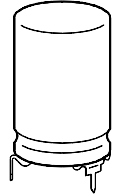


**LL grade**

**Standard version for entertainment and industrial electronics**

**Construction**

- Charge-discharge proof, polar
- Aluminum case, partially insulated
- Solder pin terminals on mounting base that is securely welded to case, ensuring perfect electrical contact
- Positive pole connection brought out axially at center
- Negative pole connected to two or three solder pins of the mounting base



KAL0276-R

**Features**

- High ripple current capability
- High vibration resistance
- Pinning ensures correct insertion
- Can be operated at temperatures of up to 105 °C 1)
- Operating voltage up to 500 V–

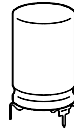
**Applications**

- Standard applications in entertainment and industrial electronics
- Filtering, coupling and pulse circuits
- Automotive electronics

**Specifications and characteristics in brief**

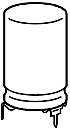
	B 41 782	B 43 782
Rated voltage $U_R$	10 ... 100 V–	160 ... 500 V–
Surge voltage $U_S$	$1,15 \cdot U_R$	$1,15 \cdot U_R$ (for $U_R \leq 250$ V–) $1,10 \cdot U_R$ (for $U_R \geq 350$ V–)
Rated capacitance $C_R$	47 ... 15 000 $\mu$ F	4,7 ... 220 $\mu$ F
Capacitance tolerance	$-10/+50\% \triangleq T$	$-10/+50\% \triangleq T$
Useful life 40 °C, $U_R$ 85 °C, $U_R$ ; $I_{-R}$	$> 200\,000$ h ( $1,5 \cdot I_{-R,85^\circ C}$ ) $> 5\,000$ h	$> 200\,000$ h ( $1,5 \cdot I_{-R,85^\circ C}$ ) $> 5\,000$ h
Failure percentage	$\leq 0,5\%$ (during useful life)	$\leq 0,5\%$ (during useful life)
Failure rate	$\leq 20$ fit ( $\leq 20 \cdot 10^{-9}/h$ )	$\leq 20$ fit ( $\leq 20 \cdot 10^{-9}/h$ )

1) Operation at 105 °C and 0,6  $I_{-max, 85^\circ C}$  permissible for a total of 500 h.



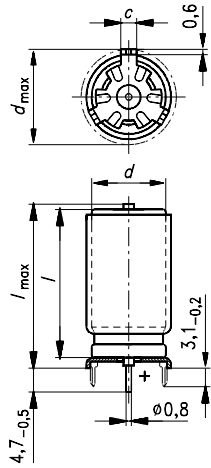
**Specifications and characteristics in brief**

	B 41 782		B 43 782		
Voltage endurance test	5 000 h, 85 °C (at $U_R$ )		5 000 h, 85 °C (at $U_R$ )		
Leakage current $I_{lka}$ (5 min, 20 °C)	$I_{lka} \leq 0,3 \mu A \cdot \left( \frac{C_R}{\mu F} \cdot \frac{U_R}{V} \right)^{0,7} + 4 \mu A$				
Self-inductance $L_{ESL}$	Diam. $d$	12 mm	14 mm	16 mm	18 mm
	Length $l$	Approx. $L_{ESL}$ (nH)			
	20 mm	6	–	–	–
	25 mm	7	8	–	–
	30 mm	8	9	10	–
	39 mm	–	–	11	14
IEC climatic category	in accordance with IEC 68–1 25/085/56 (–25 °C/+85 °C, 56 days damp heat test)				
Detail specification	similar to CECC 30 301-049				
Sectional specification	IEC 384–4				
Vibration resistance	in accordance with IEC 68–2–6, test Fc: displacement amplitude 0,75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3 × 2 h				

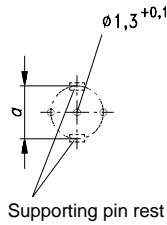


**B 41 782**  
**B 43 782**

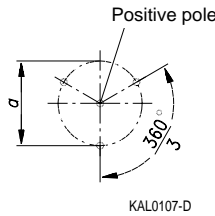
**Dimensional drawing**



Mounting holes  
 $d = 12 \dots 14 \text{ mm}$



$d = 16 \dots 18 \text{ mm}$

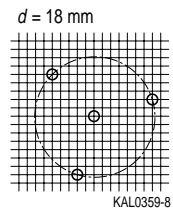
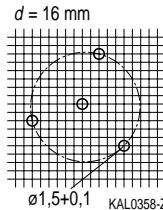
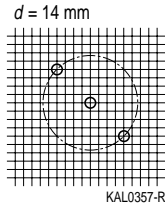
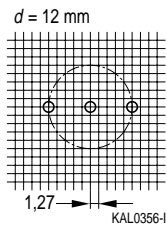


