

## Solid Aluminum Capacitors with Organic Semiconductor Electrolyte

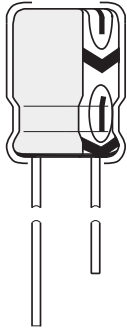


Fig. 1 Component outline

### FEATURES

- Super miniaturized (0.197" [5 mm] in height)
- Capacitors operate at + 105 °C
- 94SL capacitors are ideal for use in VCR's, car stereos and other products where a compact design is important



**RoHS**  
COMPLIANT

### PART MARKING

 Sleeve color: Blue. Marking: White

- Polarity -
- Rated voltage
- Capacitance
- Vishay OS-CON
- Lot number
- Maximum operating temperature (+ 105 °C)

QUICK REFERENCE DATA			
DESCRIPTION	VALUE		
Operating Temperature Range	- 55 °C to + 105 °C		
Capacitance Tolerance at 120 Hz	X0 = ± 20 %		
Tangent of Loss Angle (tan δ) at 120 Hz	≤ Values in Standard Ratings Table		
Leakage Current (μA/2 minutes)(or less)*	0.02 CV or 0.5 (whichever is greater)		
Equivalent Series Resistance (Ω), (100 k to 300 kHz)	≤ Values in Standard Ratings Table		
Temperature Characteristics Impedance Ratio at 100 kHz	- 55 °C	Z/Z <sub>20°C</sub>	1.0 to 1.25
	+ 105 °C	Z/Z <sub>20°C</sub>	0.75 to 1.0
High Temperature Load (+ 105 °C, 2000 hours) Rated Voltage Applied (∅ D ≥ 8, 1000 hours) (25 WV - 20 V applied)**	ΔC/C	Within ± 20 % of the initial value	
	tan δ	≤ 1.5 x the value of Tangent of Loss Angle	
	Leakage Current	≤ The Value of Max. Leakage Current	
Moisture Resistance (+ 60 °C, 90 to 95 % RH, 1000 hours, no voltage)	ΔC/C	Within ± 20 % of the initial value	
	tan δ	≤ 2 x the value of Tangent of Loss Angle	
	Leakage Current	≤ The Value of Max. Leakage Current	
Reverse Voltage Guarantee	Temporary: < 20 % of the rated voltage Continuous: < 10 % of the rated voltage		

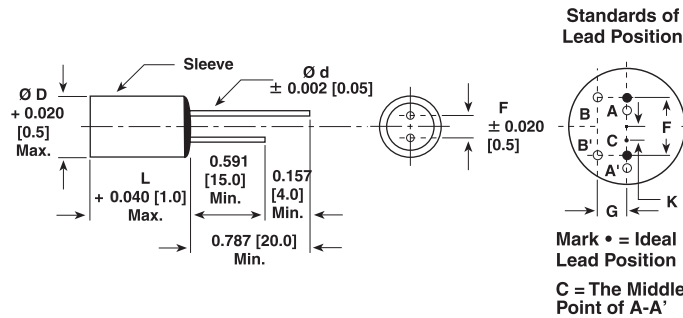
\* If any doubt arises, measure the current after applying voltage (voltage treatment) for 30 minutes at + 105 °C. The rated voltage should be applied for 4 to 16 WV, while temperature reduction voltage should be applied for 25 WV.

\*\* To use a Vishay OS-CON capacitor when the operating temperature exceeds + 85 °C on a component with a rated voltage of 25 V, reduce the voltage by 0.25 V for every degree (1°C) relative to the value at + 85 °C (25 V).

TEMPERATURE COEFFICIENT RIPPLE CURRENT	
Ambient Temperature	Coefficient
~ + 45 °C	1.0
+ 85 °C	0.7
+ 95 °C	0.4
+ 105 °C	0.25

DIMENSIONS in inches [millimeters]					
CASE CODE	NOMINAL CASE SIZE ∅ D x L	F	∅ d	G (Max.)	K (Max.)
A'	0.158 x 0.197 [4.0 x 5.0]	0.059 [1.5]	0.018 [0.45]	0.020 [0.5]	0.020 [0.5]
B'	0.197 x 0.197 [5.0 x 5.0]	0.079 [2.0]	0.018 [0.45]	0.020 [0.5]	0.020 [0.5]
C'	0.248 x 0.197 [6.3 x 5.0]	0.098 [2.5]	0.018 [0.45]	0.020 [0.5]	0.020 [0.5]
E'	0.315 x 0.197 [8.0 x 5.0]	0.138 [3.5]	0.020 [0.5]	0.031 [0.8]	0.031 [0.8]
F'	0.394 x 0.197 [10.0 x 5.0]	0.197 [5.0]	0.020 [0.5]	0.031 [0.8]	0.031 [0.8]

