



**THE DATASHEET OF  
SEK220M400ST**



# Type SEK 105 °C Radial Leaded Aluminum Electrolytic Capacitors

## Long Life, Aluminum Electrolytic



Type SEK is a radial leaded aluminum electrolytic capacitor with a +105 °C, long life rating. The volumetric efficient high CV product of the SEK makes it ideal for high density packaging in general purpose, coupling, decoupling, bypass and filtering circuit applications.

### Highlights

- +105 °C
- Long life
- High CV product
- General purpose applications
- Available in T&R and ammo pack

### Specifications

Capacitance Range	0.47 to 15,000 $\mu$ F																																					
Capacitance Tolerance	$\pm$ 20%																																					
Rated Voltage	6.3 to 450 Vdc																																					
Operating Temperature Range	-55 °C to +105 °C; 6.3 to 100 Vdc -40 °C to +105 °C; 160 to 400 Vdc -25 °C to +105 °C; 450 Vdc																																					
Maximum DC Leakage Current	After 2 minutes, with rated voltage at +20 °C 6.3 to 100 Vdc $I = .01CV$ or 3 $\mu$ A Max (whichever is greater) $\geq 160$ Vdc after 3 min, with rated voltage at +20 °C $I = .03CV$ or 10 $\mu$ A Max (whichever is greater) C = Capacitance in ( $\mu$ F) V = Rated voltage I = Leakage current in $\mu$ A																																					
Dissipation Factor @ 120 Hz, +25 °C	<table border="1"> <tr> <td><b>WV (V)</b></td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> <td>160-250</td> <td>350-450</td> </tr> <tr> <td><b>DF(%)</b></td> <td>26</td> <td>22</td> <td>18</td> <td>16</td> <td>14</td> <td>12</td> <td>10</td> <td>10</td> <td>10</td> <td>15</td> <td>20</td> </tr> </table> <p>For capacitors whose capacitance value exceeds 1000 <math>\mu</math>F, the value of DF (%) is increased 2% for every additional 1000 <math>\mu</math>F.</p>	<b>WV (V)</b>	6.3	10	16	25	35	50	63	80	100	160-250	350-450	<b>DF(%)</b>	26	22	18	16	14	12	10	10	10	15	20													
<b>WV (V)</b>	6.3	10	16	25	35	50	63	80	100	160-250	350-450																											
<b>DF(%)</b>	26	22	18	16	14	12	10	10	10	15	20																											
Ripple Multipliers for Voltage and Temperature:	<table border="1"> <thead> <tr> <th rowspan="2">Rated WVDC</th> <th colspan="4">Ripple Multipliers</th> </tr> <tr> <th>60Hz</th> <th>120Hz</th> <th>1kHz</th> <th>10kHz</th> </tr> </thead> <tbody> <tr> <td><b>6 to 25</b></td> <td>0.80</td> <td>1.0</td> <td>1.1</td> <td>1.2</td> </tr> <tr> <td><b>35 to 100</b></td> <td>0.75</td> <td>1.0</td> <td>1.3</td> <td>1.4</td> </tr> <tr> <td><b>160 to 250</b></td> <td>0.70</td> <td>1.0</td> <td>1.4</td> <td>1.6</td> </tr> <tr> <td><b>350 to 400</b></td> <td>0.60</td> <td>1.0</td> <td>1.5</td> <td>1.8</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Ambient Temperature</th> <th>Ripple Multiplier</th> </tr> </thead> <tbody> <tr> <td>+105 °C</td> <td>1.00</td> </tr> <tr> <td>+85 °C</td> <td>1.50</td> </tr> <tr> <td>+70 °C</td> <td>1.80</td> </tr> </tbody> </table>	Rated WVDC	Ripple Multipliers				60Hz	120Hz	1kHz	10kHz	<b>6 to 25</b>	0.80	1.0	1.1	1.2	<b>35 to 100</b>	0.75	1.0	1.3	1.4	<b>160 to 250</b>	0.70	1.0	1.4	1.6	<b>350 to 400</b>	0.60	1.0	1.5	1.8	Ambient Temperature	Ripple Multiplier	+105 °C	1.00	+85 °C	1.50	+70 °C	1.80
Rated WVDC	Ripple Multipliers																																					
	60Hz	120Hz	1kHz	10kHz																																		
<b>6 to 25</b>	0.80	1.0	1.1	1.2																																		
<b>35 to 100</b>	0.75	1.0	1.3	1.4																																		
<b>160 to 250</b>	0.70	1.0	1.4	1.6																																		
<b>350 to 400</b>	0.60	1.0	1.5	1.8																																		
Ambient Temperature	Ripple Multiplier																																					
+105 °C	1.00																																					
+85 °C	1.50																																					
+70 °C	1.80																																					
Load Life Test	Apply WVDC for 2000 hours at +105 °C Capacitance change within 20% of initial limit DF not to exceed 200% of initial requirement Leakage current not to exceed 200% of initial																																					
Shelf Life Test	1000 hrs @105 °C with no voltage applied Cap change within $\pm$ 20% of initial values DF not to exceed 200% of initial requirement DC leakage current meets initial requirement																																					

