

## KH series long life 5000~10000hrs

### Feature

- ◆ Used in electronic ballast, switching power supply, industrial measuring instruments.
- ◆ Higher ripple current
- ◆ Endurance 5000~10000 Hrs at 105°C
- ◆ Safety vent construction design.
- ◆ RoHS Compliant

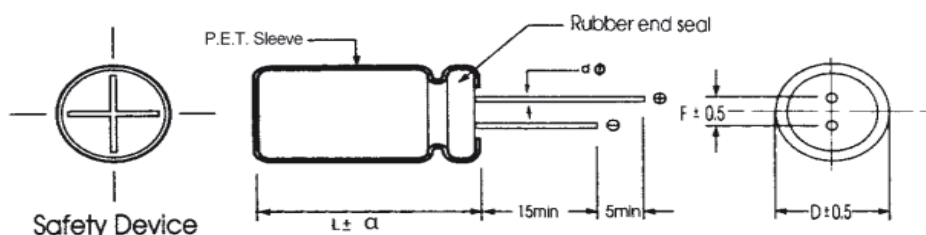
### Specifications

Item	Performance Characteristics																	
Operating Temperature Range	-40 to +105°C	-25 to +105°C																
Rated Voltage Range	10 to 400 VDC	450 VDC																
Capacitance Range	6.8 to 3300 μF	6.8 to 100 μF																
Capacitance Tolerance	±20% (120Hz, +20°C)																	
Leakage Current (+20°C, max.)	10~100V: $I \leq 0.01CV$ or 3uA	160~450V: $I \leq 0.04CV + 100(\mu A)$																
	After 1 minute whichever is greater measured with rated working voltage applied I=Leakage Current(μA) C=Rated capacitance(μF) V=Rated Voltage(V)																	
Dissipation Factor (tanδ, at 20°C, 120Hz)	Working Voltage(VDC)																	
	D.F. (%)max.	10	16	25	35	50	160	200	250	350	400	450						
Low Temperature Characteristics (at 120Hz)	Impedance ratio max																	
	Working Voltage(VDC)																	
	Z-25°C / Z+20°C	4	3	2	2	2	3	3	3	6	6	6						
	Z-40°C / Z+20°C	6	4	3	3	3	6	6	6	6	6	-						
Endurance	Test conditions Duration time :As right Ambient temperature :+105°C Applied voltage :Rated DC working voltage After test requirement at +20°C Capacitance change : with±20% of the initial measured value Dissipation factor : ≤ 200% of the initial specified value Leakage current : ≤ The initial specified value																	
		<table border="1" style="float: right;"> <thead> <tr> <th>Dφ</th> <th>Life (hours)</th> </tr> </thead> <tbody> <tr> <td>&lt;8φ</td> <td>5000</td> </tr> <tr> <td>8φ</td> <td>8000</td> </tr> <tr> <td>≥10φ</td> <td>10000</td> </tr> </tbody> </table>										Dφ	Life (hours)	<8φ	5000	8φ	8000	≥10φ
Dφ	Life (hours)																	
<8φ	5000																	
8φ	8000																	
≥10φ	10000																	
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105°C Applied voltage :None																	
	After test requirement at +20°C:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.																	

### Multiplier for Ripple Current vs.

Frequency(Hz)	120	1K	10K	≥50K
Multiplier	0.5	0.8	0.85	1.0

### Diagram of



Dφ	5	6	8	10	13	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
dφ	0.5		0.6		0.8		

α	D < 18	D = 18		D > 18
	1.5	L < 35.5	L ≥ 35.5	2.0
		1.5	2.0	2.0

## Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105°C /100KHz)
10	47	5x11	100
10	68	5x11	130
10	100	6.3x11	190
10	150	6.3x11	220
10	220	6.3x11	270
10	330	6.3x11	334
10	330	8x11.5	390
10	470	8x11.5	458
10	470	10x12.5	540
10	1000	8x20	878
10	1000	10x12.5	810
10	1000	10x16	900
10	2200	13x16	1401
10	2200	13x20	1540
10	3300	13x20	1533
10	3300	16x25	1900
16	33	5x11	115
16	47	5x11	145
16	68	6.3x11	200
16	100	6.3x11	210
16	100	8x11.5	245
16	150	6.3x11	257
16	150	8x11.5	300
16	220	6.3x11	360
16	220	8x11.5	420
16	220	10x12.5	495
16	330	8x11.5	433
16	330	8x16	500
16	470	8x11.5	558
16	470	10x12.5	657
16	470	10x16	730
16	1000	10x20	1012
16	1000	13x20	1173
16	2200	13x20	1689
16	2200	13x25	1862
16	2200	16x25	2093
25	22	5x11	100
25	33	5x11	130
25	47	6.3x11	160
25	68	6.3x11	197
25	68	8x11.5	230
25	100	6.3x11	280
25	100	8x11.5	327
25	150	8x11.5	390
25	150	10x12.5	460
25	220	8x11.5	443
25	220	10x16	580
25	330	8x16	644
25	330	10x12.5	657
25	330	10x16	730
25	330	10x20	805
25	470	10x16	861
25	470	10x20	950
25	1000	13x20	1408
25	1000	13x25	1552
25	2200	16x25	2169
25	2200	16x31.5	2400
35	10	5x11	65
35	22	5x11	125
35	33	5x11	160

