

Construction

- Radial leads
- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Minus pole marking on case surface
- Stand off rubber seal

Features

- Miniaturized dimensions
- Operation up to 105°C
- High CV product, i. e. very compact

Applications

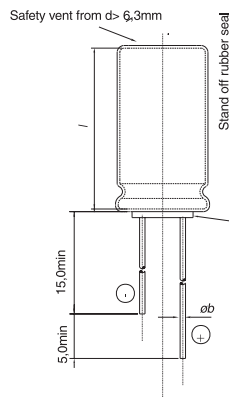
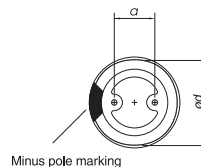
- GP (general-purpose) applications in the entertainment industry
- Semi-professional to professional application range
- For filtering, coupling and pulse circuits

Delivery Mode (packing)

Special terminals configurations and packing

- Bulk
- Ammo
- Cut
- Kinked
- PAPR

Refer to page 20 for information and examples on how to order them.


Specifications and characteristics in brief

Type		B41851	B43851
Rated voltage	U_N	6,3 ... 100 Vdc	160 ... 450 Vdc
Surge voltage	U_S	$1,15 \cdot U_N$	$1,1 \cdot U_N$
Rated capacitance	C_N	0,1 ... 10 000 μF	0,47 ... 470 μF
Capacitance tolerance		$\pm 20\%$ (M)	$\pm 20\%$ (M)
Useful life	hrs		
40°C, U_N		> 250 000 h ($1,8 \cdot I_{ac,max,105^\circ\text{C}}$)	250 000 h ($2,1 \cdot I_{ac,max,105^\circ\text{C}}$)
105°C, U_N ; $I_{ac,max}$		> 2 000 h	> 3 000 h
Fraction failure	%	$\leq 1\%$ (during the useful life)	$\leq 1\%$ (during the useful life)


Single Ended GP – Capacitors
B41851/B43851
Standard Series – 105°C

Failure rate	fit	≤ 100 fit ($\leq 100 \cdot 10^{-9}/h$)	≤ 100 fit ($\leq 100 \cdot 10^{-9}/h$)
Voltage endurance test	hrs	1000 h, 105°C (at U_N) Evaluation criteria: $\Delta C/C \leq \pm 30\%$ of initial measured value $\tan \delta \leq 2$ times initial specified value $I_L \leq$ initial specified value	
Climatic category in accordance with IEC 68-1	UCT/ LCT	40/105/56	40/105/56 - $U_N \leq 250V$ 25/105/56 - $U_N \geq 350V$
Standards		IEC 384-4 DIN 45 910 part 12	
Vibration resistance		in accordance with IEC 68-2-6, test Fc: displacement amplitude 0,75 mm, frequency range 10 ... 2000 Hz, acceleration max. 10 g, duration 3 x 2 h	


Overview of available types
Type B41851

U_N (Vdc)	6,3	10	16	25	35	50	63	100
C_N (μF)	Case dimensions $\varnothing d \times l$ (mm)							
0,1								5x11
0,22								5x11
0,33								5x11
0,47								5x11
1						5x11		5x11
2,2						5x11		5x11
3,3						5x11		5x11
4,7						5x11		5x11
10						5x11	5x11	6,3x11
22						5x11	6,3x11	8x11
33					5x11	6,3x11	6,3x11	10x12,5
47				5x11	5x11	6,3x11	8x11	10x12,5
100		5x11	5x11	6,3x11	8x11	8x11	10x12,5	10x20
220	6,3x11	6,3x11	8x11	8x11	10x12,5	10x12,5	10x16	12,5x25
330	6,3x11	8x11	8x11	10x12,5	10x12,5	10x16	10x20	16x25
470	8x11	8x11	10x12,5	10x16	10x16	10x20	12,5x25	16x31,5
1 000	10x12,5	10x12,5	10x16	10x20	12,5x25	16x20	16x31,5	20x40
2 200	10x20	10x20	12,5x25	16x20	16x31,5	18x35	20x40	
3 300	10x20	12,5x25	16x25	16x25	18x31	18x40		
4 700	12,5x25	16x20	16x25	16x31,5	18x40	22x40		
10 000		18x35	20x35	22x40				


