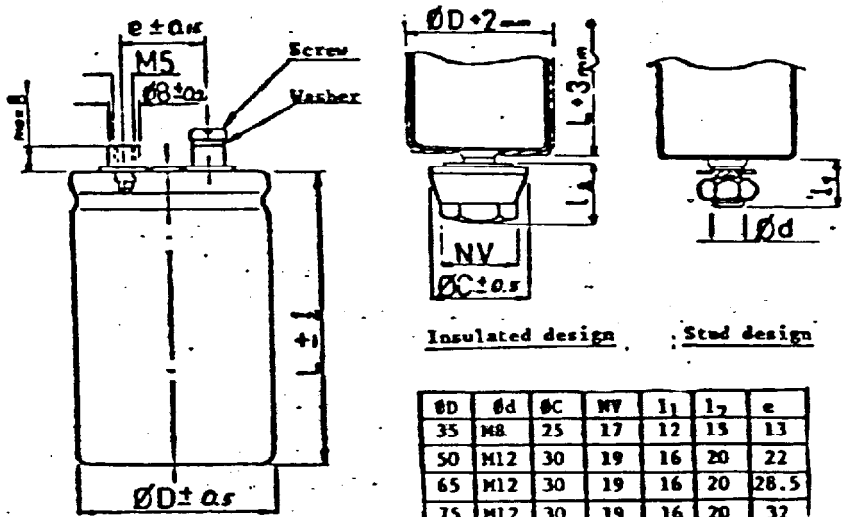
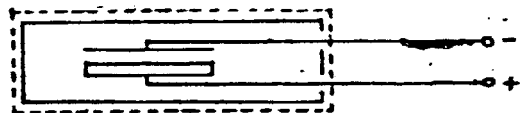


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SEK

SVENSKA ELEKTRISKA KOMMISSIONEN	CECC 30 301 - 030																																																		
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH: SEN 49 01 00 SEN 49 01 30	Manufacturer's detail specification May 1983 AB RIFA																																																		
DETAIL SPECIFICATION FOR ALUMINIUM ELECTROLYTIC CAPACITORS WITH NON SOLID ELECTROLYTE																																																			
TYPICAL CONSTRUCTION:	Cylindrical Polar Metallic, insulated or uninsulated case Stud or clamp mounting Screw terminations																																																		
 <table border="1" data-bbox="683 1227 1077 1366"> <thead> <tr> <th>ØD</th> <th>Ød</th> <th>ØC</th> <th>NV</th> <th>l₁</th> <th>l₂</th> <th>e</th> </tr> </thead> <tbody> <tr> <td>35</td> <td>M8</td> <td>25</td> <td>17</td> <td>12</td> <td>15</td> <td>13</td> </tr> <tr> <td>50</td> <td>M12</td> <td>30</td> <td>19</td> <td>16</td> <td>20</td> <td>22</td> </tr> <tr> <td>65</td> <td>M12</td> <td>30</td> <td>19</td> <td>16</td> <td>20</td> <td>28.5</td> </tr> <tr> <td>75</td> <td>M12</td> <td>30</td> <td>19</td> <td>16</td> <td>20</td> <td>32</td> </tr> </tbody> </table> Code letters, pos 14,15; see clause 6 <table border="1" data-bbox="550 1467 1117 1702"> <thead> <tr> <th>Alternative mounting</th> <th>Aluminium case</th> <th>Insulated Aluminium case</th> </tr> </thead> <tbody> <tr> <td>Stud only</td> <td>B0</td> <td>B2</td> </tr> <tr> <td>Stud + nut and washer</td> <td>B1</td> <td>B3</td> </tr> <tr> <td>Stud + plastic nut</td> <td>-</td> <td>B4</td> </tr> <tr> <td>Clamped version</td> <td>U0</td> <td>U2</td> </tr> </tbody> </table>	ØD	Ød	ØC	NV	l ₁	l ₂	e	35	M8	25	17	12	15	13	50	M12	30	19	16	20	22	65	M12	30	19	16	20	28.5	75	M12	30	19	16	20	32	Alternative mounting	Aluminium case	Insulated Aluminium case	Stud only	B0	B2	Stud + nut and washer	B1	B3	Stud + plastic nut	-	B4	Clamped version	U0	U2	QUICK REFERENCE DATA: RATED CAPACITANCE RANGE: 68 µF - 330 000 µF CAPACITANCE TOLERANCE: -10/+30 code Q RATED VOLTAGE RANGE: 10 - 400 V d.c. CLIMATIC CATEGORY: 40/085/56 GRADE: Long life use ASSESSMENT LEVEL: Full, plus additional
ØD	Ød	ØC	NV	l ₁	l ₂	e																																													
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See the relevant Qualified Products List for the availability of components qualified to this detail specification.																																																			

