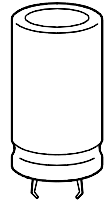


**GP grade**
**For universal application**


KAL0274-A

**Construction**

- Charge-discharge proof, polar
- Aluminum case, fully insulated
- Snap-in solder pins to hold component in place on PC-board
- Minus pole marking on case surface
- Minus pole not insulated from case

**Terminals**

- Standard version with 2 terminals  
2 lengths available: 6,3 and 4,5 mm
- 3 terminals (terminal arrangement ensures correct insertion)

**Features**

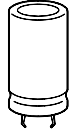
- High ripple current capability
- High  $CU$  product, i. e. extremely compact
- Different case sizes available for each capacitance value

**Applications**

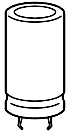
- Switch-mode power supplies in industrial and entertainment electronics

**Specifications and characteristics in brief**

	B 41 303	B 43 303
Rated voltage $U_R$	10 ... 100 V-	200 ... 550 V-
Surge voltage $U_S$	$1,15 \cdot U_R$	$1,15 \cdot U_R$ (for $U_R \leq 250$ V-) $1,10 \cdot U_R$ (for $U_R \geq 385$ V-)
Rated capacitance $C_R$	680 ... 47 000 $\mu$ F	15 ... 1 500 $\mu$ F
Capacitance tolerance	$\pm 20 \% \triangleq M$	$\pm 20 \% \triangleq M$
Useful life		
40 °C, $U_R$	$> 100\,000$ h ( $1,3 \cdot I_{-R,85^\circ C}$ )	$> 100\,000$ h ( $1,3 \cdot I_{-R,85^\circ C}$ )
85 °C, $U_R$ ; $I_{-R}$	$> 2\,000$ h	$> 2\,000$ h
Failure percentage	$\leq 1 \%$ (during useful life)	$\leq 1 \%$ (during useful life)
Failure rate	$\leq 100$ fit ( $\leq 100 \cdot 10^{-9}/h$ )	$\leq 100$ fit ( $\leq 100 \cdot 10^{-9}/h$ )
Voltage endurance test	2 000 h, 85 °C (at $U_R$ )	2 000 h, 85 °C (at $U_R$ )
Leakage current $I_{lka}$ (5 min, 20 °C)	$I_{lka} \leq 0,3 \mu A \cdot \left( \frac{C_R}{\mu F} \cdot \frac{U_R}{V} \right)^{0,7} + 4 \mu A$	


**B 41 303**
**B 43 303**
**Specifications and characteristics in brief**

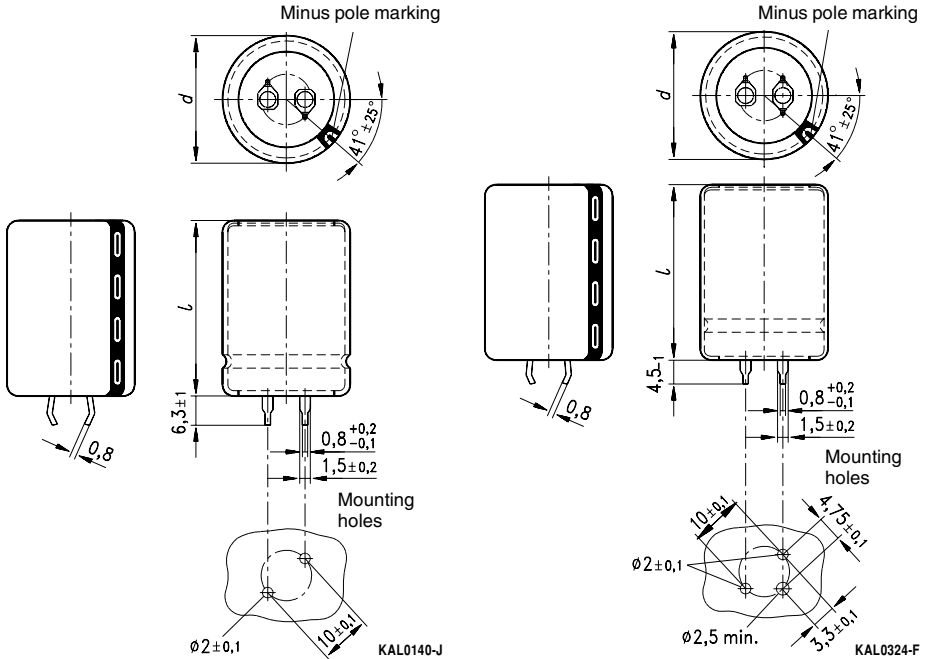
	B 41 303	B 43 303
Self-inductance $L_{ESL}$	approx. 20 nH	
IEC climatic category	in accordance with IEC 68-1 40/085/56 (-40 °C/+85 °C, 56 days damp heat test)	25/085/56 (-25 °C/+85 °C, 56 days damp heat test)
Detail specification	similar to CECC 30 301-806	
Sectional specification	IEC 384-4	
Vibration resistance	in accordance with IEC 68-2-6, test Fc: displacement amplitude 0,35 mm, frequency range 10 ... 55 Hz, acceleration max. 5 g, duration 3 × 2 h	



