

# SHELCON (Super Small Aluminum Electrolytic Capacitor)

## SHW Series (High Reliability, Super Small, Super Low ESR)

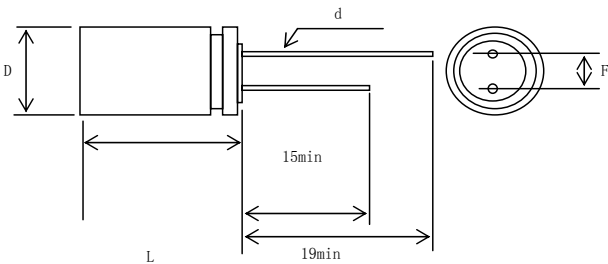
### ■ SPECIFICATIONS



**Table-1**

Items	Conditions	Characteristics		
Category temperature range	-	-55°C to +105°C		
Tolerance on reted capacitance	120Hz	M: ±20%		
Tangent of less angle	120Hz	Less than or equal to the value of Table-4		
Leakage Current	After 2 minites	Less than or equal to the value of Table-4		
ESR	-	Less than or equal to the value of Table-4		
Characteristics of impedance ratio at high temp. and low temp.	Based the value at 100KHz, +20°C	^-55°C	Z/Z20°C	2.0max
		Within ±20%		
Endurance	105°C Rated voltage applied D≤Φ8: 3000H, D≥Φ10: 5000H	ΔC/C	2times or less than an initial standerd	
		Tan-δ	2times or less than an initial standerd	
		ESR	2times or less than an initial standerd	
		Leakage Current	Below an initial standerd (after voltage processing)	

### ■ Dimensions



**Table-2**

Unit:(mm)

Size code	D±0.5	L±1.0	F±0.5	d±0.05
5L	5.0	11	2.0	0.5
6.3L	6.3	11	2.5	0.5
8L	8.0	8, 11.5, 15, 16,	3.5	0.5
10L	10.0	8, 12.5, 16, 20	5.0	0.60
13L	13.0	15	5.0	0.60
16L	16.0	15	7.5	0.80
18L	18.0	15	7.5	0.80

Φ5mm/6.3mm/8mm: d=0.50mm  
 Φ10mm/13mm: d=0.60mm  
 Φ16mm/18mm: d=0.80mm

### ■ Frequency coefficent for ripple current

**Table-2**

Frequency	120Hz ≤ f < 1KHz	1KHz ≤ f < 10KHz	10KHz ≤ f < 100KHz	100KHz ≤ f < 200KHz
Confficient	0.65	0.90	0.95	1.00

### ■ Table-3 SHW Serie Characteristics List

Size Code	Rated Voutage (V)	Rated Capacitance (µJ F)	ESR 100KHz to 300KHz/20 °C (mΩ max)	Rated ripple current 100KHz/105°C (mA.rms)	Tangent of loss angle (max)	Leakage current (µA) (max)*1	
5×11	6.3	330	155	450	0.35	21	
5×11		390	137	520	0.32	25	
5×11		470	137	520	0.30	30	
6.3×11		680	100	650	0.30	43	
6.3×11		820	100	720	0.30	52	
6.3×11		1000	75	800	0.28	63	
8×8		1000	40	1100	0.28	63	
8×8		1200	40	1200	0.28	76	
8×8		1500	35	1200	0.26	95	
8×11.5		1500	35	1450	0.26	95	
10×8		1500	30	1700	0.26	95	
8×15		2200	25	1870	0.26	139	
10×12.5		2200	25	2260	0.26	139	
8×16		2700	25	2470	0.26	170	
10×12.5		2700	25	2500	0.28	170	
10×12.5		3300	25	2900	0.28	208	
10×16		3900	20	3470	0.28	246	
10×16		4700	20	3690	0.30	296	
8×8		10	470	50	800	0.35	47
6.3×11			680	50	980	0.30	68
8×8	820		45	1150	0.28	82	
8×8	1000		45	1200	0.28	100	
8×11.5	1000		40	1350	0.26	100	
8×11.5	1200		40	1550	0.24	120	
8×16	1800		35	1980	0.22	180	
10×8	1800		35	2270	0.22	180	
10×12.5	2200		35	2450	0.22	220	
10×16	2700		35	2690	0.22	270	
10×16	3300		35	3550	0.20	330	

Size Code	Rated Voltage (V)	Rated Capacitance ( $\mu$ F)	ESR 100KHz to 300KHz/20 °C (m $\Omega$ max)	Rated ripple current 100KHz/105°C (mA.rms)	Tangent of loss angle (max)	Leakage current ( $\mu$ A) (max)*1	
5×11	16	220	130	520	0.22	35	
6.3×11		330	120	550	0.22	53	
6.3×11		470	100	960	0.20	75	
8×8		470	45	1025	0.20	75	
8×8		680	45	1126	0.20	109	
8×11.5		1000	40	1660	0.20	160	
10×8		1000	40	1700	0.20	160	
8×16		1200	40	2180	0.20	192	
10×12.5		1200	38	2210	0.20	192	
10×12.5		1500	38	2240	0.20	240	
10×16		1800	35	2670	0.20	288	
10×16		2200	30	2200	0.20	352	
10×20		3300	30	3390	0.20	528	
13×15		3300	25	3470	0.20	528	
16×15		4700	20	3820	0.20	752	
6.3×11	25	220	137	520	0.20	55	
6.3×11		330	100	600	0.20	83	
8×8		390	65	900	0.18	98	
8×8		470	40	1070	0.18	118	
8×11.5		560	40	1350	0.18	140	
8×16		820	35	1550	0.18	205	
10×8		680	35	1720	0.18	170	
10×12.5		680	35	1790	0.18	170	
10×12.5		1000	30	2200	0.18	250	
10×12.5		1200	30	2390	0.18	300	
10×16		1500	25	3300	0.18	375	
10×20		2200	25	3450	0.16	0	
13×15		2200	25	3550	0.16	550	
16×15		3300	25	3670	0.16	825	
18×15		4700	20	3850	0.16	1175	
6.3×11	35	180	100	524	0.18	63	
8×8		330	75	962	0.18	116	
8×11.5		390	60	1126	0.18	137	
10×12.5		470	40	1660	0.18	165	
10×12.5		560	35	1720	0.16	196	
10×16		680	35	2050	0.16	238	
10×16		820	35	2180	0.16	287	
10×20		1000	35	2360	0.16	350	
10×20		1200	30	2540	0.16	770	
13×20		1500	30	3694	0.16	525	
16×15		1500	25	3730	0.16	525	
18×15		2200	25	3880	0.16	770	
6.3×11		50	100	110	550	0.16	50
8×11.5	180		60	800	0.16	90	
10×12.5	220		45	1000	0.16	110	
10×12.5	330		40	1200	0.16	165	
10×16	470		35	1350	0.14	235	
13×15	470		30	1460	0.14	235	
10×20	560		28	1660	0.14	280	
13×15	560		26	1850	0.14	280	
13×20	820		24	2050	0.14	410	
16×15	820		24	2180	0.14	410	
18×15	1000		22	2550	0.12	500	