#### Regulatory Information

# Type SEK 105 °C Radial Leaded Aluminum Electrolytic Capacitors

## Outline Drawing

### Outline Dimensions (Millimeters)

Sleeving is PVC or PET (PET for all date codes after December 2019)



Case vented on diameters 6.3 and greater

sleeve adds .5 Max. to diameter and 2.0 Max. to length

## Part Numbering System

Type	Capacitance	Tolerance	Rated Voltage	Packaging	Lead Configuration
	( $\mu\text{F}$ )	(%)	(Vdc)		
SEK	100	M	100	S	T
	3R0 = 3	K = $\pm 10$	6R3 = 6.3	A = Tape & Ammo	1 = Lead cut
	100 = 10	M = $\pm 20$	010 = 10	E = Different Characteristic	2 = Lead form
	101 = 100		100 = 100	R = Tape & Reel	4 = Lead crimp & cut (form)
	102 = 1000			S = Standard	T = Standard

## Temperature Characteristics



## Load Life Characteristics



## Ratings

Cap ( $\mu$ F)	Catalog Part Number	Max ESR 120 Hz 25 °C ( $\Omega$ )	Max Ripple 120 Hz 105 °C (mA)	Size in. (mm)			
				Diameter (D)	Length (L)	Lead Space (S)	Lead Dia. (d)
<b>6.3 Vdc (8 Volts Surge)</b>							
100	SEK101M6R3ST	3.45	100	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
220	SEK221M6R3ST	1.57	165	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
330	SEK331M6R3ST	1.05	200	.248 (6.3)	.453 (11.5)	.098 (2.5)	.0197 (0.5)
470	SEK471M6R3ST	0.73	280	.315 (8.0)	.453 (11.5)	.138 (3.5)	.0236 (0.6)
1000	SEK102M6R3ST	0.35	470	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
2200	SEK222M6R3ST	0.17	930	.394 (10.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
3300	SEK332M6R3ST	0.12	1100	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
4700	SEK472M6R3ST	0.10	1320	.630 (16.0)	.984 (26.0)	.295 (7.5)	.0315 (0.8)
6800	SEK682M6R3ST	0.07	1490	.630 (16.0)	.984 (25.0)	.295 (7.5)	.0315 (0.8)
10000	SEK103M6R3ST	0.06	1830	.630 (16.0)	1.26 (32.0)	.295 (7.5)	.0315 (0.8)
15000	SEK153M6R3ST	0.05	2280	.709 (18.0)	1.40 (36.0)	.295 (7.5)	.0315 (0.8)
<b>10 Vdc (13 Volts Surge)</b>							
47	SEK470M010ST	6.21	75	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
100	SEK101M010ST	2.92	110	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
220	SEK221M010ST	1.33	180	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
330	SEK331M010ST	0.88	255	.315 (8.0)	.453 (11.5)	.138 (3.5)	.0236 (0.6)