B 41 303

B 43 303

**Dimensional drawings**

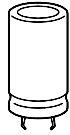


Snap-in terminals, standard (length  $6,3 \pm 1$  mm). Also available in a shorter version with a length of  $4,5 - 1$  mm. For packing mode and ordering example [see next page](#).

Snap-in capacitors are also available with 3 terminals. For packing mode and ordering example [see next page](#).

Dimensions (mm)		Approx. weight (g)	Packing units (pieces)
$d + 1$	$l \pm 2$		
22	25	9	160
22	30	12	160
22	35	15	160
22	40	18	160
22	45	20	160
<hr/>			
25	25	13	130
25	30	17	130
25	35	19	130
25	40	22	130
25	45	25	130

Dimensions (mm)		Approx. weight (g)	Packing units (pieces)
$d + 1$	$l \pm 2$		
30	20	14	80
30	25	17	80
30	30	23	80
30	35	29	80
30	40	36	80
30	45	41	80
30	50	46	80
<hr/>			
35	20	19	60
35	40	44	60
35	45	52	60
35	50	59	60
35	55	66	60



Packing	B 41 303
	B 43 303

### Packing of snap-in capacitors



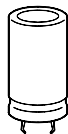
For ecological reasons the packing is pure cardboard. Components can be withdrawn (in full or in part) in the correct position for insertion.

### Ordering codes

Snap-in terminals Version	Identification in 3rd block of ordering code
Standard terminals (6,3 ± 1) mm	-M
Short terminals (4,5 – 1) mm	-M7
3 terminals	-M2

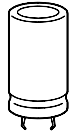
Ordering example:

- B41303-A3109-M7 } snap-in capacitor with short terminals
- B41303-A3109-M2 } snap-in capacitor with 3 terminals


**Overview of available types**
**Type B 41 303**

$U_R$ (V-)	10	16	25	40	63	100
$C_R$ ( $\mu$ F)	Case dimensions $d \times l$ (mm)					
680						22 × 30 25 × 25
1 000						22 × 35 25 × 30
1 500					22 × 30 25 × 25	25 × 35 30 × 30
2 200					22 × 35 25 × 30	30 × 35
3 300				22 × 30 25 × 25	25 × 35 30 × 30	30 × 45
4 700			22 × 30 25 × 25	22 × 35 25 × 30	30 × 35	
6 800		22 × 30 25 × 25	22 × 35 25 × 30	25 × 40 30 × 30	30 × 45	
10 000	22 × 30 25 × 25	22 × 35 25 × 30	25 × 35 30 × 30	30 × 35		
15 000	22 × 35 25 × 30	25 × 40 30 × 30	30 × 35	30 × 50		
22 000	25 × 40 30 × 30	30 × 35	30 × 45			
33 000	30 × 35	30 × 45				
47 000	30 × 45					

The capacitance and voltage ratings listed above are available in different cases upon request. Other voltage and capacitance ratings are also available upon request.