**DIMENSIONS** in inches [millimeters]



<b>CASE CODE LIST</b>						
CAPACITANCE ( $\mu$ F)	WV***	4	6.3	10	16	25
	(SV)****	(4.6)	(7.2)	(11.5)	(18.4)	(25)
1.0	-	-	-	-	-	A'
1.5	-	-	-	-	-	A'
2.2	-	-	-	-	A'	B'
3.3	-	-	-	-	A'	B'
4.7	-	-	-	A'	B'	C'
6.8	-	-	A'	-	B'	C'
10.0	-	-	-	B'	C'	-
15.0	-	-	B'	-	C'	E'
22.0	-	-	-	C'	-	F'
33.0	-	-	-	C	-	-
47.0	-	-	-	C'	E'	-
68.0	-	-	-	E'	F'	-
100.0	-	-	E'	F'	-	-
150.0	E'	F'	-	-	-	-
220.0	F'	-	-	-	-	-

\*\*\* WV = Rated Voltage. \*\*\*\* (SV) = Surge Voltage (at room temperature).

<b>STANDARD RATINGS</b>							
CASE CODE	PART NUMBER*	RATED VOLTAGE (V)	NOMINAL CAPACITANCE ( $\mu$ F)	MAX. ALLOWABLE RIPPLE CURRENT (mAmps) at 100 kHz, + 45 °C	MAX. LEAKAGE CURRENT ( $\mu$ A) (After 2 Minutes)	MAX. TANGENT OF LOSS ANGLE	MAX. ESR 100 k to 300 kHz ( $m\Omega$ )
A'	94SL105X0025ABP	25.0	1.0	430	0.50	0.05	450
	94SL155X0025ABP	25.0	1.5	435	0.75	0.05	400
	94SL225X0016ABP	16.0	2.2	450	0.70	0.05	400
	94SL335X0016ABP	16.0	3.3	500	1.06	0.06	400
	94SL475X0010ABP	10.0	4.7	540	0.94	0.06	400
	94SL685X06R3ABP	6.3	6.8	560	0.86	0.06	350
B'	94SL225X0025BBP	25.0	2.2	695	1.10	0.05	250
	94SL335X0025BBP	25.0	3.3	700	1.65	0.05	250
	94SL475X0016BBP	16.0	4.7	720	1.50	0.05	250
	94SL685X0016BBP	16.0	6.8	745	2.18	0.05	180
	94SL106X0010BBP	10.0	10.0	780	2.00	0.05	150
	94SL156X06R3BBP	6.3	15.0	815	1.89	0.06	120

\* Part Numbers shown are for  $\pm 20\%$  capacitance tolerance (X0).

94SL106X0016... Part Number is complete with Case Code and 2 character Package or Process Code. BP as shown indicates Bulk Pack.

STANDARD RATINGS							
CASE CODE	PART NUMBER*	RATED VOLTAGE (V)	NOMINAL CAPACITANCE ( $\mu$ F)	MAX. ALLOWABLE RIPPLE CURRENT (mAmps) at 100 kHz, + 45 °C	MAX. LEAKAGE CURRENT ( $\mu$ A) (After 2 Minutes)	MAX. TANGENT OF LOSS ANGLE	MAX. ESR 100 k to 300 kHz (m $\Omega$ )
C'	94SL475X0025CBP	25.0	4.7	1130	2.35	0.06	100
	94SL685X0025CBP	25.0	6.8	1140	3.40	0.06	100
	94SL106X0016CBP	16.0	10.0	1150	3.20	0.06	100
	94SL156X0016CBP	16.0	15.0	1230	4.80	0.06	100
	94SL226X0010CBP	10.0	22.0	1270	4.40	0.06	80
	94SL336X0010CBP	10.0	33.0	1350	6.60	0.06	80
	94SL476X0010CBP	10.0	47.0	1430	9.40	0.06	70
E'	94SL156X0025EBP	25.0	15.0	1400	7.50	0.07	75
	94SL476X0016EBP	16.0	47.0	1550	15.04	0.07	70
	94SL686X0010EBP	10.0	68.0	1600	13.60	0.07	65
	94SL107X06R3EBP	6.3	100.0	1600	12.60	0.07	65
	94SL157X0004EBP	4.0	150.0	2000	12.00	0.07	60
F'	94SL226X0025FBP	25.0	22.0	1600	11.00	0.07	70
	94SL686X0016FBP	16.0	68.0	1850	21.76	0.07	65
	94SL107X0010FBP	10.0	100.0	2100	20.00	0.07	60
	94SL157X06R3FBP	6.3	150.0	2100	18.90	0.07	60
	94SL227X0004FBP	4.0	220.0	2400	17.60	0.07	55

\* Part Numbers shown are for  $\pm 20\%$  capacitance tolerance (X0).

94SL106X0016... Part Number is complete with Case Code and 2 character Package or Process Code. BP as shown indicates Bulk Pack.



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