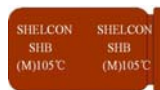
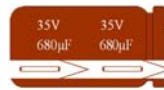


# SHELCON(Ultra Small Aluminum Electrolytic Capacitor)

## SHB Series (High Reliability, Ultra Small, Ultra Low ESR)

### SPECIFICATION



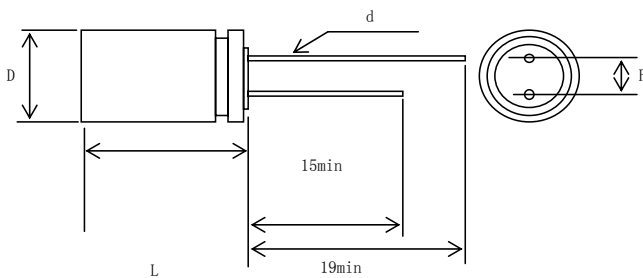
**Table-1**

Items	Conditions	Characteristics		
Category temperature range	-	-55°C to +105°C		
Tolerance on reted capacitance	120Hz	M:±20%		
Add0.02 per 1.000µF for more than 1.000µF items				
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)	

**Table-2 MUL TIPLIER FOR RIPPLE CURRENT**

Cap(µF)	(1)Frequency Coefficient				Ambient Temperature(°C)	(2) Temperature Coefficient				
	120	1K	10K	100K		40	60	70	85	##
180--560	0.49	0.73	0.92	1.00	Coefficient	2.40	2.10	1.78	1.65	##
680--1800	0.6	0.8	0.96	1.00						
2200-4700	0.7	0.85	0.98	1.00						

### Dimensions



**Table-2**

Unit:(mm)

Size code	D±0.5	L±1.5	F±0.5	±0.05
6.3L	6.3	11	2.0	0.5
8L	8.0	8, 9, 11.5, 12, 15, 16	2.5	0.5
10L	10.0	10, 12.5, 16, 20	3.5	0.5
13L	13.0	15, 20, 25	5.0	##
16L	16.0	15, 20	5.0	##
18L	18.0	15, 20	7.5	##

6.3×11mm over: d=0.50mm  
 8mm: d=0.50mm  
 10mm/13mm: d=0.60mm  
 16mm/18mm: d=0.80mm

### Frequency cofficient for ripple current

**Table-3 SHB Serise 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
6.3×11	6.3	330	155	450	0.28	21
6.3×11		390	137	520	0.28	25
6.3×11		470	137	520	0.28	30
6.3×11		680	100	650	0.28	43
6.3×11		820	100	720	0.28	52
8×8		1000	40	1100	0.26	63
8×8		1200	40	1200	0.26	76
8×11.5		1500	35	1450	0.26	95
10×10		1500	30	1700	0.26	95
8×16		2200	25	1870	0.26	139
10×12.5		2200	25	2260	0.26	139
10×16		2700	25	2470	0.26	170
10×16		3300	25	2900	0.25	208
10×16		3900	20	3470	0.25	246
13×15		4700	20	3690	0.25	296

Size Code	Rated Voutage (V)	Rated Capacitance (μF)	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
8×8	10	470	50	800	0.25	47
8×8		680	50	980	0.25	68
8×12		820	45	1150	0.25	82
8×15		1000	45	1200	0.25	100
10×12.5		1000	45	1200	0.25	100
8×15		1200	40	1550	0.22	120
10×16		1800	35	1980	0.22	180
10×16		2200	35	2450	0.22	220
10×20		2700	35	2690	0.22	270
13×15		3300	35	3550	0.20	330

6.3×11	16	220	130	520	0.22	35
6.3×11		330	120	550	0.22	53
8×9		470	45	1025	0.20	75
8×11.5		680	45	1126	0.20	109
10×12.5		1000	40	1660	0.20	160
10×16		1200	38	2210	0.20	192
10×16		1500	38	2240	0.20	240
10×20		1800	35	2670	0.20	288
10×20		2200	30	2200	0.20	352
13×20		3300	25	3470	0.20	528
16×20		4700	20	3820	0.20	752

6.3×11	25	220	137	520	0.20	55
8×11.5		330	100	600	0.20	83
8×11.5		390	65	900	0.18	98
8×11.5		470	40	1070	0.18	0
8×16		470	40	1070	0.18	118
10×12.5		470	40	1070	0.18	118
10×12.5		560	40	1350	0.18	140
10×16		680	35	1720	0.18	170
10×16		820	35	1550	0.18	205
10×20		1000	30	2200	0.18	250
10×20		1200	30	2390	0.18	300
13×15		1500	25	3300	0.18	375
13×20		2200	25	3450	0.16	0
16×20		3300	25	3670	0.16	825
18×20		4700	20	3850	0.16	1175

6.3×11	35	100	100	400	0.18	35
8×11.5		180	100	524	0.18	63
8×15		330	75	962	0.18	116
10×12.5		390	60	1126	0.18	137
10×16		470	40	1660	0.18	165
10×16		560	35	1720	0.16	196
10×20		680	35	2050	0.16	238
10×20		820	35	2180	0.16	287
13×15		820	35	2180	0.16	287
13×20		1000	35	2360	0.16	350
13×20		1200	30	2540	0.16	770
16×20		1500	30	3694	0.16	525
13×25		2200	25	3880	0.16	0
18×20		2200	25	3880	0.16	770

8×11.5	50	100	110	550	0.16	0
10×12.5		180	60	800	0.16	0
10×12.5		220	45	1000	0.16	0
10×16		330	40	1200	0.16	0
10×20		470	35	1350	0.14	0
13×15		470	30	1460	0.14	0
13×15		560	26	1850	0.14	0
13×20		820	24	2050	0.14	0
16×15		820	24	2180	0.14	0
18×15		1000	22	2550	0.12	0