470	SEK471M010ST	0.62	305	.315 (8.0)	.453 (11.5)	.138 (3.5)	.0236 (0.6)
1000	SEK102M010ST	0.29	570	.394 (10.0)	.630 (16.0)	.197 (5.0)	.0236 (0.6)
2200	SEK222M010ST	0.14	1010	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
3300	SEK332M010ST	0.10	1220	.512 (13.0)	.984 (25.0)	.197 (5.0)	.0236 (0.6)
4700	SEK472M010ST	0.08	1410	.630 (16.0)	.984 (25.0)	.295 (7.5)	.0315 (0.8)
6800	SEK682M010ST	0.07	1610	.630 (16.0)	1.26 (32.0)	.295 (7.5)	.0315 (0.8)
10000	SEK103M010ST	0.05	1980	.709 (18.0)	1.40 (36.0)	.295 (7.5)	.0315 (0.8)
15000	SEK153M010ST	0.04	3330	.709 (18.0)	1.65 (42.0)	.295 (7.5)	.0315 (0.8)
<b>16 Vdc (20 Volts Surge)</b>							
33	SEK330M016ST	7.24	70	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
47	SEK470M016ST	5.08	85	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
100	SEK101M016ST	2.39	135	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
220	SEK221M016ST	1.09	235	.315 (8.0)	.453 (11.5)	.138 (3.5)	.0236 (0.6)
330	SEK331M016ST	0.72	285	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
470	SEK471M016ST	0.51	395	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
1000	SEK102M016ST	0.24	700	.394 (10.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
2200	SEK222M016ST	0.12	1150	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
3300	SEK332M016ST	0.09	1350	.512 (13.0)	.984 (26.0)	.197 (5.0)	.0236 (0.6)
4700	SEK472M016ST	0.07	1560	.630 (16.0)	1.26 (32.0)	.295 (7.5)	.0315 (0.8)
6800	SEK682M016ST	0.06	1790	.709 (18.0)	1.40 (36.0)	.295 (7.5)	.0315 (0.8)
10000	SEK103M016ST	0.05	2884	.709 (18.0)	1.65 (42.0)	.295 (7.5)	.0315 (0.8)
<b>25 Vdc (32 Volts Surge)</b>							
10	SEK100M025ST	21.23	50	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
22	SEK220M025ST	9.65	60	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
33	SEK330M025ST	6.43	75	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
47	SEK470M025ST	4.52	90	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
100	SEK101M025ST	2.12	145	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
220	SEK221M025ST	0.97	250	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
330	SEK331M025ST	0.64	355	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)