1. DIMENSIONS

Table 1

CASE SIZE REFERENCE	DIMENSIONS IN mm		TYPICAL WEIGHT g
	$\varnothing D_{\max}$	$L_{\max}$	
A	36	52	70
B	36	61	85
C	36	76	105
D	36	96	130
H	51	76	180
J	51	96	240
K	51	106	265
O	66	106	415
R	66	146	570
T	76	106	585
U	76	116	640
V	76	146	800

2. SPECIFIED METHOD OF MOUNTING FOR VIBRATION AND BUMP TESTING:

PEH 166 - 167 shall be mounted by means of mounting clips.

PEH 168 - 169 shall be mounted by their studs.

3. RATINGS, CHARACTERISTICS

Grade	Long life use
Capacitance range	See table 2A
Capacitance tolerances in percent	-10/+30, code Q
Rated voltage range	10V d.c. to 400V d.c.
Rated temperature	85°C
Rated ripple current	See table 2B
Tangent of loss angle	See table 2B
Leakage current	$\leq 0.003 \times C \times U + 4 \mu A$ after 5 min at U
Impedance	See curves page 7-10
Climatic category	40/085/56
ESR	See table 2B

Table 2A

Values of capacitance and of voltage related to case sizes.

Rated capacitance μF	Rated voltages and voltage code letters										
	10 E	16 G	25 H	40 K	63 M	100 P	160 Q	200 R	250 S	350 U	400 V
68 100 150										A A	A A B
220 330 470							A A	A B	A B C	C D H	C H H
680 1000 1500					A	A A	C D H	D H J	H H K	J K O	K O T V
2200 3300 4700			A	A B	A C D	D H J	J O T	K O T V	O R V	T V	
6800 10000 15000	A A B	A A C	A C D	C D H	H J O	O O U	U V	V			
22000 33000 47000	C D H	D H J	H J O	J O T	T U V	V					
68000 100000 150000	J K O	O T U	T U V	U V							
220000 330000	R V	V									

Table 2B

Tan δ , rated ripple current and ESR

U_R V	C_R μF	Case size	Maximum tangent of loss angle at 100 Hz %	Maximum rated ripple current at 85°C mA at 100 Hz *)	Maximum ESR at f_r **) m Ω
10	6800	A	23	2.7	38
	10000	A	24	3.3	27
	15000	B	25	6.0	19
	22000	C	26	7.6	14
	33000	D	28	9.8	11
	47000	H	35	12.7	10
	68000	J	40	15.4	8
	100000	K	53	17.2	8
	150000	O	84	17.0	9
	220000	R	92	21.9	7
	330000	V	154	19.9	8
16	6800	A	18	3.0	28
	10000	A	20	3.6	21
	15000	C	20	7.2	14
	22000	D	21	9.2	11
	33000	H	28	11.9	11
	47000	J	31	14.8	9
	68000	O	38	16.8	8
	100000	T	57	15.9	9
	150000	U	86	16.5	9
	220000	V	103	19.9	7
25	4700	A	15	2.8	30
	6800	A	15	3.5	22
	10000	C	16	6.7	15
	15000	D	16	8.7	12
	22000	H	20	14.4	10
	33000	J	22	14.8	8
	47000	O	26	16.8	7
	68000	T	40	15.7	8
	100000	U	57	16.5	9
	150000	V	75	19.2	8
40	3300	A	11	2.8	26
	4700	B	12	3.6	19
	6800	C	12	6.3	14
	10000	D	12	8.3	11
	15000	H	15	10.5	10
	22000	J	17	13.4	8
	33000	O	21	15.7	8
	47000	T	31	15.4	9
	68000	U	43	16.3	9
	100000	V	51	20.1	8