**Overview of available types**
**Type B 43 303**

$U_R$ (V-)	200	250	385	400	450	500	550
$C_R$ ( $\mu$ F)	Case dimensions $d \times l$ (mm)						
15							22 × 25
22						22 × 25	22 × 30
33						22 × 30	22 × 40 25 × 30
47						22 × 40	25 × 40
68			22 × 25	22 × 30	22 × 35	25 × 40	30 × 40
100			22 × 30 25 × 25	22 × 35 25 × 30	22 × 40	30 × 40	30 × 50
120				25 × 30	25 × 35		
150		22 × 25	22 × 40 25 × 30	22 × 40 25 × 30	30 × 35	30 × 50	
180					30 × 35		
220	22 × 25	22 × 30 25 × 25	25 × 40 30 × 35	25 × 40 30 × 30	30 × 50		
270				30 × 35	30 × 45		
330	22 × 30 25 × 25	22 × 40 25 × 35	30 × 45	30 × 45	35 × 40		
390				30 × 45 35 × 40	35 × 45		
470	22 × 40 30 × 25	25 × 40 30 × 30	35 × 40	35 × 45	35 × 50		
560			35 × 45	35 × 50			
680	25 × 40 30 × 35	30 × 40		35 × 55			
1 000	30 × 45 35 × 40	35 × 45					
1 200	35 × 45	35 × 50					
1 500	35 × 50						

The capacitance and voltage ratings listed above are available in different cases upon request. Other voltage and capacitance ratings are also available upon request.



**B 41 303**

**B 43 303**

**Technical data and ordering codes**

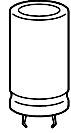
$U_R$	$C_R$	Case dimensions $d \times l$ mm	$R_{ESR, max}$ 100 Hz 20 °C mΩ	$Z_{max}$ 10 kHz 20 °C mΩ	$I_{\sim max}$ 100 Hz 40 °C A	$I_{\sim R}^{1)}$ 100 Hz 85 °C A	Ordering code <sup>2)</sup>
V-	μF						Short code

**B41303-**

10	10 000	22 × 30	66	59	4,7	1,8	-A3109-M
	10 000	25 × 25	66	59	4,7	1,8	-J3109-M
	15 000	22 × 35	54	49	5,6	2,2	-B3159-M
	15 000	25 × 30	54	49	5,6	2,2	-J3159-M
	22 000	25 × 40	46	43	6,7	2,6	-A3229-M
	22 000	30 × 30	46	43	6,7	2,6	-J3229-M
	33 000	30 × 35	41	39	7,3	2,8	-B3339-M
	47 000	30 × 45	38	36	8,3	3,2	-B3479-M
16	6 800	22 × 30	71	59	4,5	1,8	-A4688-M
	6 800	25 × 25	71	59	4,5	1,8	-J4688-M
	10 000	22 × 35	58	52	5,2	2,0	-B4109-M
	10 000	25 × 30	58	52	5,2	2,0	-J4109-M
	15 000	25 × 40	49	45	6,4	2,5	-A4159-M
	15 000	30 × 30	49	45	6,4	2,5	-J4159-M
	22 000	30 × 35	43	40	7,3	2,8	-B4229-M
	33 000	30 × 45	39	37	8,1	3,1	-B4339-M
25	4 700	22 × 30	77	67	4,4	1,7	-A5478-M
	4 700	25 × 25	77	67	4,4	1,7	-J5478-M
	6 800	22 × 35	62	56	4,9	1,9	-B5688-M
	6 800	25 × 30	62	56	4,9	1,9	-J5688-M
	10 000	25 × 35	52	48	5,5	2,3	-B5109-M
	10 000	30 × 30	52	48	5,5	2,3	-J5109-M
	15 000	30 × 35	45	42	7,0	2,7	-B5159-M
	22 000	30 × 45	40	38	8,1	3,1	-B5229-M

1) 120 Hz conversion factor of ripple current:  $I_{\sim} (120 \text{ Hz}) = 1,03 \cdot I_{\sim} (100 \text{ Hz})$

2) To obtain the required ordering code, prefix the type number to the short code. E. g.: B41303-A3109-M


**B 41 303**
**B 43 303**
**Technical data and ordering codes**

$U_R$	$C_R$	Case dimensions $d \times l$ mm	$R_{ESR, max}$ 100 Hz 20 °C mΩ	$Z_{max}$ 10 kHz 20 °C mΩ	$I_{~max}$ 100 Hz 40 °C A	$I_{~R}^{1)}$ 100 Hz 85 °C A	Ordering code <sup>2)</sup>
V-	μF						Short code