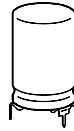
Soldering star and supports are connected to the negative pole

Dimensions (mm)				Approx weight (g)	Packing units (pieces)
$d \times l$	$d_{\max} \times l_{\max}$	$a \pm 0,1$	$c \pm 0,1$		
12 × 20	13,5 × 22,5	12,5	3,0	3,8	640
12 × 25	13,5 × 27	12,5		4,5	480
12 × 30	13,5 × 32	12,5		5,4	480
14 × 25	15,5 × 27	14,5		6,1	480
14 × 30	15,5 × 32	14,5		7,2	480
16 × 30	17,5 × 32	16,5		9,4	300
16 × 39	17,5 × 41,5	16,5		12,2	200
18 × 39	19,5 × 41,5	18,5	15,4	200	

The PC-board hole arrangement specified above is based on circular arcs.

If, however, the mounting holes have to be matched to a standard drilling raster, a spacing of 1,27 mm ( $1/20''$ ) has proved to be sufficiently accurate if the following arrangements are used:





**Overview of available types**

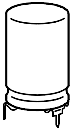
**Type B 41 782**

$U_R$ (V-)	10	16	25	40	63	100
$C_R$ ( $\mu$ F)	Case dimensions $d \times l$ (mm)					
47						12 × 20
68						12 × 20
100					12 × 20	12 × 25
150					12 × 20	12 × 30
220			12 × 20	12 × 20	12 × 20	14 × 30
330				12 × 20	12 × 30	16 × 30
470	12 × 20	12 × 20	12 × 20	12 × 25	14 × 30	16 × 39
680			12 × 20	12 × 30	16 × 30	18 × 39
1 000	12 × 20	12 × 20	12 × 25	14 × 30	16 × 39	
1 500	12 × 20	12 × 25	14 × 25	16 × 30	18 × 39	
2 200	12 × 25	14 × 25	14 × 30	16 × 39		
3 300	12 × 30	14 × 30	16 × 30	18 × 39		
4 700	14 × 30	16 × 30	16 × 39			
6 800	16 × 30	16 × 39				
10 000	16 × 39	18 × 39				
15 000	18 × 39					

**Type B 43 782**

$U_R$ (V-)	160	250	350	400	450	500
$C_R$ ( $\mu$ F)	Case dimensions $d \times l$ (mm)					
4,7					12 × 20	12 × 20
6,8					12 × 20	
10			12 × 20	12 × 20	12 × 25	12 × 30
22		12 × 20	12 × 30	14 × 30	14 × 30	16 × 30
33	12 × 20	12 × 30	14 × 30	16 × 30	16 × 30	
47	12 × 25	14 × 30	16 × 30	16 × 39	16 × 39	18 × 39
68				18 × 39		
100	14 × 30	16 × 39	18 × 39			
150		18 × 39				
220	16 × 39					

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

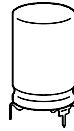


**B 41 782**  
**B 43 782**

**Technical data and ordering codes**

$U_R$	$C_R$	Case dimensions $d \times l$ mm	$R_{ESR, max}$ 100 Hz 20 °C mΩ	$Z_{max}$ 20 kHz 20 °C mΩ	$I_{-max}$ 100 Hz 40 °C A	$I_{-R}$ 100 Hz 85 °C A	Ordering code 1)  Short code
V-	μF						
<b>B41782-</b>							
10	470	12 × 20	500	420	1,7	0,65	-A3477-T
	1 000	12 × 20	410	360	2,1	0,80	-A3108-T
	1 500	12 × 20	410	360	2,2	0,85	-A3158-T
	2 200	12 × 25	280	240	2,9	1,1	-A3228-T
	3 300	12 × 30	200	170	3,6	1,4	-A3338-T
	4 700	14 × 30	140	115	4,4	1,7	-A3478-T
	6 800	16 × 30	100	87	5,7	2,2	-A3688-T
	10 000	16 × 39	70	59	7,3	2,8	-A3109-T
15 000	18 × 39	55	43	9,4	3,6	-A3159-T	
16	470	12 × 20	520	430	1,7	0,65	-A4477-T
	1 000	12 × 20	430	375	2,0	0,75	-A4108-T
	1 500	12 × 25	290	260	2,6	1,0	-A4158-T
	2 200	14 × 25	200	175	3,4	1,3	-A4228-T
	3 300	14 × 30	150	135	4,4	1,7	-A4338-T
	4 700	16 × 30	100	90	5,2	2,0	-A4478-T
	6 800	16 × 39	70	62	7,0	2,7	-A4688-T
	10 000	18 × 39	60	52	7,8	3,0	-A4109-T
25	220	12 × 20	560	420	1,3	0,50	-A5227-T
	470	12 × 20	400	330	1,8	0,70	-A5477-T
	680	12 × 20	400	350	1,8	0,70	-A5687-T
	1 000	12 × 25	270	240	2,6	1,0	-A5108-T
	1 500	14 × 25	185	165	3,4	1,3	-A5158-T
	2 200	14 × 30	130	120	4,2	1,6	-A5228-T
	3 300	16 × 30	100	93	5,2	2,0	-A5338-T
	4 700	16 × 39	70	65	6,8	2,6	-A5478-T