# Type SEK 105 °C Radial Leaded Aluminum Electrolytic Capacitors



Cap ( $\mu$ F)	Catalog Part Number	Max ESR 120 Hz 25 °C ( $\Omega$ )	Max Ripple 120 Hz 105 °C (mA)	Size in. (mm)			
				Diameter (D)	Length (L)	Lead Space (S)	Lead Dia. (d)
<b>25 Vdc (32 Volts Surge)</b>							
470	SEK471M025ST	0.45	470	.394 (10.0)	.630 (16.0)	.197 (5.0)	.0236 (0.6)
1000	SEK102M025ST	0.21	855	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
2200	SEK222M025ST	0.11	1230	.512 (13.0)	.984 (26.0)	.197 (5.0)	.0236 (0.6)
3300	SEK332M025ST	0.08	1450	.630 (16.0)	1.26 (32.0)	.295 (7.5)	.0315 (0.8)
4700	SEK472M025ST	0.07	1690	.709 (18.0)	1.40 (36.0)	.295 (7.5)	.0315 (0.8)
6800	SEK682M025ST	0.05	2856	.709 (18.0)	1.65 (42.0)	.295 (7.5)	.0315 (0.8)
<b>35 Vdc (44 Volts Surge)</b>							
22	SEK220M035ST	8.44	65	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
33	SEK330M035ST	5.63	85	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
47	SEK470M035ST	3.95	115	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
100	SEK101M035ST	1.86	190	.315 (8.0)	.453 (11.5)	.138 (3.5)	.0236 (0.6)
220	SEK221M035ST	0.84	315	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
330	SEK331M035ST	0.56	440	.394 (10.0)	.630 (16.0)	.197 (5.0)	.0236 (0.6)
470	SEK471M035ST	0.40	580	.512 (13.0)	.787 (20.0)	.197 (5.0)	.0236 (0.6)
1000	SEK102M035ST	0.19	995	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
2200	SEK222M035ST	0.10	1450	.630 (16.0)	1.26 (32.0)	.295 (7.5)	.0315 (0.8)
3300	SEK332M035ST	0.07	1660	.709 (18.0)	1.40 (36.0)	.295 (7.5)	.0315 (0.8)
4700	SEK472M035ST	0.06	2674	.709 (18.0)	1.65 (42.0)	.295 (7.5)	.0315 (0.8)
<b>50 Vdc (63 Volts Surge)</b>							
0.47	SEKR47M050ST	338.80	7.0	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
1.0	SEK010M050ST	159.24	12.0	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
2.2	SEK2R2M050ST	72.38	18.0	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
3.3	SEK3R3M050ST	48.25	25.0	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
4.7	SEK4R7M050ST	33.88	30.0	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
10	SEK100M050ST	15.92	50.0	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
22	SEK220M050ST	7.24	75.0	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
33	SEK330M050ST	4.83	105.0	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
47	SEK470M050ST	3.39	125.0	.248 (6.3)	.453 (11.5)	.098 (2.5)	.0197 (0.5)
100	SEK101M050ST	1.59	210.0	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
220	SEK221M050ST	0.72	400.0	.394 (10.0)	.630 (16.0)	.197 (5.0)	.0236 (0.6)
330	SEK331M050ST	0.48	535.0	.394 (10.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
470	SEK471M050ST	0.34	730.0	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
1000	SEK102M050ST	0.16	1110.0	.630 (16.0)	.984 (25.0)	.295 (7.5)	.0315 (0.8)
2200	SEK222M050ST	0.08	1530.0	.709 (18.0)	1.40 (36.0)	.295 (7.5)	.0315 (0.8)
3300	SEK332M050ST	0.47	2478.0	.709 (18.0)	1.65 (42.0)	.295 (7.5)	.0315 (0.8)
<b>63 Vdc (79 Volts Surge)</b>							
4.7	SEK4R7M063ST	28.23	34	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
10	SEK100M063ST	13.27	55	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
22	SEK220M063ST	6.03	90	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
33	SEK330M063ST	4.02	110	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
47	SEK470M063ST	2.82	155	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
100	SEK101M063ST	1.33	260	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
220	SEK221M063ST	0.60	460	.394 (10.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
330	SEK331M063ST	0.40	650	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
470	SEK471M063ST	0.28	800	.512 (13.0)	.984 (26.0)	.197 (5.0)	.0236 (0.6)
1000	SEK102M063ST	0.13	1200	.630 (16.0)	1.26 (32.0)	.295 (7.5)	.0315 (0.8)

Parts highlighted in yellow are obsolete.

