-in terminal type
- Complied to the RoHS directive



Item	Characteristics															
Operating temperature range	WV < 350 : -40 ~ +105°C, WV ≥ 350 : -25 ~ +105°C															
Capacitance tolerance	±20% at 120Hz, 20°C															
Leakage current max.	$I = 3\sqrt{CV}$ (µA) (after 5 minutes)															
Dissipation factor max. (at 120Hz, 20°C)	Capacitance > 1000µF : tanδ increases by 0.01 for each 1000µF from below value.															
	<table border="1"> <thead> <tr> <th>WV</th> <th>6.3, 10</th> <th>16</th> <th>25, 35</th> <th>50, 63</th> <th>80, 100</th> <th>160~400</th> <th>450, 500</th> </tr> </thead> <tbody> <tr> <td>tanδ</td> <td>0.50</td> <td>0.40</td> <td>0.35</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> <td>0.20</td> </tr> </tbody> </table>	WV	6.3, 10	16	25, 35	50, 63	80, 100	160~400	450, 500	tanδ	0.50	0.40	0.35	0.25	0.20	0.15
WV	6.3, 10	16	25, 35	50, 63	80, 100	160~400	450, 500									
tanδ	0.50	0.40	0.35	0.25	0.20	0.15	0.20									
Load life (after application of the rated voltage for 2000 hours at 105°C)	Leakage current	Less than specified value														
	Capacitance change	Within ±20% of initial value														
	tanδ	Less than 200% of specified value														
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 6035 clause 5.4.															

● DRAWING

Unit : mm



● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

WV \ Frequency(Hz)	50Hz	120Hz	300Hz	1kHz	10kHz ≤
~ 100	0.85	1.00	1.06	1.15	1.20
160 ~ 250	0.85	1.00	1.20	1.25	1.45
315 ~	0.85	1.00	1.15	1.20	1.40

HE series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV μF / ØD	6.3					10					16				
	22	25.4	30	35	40	22	25.4	30	35	40	22	25.4	30	35	40
8200											22 × 25 2.14				
10000						22 × 25 2.17					22 × 30 2.48	25.4 × 25 2.56			
12000	22 × 25 2.19					22 × 30 2.48					22 × 35 2.80	25.4 × 30 2.90	30 × 25 2.97		
15000	22 × 30 2.53					22 × 35 2.83	25.4 × 25 2.75				22 × 40 3.17	25.4 × 35 3.29	30 × 30 3.38		
18000	22 × 35 2.85	25.4 × 25 2.77				22 × 35 3.00	25.4 × 30 3.11				22 × 45 3.50	25.4 × 40 3.65	30 × 30 3.57		
22000	22 × 35 3.04	25.4 × 30 3.15				22 × 40 3.35	25.4 × 35 3.48	30 × 25 3.38				25.4 × 45 4.03	30 × 35 3.98		
27000	22 × 40 3.40	25.4 × 35 3.53	30 × 25 3.42			22 × 50 3.88	25.4 × 40 3.87	30 × 30 3.79				25.4 × 50 4.42	30 × 40 4.39	35 × 30 4.29	
33000	22 × 50 3.92	25.4 × 40 3.91	30 × 30 3.83				25.4 × 45 4.26	30 × 35 4.20					30 × 45 4.79	35 × 35 4.71	
39000		25.4 × 45 4.26	30 × 35 4.20				25.4 × 50 4.60	30 × 40 4.57	35 × 30 4.46				30 × 50 5.16	35 × 40 5.10	
47000		25.4 × 50 4.63	30 × 40 4.60	35 × 30 4.50				30 × 45 4.95	35 × 35 4.87					35 × 45 5.50	40 × 40 5.60
56000			30 × 50 5.17	35 × 40 5.12					35 × 45 5.49	40 × 40 5.59					40 × 50 6.22
68000				35 × 45 5.52	40 × 40 5.62					40 × 50 6.22					40 × 60 6.83

WV μF / ØD	25					35					50				
	22	25.4	30	35	40	22	25.4	30	35	40	22	25.4	30	35	40
2700											22 × 30 1.94				
3300						22 × 25 1.62					22 × 35 2.20				
3900						22 × 30 1.88					22 × 40 2.52	25.4 × 35 2.62	30 × 25 2.54		
4700	22 × 25 1.73					22 × 35 2.14	25.4 × 25 2.09				22 × 45 2.81	25.4 × 40 2.93	30 × 30 2.87		
5600	22 × 30 1.98					22 × 35 2.29	25.4 × 30 2.37	30 × 25 2.43			22 × 50 3.11	25.4 × 40 3.11	30 × 35 3.21		
6800	22 × 30 2.14					22 × 40 2.61	25.4 × 35 2.71	30 × 30 2.79				25.4 × 50 3.64	30 × 40 3.61	35 × 30 3.53	
8200	22 × 35 2.42	25.4 × 30 2.50				22 × 50 3.02	25.4 × 40 3.02	30 × 30 2.95					30 × 45 3.94	35 × 35 3.87	
10000	22 × 40 2.77	25.4 × 35 2.88					25.4 × 45 3.43	30 × 35 3.38					30 × 50 4.42	35 × 40 4.37	
12000	22 × 45 3.09	25.4 × 40 3.22	30 × 30 3.15				25.4 × 50 3.78	30 × 40 3.75	35 × 30 3.67					35 × 45 4.78	
15000		25.4 × 45 3.62	30 × 35 3.57	35 × 30 3.65				30 × 45 4.19	35 × 35 4.12					35 × 50 5.24	40 × 40 5.13
18000		25.4 × 50 3.98	30 × 40 3.95	35 × 35 4.06					35 × 40 4.52						40 × 50 5.76
22000			30 × 45 4.36	35 × 35 4.28					35 × 45 4.95	40 × 40 5.04					40 × 50 5.98
27000				35 × 45 4.92	40 × 40 5.01					40 × 50 5.92					40 × 60 6.61