Type B41851

U_N (Vdc)	160	200	250	350	400	450
C_N (µF)	Case dimensions $\varnothing d \times l$ (mm)					
0,47	6,3x11	6,3x11	6,3x11	6,3x11		
1	6,3x11	6,3x11	6,3x11	6,3x11		
2,2	6,3x11	6,3x11	6,3x11	8x11	10x12,5	10x12,5
3,3	6,3x11	6,3x11	8x11	10x12,5	10x12,5	10x16
4,7	8x11	8x11	10x12,5	10x12,5	10x16	10x20
10	10x12,5	10x12,5/10x16	10x16	10x20	10x20	12,5x25
22	10x16	10x20	10x20	12,5x25	16x20	16x25
33	10x20	10x20/12,5x25	12,5x25	16x25	16x25	16x31,5
47	12,5x25	12,5x25	16x20	16x31,5	16x31,5	18x31
100	16x25	16x25	18x35	20x30	20x35	20x40
220	18x31	18x35	18x40			
330	20x30	22x35	22x40			
470	22x35					

Other capacitance and voltage ratings are available upon request.


Single Ended GP – Capacitors
B41851/B43851
Standard Series – 105°C
Technical data and ordering codes

U_N	C_N	Case Dimensions	$I_{L_{max}}$	$\tan\delta_{max}$	ESR_{max}	$I_{ac_{max}}$	Ordering code
Vdc	120 Hz 20°C μF	$\varnothing d \times l$ mm	5 min 20°C μA	120 Hz 20°C	120 Hz 20°C Ω	120 Hz 105°C mA (rms)	Short Code
B41851 -							
6,3	220	6,3 x 11	14	0,28	2,1	133	-A2227-M
	330	6,3 x 11	21	0,28	1,4	189	-A2337-M
	470	8 x 11	30	0,28	1,0	231	-A2477-M
	1 000	10 x 12,5	63	0,28	0,46	392	-A2108-M
	2 200	10 x 20	139	0,30	0,23	665	-A2228-M
	3 300	10 x 20	208	0,32	0,16	735	-A2338-M*
	4 700	12,5 x 25	296	0,34	0,12	910	-A2478-M*
10	100	5 x 11	10	0,24	4,0	84	-A3107-M
	220	6,3 x 11	22	0,24	1,8	154	-A3227-M
	330	8 x 11	33	0,24	1,2	196	-A3337-M
	470	8 x 11	47	0,24	0,85	280	-A3477-M
	1 000	10 x 12,5	100	0,24	0,40	448	-A3108-M
	2 200	10 x 20	220	0,26	0,20	728	-A3228-M
	3 300	12,5 x 25	330	0,28	0,14	1015	-A3338-M*
	4 700	16 x 20	470	0,30	0,11	1078	-A3478-M*
	10 000	18 x 35	1000	0,42	0,07	1764	-A3109-M*
16	100	5 x 11	16	0,20	3,3	112	-A4107-M
	220	8 x 11	35	0,20	1,5	182	-A4227-M
	330	8 x 11	53	0,20	1,0	245	-A4337-M
	470	10 x 12,5	75	0,20	0,71	350	-A4477-M
	1 000	10 x 16	160	0,20	0,33	504	-A4108-M
	2 200	12,5 x 25	352	0,22	0,17	840	-A4228-M
	3 300	16 x 25	528	0,24	0,12	1106	-A4338-M*
	4 700	16 x 25	752	0,26	0,09	1190	-A4478-M*
	10 000	20 x 35	1600	0,38	0,06	1820	-A4109-M*
25	47	5 x 11	12	0,16	5,6	70	-A5476-M
	100	6,3 x 11	25	0,16	2,7	126	-A5107-M
	220	8 x 11	55	0,16	1,2	203	-A5227-M
	330	10 x 12,5	83	0,16	0,80	280	-A5337-M
	470	10 x 16	118	0,16	0,56	406	-A5477-M
	1 000	10 x 20	250	0,16	0,27	595	-A5108-M
	2 200	16 x 20	550	0,18	0,14	910	-A5228-M
	3 300	16 x 25	825	0,20	0,10	1225	-A5338-M*
	4 700	16 x 31,5	1175	0,22	0,08	1400	-A5478-M*
	10 000	22 x 40	2500	0,34	0,06	2100	-A5109-M*

* Type available under consult.