# Type SEK 105 °C Radial Leaded Aluminum Electrolytic Capacitors



Cap ( $\mu$ F)	Catalog Part Number	Max ESR 120 Hz 25 °C ( $\Omega$ )	Max Ripple 120 Hz 105 °C (mA)	Size in. (mm)			
				Diameter (D)	Length (L)	Lead Space (S)	Lead Dia. (d)
<b>100 Vdc (125 Volts Surge)</b>							
0.47	SEKR47M100ST	282.33	10	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
1.0	SEK010M100ST	132.70	15	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
2.2	SEK2R2M100ST	60.32	22	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
3.3	SEK3R3M100ST	40.21	29	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
4.7	SEK4R7M100ST	28.23	37	.197 (5.0)	.433 (11.0)	.079 (2.0)	.0197 (0.5)
10.0	SEK100M100ST	13.27	65	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
22.0	SEK220M100ST	6.03	115	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
33.0	SEK330M100ST	4.02	160	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
47.0	SEK470M100ST	2.82	210	.394 (10.0)	.630 (16.0)	.197 (5.0)	.0236 (0.6)
100.0	SEK101M100ST	1.33	385	.512 (13.0)	.787 (20.0)	.197 (5.0)	.0236 (0.6)
220.0	SEK221M100ST	0.60	590	.630 (16.0)	.984 (25.0)	.295 (7.5)	.0315 (0.8)
330.0	SEK331M100ST	0.40	720	.630 (16.0)	.984 (25.0)	.295 (7.5)	.0315 (0.8)
470.0	SEK471M100ST	0.28	875	.630 (16.0)	1.26 (32.0)	.295 (7.5)	.0315 (0.8)
<b>160 Vdc (200 Volts Surge)</b>							
0.47	SEKR47M160ST	423.50	12	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
1.0	SEK010M160ST	199.04	17	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
2.2	SEK2R2M160ST	90.47	25	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
3.3	SEK3R3M160ST	60.32	36	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
4.7	SEK4R7M160ST	42.35	43	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
10	SEK100M160ST	19.90	70	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
22	SEK220M160ST	9.05	130	.394 (10.0)	.630 (16.0)	.197 (5.0)	.0236 (0.6)
33	SEK330M160ST	6.03	180	.394 (10.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
47	SEK470M160ST	4.23	270	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
100	SEK101M160ST	1.99	330	.512 (13.0)	.984 (26.0)	.197 (5.0)	.0236 (0.6)
220	SEK221M160ST	0.90	500	.630 (16.0)	1.42 (36.0)	.295 (7.5)	.0315 (0.8)
330	SEK331M160ST	0.60	850	.709 (18.0)	1.65 (42.0)	.295 (7.5)	.0315 (0.8)
<b>200 Vdc (250 Volts Surge)</b>							
0.47	SEKR47M200ST	423.50	12	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
1.0	SEK010M200ST	199.04	17	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
2.2	SEK2R2M200ST	90.47	25	.248 (6.3)	.453 (11.5)	.098 (2.5)	.0197 (0.5)
3.3	SEK3R3M200ST	60.32	36	.248 (6.3)	.453 (11.5)	.098 (2.5)	.0197 (0.5)
4.7	SEK4R7M200ST	42.35	50	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
10	SEK100M200ST	19.90	80	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
22	SEK220M200ST	9.05	140	.394 (10.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
33	SEK330M200ST	6.03	190	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
47	SEK470M200ST	4.23	220	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
100	SEK101M200ST	1.99	335	.630 (16.0)	.984 (25.0)	.295 (7.5)	.0315 (0.8)
220	SEK221M200ST	0.90	515	.709 (18.0)	1.65 (42.0)	.295 (7.5)	.0315 (0.8)
<b>250 Vdc (300 Volts Surge)</b>							
0.47	SEKR47M250ST	423.50	12	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
1.0	SEK010M250ST	199.04	17	.248 (6.3)	.433 (11.0)	.098 (2.5)	.0197 (0.5)
2.2	SEK2R2M250ST	90.47	29	.248 (6.3)	.453 (11.5)	.098 (2.5)	.0197 (0.5)
3.3	SEK3R3M250ST	60.32	42	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
4.7	SEK4R7M250ST	42.35	50	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
10.0	SEK100M250ST	19.90	88	.394 (10.0)	.630 (16.0)	.197 (5.0)	.0236 (0.6)

Parts highlighted in yellow are obsolete.

