

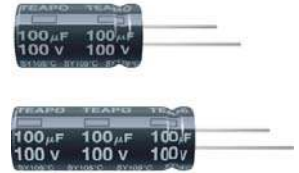
**SY**

Low impedance · Long life Series

- Features: Low Impedance , high permissible ripple current at high frequency and long life than SC
- Recommended Applications :Used switching regulator applications in computers.  
Especially for high frequency.
- Corresponding product to RoHS

**SY**

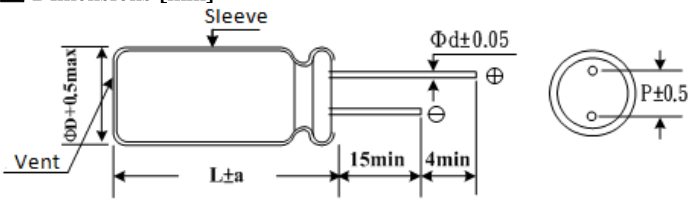
↑ Long Life  
SC



**SPECIFICATIONS**

Item	Characteristics																												
Category Temperature Range	-40 ~ +105°C																												
Rated Voltage Range	6.3 ~ 100VDC																												
Rated Capacitance Range	15 ~ 15000 μF																												
Capacitance Tolerance	± 20 % (120Hz , 20°C)																												
Leakage Current (20°C)	I=0.01CV or 3 μ A whichever is greater. (After rated voltage applied for 2 minutes) I : Max. leakage current (μ A), C : Nominal capacitance (μ F), V : Rated voltage (V)																												
Dissipation Factor(MAX) (tan δ) (120Hz , 20°C)	<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> <td>63</td> <td>100</td> </tr> <tr> <td>tan δ</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> <td>0.09</td> <td>0.08</td> </tr> </table> <p>When nominal capacitance is over 1000 μ F, tan δ shall be added 0.02 to the listed value with increase of every 1000 μ F.</p>	WV	6.3	10	16	25	35	50	63	100	tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08										
WV	6.3	10	16	25	35	50	63	100																					
tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08																					
Low Temperature Stability Impedance Ratio (MAX)	<table border="1"> <tr> <td rowspan="3">Z(120Hz)</td> <td>WV</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td>Z-25°C / Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>	Z(120Hz)	WV	6.3	10	16	25	35	50	63	100	Z-25°C / Z+20°C	4	3	2	2	2	2	2	2	Z-40°C / Z+20°C	8	6	4	3	3	3	3	3
Z(120Hz)	WV		6.3	10	16	25	35	50	63	100																			
	Z-25°C / Z+20°C		4	3	2	2	2	2	2	2																			
	Z-40°C / Z+20°C	8	6	4	3	3	3	3	3																				
Endurance	<p>After applying rated voltage with rated ripple current for 6000 hours at 105°C , the capacitors shall meet the following requirements.</p> <table border="1"> <tr> <td>Capacitance change</td> <td colspan="4">Within ± 25% of initial value</td> </tr> <tr> <td>D.F. (tan δ)</td> <td colspan="4">Not more than 200% of specified value</td> </tr> <tr> <td>Leakage current</td> <td colspan="4">Not more than the specified value</td> </tr> <tr> <td>DΦ</td> <td>5~6.3 Φ</td> <td>8~10 Φ x12.5</td> <td>10x15~12 Φ</td> <td>13~18 Φ</td> </tr> <tr> <td>life(hours)</td> <td>3000 hrs</td> <td>4000 hrs</td> <td>5000 hrs</td> <td>6000 hrs</td> </tr> </table> <p>*If dimension is down size,Endurance will be less 1000 hours than standard.</p>	Capacitance change	Within ± 25% of initial value				D.F. (tan δ)	Not more than 200% of specified value				Leakage current	Not more than the specified value				DΦ	5~6.3 Φ	8~10 Φ x12.5	10x15~12 Φ	13~18 Φ	life(hours)	3000 hrs	4000 hrs	5000 hrs	6000 hrs			
Capacitance change	Within ± 25% of initial value																												
D.F. (tan δ)	Not more than 200% of specified value																												
Leakage current	Not more than the specified value																												
DΦ	5~6.3 Φ	8~10 Φ x12.5	10x15~12 Φ	13~18 Φ																									
life(hours)	3000 hrs	4000 hrs	5000 hrs	6000 hrs																									
Shelf Life	After placed at 105°C without voltage applied for 1000 hours,the capacitors shall meet the same requirement as Endurance.																												