 Preferred types.


Single Ended GP – Capacitors
B41851/B43851
Standard Series – 105°C

U_N	C_N	Case Dimensions	I_{Lmax}	$\tan\delta_{max}$	ESR_{max}	I_{acmax}	Ordering code
Vdc	120 Hz 20 °C μF	$\varnothing d \times l$ mm	5 min 20°C μA	120 Hz 20°C	120 Hz 20°C Ω	120 Hz 105°C mA (rms)	Short Code
35	33	5 x 11	12	0,14	7,0	60	-A7336-M
	47	5 x 11	16	0,14	4,9	91	-A7476-M
	100	8 x 11	35	0,14	2,3	147	-A7107-M
	220	10 x 12,5	77	0,14	1,1	273	-A7227-M
	330	10 x 12,5	116	0,14	0,70	315	-A7337-M
	470	10 x 16	165	0,14	0,49	399	-A7477-M
	1 000	12,5 x 25	350	0,14	0,23	700	-A7108-M
	2 200	16 x 31,5	770	0,16	0,12	1050	-A7228-M
	3 300	18 x 31	1155	0,18	0,09	1505	-A7338-M
	4 700	18 x 40	1645	0,20	0,07	1610	-A7478-M
50	1	5 x 11	4	0,12	199	12	-A6105-M
	2,2	5 x 11	4	0,12	90	20	-A6225-M
	3,3	5 x 11	4	0,12	60	25	-A6335-M
	4,7	5 x 11	4	0,12	42	30	-A6475-M
	10	5 x 11	5	0,12	20	40	-A6106-M
	22	5 x 11	11	0,12	9,0	63	-A6226-M
	33	6,3 x 11	17	0,12	6,0	77	-A6336-M
	47	6,3 x 11	24	0,12	4,2	105	-A6476-M
	100	8 x 11	50	0,12	2,0	175	-A6107-M
	220	10 x 12,5	110	0,12	0,90	280	-A6227-M
	330	10 x 16	165	0,12	0,60	357	-A6337-M
	470	10 x 20	235	0,12	0,42	490	-A6477-M
	1 000	16 x 20	500	0,12	0,20	770	-A6108-M
	2 200	18 x 35	1100	0,14	0,11	1190	-A6228-M
3 300	18 x 40	1650	0,16	0,08	1330	-A6338-M	
4 700	22 x 40	2350	0,18	0,06	1540	-A6478-M	
63	10	5 x 11	6,3	0,12	20	42	-A8106-M
	22	6,3 x 11	14	0,12	9,0	77	-A8226-M
	33	6,3 x 11	21	0,12	6,0	91	-A8336-M
	47	8 x 11	30	0,12	4,2	126	-A8476-M
	100	10 x 12,5	63	0,12	2,0	203	-A8107-M
	220	10 x 16	139	0,12	0,90	329	-A8227-M
	330	10 x 20	208	0,12	0,60	434	-A8337-M
	470	12,5 x 25	296	0,12	0,42	630	-A8477-M
	1 000	16 x 31,5	630	0,12	0,20	1050	-A8108-M
	2 200	20 x 40	1386	0,14	0,11	1540	-A8228-M

Preferred types.