**B41303-**

40	3 300	22 × 30	77	71	4,4	1,7	-A7338-M
	3 300	25 × 25	77	71	4,4	1,7	-J7338-M
	4 700	22 × 35	66	59	4,9	1,9	-B7478-M
	4 700	25 × 30	66	59	4,9	1,9	-J7478-M
	6 800	25 × 40	55	50	6,1	2,4	-A7688-M
	6 800	30 × 30	55	50	6,1	2,4	-J7688-M
	10 000	30 × 35	47	44	6,8	2,6	-B7109-M
	15 000	30 × 50	41	39	8,4	3,3	-A7159-M
63	1 500	22 × 30	120	100	3,5	1,4	-A8158-M
	1 500	25 × 25	120	100	3,5	1,4	-J8158-M
	2 200	22 × 35	89	77	4,2	1,6	-B8228-M
	2 200	25 × 30	89	77	4,2	1,6	-J8228-M
	3 300	25 × 35	69	62	5,2	2,0	-B8338-M
	3 300	30 × 30	69	62	5,2	2,0	-J8338-M
	4 700	30 × 35	58	52	6,2	2,4	-B8478-M
	6 800	30 × 45	49	45	7,3	2,8	-B8688-M
100	680	22 × 30	180	150	2,9	1,1	-A9687-M
	680	25 × 25	180	150	2,9	1,1	-J9687-M
	1 000	22 × 35	130	110	3,4	1,3	-B9108-M
	1 000	25 × 30	130	110	3,4	1,3	-J9108-M
	1 500	25 × 35	97	83	4,4	1,7	-B9158-M
	1 500	30 × 30	97	83	4,4	1,7	-J9158-M
	2 200	30 × 35	75	66	5,5	2,1	-B9228-M
	3 300	30 × 45	60	54	6,5	2,5	-B9338-M

1) 120 Hz conversion factor of ripple current:  $I_{~}(120 \text{ Hz}) = 1,03 \cdot I_{~}(100 \text{ Hz})$

2) To obtain the required ordering code, prefix the type number to the short code. E. g.: B41303-A7338-M





**B 41 303**

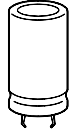
**B 43 303**

**Technical data and ordering codes**

$U_R$	$C_R$	Case dimensions $d \times l$ mm	$R_{ESR, max}$ 100 Hz 20 °C mΩ	$Z_{max}$ 10 kHz 20 °C mΩ	$I_{~max}$ 100 Hz 40 °C A	$I_{~R}^{1)}$ 100 Hz 85 °C A	Ordering code <sup>2)</sup>	
V-	μF						Short code	
<b>B43303-</b>								
200	220	22 × 25	1250	960	1,7	0,77	-D227-M	
	330	22 × 30	900	640	2,2	1,0	-D337-M	
	330	25 × 25	800	640	2,3	1,0	-M337-M	
	470	22 × 40	560	450	2,9	1,3	-D477-M	
	470	30 × 25	560	450	3,0	1,3	-M477-M	
	680	25 × 40	390	310	3,8	1,7	-D687-M	
	680	30 × 35	390	310	4,0	1,8	-M687-M	
	1 000	30 × 45	260	210	5,3	2,4	-D108-M	
	1 000	35 × 40	260	210	5,6	2,5	-E108-M	
	1 200	35 × 45	220	180	6,4	2,9	-A128-M	
1 500	35 × 50	180	140	7,4	3,3	-A158-M		
250	150	22 × 25	1400	1200	1,4	0,63	-C2157-M	
	220	22 × 30	920	740	1,8	0,82	-C2227-M	
	220	25 × 25	920	740	1,8	0,84	-L2227-M	
	330	22 × 40	620	500	2,5	1,1	-C2337-M	
	330	25 × 35	620	500	2,5	1,2	-L2337-M	
	470	25 × 40	440	360	3,2	1,4	-C2477-M	
	470	30 × 30	440	360	3,1	1,4	-L2477-M	
	680	30 × 40	300	240	4,2	1,9	-C2687-M	
	1 000	35 × 45	220	170	5,8	2,6	-A2108-M	
	1 200	35 × 50	180	150	6,6	3,0	-A2128-M	
	385	68	22 × 25	2700	2200	1,0	0,45	-H686-M
		100	22 × 30	1800	1500	1,3	0,58	-H107-M
100		25 × 25	1800	1500	1,3	0,59	-R107-M	
150		22 × 40	1200	940	1,7	0,79	-H157-M	
150		25 × 30	1200	940	1,7	0,77	-R157-M	
220		25 × 40	800	640	2,3	1,0	-H227-M	
220		30 × 35	800	640	2,4	1,1	-P227-M	
330		30 × 45	540	440	3,2	1,4	-H337-M	
470		35 × 40	410	330	4,1	1,8	-E477-M	
560		35 × 45	340	280	4,7	2,1	-A567-M	