**Dimensions [mm]**



ΦD	5	6.3	8	10	13	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
Φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
a	1.5	1.5	1.5	1.5	2.0	2.0	2.0

**Multiplier for Ripple Current**

Freq. (Hz)	120	1 K	10 K	100 K
15~ 180 μ F	0.40	0.75	0.90	1.00
220 ~ 560 μ F	0.50	0.85	0.94	1.00
680 ~1800 μ F	0.60	0.87	0.95	1.00
2200 ~ 3900 μ F	0.75	0.90	0.95	1.00
≥ 4700 μ F	0.85	0.95	0.98	1.00

■ STANDARD RATINGS

Rated Voltage (SurageVoltage) (V)	Cap ( $\mu$ F)	Case size $\Phi$ DxL(mm)	Ripple current (mA/rms105°C) (100KHz)	Impedance ( $\Omega$ ,20°C) (100KHz)	Rated Voltage (SurageVoltage) (V)	Cap ( $\mu$ F)	Case size $\Phi$ DxL(mm)	Ripple current (mA/rms105°C) (100KHz)	Impedance ( $\Omega$ ,20°C) (100KHz)
6.3V (8)	150	5x11	210	0.580	16V(20)	120	6.3x11	340.00	0.220
	330	6.3x11	340	0.220		220	6.3x11	469.00	0.185
	470	6.3x11	510	0.160			8x11	582.00	0.150
	680	8x11	640	0.130		330	8x11	640.00	0.130
	820	10x12.5	865	0.080		470	*8x15	840.00	0.087
	1000	8x15	840	0.087			8x20	950.00	0.078
	1200	8x20	1050	0.069			*10x12.5	865.00	0.080
		10x16	1210	0.060			10x16	1210.00	0.060
	1500	8x20	1050	0.069		680	8x20	1050.00	0.069
		*10x16	1210	0.060		10x16	1210.00	0.060	
		10x20	1400	0.046		1000	8x20	1050.00	0.069
	1800	13x16	1450	0.049			*10x16	1210.00	0.060
	2200	*10x20	1400	0.046			10x20	1400.00	0.046
		10x25	1650	0.042		13x16	1450.00	0.049	
	2700	10x30	1910	0.031		1200	10x25	1650.00	0.042
		16x16	1940	0.042		1500	10x30	1910.00	0.031
	3300	10x25	1650	0.042			13x20	1900.00	0.035
		13x20	1900	0.035			16x16	1940.00	0.042
	3900	13x25	2230	0.027		2200	13x25	2230.00	0.027
		18x16	2210	0.043		18x16	2210.00	0.043	
4700	13x30	2650	0.024	2700	13x30	2650.00	0.024		
5600	13x35	2880	0.020		16x20	2530.00	0.027		
	16x20	2530	0.027	3300	13x35	2880.00	0.020		
6800	13x40	3350	0.017	3900	13x40	3350.00	0.017		
	16x25	2930	0.021		16x25	2930.00	0.021		
	18x20	2860	0.026		18x20	2860.00	0.026		
8200	16x32	3450	0.017	4700	16x32	3450.00	0.017		
10000	16x36	3610	0.015		18x25	3140.00	0.019		
	18x25	3140	0.017	5600	16x36	3610.00	0.015		
12000	18x32	4170	0.015		18x32	4170.00	0.015		
15000	18x36	4220	0.014	6800	16x40	4080.00	0.013		
10V (13)	100	5x11	210	0.580	8200	18x36	4220.00	0.014	
	220	6.3x11	340	0.220	10000	18x40	4280.00	0.012	
	470	8x11	640	0.130	25V (32)	47	5x11	210.00	0.580
	680	8x15	840	0.087		100	6.3x11	340.00	0.220
	820	10x12.5	865	0.080		150	8x11	640.00	0.160
	1000	8x20	1050	0.069		220	8x11	640.00	0.130
		10x16	1210	0.060		330	8x15	840.00	0.087
	1200	10x20	1400	0.046			10x12.5	865.00	0.080
		1500	10x25	1650		0.042	8x20	1050.00	0.069
	13x16		1450	0.049		470	*10x12.5	1050.00	0.070
	2200	10x30	1910	0.031			10x16	1210.00	0.060
		13x20	1900	0.042		680	10x20	1400.00	0.046
	16x16	1940	0.042	820		13x16	1450.00	0.049	
	2700	18x16	2210	0.043		1000	10x25	1650.00	0.042
	3300	10x30	1910	0.031			10x30	1910.00	0.031
		13x25	2230	0.027		13x20	1900.00	0.035	
	3900	13x30	2650	0.024		16x16	1940.00	0.042	
		16x20	2530	0.027		1200	18x16	2210.00	0.043
	4700	13x35	2880	0.020		1500	*13x20	1900.00	0.035
	5600	13x40	3350	0.017			13x25	2230.00	0.027
16x25		2930	0.021	1800		13x30	2650.00	0.024	
18x20		2860	0.026			16x20	2530.00	0.027	
6800	16x32	3450	0.017	2200	13x35	2880.00	0.020		
	18x25	3140	0.019		18x20	2860.00	0.026		
8200	16x36	3610	0.015	2700	13x40	3350.00	0.017		
	18x32	4170	0.015		16x25	2930.00	0.021		
10000	16x40	4080	0.013	3300	16x32	3450.00	0.017		
	18x36	4220	0.014		18x25	3140.00	0.019		
12000	18x40	4280	0.012	3900	18x32	4170.00	0.015		
16V (20)	56	5x11	210	0.580	4700	18x36	4220.00	0.014	
	100	6.3x11	250	0.230	5600	18x40	4280.00	0.012	