# Type SEK 105 °C Radial Leaded Aluminum Electrolytic Capacitors



Cap ( $\mu$ F)	Catalog Part Number	Max ESR 120 Hz 25 °C ( $\Omega$ )	Max Ripple 120 Hz 105 °C (mA)	Size in. (mm)			
				Diameter (D)	Length (L)	Lead Space (S)	Lead Dia. (d)
<b>250 Vdc (300 Volts Surge)</b>							
22	SEK220M250ST	9.05	155	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
33	SEK330M250ST	6.03	190	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
47	SEK470M250ST	4.23	230	.512 (13.0)	.984 (26.0)	.197 (5.0)	.0236 (0.6)
100	SEK101M250ST	1.99	340	.630 (16.0)	1.26 (32.0)	.295 (7.5)	.0315 (0.8)
<b>350 Vdc (400 Volts Surge)</b>							
0.47	SEKR47M350ST	564.67	14	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
1.0	SEK010M350ST	265.39	20	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
2.2	SEK2R2M350ST	120.63	35	.315 (8.0)	.453 (11.5)	.138 (3.5)	.0236 (0.6)
3.3	SEK3R3M350ST	80.42	47	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
4.7	SEK4R7M350ST	56.47	55	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
10	SEK100M350ST	26.54	95	.394 (10.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
22	SEK220M350ST	12.06	165	.512 (13.0)	.984 (26.0)	.197 (5.0)	.0236 (0.6)
33	SEK330M350ST	8.04	195	.512 (13.0)	.984 (25.0)	.197 (5.0)	.0236 (0.6)
47	SEK470M350ST	5.65	240	.630 (16.0)	1.42 (36.0)	.295 (7.5)	.0315 (0.8)
100	SEK101M350ST	2.65	360	.709 (18.0)	1.65 (42.0)	.295 (7.5)	.0315 (0.8)
<b>400 Vdc (450 Volts Surge)</b>							
0.47	SEKR47M400ST	564.67	14	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
1.0	SEK010M400ST	265.39	20	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
2.2	SEK2R2M400ST	120.63	35	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
3.3	SEK3R3M400ST	80.42	50	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
4.7	SEK4R7M400ST	56.47	58	.394 (10.0)	.630 (16.0)	.197 (5.0)	.0236 (0.6)
10	SEK100M400ST	26.54	100	.512 (13.0)	.787 (20.0)	.197 (5.0)	.0236 (0.6)
22	SEK220M400ST	12.06	170	.512 (13.0)	.984 (26.0)	.197 (5.0)	.0236 (0.6)
33	SEK330M400ST	8.04	205	.630 (16.0)	1.26 (32.0)	.295 (7.5)	.0315 (0.8)
47	SEK470M400ST	5.65	255	.709 (18.0)	1.40 (36.0)	.295 (7.5)	.0315 (0.8)
<b>450 Vdc (500 Volts Surge)</b>							
0.47	SEKR47M450ST	564.67	14	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
1.0	SEK010M450ST	265.39	20	.315 (8.0)	.433 (11.0)	.138 (3.5)	.0236 (0.6)
2.2	SEK2R2M450ST	120.63	35	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
3.3	SEK3R3M450ST	80.42	50	.394 (10.0)	.512 (13.0)	.197 (5.0)	.0236 (0.6)
4.7	SEK4R7M450ST	56.47	58	.394 (10.0)	.630 (16.0)	.197 (5.0)	.0236 (0.6)
10	SEK100M450ST	26.54	100	.512 (13.0)	.827 (21.0)	.197 (5.0)	.0236 (0.6)
22	SEK220M450ST	12.06	170	.512 (13.0)	.984 (26.0)	.197 (5.0)	.0236 (0.6)
33	SEK330M450ST	8.04	205	.630 (16.0)	1.26 (32.0)	.295 (7.5)	.0315 (0.8)
47	SEK470M450ST	5.65	255	.709 (18.0)	1.40 (36.0)	.295 (7.5)	.0315 (0.8)

Parts highlighted in yellow are obsolete.

