

## Solid Aluminum Capacitors With Organic Semiconductor Electrolyte



### FEATURES

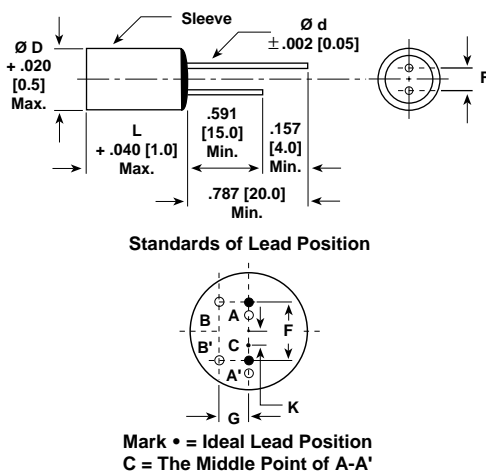
- High capacitance.
- Miniaturized.
- 94SA capacitors are suitable for high frequency switching power supplies, etc.

STANDARD RATINGS							
CASE CODE	PART* NUMBER	RATED VOLTAGE (V)	NOMINAL CAPACITANCE (μF)	MAX. ALLOWABLE RIPPLE CURRENT (mA rms) (@ 100kHz, + 45°C)	MAX. LEAKAGE CURRENT (μA) (After 2 Minutes)	MAX. TANGENT OF LOSS ANGLE	MAX. ESR 100k ~ 300kHz (mΩ)
C	94SA156X0020CBP	20.0	15.0	1200	6.00	0.06	90
	94SA226X0020CBP	20.0	22.0	1300	8.80	0.06	70
	94SA336X0010CBP	10.0	33.0	1370	6.60	0.07	70
	94SA336X0016CBP	16.0	33.0	1370	10.56	0.06	70
	94SA476X06R3CBP	6.3	47.0	1430	5.92	0.07	60
D	94SA336X0020DBP	20.0	33.0	1710	13.20	0.06	70
	94SA476X0016DBP	16.0	47.0	1830	15.04	0.06	60
	94SA686X0010DBP	10.0	68.0	2000	13.60	0.07	50
E	94SA476X0020EBP	20.0	47.0	2450	18.80	0.06	40
	94SA686X0020EBP	20.0	68.0	2600	27.20	0.06	36
	94SA107X0010EBP	10.0	100.0	2670	20.00	0.07	30
	94SA107X0016EBP	16.0	100.0	2740	32.00	0.06	30
	94SA157X06R3EBP	6.3	150.0	2780	18.90	0.07	30
F	94SA107X0020FBP	20.0	100.0	3210	40.00	0.06	30
	94SA157X0016FBP	16.0	150.0	3260	48.00	0.06	28
	94SA227X0010FBP	10.0	220.0	3370	44.00	0.07	27
	94SA337X06R3FBP	6.3	330.0	3500	41.58	0.07	25
G	94SA477X0016GBP	16.0	470.0	6080	300.80	0.08	20
H	94SA108X0016HBP	16.0	1000.0	9750	640.00	0.09	15
	94SA228X06R3HBP	6.3	2200.0	9750	554.40	0.13	15

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

94SA156X0020\_\_ Part Number is complete with Case Code and 2 character Package or Process Code. BP as shown indicates Bulk Pack.

### DIMENSIONS in inches (millimeters)



CASE CODE	Ø D x L	F	Ø d	G (Max.)	K (Max.)
C	.248 x .268 [6.3 x 6.8]	.098 ± .020 [2.5 ± 0.5]	.018 [0.45]	.020 [0.5]	.020 [0.5]
D	.248 x .386 [6.3 x 9.8]	.098 ± .020 [2.5 ± 0.5]	.024 [0.60]	.020 [0.5]	.020 [0.5]
E	.315 x .413 [8.0 x 10.5]	.138 ± .020 [3.5 ± 0.5]	.024 [0.60]	.031 [0.8]	.031 [0.8]
F	.394 x .413 [10.0 x 10.5]	.197 ± .020 [5.0 ± 0.5]	.024 [0.60]	.031 [0.8]	.031 [0.8]
G	.492 ± .866 [12.5 ± 22.0]	.197 ± .040 [5.0 ± 1.0]	.031 [0.80]	.031 [0.8]	.031 [0.8]
H	.630 ± .984 [16.0 ± 25.0]	.295 ± .040 [7.5 ± 1.0]	.031 [0.80]	.031 [0.8]	.031 [0.8]



ENVIRONMENTAL PERFORMANCE			
ITEMS	CHARACTERISTICS		
1. Operating Temperature Range	- 55°C ~ + 105°C		
2. Capacitance Tolerance @ 120Hz	X0 = ± 20%		
3. Tangent of Loss Angle (tan δ) @ 120Hz	≤ Values in Standard Ratings Table		
4. Leakage Current (μA/2 minutes) (or less)*	0.02 CV (0.04 CV for G, H size)		
5. Equivalent Series Resistance (Ω) (100k ~ 300kHz)	≤ Values in Standard Ratings Table		
6. Temperature Characteristics Impedance Ratio at 100kHz	- 55°C	Z/Z <sub>20°C</sub>	1.0 ~ 1.25
	+ 105°C	Z/Z <sub>20°C</sub>	0.75 ~ 1.0
7. High Temperature Load + 105°C, 2,000 hours (Ø D ≥ 12.5, 1,000 hours) Rated Voltage Applied	Δ C/C		Within ± 20% of the initial value
	tan δ		≤ 1.5 times the value of Item 3
	Leakage Current		≤ The value of Item 4
8. Moisture Resistance (+ 60°C, 90 ~ 95% RH, 1,000 hours, no voltage)	Δ C/C		Within ± 10% of the initial value
	tan δ		≤ 1.5 times the value of Item 3
	Leakage Current		≤ The value of Item 4
9. Reverse Voltage Guarantee	Temporary: Less than 20% of the rated voltage Continuous: Less than 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 for all WV.

CASE CODE LIST					
CAPACITANCE (μF)	WV**	6.3	10	16	20
	(SV)***	(7.2)	(11.5)	(18.4)	(23)
15.0	—	—	—	—	C
22.0	—	—	—	—	C
33.0	—	—	—	C	D
47.0	C	—	—	D	E
68.0	—	—	D	—	E
100.0	—	—	—	E	F
150.0	E	—	—	F	—
220.0	—	—	F	—	—
330.0	F	—	—	—	—
470.0	—	—	—	G	—
1000.0	—	—	—	H	—
2200.0	H	—	—	—	—

\*\*WV = Rated Voltage.

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

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

PART MARKING****
<ul style="list-style-type: none"> <li>— Polarity ⊖</li> <li>— Rated voltage</li> <li>— Capacitance</li> <li>— OS-CON</li> <li>— Lot number</li> <li>— Maximum operating temperature (+ 105°C)</li> </ul>

\*\*\*\*Sleeve color: Blue. Marking: White.