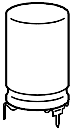
1) To obtain the required ordering code, prefix the type number to the short code. E. g.: B41782-A3477-T



**Technical data and ordering codes**

$U_R$	$C_R$	Case dimensions $d \times l$ mm	$R_{ESR, max}$ 100 Hz 20 °C mΩ	$Z_{max}$ 20 kHz 20 °C mΩ	$I_{-max}$ 100 Hz 40 °C A	$I_{-R}$ 100 Hz 85 °C A	Ordering code 1)  Short code
<b>B41782-</b>							
40	220	12 × 20	540	400	1,4	0,55	-A7227-T
	330	12 × 20	520	430	1,6	0,60	-A7337-T
	470	12 × 25	370	300	2,1	0,80	-A7477-T
	680	12 × 30	255	210	2,7	1,1	-A7687-T
	1 000	14 × 30	175	145	3,4	1,3	-A7108-T
	1 500	16 × 30	120	100	4,2	1,6	-A7158-T
	2 200	16 × 39	85	70	5,7	2,2	-A7228-T
	3 300	18 × 39	62	50	6,8	2,6	-A7338-T
63	100	12 × 20	700	500	1,0	0,40	-A8107-T
	150	12 × 20	540	360	1,3	0,50	-A8157-T
	220	12 × 20	520	400	1,4	0,55	-A8227-T
	330	12 × 30	320	250	2,1	0,80	-A8337-T
	470	14 × 30	230	180	2,6	1,0	-A8477-T
	680	16 × 30	160	130	3,4	1,3	-A8687-T
	1 000	16 × 39	110	90	4,7	1,8	-A8108-T
	1 500	18 × 39	80	65	5,7	2,2	-A8158-T
100	47	12 × 20	1200	1000	0,7	0,25	-A9476-T
	68	12 × 20	950	650	0,8	0,30	-A9686-T
	100	12 × 25	650	450	1,2	0,45	-A9107-T
	150	12 × 30	440	310	1,6	0,60	-A9157-T
	220	14 × 30	300	210	2,1	0,80	-A9227-T
	330	16 × 30	205	145	2,6	1,0	-A9337-T
	470	16 × 39	145	100	3,6	1,4	-A9477-T
	680	18 × 39	105	75	4,4	1,7	-A9687-T

1) To obtain the required ordering code, prefix the type number to the short code. E. g.: B41782-A7227-T