1) 120 Hz conversion factor of ripple current:  $I_{~}(120 \text{ Hz}) = 1,03 \cdot I_{~}(100 \text{ Hz})$

2) To obtain the required ordering code, prefix the type number to the short code. E. g.: B43303-D227-M


**B 41 303**
**B 43 303**
**Technical data and ordering codes**

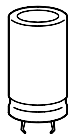
$U_R$	$C_R$	Case dimensions $d \times l$ mm	$R_{ESR, \max}$ 100 Hz 20 °C mΩ	$Z_{\max}$ 10 kHz 20 °C mΩ	$I_{\sim \max}$ 100 Hz 40 °C A	$I_{\sim R}^{1)}$ 100 Hz 85 °C A	Ordering code <sup>2)</sup>
V-	μF						Short code

**B43303-**

400	68	22 × 30	2400	2000	1,0	0,48	-G686-M
	100	22 × 35	1600	1420	1,3	0,61	-G107-M
	100	25 × 30	1600	1420	1,4	0,63	-Q107-M
	120	25 × 30	1350	1180	1,5	0,69	-A9127-M
	150	22 × 40	1100	920	1,7	0,79	-A9157-M
	150	25 × 30	1100	920	1,7	0,77	-B9157-M
	220	25 × 40	700	630	2,2	1,0	-B9227-M
	220	30 × 30	700	630	2,2	1,0	-A9227-M
	270	30 × 35	580	520	2,6	1,2	-A9277-M
	330	30 × 45	450	420	3,2	1,4	-G337-M
	390	30 × 45	400	360	3,5	1,6	-A9397-M
	390	35 × 40	440	350	3,7	1,7	-A397-M
	470	35 × 45	360	290	4,3	1,9	-F477-M
	560	35 × 50	300	240	4,9	2,2	-F567-M
	680	35 × 55	250	200	5,6	2,5	-A687-M

1) 120 Hz conversion factor of ripple current:  $I_{\sim} (120 \text{ Hz}) = 1,03 \cdot I_{\sim} (100 \text{ Hz})$

2) To obtain the required ordering code, prefix the type number to the short code. E. g.: B43303-G686-M.



**B 41 303**

**B 43 303**

**Technical data and ordering codes**

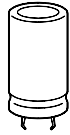
$U_R$	$C_R$	Case dimensions $d \times l$ mm	$R_{ESR, max}$ 100 Hz 20 °C mΩ	$Z_{max}$ 10 kHz 20 °C mΩ	$I_{~max}$ 100 Hz 40 °C A	$I_{~R}^{1)}$ 100 Hz 85 °C A	Ordering code <sup>2)</sup>
V-	μF						Short code

**B43303-**

450	68	22 × 35	3700	3080	1,1	0,50	-A5686-M
	100	22 × 40	2500	2080	1,4	0,64	-B5107-M
	120	25 × 35	2100	1730	1,6	0,72	-A5127-M
	150	30 × 35	1700	1420	1,9	0,88	-A5157-M
	180	30 × 35	1370	1180	2,1	0,97	-A5187-M
	220	30 × 50	1200	1000	2,7	1,2	-A5227-M
	270	30 × 45	910	790	2,9	1,3	-A5277-M
	330	35 × 40	840	670	3,4	1,5	-A5337-M
	390	35 × 45	710	570	3,9	1,8	-A5397-M
470	35 × 50	590	470	4,5	2,0	-A5477-M	
500	22	22 × 25	9200	7700	0,52	0,24	-A6226-M
	33	22 × 30	6200	5200	0,68	0,31	-A6336-M
	47	22 × 40	4400	3700	0,91	0,41	-A6476-M
	68	25 × 40	3000	2500	1,2	0,54	-A6686-M
	100	30 × 40	2100	1800	1,6	0,71	-A6107-M
	150	30 × 50	1400	1200	2,1	0,94	-A6157-M
550	15	22 × 25	14000	12000	0,43	0,20	-A7156-M
	22	22 × 30	9200	7700	0,56	0,25	-A7226-M
	33	22 × 40	6200	5200	0,76	0,35	-A7336-M
	33	25 × 30	6200	5200	0,74	0,34	-J7336-M
	47	25 × 40	4400	3700	0,98	0,45	-A7476-M
	68	30 × 40	3000	2500	1,3	0,58	-A7686-M
	100	30 × 50	2100	1800	1,7	0,77	-A7107-M

