

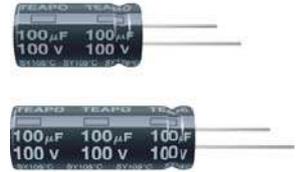
**SY**

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**

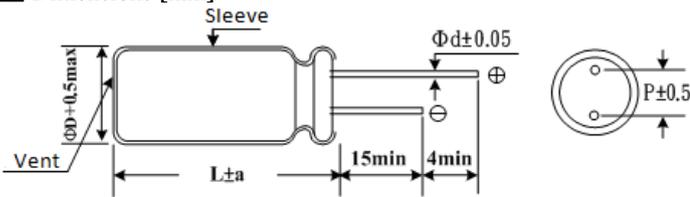
↑ Long Life  
SC



**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>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(120Hz)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></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>	WV	6.3	10	16	25	35	50	63	100	Z(120Hz)									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
WV	6.3	10	16	25	35	50	63	100																													
Z(120Hz)																																					
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> </table> <table border="1"> <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																																				
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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 (μF)	Case size Φ DxL(mm)	Ripple current (mA/rms105°C) (100KHz)	Impedance (Ω,20°C) (100KHz)	Rated Voltage (SurageVoltage) (V)	Cap (μF)	Case size Φ DxL(mm)	Ripple current (mA/rms105°C) (100KHz)	Impedance (Ω,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		470	8x20	1050.00	0.069
		13x16	1450	0.049			*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		13x16	1450.00	0.049	
	2700	18x16	2210	0.043		820	10x25	1650.00	0.042
	3300	10x30	1910	0.031		1000	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	2200		16x20	2530.00	0.027	
6800	16x32	3450	0.017		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 (μF)	Case size Φ DxL(mm)	Ripple current (mA/rms105°C) (100KHz)	Impedance (Ω,20°C) (100KHz)	Rated Voltage (SurageVoltage) (V)	Cap (μF)	Case size Φ DxL(mm)	Ripple current (mA/rms105°C) (100KHz)	Impedance (Ω,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	0.43
	470		10x20	1400		0.046	120	8x20	362	0.33
		13x16	1450	0.049		10x16		357	0.31	
	560	10x25	1650	0.042		180	10x20	466	0.21	
		680	10x30	1910			0.031	13x16	466	0.23
	820		13x20	1900		0.035	220	10x25	531	0.2
		16x16	1940	0.042		270		10x30	663	0.15
	1000	13x20	1900	0.035			13x20	690	0.16	
		1200	13x25	2230		0.027	16x16	795	0.14	
	1500		18x16	2210		0.043	330	13x25	784	0.12
		1800	13x30	2650		0.024		18x16	920	0.12
	2200		16x20	2530		0.027	390	13x30	905	0.1
		2700	13x35	2880		0.020		470	16x20	1040
	3300		13x40	3350		0.017	560		13x35	1050
3900		16x25	2930	0.021		16x25		1250	0.073	
	50V (63)	22	5x11	180		0.700	680	13x40	1180	0.071
33		6.3x11	245	0.490		18x20		1240	0.08	
47		6.3x11	300	0.520		820	16x32	1570	0.054	
56		6.3x11	295	0.300			18x25	1490	0.057	
100		8x11	555	0.170		1000	16x36	1790	0.045	
120		8x15	730	0.120	18x32		1630	0.047		
150		10x12.5	760	0.120	1200	16x40	2020	0.04		
180		8x20	910	0.091		100V (125)	15	6.3x11	115	1.2
220		10x16	1050	0.084	27		8x12	232	0.63	
270		10x20	1220	0.060	39		8x15	300	0.45	
		13x16	1260	0.061	47		10x12.5	288	0.43	
330		*10x20	1400	0.058	56		8x20	362	0.33	
		10x25	1440	0.055	68		10x16	357	0.31	
470		10x30	1690	0.043	82		10x20	466	0.21	
		13x20	1660	0.045			13x16	466	0.23	
560		16x16	1690	0.055	100		10x25	531	0.2	
		13x25	1950	0.034			120	10x30	663	0.15
680		18x16	1930	0.054	150			13x20	690	0.16
		820	13x30	2310			0.030	16x16	795	0.14
1000			13x35	2510	0.025		180	13x25	784	0.12
		16x20	2210	0.034	18x16			920	0.12	
1200		13x40	2920	0.021	220		13x30	905	0.1	
		16x25	2555	0.025			16x20	1040	0.091	
50V (63)		22	5x11	180	0.700		270	13x35	1050	0.083
	33	6.3x11	245	0.490	330			16x25	1250	0.073
	47	6.3x11	300	0.520			390	13x40	1180	0.071
	56	6.3x11	295	0.300	470			18x20	1240	0.08
	100	8x11	555	0.170			560	16x32	1570	0.054
	120	8x15	730	0.120	680			18x25	1490	0.057