\* \* " is down size , Ripple Life is less 1000 hrs than standard

■ STANDARD RATINGS

Rated Voltage (SurageVoltage) (V)	Cap ( $\mu$ F)	Case size $\Phi$ DxL(mm)	Ripple current (mA/rms105°C) (100KHz)	Impedance ( $\Omega$ ,20°C) (100KHz)	Rated Voltage (SurageVoltage) (V)	Cap ( $\mu$ F)	Case size $\Phi$ DxL(mm)	Ripple current (mA/rms105°C) (100KHz)	Impedance ( $\Omega$ ,20°C) (100KHz)
35V (44)	33	5x11	210	0.580	50V (63)	1200	18x25	2740	0.026
	47	6.3x11	275	0.390		1500	16x36	3150	0.019
	56	6.3x11	340	0.220		1800	16x40	3710	0.016
	68	6.3x11	500	0.170			18x32	3635	0.021
	82	6.3x11	540	0.160		2200	18x36	3680	0.017
	100	8x11	580	0.150		2700	18x40	3800	0.014
	150	8x11	640	0.130	63V (79)	15	5x11	55	2.3
	220	*8x15	840	0.087		33	6.3x11	115	1.2
		10x12.5	865	0.080		56	8x12	232	0.63
	270	8x20	1050	0.069		82	8x15	300	0.45
		330	*10x16	1210			0.060	10x12.5	288
	470		10x20	1400		0.046	120	8x20	362
		10x20	1400	0.046		10x16		357	0.31
	560	13x16	1450	0.049		180	10x20	466	0.21
		10x25	1650	0.042			13x16	466	0.23
	680	10x30	1910	0.031		220	10x25	531	0.2
		13x20	1900	0.035			10x30	663	0.15
		16x16	1940	0.042		270	13x20	690	0.16
	820	13x20	1900	0.035			16x16	795	0.14
		1000	13x25	2230		0.027	330	13x25	784
	18x16		2210	0.043		390		18x16	920
	1200	13x30	2650	0.024		470	13x30	905	0.1
		16x20	2530	0.027			16x20	1040	0.091
	1500	13x35	2880	0.020		560	13x35	1050	0.083
13x40		3350	0.017	16x25			1250	0.073	
1800	16x25	2930	0.021	680		13x40	1180	0.071	
	18x20	2860	0.026			18x20	1240	0.08	
2200	16x32	3450	0.017	820		16x32	1570	0.054	
	18x25	3140	0.019			18x25	1490	0.057	
2700	16x36	3610	0.015	1000		16x36	1790	0.045	
	18x32	4170	0.015		18x32	1630	0.047		
3300	16x40	4080	0.013	1200	16x40	2020	0.04		
	18x36	4220	0.014		100V (125)	15	6.3x11	115	1.2
3900	18x40	4280	0.012	27		8x12	232	0.63	
50V (63)	22	5x11	180	0.700		39	8x15	300	0.45
	33	6.3x11	245	0.490		47	10x12.5	288	0.43
	47	6.3x11	300	0.520		56	8x20	362	0.33
	56	6.3x11	295	0.300		68	10x16	357	0.31
	100	8x11	555	0.170		82	10x20	466	0.21
	120	8x15	730	0.120			13x16	466	0.23
	150	10x12.5	760	0.120		100	10x25	531	0.2
	180	8x20	910	0.091			10x30	663	0.15
	220	10x16	1050	0.084		120	13x20	690	0.16
		10x20	1220	0.060			150	16x16	795
	270	13x16	1260	0.061		180	13x25	784	0.12
		*10x20	1400	0.058			18x16	920	0.12
	330	10x25	1440	0.055		220	13x30	905	0.1
		10x30	1690	0.043			16x20	1040	0.091
	470	13x20	1660	0.045		270	13x35	1050	0.083
		16x16	1690	0.055			16x25	1250	0.073
	560	13x25	1950	0.034		330	13x40	1180	0.071
		18x16	1930	0.054			18x20	1240	0.08
	680	13x30	2310	0.030		390	16x32	1570	0.054
		13x35	2510	0.025			18x25	1490	0.057
	820	16x20	2210	0.034		470	16x36	1790	0.045
		13x40	2920	0.021			18x32	1630	0.047
	1000	16x25	2555	0.025	560	16x40	2020	0.04	
		18x20	2490	0.036		680	18x36	1790	0.04
1200	16x32	3010	0.022	820	18x40	2330	0.036		

" \* " is down size , Ripple Life is less 1000 hrs than standard