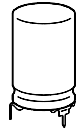


**B 41 782**  
**B 43 782**

**Technical data and ordering codes**

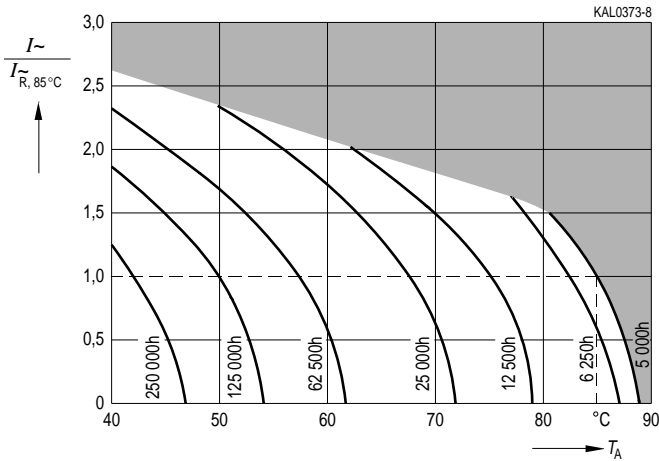
$U_R$	$C_R$	Case dimensions $d \times l$ mm	$R_{ESR, max}$ 100 Hz 20 °C mΩ	$Z_{max}$ 20 kHz 20 °C mΩ	$I_{-max}$ 100 Hz 40 °C A	$I_{-R}$ 100 Hz 85 °C A	Ordering code 1)  Short code
V-	μF						
<b>B43782-</b>							
160	33	12 × 20	5000	3500	0,49	0,19	-A1336-T
	47	12 × 25	3600	2500	0,65	0,25	-A1476-T
	100	14 × 30	1700	1200	1,1	0,44	-A1107-T
	220	16 × 39	800	550	2,1	0,79	-A1227-T
250	22	12 × 20	6600	4200	0,42	0,16	-A2226-T
	33	12 × 30	4400	2800	0,60	0,23	-A2336-T
	47	14 × 30	3100	2000	0,81	0,31	-A2476-T
	100	16 × 39	1500	950	1,4	0,55	-A2107-T
	150	18 × 39	1000	650	1,9	0,71	-A2157-T
350	10	12 × 20	12000	6000	0,29	0,11	-A4106-T
	22	12 × 30	5500	2800	0,52	0,20	-A4226-T
	33	14 × 30	3600	1900	0,65	0,25	-A4336-T
	47	16 × 30	2500	1300	0,86	0,33	-A4476-T
	100	18 × 39	1200	650	1,5	0,59	-A4107-T
400	10	12 × 20	12000	6000	0,29	0,11	-A9106-T
	22	14 × 30	5000	2500	0,55	0,21	-A9226-T
	33	16 × 30	3500	1700	0,75	0,29	-A9336-T
	47	16 × 39	2300	1200	1,0	0,39	-A9476-T
	68	18 × 39	1700	950	1,3	0,50	-A9686-T
450	4,7	12 × 20	14000	6000	0,23	0,09	-A5475-T
	6,8	12 × 20	15000	7000	0,23	0,09	-A5685-T
	10	12 × 25	10000	4800	0,31	0,12	-A5106-T
	22	14 × 30	4500	2200	0,57	0,22	-A5226-T
	33	16 × 30	3000	1500	0,70	0,27	-A5336-T
	47	16 × 39	2100	1050	1,0	0,39	-A5476-T
500	4,7	12 × 20	33000	18000	0,18	0,07	-A6475-T
	10	12 × 30	16000	9000	0,34	0,13	-A6106-T
	22	16 × 30	7000	4200	0,57	0,22	-A6226-T
	47	18 × 39	3400	2000	0,99	0,38	-A6476-T

1) To obtain the required ordering code, prefix the type number to the short code. E. g.: B43782-A1336-T



**Useful life**

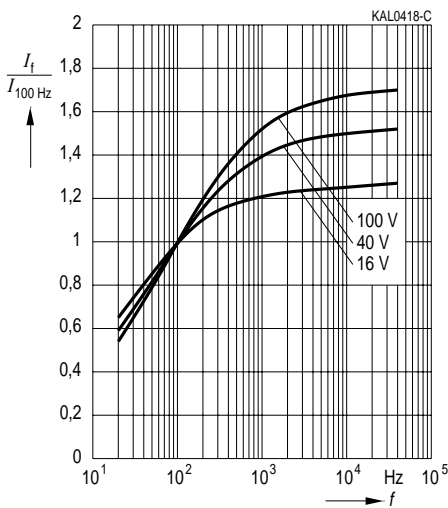
versus ambient temperature  $T_A$  under ripple current operating conditions <sup>1)</sup>



**Permissible ripple current  $I_r$**

versus frequency  $f$

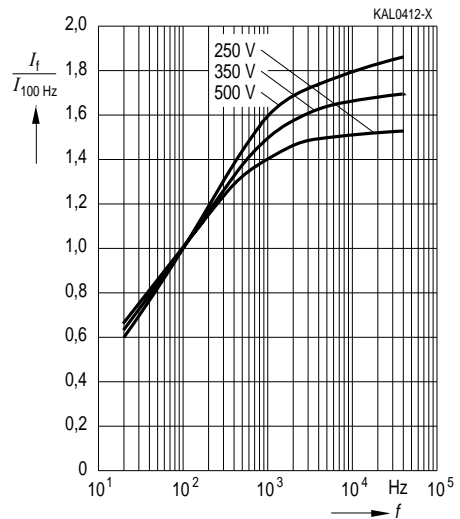
$U_R \leq 100 \text{ V}$ —



**Permissible ripple current  $I_r$**

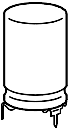
versus frequency  $f$

$U_R \geq 160 \text{ V}$ —



1) Refer to [page 34](#) for an explanation on how to interpret the useful life graphs.