Single Ended GP – Capacitors
B41851/B43851
Standard Series – 105°C

U_N	C_N	Case Dimensions	$I_{L,max}$	$\tan\delta_{max}$	ESR_{max}	$I_{ac,max}$	Ordering code
	120 Hz 20°C μF	$\varnothing d \times l$ mm	5 min 20°C μA	120 Hz 20°C	120 Hz 20°C Ω	120 Hz 105°C mA (rms)	Short Code
100	0,1	5 x 11	3,0	0,10	1658	1,4	-A9104-M
	0,22	5 x 11	3,0	0,10	754	2,8	-A9224-M
	0,33	5 x 11	3,0	0,10	502	4,9	-A9334-M
	0,47	5 x 11	3,0	0,10	353	7,0	-A9474-M
	1	5 x 11	3,0	0,10	166	14	-A9105-M
	2,2	5 x 11	3,0	0,10	75	21	-A9225-M
	3,3	5 x 11	3,3	0,10	50	28	-A9335-M
	4,7	5 x 11	4,7	0,10	35	31	-A9475-M
	10	6,3 x 11	10	0,10	17	52	-A9106-M
	22	8 x 11	22	0,10	7,5	91	-A9226-M
	33	10 x 12,5	33	0,10	5,0	133	-A9336-M
	47	10 x 12,5	47	0,10	3,5	161	-B9476-M
	100	10 x 20	100	0,10	1,7	245	-A9107-M
	220	12,5 x 25	220	0,10	0,75	434	-A9227-M
	330	16 x 25	330	0,10	0,50	560	-A9337-M
	470	16 x 31,5	470	0,10	0,35	630	-A9477-M
	1 000	20 x 40	1000	0,10	0,17	910	-A9108-M
B43851 -							
160	0,47	6,3 x 11	17	0,20	705	9,8	-A1474-M
	1	6,3 x 11	20	0,20	332	15	-A1105-M
	2,2	6,3 x 11	26	0,20	151	28	-A1225-M
	3,3	6,3 x 11	31	0,20	100	32	-A1335-M
	4,7	8 x 11	38	0,20	71	39	-A1475-M
	10	10 x 12,5	63	0,20	33	60	-A1106-M
	22	10 x 16	121	0,20	15	91	-A1226-M
	33	10 x 20	173	0,20	10	123	-A1336-M
	47	12,5 x 25	241	0,20	7,1	182	-A1476-M
	100	16 x 25	495	0,20	3,3	287	-A1107-M
	220	18 x 31	1071	0,20	1,5	462	-A1227-M
	330	20 x 30	1599	0,20	1,0	525	-A1337-M
	470	22 x 35	2271	0,20	0,71	700	-A1477-M

Preferred types.


Single Ended GP – Capacitors
B41851/B43851
Standard Series – 105°C

U_N	C_N	Case Dimensions	$I_{L\max}$	$\tan\delta_{\max}$	ESR_{\max}	$I_{ac\max}$	Ordering code
	120 Hz 20°C	$\varnothing d \times l$	5 min 20°C	120 Hz 20°C	120 Hz 20°C	120 Hz 105°C	
Vdc	μF	mm	μA		Ω	mA (rms)	Short Code
200	0,47	6,3 x 11	18	0,20	705	9	-A2474-M
	1	6,3 x 11	21	0,20	332	15	-A2105-M
	2,2	6,3 x 11	28	0,20	151	28	-A2225-M
	3,3	6,3 x 11	35	0,20	100	32	-A2335-M
	4,7	8 x 11	43	0,20	71	39	-A2475-M
	10	10 x 16	75	0,20	33	63	-A2106-M
	10	10 x 12,5	75	0,20	33	56	-B2106-M
	22	10 x 20	147	0,20	15	98	-A2226-M
	33	12,5 x 25	213	0,20	10	126	-A2336-M
	33	10 x 20	213	0,20	10	109	-B2336-M
	47	12,5 x 25	297	0,20	7,1	175	-A2476-M
	100	16 x 25	615	0,20	3,3	287	-A2107-M
	220	18 x 35	1335	0,20	1,5	700	-A2227-M
330	22 x 35	1995	0,20	1,0	840	-A2337-M	
250	0,47	6,3 x 11	19	0,20	705	8	-F2474-M
	1	6,3 x 11	23	0,20	332	15	-F2105-M
	2,2	6,3 x 11	32	0,20	151	32	-F2225-M
	3,3	8 x 11	40	0,20	100	35	-F2335-M
	4,7	10 x 12,5	50	0,20	71	49	-F2475-M
	10	10 x 16	90	0,20	33	63	-F2106-M
	22	10 x 20	180	0,20	15	102	-F2226-M
	33	12,5 x 25	263	0,20	10	151	-F2336-M
	47	16 x 20	368	0,20	7,1	210	-F2476-M
	100	18 x 35	765	0,20	3,3	490	-F2107-M
	220	18 x 40	1665	0,20	1,5	700	-F2227-M
	330	22 x 40	2490	0,20	1,0	840	-F2337-M
	350	0,47	6,3 x 11	20	0,20	705	8
1		6,3 x 11	26	0,20	332	15	-A4105-M
2,2		8 x 11	38	0,20	151	21	-A4225-M
3,3		10 x 12,5	50	0,20	100	32	-A4335-M
4,7		10 x 12,5	64	0,20	71	39	-A4475-M
10		10 x 20	120	0,20	33	67	-A4106-M
22		12,5 x 25	246	0,20	15	123	-A4226-M
33		16 x 25	362	0,20	10	168	-A4336-M
47		16 x 31,5	509	0,20	7,1	224	-A4476-M
100		20 x 30	1065	0,20	3,3	420	-A4107-M