1) 120 Hz conversion factor of ripple current:  $I_{~(120\text{ Hz})} = 1,03 \cdot I_{~(100\text{ Hz})}$

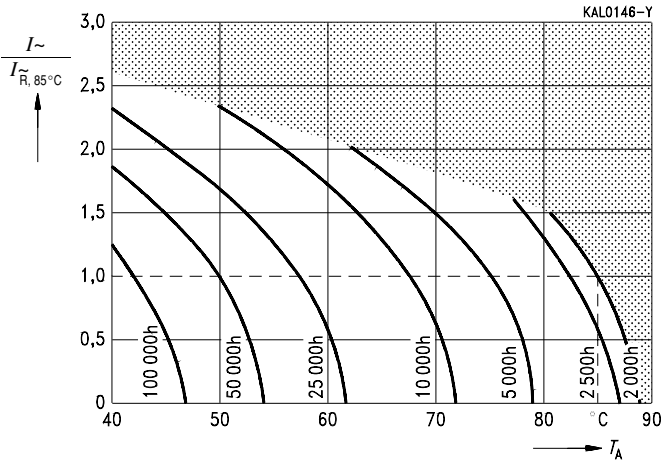
2) To obtain the required ordering code, prefix the type number to the short code. E. g.: B43303-A5686-M



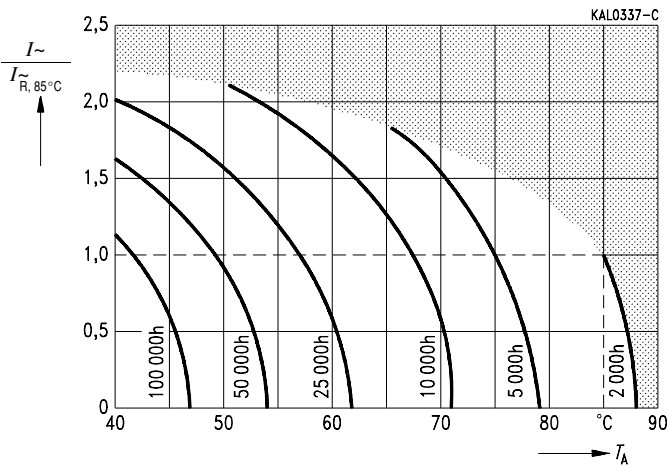
**Useful life**

versus ambient temperature  $T_A$  under ripple current operating conditions <sup>1)</sup>

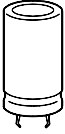
$U_R \leq 100 \text{ V}$ –



$U_R \geq 200 \text{ V}$ –



1) Refer to [page 31](#) for an explanation on how to interpret the useful life graphs.

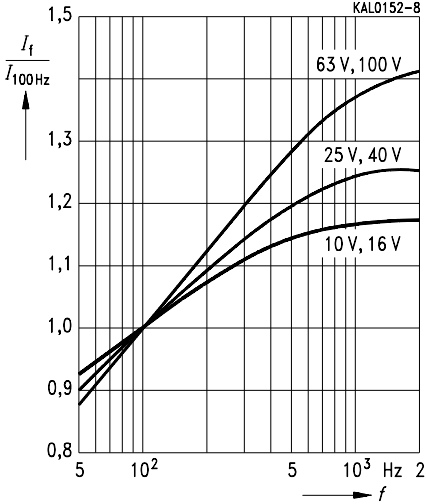


B 41 303

B 43 303

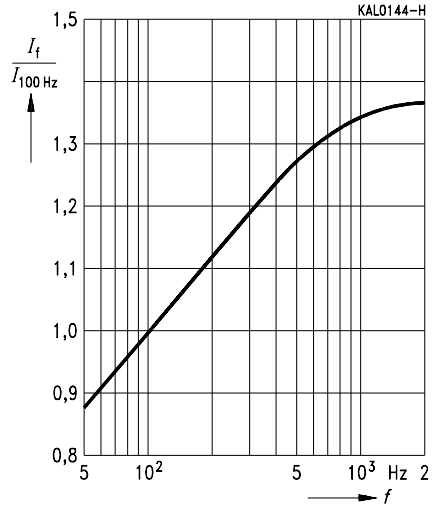
**Permissible ripple current  $I_{\sim}$**   
versus frequency  $f$