*) When test is performed at 50Hz the values in the table shall be multiplied by 0.8.

**) f_r = resonance frequency.

U_R V	C_R μF	Case size	Maximum tangent of loss angle at 100 Hz %	Maximum rated ripple current at 85°C mA at 100 Hz *)	Maximum ESR at f_r **) m Ω
63	1500	A	8	2.2	32
	2200	A	9	2.7	24
	3300	C	9	5.1	16
	4700	D	9	6.7	12
	6800	H	11	8.3	11
	10000	J	11	11.2	9
	15000	O	12	13.9	7
	22000	T	17	14.1	8
	33000	U	22	15.9	8
	47000	V	26	19.2	7
100	680	A	11	1.8	150
	1000	A	11	2.2	105
	1500	C	11	3.1	71
	2200	D	12	3.8	49
	3300	H	12	5.8	35
	4700	J	13	7.2	25
	6800	O	13	9.6	18
	10000	O	14	11.6	15
	15000	U	16	13.6	12
	22000	V	18	17.0	10
160	330	A	12	1.6	265
	470	A	12	2.0	190
	680	C	12	2.7	130
	1000	D	12	3.6	90
	1500	H	13	5.2	64
	2200	J	13	6.8	45
	3300	O	13	9.9	33
	4700	T	14	11.5	27
	6800	U	16	13.4	22
	10000	V	17	17.3	17
200	330	A	13	1.6	330
	470	B	13	2.2	240
	680	D	13	2.9	160
	1000	H	14	3.5	115
	1500	J	14	4.8	78
	2200	K	14	5.9	56
	3300	O	15	7.7	41
	4700	T	16	9.1	33
	6800	V	16	12.1	24

*) When test is performed at 50Hz the values in the table shall be multiplied by 0.8.

**) f_r = resonance frequency

U_R V	C_R μF	Case size	Maximum tangent of loss angle at 100 Hz %	Maximum rated ripple current at 85°C mA at 100 Hz *)	Maximum ESR at f_r **) m Ω
250	150	A	10	1.0	535
	220	A	11	1.3	370
	330	B	11	1.6	350
	470	C	11	2.1	175
	680	H	11	3.3	125
	1000	H	11	4.1	85
	1500	K	11	5.5	59
	2200	O	11	7.4	43
	3300	R	12	9.6	30
	4700	V	12	11.5	24
350	100	A	8	1.0	545
	150	A	8	1.2	365
	220	C	8	1.6	250
	330	D	8	2.2	170
	470	H	9	3.0	120
	680	J	9	3.8	85
	1000	K	9	4.9	61
	1500	O	9	6.8	44
	2200	T	10	7.9	34
	3300	V	10	10.7	24
400	68	A	7	0.9	655
	100	A	7	1.0	450
	150	B	7	1.4	300
	220	C	7	1.8	205
	330	H	7	2.7	140
	470	H	7	3.6	100
	680	K	7	4.7	70
	1000	O	8	5.8	50
	1500	T	8	7.1	38
	2200	V	8	10.1	27

*) When test is performed at 50 Hz the values in the table shall be multiplied by 0.8.

**) f_r = resonance frequency