## Taping & Packaging

Fig. 1 - Formed Taping



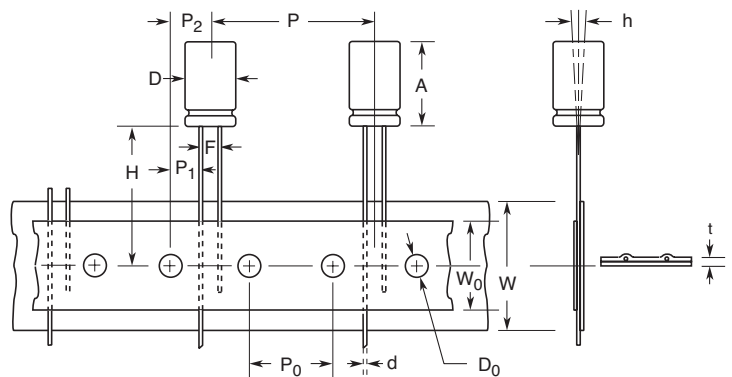
Fig. 2 - Straight Taping (5φ, 6.3φ, 8φ)



Fig. 3 - Straight Taping (Under 10φ, 12φ, 13φ)



Fig. 4 - Straight Taping (16φ, 18φ)



Standard Lead Spacing of Taped Components is 5mm  
Other Lead Spacing is Available by Special Order

Code	D	A	d	P	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	F	W	W <sub>0</sub>	H	H <sub>0</sub>	D <sub>0</sub>	t	ih	Fig.
Tolerance	0.5	1.0	±0.05	±1.0	±0.2	±0.7	±1.3	+0.8 -0.2	±0.5	Min.	±0.75	±0.5	±0.2	±0.2	Max.	
Item	4 ~ 6.3	7.0	0.45	12.7	12.7	3.85	6.35	5.0	18.0	12.5	18.5	16.0	4.0	0.7	2.0	1
	5 ~ 8	12.5	0.5	12.7	12.7	3.85	6.35	5.0	18.0	12.5	18.5	16.0	4.0	0.7	2.0	2
	5, 6.3	12.5	0.5	12.7	12.7	5.1	6.35	2.5	18.0	12.5	18.5	—	4.0	0.7	2.0	
	8	12.5	0.5	12.7	12.7	4.6	6.35	3.5	18.0	12.5	18.5	—	4.0	0.7	2.0	3
	10	21.0	0.6	12.7	12.7	3.85	6.35	5.0	18.0	12.5	18.5	—	4.0	0.7	2.0	
	12, 13	26.0	0.6	15.0	15.0	5.0	7.5	5.0	18.0	12.5	18.5	—	4.0	0.7	2.0	
16, 18	26.0	0.8	30.0	15.0	3.75	7.5	7.5	7.5	18.0	12.5	18.0	—	4.0	0.7	2.0	4

Capacitor Diameter D (mm)	Ammo Pack Box Dimensions (mm)			Quantity Per Ammo Pack Box
	A±5	B Max	C±3	
4	250	340	54	3000
5	250	340	54	2,000
6.3	290	340	54	2,000
8	250	340	54	1,000
10 (12 L)	290	340	54	600
10 (16 L)	350	340	59	600
10 (20 L)	340	340	71	600
12, 13	340	340	71	400
16	340	340	71	300



Tape And Reel Quantities		
Case Diameter D (mm)	Reel Width	Reel Qty. (Pcs.)
4	44	1500
5	44	1200
6	44	1000
8	44	800
10 (12L)	44	600
10 (16L)	50	600
12, 13	-	-
16	-	-



## Type SEK 105 °C Radial Leaded Aluminum Electrolytic Capacitors

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