$U_R \leq 100 \text{ V-}$



**Permissible ripple current  $I_{\sim}$**   
versus frequency  $f$

$U_R \geq 200 \text{ V-}$

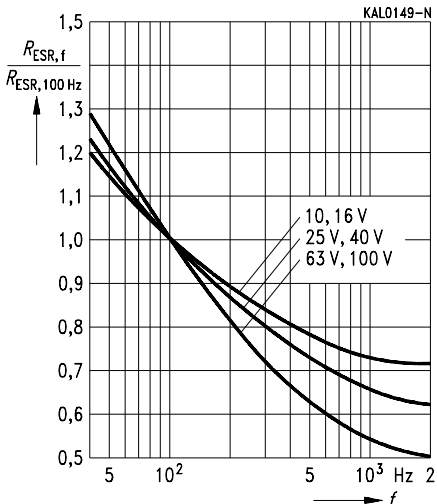


**Equivalent series resistance  $R_{ESR}$**

versus frequency  $f$

Typical behavior

$U_R \leq 100 \text{ V-}$

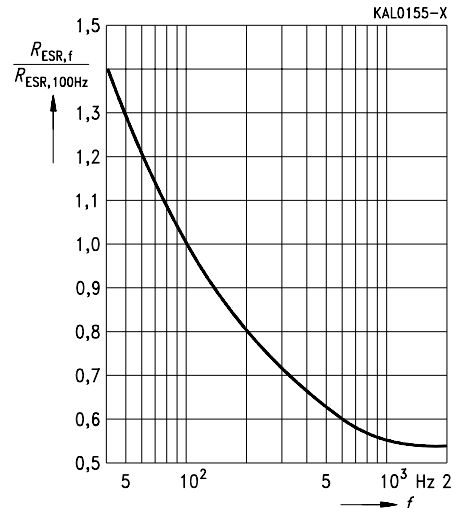


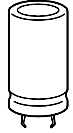
**Equivalent series resistance  $R_{ESR}$**

versus frequency  $f$

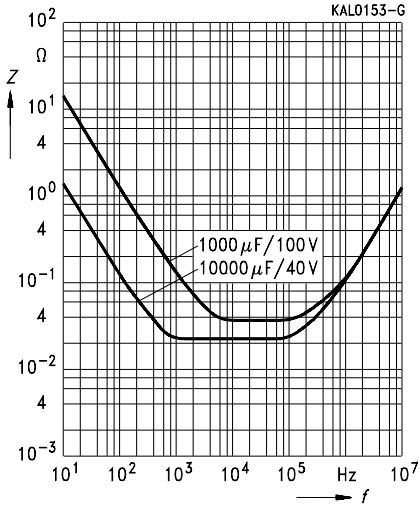
Typical behavior

$U_R \geq 200 \text{ V-}$

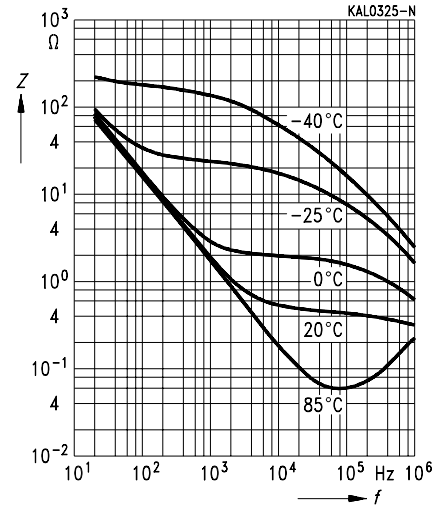




**Impedance  $Z$**   
 versus frequency  $f$   
 Typical behavior  
 $U_R \leq 100 \text{ V}$



**Impedance  $Z$**   
 versus frequency  $f$   
 and temperature  $T$  for 100  $\mu\text{F}/400 \text{ V}$ —  
 Typical behavior



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