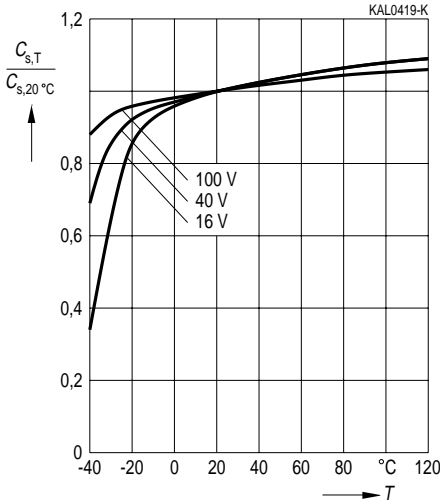


**B 41 782**  
**B 43 782**

**Series capacitance  $C_s$  at  $f = 100$  Hz**  
versus temperature  $T$

Typical behavior

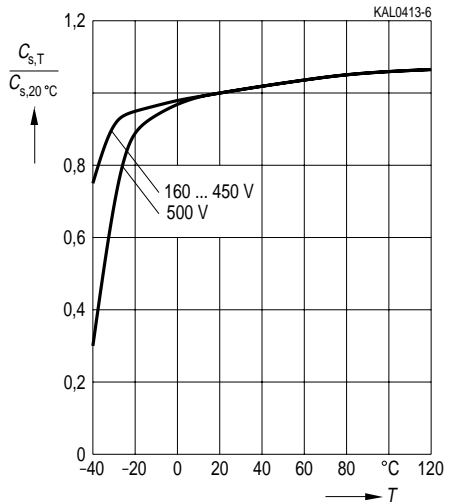
$U_R \leq 100$  V-



**Series capacitance  $C_s$  at  $f = 100$  Hz**  
versus temperature  $T$

Typical behavior

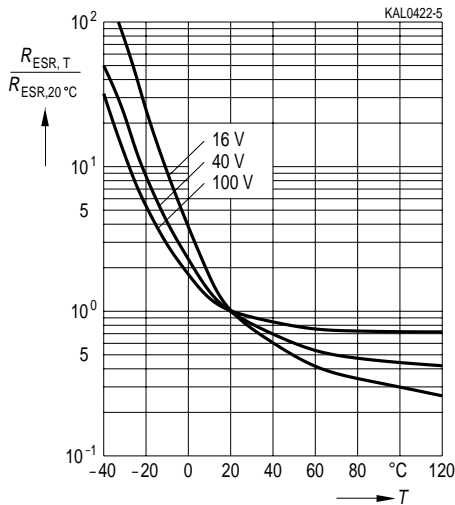
$U_R \geq 160$  V-



**Equivalent series resistance  $R_{ESR}$**   
at  $f = 100$  Hz versus temperature  $T$

Typical behavior

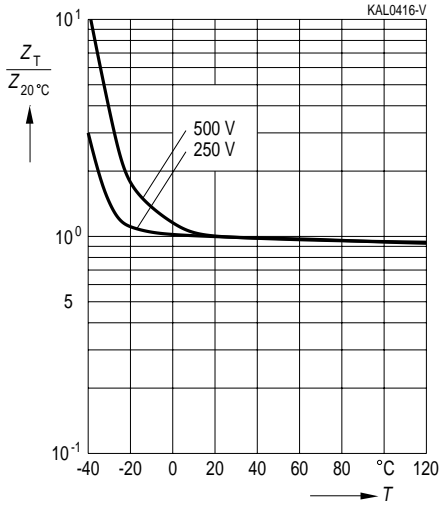
$U_R \leq 100$  V-

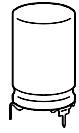


**Impedance  $Z$  at  $f = 100$  Hz**  
versus temperature  $T$

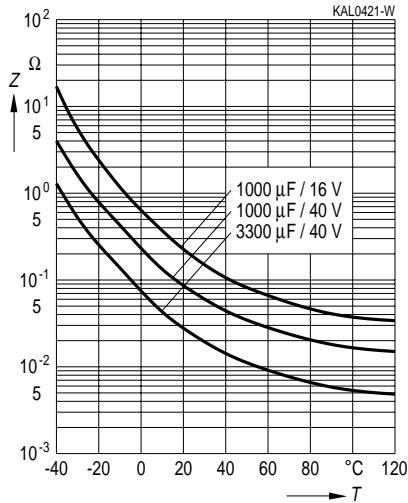
Typical behavior

$U_R \geq 160$  V-

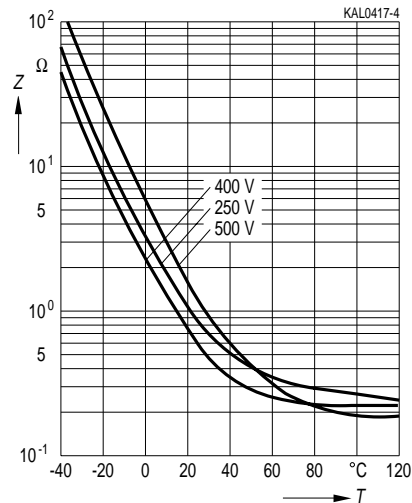




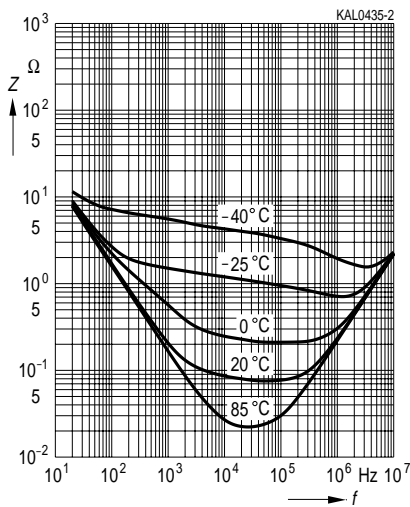
**Impedance  $Z$  at  $f = 20$  kHz**  
versus temperature  $T$   
