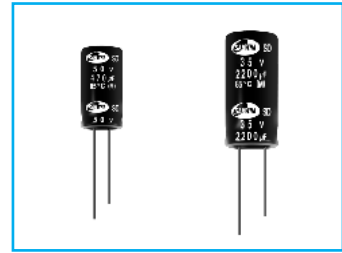
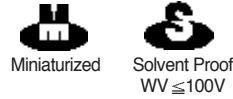


# MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

UPGRADE



Standard, For General Purposes Series

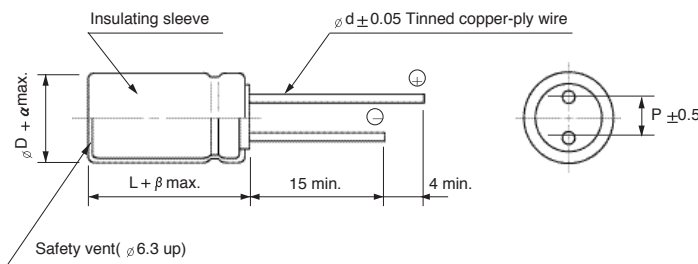


- Standard series for general purposes
- High CV value
- Ideal for slim type audio equipment
- Voltage range of 6.3~500V
- Load life of 2000 hours at 85°C

Item	Characteristics										
Operating temperature range	WV	6.3~350									
	Temperature range	400 ~ 500 -40 ~ +85°C									
Leakage current max.	WV ≤ 100	WV > 100									
	I = 0.01CV or 3μA whichever is greater (after 2 min) I = 0.03CV or 4μA whichever is greater (after 1 min)										
Capacitance tolerance	±20% at 120Hz, 20°C										
Dissipation factor max. (at 120Hz, 20°C)	Capacitance > 1000μF : tan δ increases by 0.02 for each 1000μF from below value.										
	WV	6.3	10	16	25	35	50	63	100	160~250	350~500
tan δ	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	400~500	
	Z-25°C/Z+20°C	5	4	3	2	2	2	4	6	12	
	Z-40°C/Z+20°C	12	10	8	5	4	3	6	8	—	
Load life (after application of the rated voltage for 2000 hours at 85°C)	Leakage current	Less than specified value									
	Capacitance change	Within ±20% of initial value									
	tan δ	Less than 200% of specified value									
Shelf life (at 85°C)	After 1000 hours no load test, leakage current, capacitance and tan δ are same as load life value.										

## ● DRAWING

Unit : mm



øD	5	6.3	8	10	12.5	16	18	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	12.5
ød	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0
α	0.5							1.0	
β	1.0			2.0					

## ● PERMISSIBLE RIPPLE CURRENT MULTIPLIERS

μF \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz~
~ 47	0.75	1	1.35	1.55	2.0
68 ~ 680	0.80	1	1.25	1.34	1.5
1000 ~	0.85	1	1.10	1.13	1.15