WV μF / ØD	63					80					100				
	22	25.4	30	35	40	22	25.4	30	35	40	22	25.4	30	35	40
820						22 × 25 1.37					22 × 30 1.46	25.4 × 25 1.51			
1000						22 × 30 1.62	25.4 × 25 1.67				22 × 35 1.71	25.4 × 30 1.77			
1200	22 × 25 1.37					22 × 30 1.67	25.4 × 25 1.72				22 × 40 1.86	25.4 × 35 1.94	30 × 25 1.88		
1500	22 × 30 1.50	25.4 × 25 1.54				22 × 35 1.98	25.4 × 30 2.05				22 × 45 2.18	25.4 × 40 2.28	30 × 30 2.23		
1800	22 × 30 1.64	25.4 × 25 1.69				22 × 40 2.28	25.4 × 35 2.37	30 × 25 2.30				25.4 × 45 2.61	30 × 35 2.57		
2200	22 × 35 1.86	25.4 × 30 1.92				22 × 45 2.51	25.4 × 35 2.49	30 × 30 2.56				25.4 × 50 2.85	30 × 40 2.83	35 × 30 2.76	
2700	22 × 40 2.17	25.4 × 30 2.13	30 × 25 2.18				25.4 × 45 3.03	30 × 35 2.99					30 × 45 3.27	35 × 35 3.22	
3300	22 × 50 2.53	25.4 × 40 2.53	30 × 30 2.48				25.4 × 50 3.33	30 × 40 3.30	35 × 30 3.23				30 × 50 3.59	35 × 40 3.55	
3900		25.4 × 45 2.88	30 × 35 2.84					30 × 45 3.75	35 × 35 3.69					35 × 45 4.03	
4700		25.4 × 50 3.20	30 × 40 3.17	35 × 30 3.10				30 × 50 4.10	35 × 40 4.06					35 × 50 4.40	40 × 40 4.31
5600			30 × 45 3.51	35 × 35 3.46					35 × 45 4.44						40 × 50 4.88
6800			30 × 50 3.92	35 × 40 3.88					35 × 50 4.90	40 × 40 4.80					40 × 50 5.18
8200				35 × 45 4.22						40 × 50 5.32	← Case size ØD × L (mm)				
10000				35 × 50 4.74	40 × 40 4.64						← Ripple current (Arms) at 105°C, 120Hz				

LARGE ALUMINUM ELECTROLYTIC CAPACITORS

HE series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV μF ∅D	160					200					250				
	22	25.4	30	35	40	22	25.4	30	35	40	22	25.4	30	35	40
150						22×20 0.63					22×20 0.68	25.4×20 0.69			
180	22×20 0.69					22×20 0.69					22×25 0.74	25.4×20 0.76	30×20 0.83		
220	22×20 0.76					22×25 0.82	25.4×20 0.84				22×25 0.88	25.4×25 0.90	30×20 0.92		
270	22×25 0.91	25.4×20 0.93				22×30 0.91	25.4×25 1.00	30×20 1.02			22×30 1.03	25.4×30 1.06	30×25 1.09	35×20 1.11	
330	22×25 1.01	25.4×25 1.10	30×20 1.13			22×30 1.07	25.4×25 1.11	30×20 1.13			22×40 1.20	25.4×30 1.18	30×25 1.21	35×20 1.23	
390	22×30 1.17	25.4×25 1.20	30×20 1.23			22×35 1.24	25.4×30 1.28	30×25 1.31	35×20 1.34		22×45 1.36	25.4×40 1.42	30×30 1.39	35×25 1.42	
470	22×35 1.36	25.4×25 1.32	30×25 1.44	35×20 1.47		22×40 1.43	25.4×35 1.40	30×25 1.44	35×25 1.56		22×50 1.56	25.4×40 1.56	30×30 1.53	35×25 1.56	
560	22×40 1.56	25.4×30 1.53	30×25 1.57	35×25 1.70		22×45 1.63	25.4×40 1.62	30×30 1.67	35×25 1.70			25.4×50 1.86	30×35 1.76	35×30 1.80	
680	22×45 1.80	25.4×35 1.79	30×25 1.73	35×25 1.88		22×50 1.88	25.4×45 1.96	30×30 1.84	35×25 1.88				30×35 2.12	35×35 2.09	
820	22×50 2.06	25.4×40 2.06	30×30 2.02	35×25 2.06			25.4×50 2.25	30×35 2.13	35×30 2.18				30×40 2.23	35×35 2.40	
1000		25.4×45 2.38	30×35 2.35	35×30 2.41				30×45 2.57	35×35 2.53					35×45 2.76	40×40 2.81
1200		25.4×50 2.52	30×40 2.50	35×30 2.44				30×50 2.72	35×35 2.57	40×40 2.85				35×50 2.91	40×50 3.08
1500				35×40 3.00	40×40 3.19				35×45 3.13	40×50 3.44					40×60 3.68