Preferred types.


Single Ended GP – Capacitors
B41851/B43851
Standard Series – 105°C

U_N	C_N	Case Dimensions	I_{Lmax}	$\tan\delta_{max}$	ESR_{max}	I_{acmax}	Ordering code
Vdc	120 Hz 20°C μF	$\varnothing d \times l$ mm	5 min 20°C μA	120 Hz 20°C	120 Hz 20°C Ω	120 Hz 105°C mA (rms)	Short Code
400	2,2	10 x 12,5	41	0,20	151	28	-A9225-M
	3,3	10 x 12,5	55	0,20	100	32	-A9335-M
	4,7	10 x 16	71	0,20	71	42	-A9475-M
	10	10 x 20	135	0,20	33	67	-A9106-M
	22	16 x 20	279	0,20	15	126	-A9226-M
	33	16 x 25	411	0,20	10	168	-A9336-M
	47	16 x 31,5	579	0,20	7,1	217	-A9476-M
	100	20 x 35	1215	0,20	3,3	420	-A9107-M
450	2,2	10 x 12,5	45	0,20	151	20	-A5225-M
	3,3	10 x 16	60	0,20	100	31	-A5335-M
	4,7	10 x 20	78	0,20	71	35	-A5475-M
	10	12,5 x 25	150	0,20	33	63	-A5106-M
	22	16 x 25	312	0,20	15	116	-A5226-M
	33	16 x 31,5	460	0,20	10	154	-A5336-M
	47	18 x 31	650	0,20	7,1	186	-A5476-M
	100	20 x 40	1365	0,20	3,3	420	-A5107-M

How to determine the ordering code

To obtain the required ordering code, prefix the type number to the short code.

E. g.: B41851-A6106-M

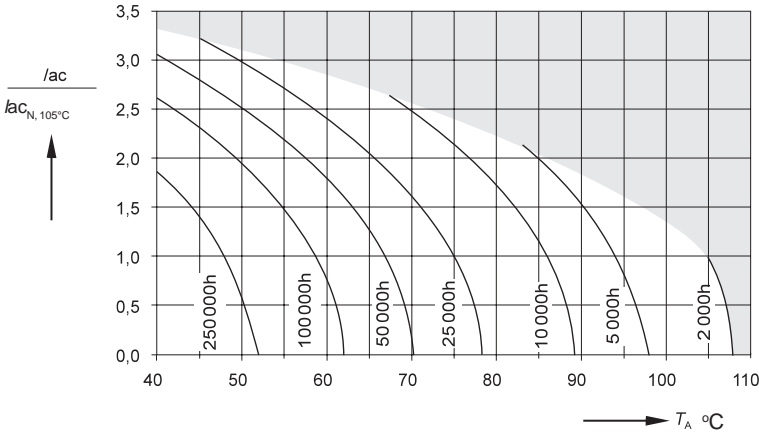
	$U_N = 6,3 \dots 100$ Vdc	$U_N = 160 \dots 450$ Vdc
Type number	B41851-...	B43851-...