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105°C /100KHz)
35	33	6.3x11	178
35	47	5x11	180
35	47	6.3x11	206
35	47	8x11.5	240
35	68	6.3x11	231
35	68	8x11.5	270
35	100	8x11.5	331
35	100	10x12.5	390
35	150	8x11.5	483
35	150	8x16	558
35	150	10x16	632
35	220	8x16	610
35	220	10x16	689
35	220	10x20	760
35	330	10x16	810
35	330	10x20	893
35	330	13x20	1035
35	470	10x16	781
35	470	10x20	861
35	470	13x20	998
35	470	13x25	1100
35	820	10x25	1300
35	1000	13x20	1409
35	1000	13x25	1554
35	1000	16x25	1746
35	1000	16x31.5	1932
50	6.8	5x11	75
50	10	5x11	97
50	22	6.3x11	130
50	33	6.3x11	210
50	33	8x11.5	241
50	47	6.3x11	246
50	47	8x11.5	287
50	47	10x12.5	300
50	68	8x11.5	302
50	68	10x12.5	356
50	100	8x11.5	382
50	100	10x16	500
50	150	10x12.5	610
50	150	10x16	677
50	150	10x20	747
50	220	10x16	764
50	220	10x20	843
50	220	13x20	977
50	330	13x20	1043
50	330	13x25	1150
50	470	13x20	1253
50	470	16x21	1441
50	470	16x25	1552
50	1000	16x25	1771
50	1000	16x31.5	1960
50	1000	18x31.5	2093

## Case Size

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105°C /100KHz)
160	47	5×11	100
160	68	5×11	130
160	100	6.3×11	190
160	150	6.3×11	220
160	220	6.3×11	270
160	330	6.3×11	334
160	330	8×11.5	390
160	470	8×11.5	458
160	470	10×12.5	540
160	1000	8×20	878
160	1000	10×12.5	810
160	1000	10×16	900
160	2200	13×16	1401
160	2200	13×20	1540
160	3300	13×20	1533
160	3300	16×25	1900
160	33	5×11	115
200	47	5×11	145
200	68	6.3×11	200
200	100	6.3×11	210
200	100	8×11.5	245
200	150	6.3×11	257
200	150	8×11.5	300
200	220	6.3×11	360
200	220	8×11.5	420
200	220	10×12.5	495
200	330	8×11.5	433
200	330	8×16	500
200	470	8×11.5	558
200	470	10×12.5	657
200	470	10×16	730
200	1000	10×20	1012
250	1000	13×20	1173
250	2200	13×20	1689
250	2200	13×25	1862
250	2200	16×25	2093
250	22	5×11	100
250	33	5×11	130
250	47	6.3×11	160
250	68	6.3×11	197
250	68	8×11.5	230
250	100	6.3×11	280
250	100	8×11.5	327
250	150	8×11.5	390
250	150	10×12.5	460
250	220	8×11.5	443
250	220	10×16	580
350	330	8×16	644
350	330	10×12.5	657
350	330	10×16	730
350	330	10×20	805
350	470	10×16	861
350	470	10×20	950
350	1000	13×20	1408
350	1000	13×25	1552
350	2200	16×25	2169
350	2200	16×31.5	2400
350	10	5×11	65
350	22	5×11	125
350	33	5×11	160

WV (Vdc)	Cap (uF)	Size mm	Rated Ripple current (Arms/105°C /100KHz)
350	100	18×25	1580
350	120	18×31.5	1870
350	150	18×35.5	2170
400	6.8	10×12.5	260
400	6.8	10×16	290
400	6.8	10×20	310
400	10	10×16	330
400	10	10×20	360
400	10	13×20	410
400	15	13×20	560
400	22	13×20	770
400	22	16×21	880
400	22	16×25	950
400	33	16×21	910
400	33	18×21	970
400	47	16×25	1190
400	47	18×21	1190
400	47	18×25	1270
400	68	18×25	1480
400	68	18×31.5	1630
400	82	18×25	1530
400	100	18×31.5	1730
400	120	18×35.5	1950
400	150	18×41	2220
450	6.8	10×20	290
450	6.8	13×20	330
450	10	13×20	460
450	10	13×25	500
450	15	13×20	550
450	15	13×25	610
450	22	13×25	710
450	22	16×21	760
450	22	16×25	790
450	33	16×25	990
450	33	18×21	990
450	33	18×25	1060
450	47	18×25	1210
450	47	18×31.5	1330
450	68	18×31.5	1580
450	82	18×35.5	1790
450	100	18×41	1810