**SD** series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV μF	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	500
1.0						5×11 21	5×11 23	5×11 23							8×11.5 26
1.5						5×11 26	5×11 28	5×11 28							8×11.5 32
2.2						5×11 32	5×11 34	5×11 34							8×11.5 33
3.3						5×11 39	5×11 42	5×11 42	6.3×11 45	6.3×11 45	6.3×11 48	8×11.5 53	8×11.5 56	8×11.5 50	
4.7						5×11 46	5×11 50	5×11 50	6.3×11 53	6.3×11 57	6.3×11 57	8×11.5 66	10×12.5 61	10×12.5 72	10×16 69
6.8						5×11 56	5×11 60	5×11 60	8×11.5 76	8×11.5 76	8×11.5 76	10×12.5 88	10×12.5 87	10×16 86	10×16 76
10						5×11 68	5×11 72	5×11 76	8×11.5 96	8×11.5 96	10×12.5 107	10×12.5 107	10×16 115	10×20 115	12.5×25 178
15						5×11 83	5×11 89	5×11 89	10×12.5 131	10×16 143	10×16 143	10×20 156	12.5×20 165	12.5×20 164	
22						5×11 101	5×11 108	6.3×11 124	10×12.5 156	10×16 173	10×16 170	12.5×20 222	12.5×20 218	12.5×25 217	16×25 265
33						5×11 123	6.3×11 151	8×11.5 178	10×16 209	10×20 232	10×20 247	16×20 297	12.5×25 296	16×25 294	16×31.5 310
47				5×11 120	5×11 131	6.3×11 169	6.3×11 181	8×11.5 222	10×20 293	10×20 293	12.5×20 319	16×20 362	16×25 387	16×31.5 384	18×31.5 412
68				5×11 144	6.3×11 182	6.3×11 203	8×11.5 256	10×12.5 293	12.5×20 391	12.5×25 426	16×20 425	16×25 465	16×31.5 488	16×35.5 503	18×35.5 457
100			5×11 162	5×11 181	6.3×11 220	8×11.5 291	8×11.5 311	10×16 388	12.5×25 516	12.5×25 516	16×25 564	18×31.5 592	18×35.5 667	18×40 546	
150			5×11 198	6.3×11 246	8×11.5 318	10×12.5 414	10×12.5 422	10×20 528	16×20 632	16×25 691	16×31.5 726	18×40 845	18×40 863	22×45 1283	
220	5×11 201	5×11 218	6.3×11 276	6.3×11 327	8×11.5 386	10×12.5 501	10×16 586	12.5×20 737	16×25 873	16×31.5 962	18×35.5 988	22×41 1112	22×45 1183		
330	6.3×11 283	6.3×11 307	6.3×11 359	8×11.5 431	10×12.5 549	10×16 672	10×20 784	12.5×25 1002	16×35.5 1152	18×35.5 1206	22×41 1495				
470	6.3×11 338	6.3×11 366	8×11.5 476	10×12.5 550	10×16 740	10×20 875	12.5×20 1098	16×25 1328	18×40 1434	18×40 1495	25×41 1612				
680	6.3×11 480	8×11.5 520	8×11.5 600	10×16 754	10×20 947	12.5×20 1235	12.5×25 1440	16×31.5 1643	22×41 1831	22×51 1902	25×51 2151				
1000	8×11.5 581	10×12.5 659	10×12.5 796	10×16 942	12.5×20 1306	12.5×25 1633	16×25 1937	18×31.5 1965	25×51 2105						
2200	10×16 983	10×16 1051	10×20 1331	12.5×20 1542	16×25 2032	16×31.5 2220	18×31.5 2445	22×51 2612							
3300	10×20 1286	12.5×20 1545	12.5×20 1686	16×25 2194	16×31.5 2502	18×31.5 2765	18×40 2987	25×51 3187							
4700	12.5×20 1736	12.5×25 1903	12.5×25 2129	16×25 2448	16×35.5 2905	18×40 3272	25×41 3412								
6800	12.5×25 2129	16×25 2332	16×25 2577	18×31.5 3114	18×40 3408	25×41 4251	25×51 4351	Case size $\varnothing D \times L$ (mm) Ripple current (mA rms) at 85°C, 120Hz							
10000	16×25 2629	16×31.5 2830	16×31.5 3176	18×40 3544	25×41 3899										
15000	16×35.5 2959	16×35.5 3284	18×35.5 3656	25×41 4399											
22000	18×40 3733	18×40 3843	22×41 4012												
33000	22×41 5992	25×41 6184	25×51 6276												
39000	25×41 7487	25×51 7613													