	150	10x12.5	760	0.120			820	16x36	1790	0.045
	180	8x20	910	0.091	18x32			1630	0.047	
	220	10x16	1050	0.084	1000	16x40	2020	0.04		
	270	10x20	1220	0.060		18x36	1790	0.04		
		13x16	1260	0.061	1200	18x40	2330	0.036		
	330	*10x20	1400	0.058		100V (125)	15	6.3x11	115	1.2
		10x25	1440	0.055	27		8x12	232	0.63	
	470	10x30	1690	0.043	39		8x15	300	0.45	
		13x20	1660	0.045	47		10x12.5	288	0.43	
	560	16x16	1690	0.055	56		8x20	362	0.33	
		13x25	1950	0.034	68		10x16	357	0.31	
	680	18x16	1930	0.054	82		10x20	466	0.21	
		820	13x30	2310			0.030	13x16	466	0.23
	1000		13x35	2510	0.025		100	10x25	531	0.2
		16x20	2210	0.034	120			10x30	663	0.15
	1200	13x40	2920	0.021			150	13x20	690	0.16
		16x25	2555	0.025	180			16x16	795	0.14
	50V (63)	22	5x11	180			0.700	220	13x25	784
33		6.3x11	245	0.490	270		18x16		920	0.12
47		6.3x11	300	0.520			330	13x30	905	0.1
56		6.3x11	295	0.300	390			16x20	1040	0.091
100		8x11	555	0.170			470	13x35	1050	0.083
120		8x15	730	0.120	560			16x25	1250	0.073
150		10x12.5	760	0.120			680	13x40	1180	0.071
180		8x20	910	0.091	820			18x20	1240	0.08
220		10x16	1050	0.084			1000	16x32	1570	0.054
270		10x20	1220	0.060	18x25			1490	0.057	
		13x16	1260	0.061	1200		16x36	1790	0.045	
330		*10x20	1400	0.058			18x32	1630	0.047	
		10x25	1440	0.055	100V (125)	16x40	2020	0.04		
470		10x30	1690	0.043		18x36	1790	0.04		
		13x20	1660	0.045		820	18x40	2330	0.036	
560		16x16	1690	0.055			100V (125)	15	6.3x11	115
		13x25	1950	0.034		27		8x12	232	0.63
680		18x16	1930	0.054		39		8x15	300	0.45
		820	13x30	2310		0.030		47	10x12.5	288
1000			13x35	2510		0.025		56	8x20	362
		16x20	2210	0.034		68		10x16	357	0.31
1200		13x40	2920	0.021		82		10x20	466	0.21
		16x25	2555	0.025				13x16	466	0.23
50V (63)		22	5x11	180		0.700		100	10x25	531
	33	6.3x11	245	0.490		120			10x30	663
	47	6.3x11	300	0.520				150	13x20	690
	56	6.3x11	295	0.300		180			16x16	795
	100	8x11	555	0.170				220	13x25	784
	120	8x15	730	0.120		270			18x16	920
	150	10x12.5	760	0.120				330	13x30	905
	180	8x20	910	0.091		390			16x20	1040
	220	10x16	1050	0.084				470	13x35	1050
	270	10x20	1220	0.060		560			16x25	1250
		13x16	1260	0.061				680	13x40	1180
	330	*10x20	1400	0.058		820			18x20	1240
		10x25	1440	0.055				1000	16x32	1570
	470	10x30	1690	0.043	18x25	1490			0.057	
		13x20	1660	0.045	1200	16x36		1790	0.045	
	560	16x16	1690	0.055		18x32		1630	0.047	
		13x25	1950	0.034	100V (125)	16x40	2020	0.04		
	680	18x16	1930	0.054		18x36	1790	0.04		
		820	13x30	2310		0.030	820	18x40	2330	0.036
	1000		13x35	2510		0.025		100V (125)	15	6.3x11
		16x20	2210	0.034		27	8x12		232	0.63
	1200	13x40	2920	0.021		39	8x15		300	0.45
		16x25	2555	0.025		47	10x12.5		288	0.43
	50V (63)	22	5x11	180		0.700	56		8x20	362
33		6.3x11	245	0.490		68	10x16		357	0.31
47		6.3x11	300	0.520		82	10x20		466	0.21
56		6.3x11	295	0.300			13x16		466	0.23
100		8x11	555	0.170		100	10x25		531	0.2
120		8x15	730	0.120			120		10x30	663
150		10x12.5	760	0.120		150			13x20	690
180		8x20	910	0.091			180		16x16	795
220		10x16	1050	0.084		220			13x25	784
270		10x20	1220	0.060			270		18x16	920
		13x16	1260	0.061		330			13x30	905
330		*10x20	1400	0.058			390		16x20	1040
		10x25	1440	0.055		470			13x35	1050
470		10x30	1690	0.043			560		16x25	1250
		13x20	1660	0.045		680			13x40	1180
560		16x16	1690	0.055			820		18x20	1240
		13x25	1950	0.034		1000			16x32	1570
680		18x16	1930	0.054	18x25		1490		0.057	
		820	13x30	2310	0.030	1200	16x36		1790	0.045
1000			13x35	2510	0.025		18x32		1630	0.047
		16x20	2210	0.034	100V (125)	16x40	2020	0.04		
1200		13x40	2920	0.021		18x36	1790	0.04		
		16x25	2555	0.025		100V (125)	18x40	2330	0.036	

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