SH Wide Temperature Range Series

· Standard series for general purposes
· High CV value
· Wide operating temperature range of -40 ~ + 105℃
· Complied to the RoHS directive

Items	Performance characteristics
Operating temperature range	-40 ~ +105℃ (6.3V~450V); -25 ~ +105℃ (500V)
Leakage current max.	WV ≤ 100: I = 0.01CV or 3μA whichever is greater (after 2 minutes); I = 0.03CV or 4μA whichever is greater (after 1 minute) WV > 100: I = 0.02CV + 15μA (after 5 minutes)
Capacitance tolerance	±20% at 120Hz, 20℃
Dissipation factor max. (at 120Hz, 20℃)	Capacitance > 1000μF:tanδ increases by 0.02 for each 1000μF from below value.

WV	6.3	10	16	25	35	50	63	100	160~250	350~500
Tanδ	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.15	0.20

Low temperature characteristics (Impedance ratio at 120Hz)

WV	6.3	10	16	25	35	50~100	160	200~350	400~450	500
Z-25℃ /Z+20℃	5	4	3	2	2	2	4	6	10	12
Z-40℃ /Z+20℃	12	10	8	5	4	3	6	8	12	-

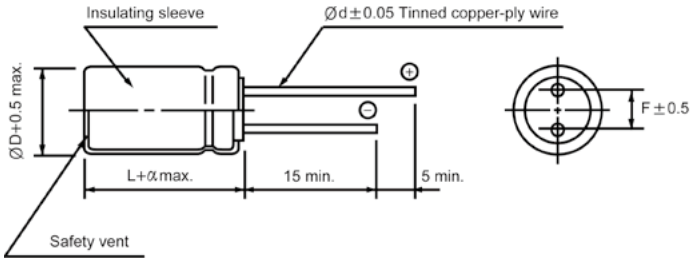
Load life (after application of the rated voltage for 2000 hours at 105℃)

Leakage current	Less than specified value
Capacitance change	Within ±20% of initial value
Tanδ	Less than 200% of specified value

Shelf life (at 105℃)	After 1000 hours no load test, leakage current, capacitance and tanδ are same as load life value.

● DRAWING

Unit : mm



ΦD	5	6.3	8	10	12.5	16	18	22
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
Φd	0.5			0.6		0.8		
α	1.5			2.0				3.0

● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

WV	Frequency / μF	60Hz	120Hz	1kHz	10kHz	50kHz	100kHz≤
6.3 ~ 100	~ 47	0.75	1.00	1.55	2.00	2.00	2.00
	68 ~ 680	0.80	1.00	1.35	1.50	1.62	1.75
	820 ~	0.85	1.00	1.15	1.15	1.32	1.50
160 ~ 500	~ 220	0.80	1.00	1.40	1.60	1.70	1.80
	330 ~	0.90	1.00	1.13	1.15	1.32	1.50

SH Series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV / μF	6.3		10		16		25		35	
47									5×11	98
68							5×11	108	6.3×11	136
100					5×11	121	5×11	135	6.3×11	165
150					5×11	148	6.3×11	184	8×11.5	238
220	5×11	150	5×11	163	6.3×11	207	6.3×11	245	8×11.5	289
330	6.3×11	212	6.3×11	230	6.3×11	269	8×11.5	323	10×12.5	411
470	6.3×11	253	6.3×11	274	8×11.5	357	10×12.5	412	10×16	555
680	8×11.5	360	8×11.5	390	8×11.5	450	10×16	565	10×20	710
1000	8×11.5	435	10×12.5	494	10×12.5	597	10×16	706	12.5×20	979
2200	10×16	737	10×16	788	10×20	998	12.5×20	1156	16×25	1524
3300	10×20	964	12.5×20	1158	12.5×20	1264	16×25	1645	16×31.5	1876
4700	12.5×20	1302	12.5×25	1427	12.5×25	1596	16×25	1836	16×35.5	2178
6800	12.5×25	1596	16×25	1749	16×25	1932	18×31.5	2335	18×40	2556
10000	16×25	1971	16×31.5	2122	16×31.5	2382	18×40	2658		
15000	16×35.5	2219	16×35.5	2463	18×35.5	2742				
22000	18×40	2799	18×40	2882	22×40	3009				

WV / μF	50		63		100		160		200	
1.0	5×11	15	5×11	17	5×11	17				
2.2	5×11	24	5×11	25	5×11	25				
3.3	5×11	29	5×11	31	5×11	31	6.3×11	33	6.3×11	33
4.7	5×11	34	5×11	37	5×11	37	6.3×11	39	6.3×11	42
6.8	5×11	42	5×11	45	5×11	45	8×11.5	57	8×11.5	57
10	5×11	51	5×11	54	5×11	57	8×11.5	72	8×11.5	72
22	5×11	75	5×11	81	6.3×11	93	10×12.5	117	10×16	129
33	5×11	92	6.3×11	113	8×11.5	133	10×16	156	10×20	174
47	6.3×11	126	6.3×11	135	8×11.5	166	10×20	219	10×20	219
68	6.3×11	152	8×11.5	192	10×12.5	219	12.5×20	293	12.5×25	319
100	8×11.5	218	8×11.5	233	10×16	291	12.5×25	387	16×25	387
150	10×12.5	310	10×12.5	316	10×20	396	16×20	474	16×25	518
220	10×12.5	375	10×16	439	12.5×20	552	16×25	654	18×31.5	721
330	10×16	504	10×20	588	12.5×25	751	16×35.5	864	18×35.5	904
470	10×20	656	12.5×20	823	16×25	996	18×40	1075	22×40	1121
680	12.5×20	926	12.5×25	1080	16×31.5	1232	22×40	1373		
1000	12.5×25	1224	16×25	1452	18×31.5	1473				
2200	16×31.5	1665	18×31.5	1833						
3300	18×31.5	2073	18×40	2240						
4700	18×40	2454								

Ripple current (mA rms) at 105℃ , 120Hz
Case size ΦD×L(mm)

WV / μF	250		350		400		450		500	
1.0							8×11.5	19		
2.2							8×11.5	24		
3.3	6.3×11	36	8×11.5	39	8×11.5	42	8×11.5	37		
4.7	6.3×11	42	8×11.5	49	10×12.5	54	10×12.5	54	10×16	51
6.8	8×11.5	57	10×12.5	66	10×12.5	65	10×16	64	10×16	57
10	10×12.5	80	10×12.5	80	10×16	86	10×20	86	12.5×25	133
22	10×16	127	12.5×20	166	12.5×20	163	12.5×25	162	16×25	198
33	10×20	185	16×20	222	12.5×25	222	16×25	220	16×31.5	232
47	12.5×20	239	16×20	264	16×25	290	16×31.5	288	18×31.5	309
68	16×20	318	16×25	348	16×31.5	366	16×35.5	377	18×35.5	342
100	16×25	423	18×31.5	444	18×35.5	500	18×40	409		
150	16×31.5	544	18×40	633	18×40	647	22×45	962		
220	18×35.5	741	22×40	834	22×45	887				
330	22×40	1121								