Useful life

versus temperature $T_A^{(*)}$ under ripple operating conditions¹⁾

$U_N = 6,3 \dots 100 \text{ Vdc}$

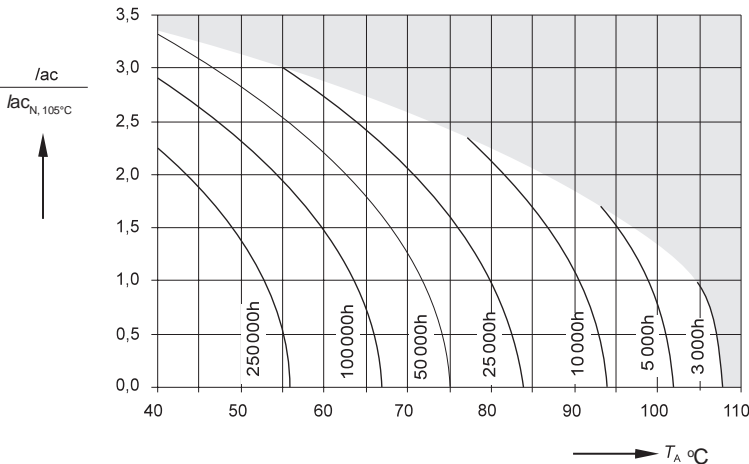


(*) " T_A " – Must be considered as the temperature of the capacitor's place in the board/circuit in maximum operate conditional.

Useful life

versus temperature $T_A^{(*)}$ under ripple operating conditions¹⁾

$U_N = 160 \dots 450 \text{ Vdc}$



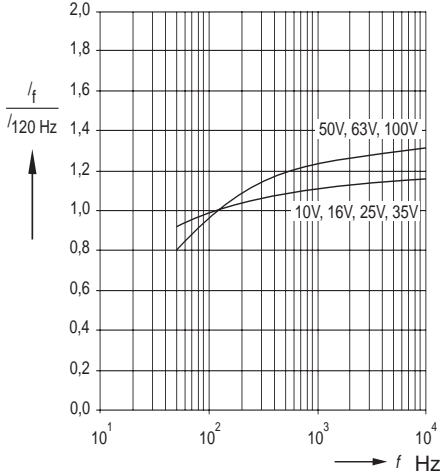
¹⁾ Refer to page 42 for an explanation on how to interpret the useful life graph.