WV μF ∅D	315					350					400				
	22	25.4	30	35	40	22	25.4	30	35	40	22	25.4	30	35	40
56											22×20 0.37				
68						22×20 0.41					22×25 0.44	25.4×20 0.45			
82	22×20 0.45					22×25 0.48	25.4×20 0.49				22×25 0.48	25.4×25 0.53	30×20 0.54		
100	22×25 0.53	25.4×20 0.55				22×25 0.53	25.4×25 0.59	30×20 0.60			22×30 0.56	25.4×25 0.58	30×20 0.60		
120	22×30 0.62	25.4×25 0.64	30×20 0.65			22×30 0.62	25.4×25 0.64	30×20 0.65			22×35 0.66	25.4×30 0.68	30×25 0.70	35×20 0.71	
150	22×35 0.74	25.4×30 0.76	30×20 0.73			22×40 0.78	25.4×30 0.76	30×25 0.78	35×20 0.80		22×40 0.77	25.4×30 0.75	30×25 0.78	35×20 0.80	
180	22×40 0.85	25.4×35 0.88	30×25 0.86	35×20 0.87		22×45 0.89	25.4×35 0.88	30×30 0.91	35×20 0.87		22×45 0.89	25.4×40 0.93	30×30 0.91	35×25 0.93	
220	22×45 0.98	25.4×35 0.98	30×25 0.95	35×20 0.96		22×50 1.03	25.4×40 1.03	30×30 1.00	35×25 1.03		22×50 1.02	25.4×40 1.01	30×30 1.00	35×30 1.08	
270		25.4×40 1.19	30×30 1.12	35×25 1.14			25.4×45 1.19	30×35 1.17	35×30 1.20			25.4×45 1.17	30×35 1.17	35×30 1.20	
330		25.4×40 1.24	30×40 1.36	35×30 1.33			25.4×50 1.35	30×40 1.36	35×30 1.36			25.4×50 1.35	30×40 1.36	35×35 1.40	
390			30×40 1.47	35×35 1.52			25.4×50 1.47	30×45 1.54	35×35 1.54				30×50 1.61	35×40 1.59	
470			30×45 1.70	35×40 1.74					35×40 1.74				30×50 1.76	35×45 1.82	40×40 1.85
560			30×50 1.90	35×40 1.90					35×50 2.06	40×40 2.02				35×50 2.06	40×50 2.18
680			30×50 2.12	35×45 2.18	40×40 2.23					40×50 2.40				35×50 2.27	40×60 2.57

WV μF ∅D	450					500				
	22	25.4	30	35	40	22	25.4	30	35	40
47	22×20 0.34					22×25 0.27	25.4×20 0.27			
56	22×25 0.40	25.4×20 0.41				22×30 0.31	25.4×25 0.32	30×20 0.33		
68	22×25 0.44	25.4×25 0.48	30×20 0.49			22×30 0.34	25.4×25 0.35	30×25 0.39	35×20 0.39	
82	22×30 0.51	25.4×25 0.52	30×20 0.54			22×35 0.40	25.4×30 0.41	30×25 0.43	35×20 0.43	
100	22×30 0.56	25.4×25 0.58	30×25 0.64	35×20 0.65		22×40 0.46	25.4×35 0.48	30×25 0.47	35×25 0.51	
120	22×35 0.66	25.4×30 0.67	30×25 0.70	35×25 0.76		22×45 0.53	25.4×40 0.55	30×30 0.55	35×30 0.59	
150	22×45 0.80	25.4×30 0.77	30×25 0.83	35×25 0.85			25.4×45 0.65	30×35 0.64	35×30 0.66	
180		25.4×35 0.93	30×30 0.90	35×30 0.98			25.4×45 0.70	30×40 0.74	35×35 0.76	
220		25.4×45 1.08	30×35 1.06	35×30 1.08				30×45 0.85	35×40 0.88	40×40 0.93
270			30×40 1.23	35×35 1.26				30×50 0.98	35×45 1.01	40×40 1.03
330			30×45 1.42	35×40 1.46					35×50 1.17	40×50 1.23
390			30×50 1.60	35×45 1.66					35×50 1.27	40×50 1.34
470				35×45 1.81	40×40 1.85					40×60 1.57
560				35×50 2.06	40×50 2.18					

← Case size ∅D×L (mm)
← Ripple current (Arms) at 105°C, 120Hz