Typical behavior  
 $U_R \leq 100$  V–



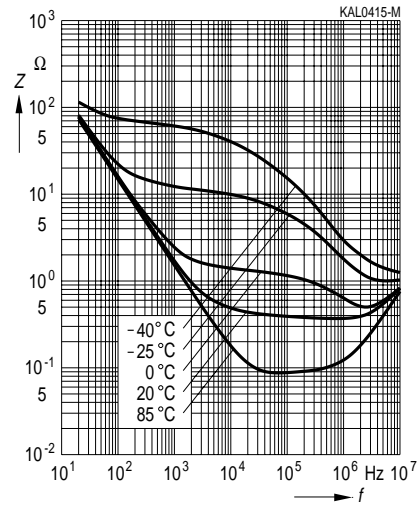
**Impedance  $Z$  at  $f = 20$  kHz**  
versus temperature  $T$  for  $47 \mu\text{F}$   
Typical behavior  
 $U_R \geq 160$  V–

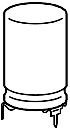


**Impedance  $Z$**   
versus frequency  $f$   
and temperature  $T$  for  $1000 \mu\text{F}/40$  V–  
Typical behavior



**Impedance  $Z$**   
versus frequency  $f$   
and temperature  $T$  for  $100 \mu\text{F}/250$  V–  
Typical behavior





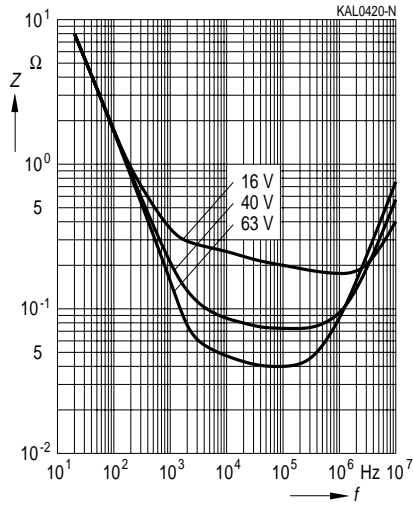
**B 41 782**  
**B 43 782**

### Impedance $Z$

versus frequency  $f$  for 1000  $\mu\text{F}$

Typical values at 20 °C

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



### Impedance $Z$

versus frequency  $f$  for 47  $\mu\text{F}$

Typical values at 20 °C

$U_R \geq 160 \text{ V-}$

