

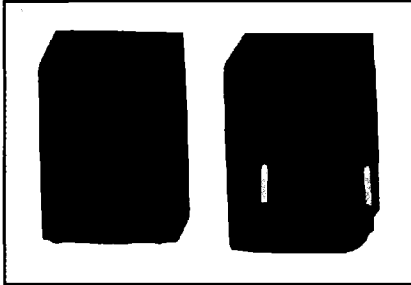
# OS-CON® TYPE 94SM

## Solid Aluminum Capacitors

### With Organic Semiconductor Electrolyte

### Surface Mount

A COMPANY OF  
VISHAY



#### FEATURES

- New materials developed to achieve higher temperature tolerance
- Can be soldered by reflow and mounted by carrier taping
- Ideal for use in products such as switching power supplies, VCR's and other products where a surface mount design is necessary
- Registered by EIAJ

#### STANDARD RATINGS

CASE CODE	PART* NUMBER	RATED VOLTAGE (V)	NOMINAL CAPACITANCE (μF)	MAX. DF (%)	MAX. LEAKAGE CURRENT (μA)	MAX. ESR 100kHz - 300kHz (Ω)
A	94SM105X0020A__	20.0	1.0	0.06	1.00	0.700
	94SM225X0016A__	16.0	2.2	0.07	1.06	0.600
	94SM335X0016A__	16.0	3.3	0.08	1.58	0.600
	94SM475X0010A__	10.0	4.7	0.09	1.41	0.600
	94SM685X06R3A__	6.3	6.8	0.09	1.29	0.600
B	94SM225X0020B__	20.0	2.2	0.06	1.32	0.500
	94SM335X0020B__	20.0	3.3	0.06	1.98	0.400
	94SM475X0016B__	16.0	4.7	0.07	2.26	0.400
	94SM685X0016B__	16.0	6.8	0.07	3.26	0.400
	94SM106X0010B__	10.0	10.0	0.09	3.00	0.400
	94SM156X06R3B__	6.3	15.0	0.09	2.84	0.400
C	94SM475X0020C__	20.0	4.7	0.07	4.70	0.150
	94SM685X0020C__	20.0	6.8	0.07	6.80	0.150
	94SM106X0020C__	20.0	10.0	0.07	10.0	0.150
	94SM156X0016C__	16.0	15.0	0.07	12.0	0.150
	94SM226X0010C__	10.0	22.0	0.07	11.0	0.150
	94SM336X06R3C__	6.3	33.0	0.07	10.3	0.150
	94SM476X06R3C__	6.3	47.0	0.08	14.8	0.150
D	94SM156X0020D__	20.0	15.0	0.07	15.0	0.125
	94SM226X0020D__	20.0	22.0	0.07	22.0	0.125
	94SM336X0020D__	20.0	33.0	0.07	33.0	0.125
	94SM476X0010D__	10.0	47.0	0.08	23.5	0.125
	94SM686X0010D__	10.0	68.0	0.08	34.0	0.125
E	94SM476X0020E__	20.0	47.0	0.07	47.0	0.080
	94SM686X0020E__	20.0	68.0	0.07	68.0	0.080
	94SM107X0010E__	10.0	100.0	0.08	50.0	0.080
	94SM157X06R3E__	6.3	150.0	0.09	47.2	0.080

\* Part Numbers shown are for ± 20% capacitance tolerance. For ± 10%, change X0 to X9.