Permissible ripple current I_f

versus frequency f

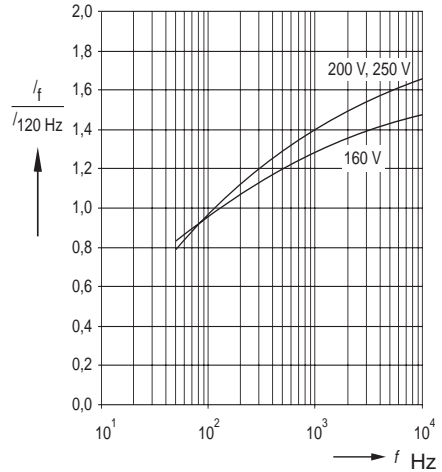
$U_N \leq 100$ Vdc



Permissible ripple current I_f

versus frequency f

$U_N \geq 160$ Vdc

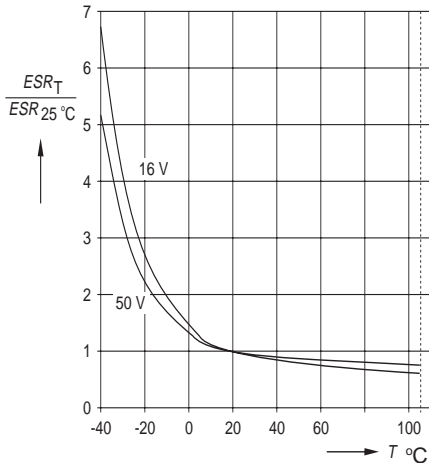


Equivalent series resistance ESR

at $f = 120$ Hz versus temperature T

Typical behavior

$U_N \leq 100$ Vdc

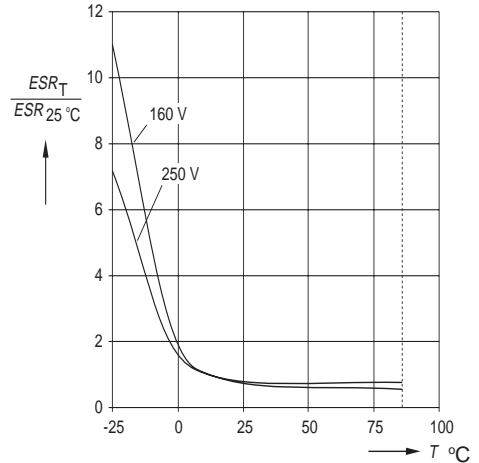


Equivalent series resistance ESR

at $f = 120$ Hz versus temperature T

Typical behavior

$U_N \geq 160$ Vdc





Single Ended GP – Capacitors

B41851/B43851

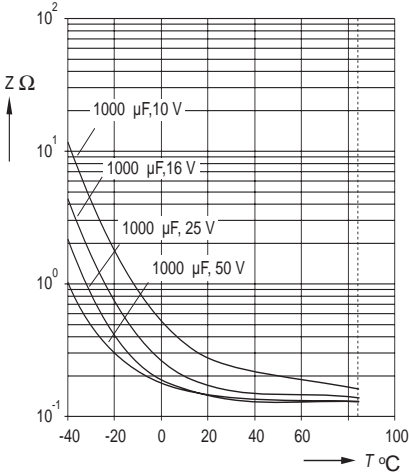
Standard Series – 105°C

Impedance Z at $f = 10$ kHz

versus temperature T

Typical behavior

$U_N \leq 100$ Vdc

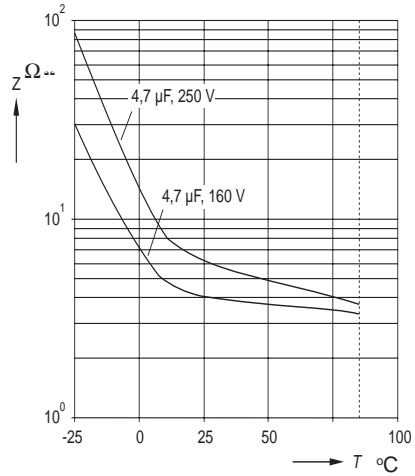


Impedance Z at $f = 10$ kHz

versus temperature T

Typical behavior

$U_N \geq 160$ Vdc

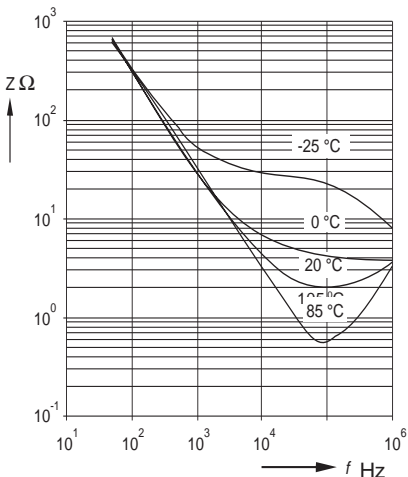


Impedance Z

versus frequency f

and temperature T for 4,7 μF /160Vdc

Typical behavior

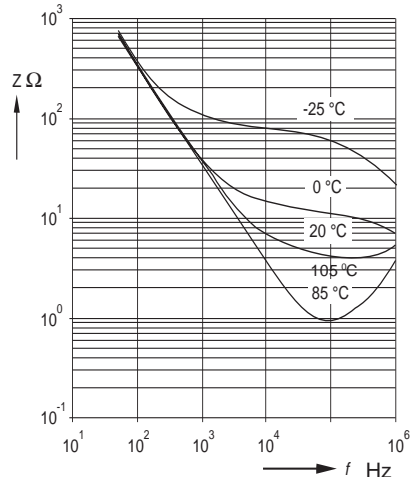


Impedance Z

versus frequency f

and temperature T for 10 μF /160Vdc

Typical behavior





Impedance Z

versus frequency f

Typical values at 20°C