MINIATURE TYPES

# MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

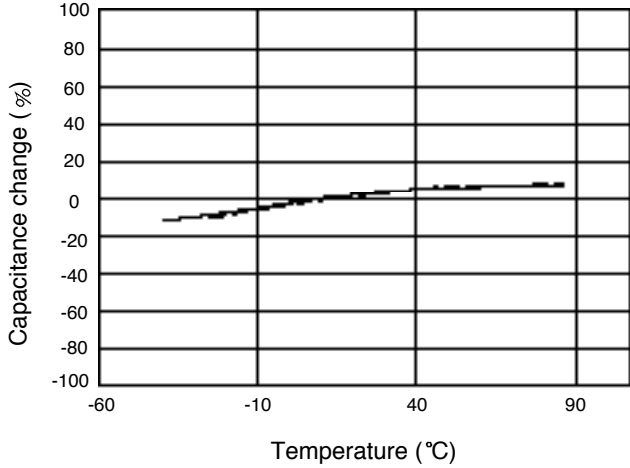
**SD** series

## TYPICAL PERFORMANCE

— 16V 1000 $\mu$ F  
 ..... 400V 10 $\mu$ F

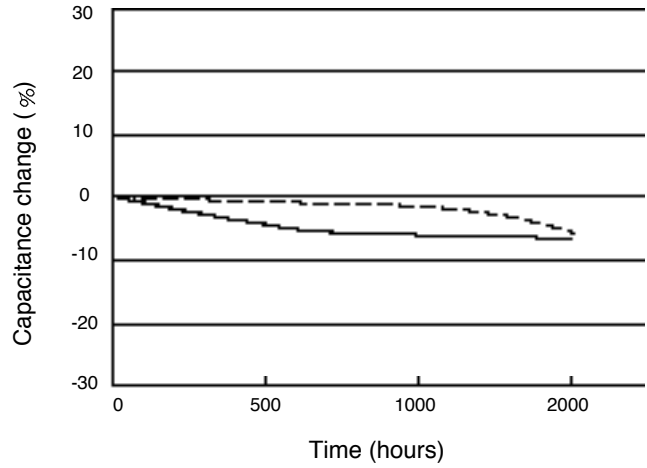
● TEMPERATURE CHARACTERISTICS

Capacitance change vs. temperature

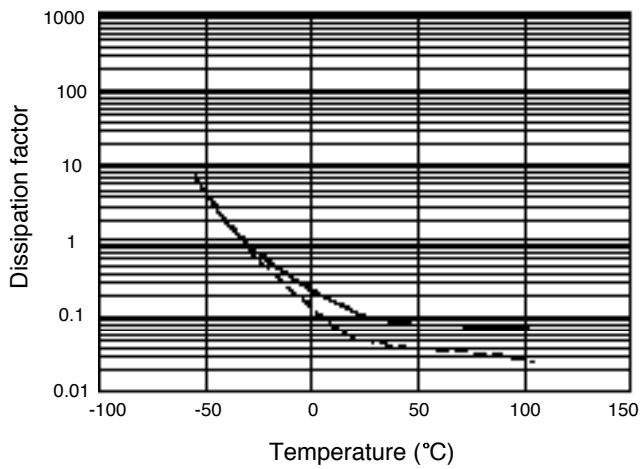


● LOAD LIFE (at +85°C)

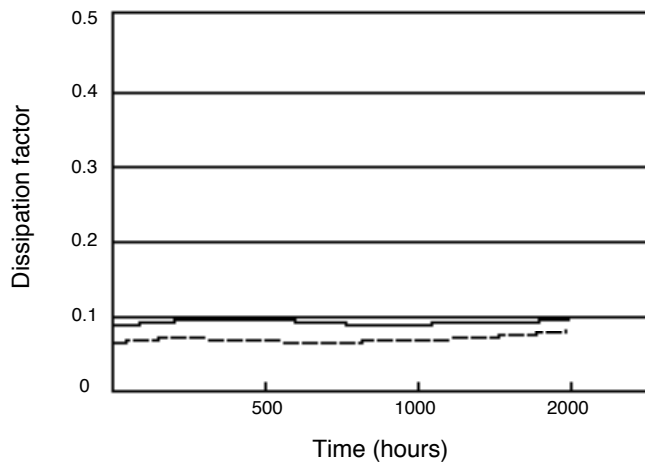
Capacitance change vs. time



Dissipation factor vs. temperature

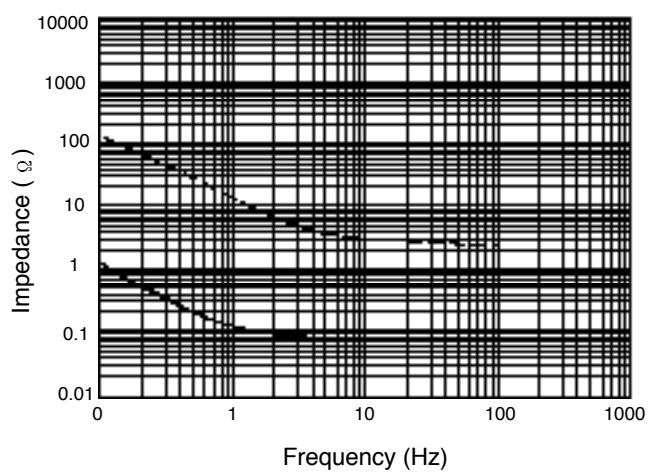


Dissipation factor vs. time



● FREQUENCY CHARACTERISTICS

Impedance vs. frequency



Leakage current vs. time