#### DIMENSIONAL CONFIGURATIONS [Numbers in brackets indicate millimeters]

CASE CODE	W	H	L	P
A	.181 [4.6]	.181 [4.6]	.287 [7.3]	.142 [3.6]
B	.220 [5.6]	.220 [5.6]	.287 [7.3]	.173 [4.4]
C	.276 [7.0]	.276 [7.0]	.354 [9.0]	.217 [5.5]
D	.276 [7.0]	.276 [7.0]	.472 [12.0]	.217 [5.5]
E	.346 [8.8]	.346 [8.8]	.512 [13.0]	.276 [7.0]

**OS-CON® TYPE 94SM**

ENVIRONMENTAL PERFORMANCE		
ITEMS	CHARACTERISTICS	
1. Operating Temperature Range	- 55°C to + 105°C	
2. Capacitance Tolerance (@ 120Hz)	X0 = ± 20%.	
3. Maximum Dissipation Factor @ 120Hz (%)	Value in Standard Ratings table	
4. Maximum Leakage Current (µA/2 minutes)	A, B 0.03CV or 1.0 (Whichever is the greater). C, D, E 0.05CV.	
5. Maximum Equivalent Series Resistance (Ω) (100kHz from - 25°C to + 35°C)	Value in Standard Ratings table	
6. Temperature Characteristics Maximum Impedance Change at 100kHz	- 55°C	1.0 - 2.0
	+ 105°C	0.6 - 1.0
7. Life Test + 105°C, 1,000 hours. Rated voltage applied.	Δc/c	Within ± 20% of the initial value
	DF	≤ 1.5 times the initial requirement
	DCL	Shall meet the original requirement
8. Moisture Resistance (60°C, 90 - 95% RH, 500 hours, no voltage)	Δc/c	Within ± 20% of the initial value
	DF	≤ 1.5 times the value of Item 3
	DCL	≤ The value of Item 4
9. Reverse Voltage Guarantee	20% of the rated voltage	

ALLOWABLE RIPPLE CURRENT				
CASE CODE	PART* NUMBER	≤ + 45°C	+ 85°C	+ 105°C
		100kHz	100kHz	100kHz
A	94SM105X0020A__	0.430	0.301	0.108
	94SM225X0016A__	0.450	0.315	0.113
	94SM335X0016A__	0.500	0.350	0.125
	94SM475X0010A__	0.540	0.378	0.135
	94SM685X06R3A__	0.560	0.392	0.140
B	94SM225X0020B__	0.695	0.487	0.174
	94SM335X0020B__	0.700	0.490	0.175
	94SM475X0016B__	0.720	0.504	0.180
	94SM685X0016B__	0.745	0.522	0.186
	94SM106X0010B__	0.780	0.546	0.195
	94SM156X06R3B__	0.815	0.571	0.204
C	94SM475X0020C__	0.790	0.553	0.197
	94SM685X0020C__	0.800	0.560	0.200
	94SM106X0020C__	0.890	0.623	0.222
	94SM156X0016C__	0.900	0.630	0.225
	94SM226X0010C__	1.000	0.700	0.250
	94SM336X06R3C__	1.240	0.868	0.310
	94SM476X06R3C__	1.320	0.924	0.330
D	94SM156X0020D__	1.140	0.798	0.285
	94SM226X0020D__	1.450	1.015	0.362
	94SM336X0020D__	1.580	1.106	0.395
	94SM476X0010D__	1.630	1.141	0.407
	94SM686X0010D__	1.650	1.155	0.412
E	94SM476X0020E__	1.710	1.197	0.427
	94SM686X0020E__	2.020	1.414	0.505
	94SM107X0010E__	2.110	1.477	0.527
	94SM157X0010E__	2.150	1.505	0.537

\* Part Numbers shown are for ± 20% capacitance tolerance. For ± 10%, change X0 to X9.

CASE CODE LIST				
CAPACITANCE (µF)	6.3 WVDC	10 WVDC	16 WVDC	20 WVDC
1.0	—	—	—	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	D
22.0	—	C	—	D
33.0	C	—	—	D
47.0	C	D	—	E
68.0	—	D	—	E
100.0	—	E	—	—
150.0	E	—	—	—

TEMPERATURE COEFFICIENT FOR RIPPLE CURRENT				
Ambient Temperature	~ + 45°C	+ 85°C	+ 95°C	+ 105°C
Coefficient	4.0	2.8	1.6	1.0