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## Film Capacitors

### Metallized Polypropylene Film Capacitors (MKP)

**Series/Type:** B32774 ... B32778

**Date:** February 2017

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**Recommended applications**

- Frequency converters
- Industrial and high-end power supplies
- Solar inverters

**Climatic**

- Max. operating temperature: 105 °C (case)
- Climatic category (IEC 60068-1): 40/105/56

**Construction**

- Dielectric: Polypropylene (MKP)
- Plastic case (UL 94 V-0)
- Epoxy resin sealing (UL 94 V-0)

**Features**

- Capacitance values up to 480  $\mu\text{F}$
- High CV product, compact
- Good self-healing properties
- Over-voltage capability
- Low losses with high current capability
- High reliability
- Long useful life
- RoHS-compatible

**Terminals**

- Parallel wire leads, lead-free tinned
- 2-pin, 4-pin and 12-pin versions
- Standard lead lengths: 6 – 1 mm

**Marking**

Manufacturer's logo and lot number, date code, rated capacitance (coded), capacitance tolerance (code letter) and rated DC voltage

**Delivery mode**

Bulk (untaped)



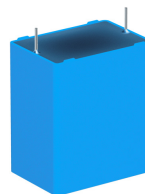
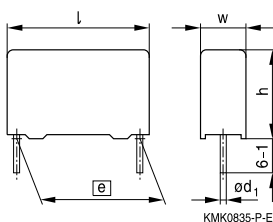
## Dimensional drawings

Dimensions in mm

Number of wires	Lead spacing $[e] \pm 0.4$	Lead diameter $d_1 \pm 0.05$	Type
2-pin	27.5	0.8	B32774D
2-pin	37.5	1.0	B32776E
2-pin	37.5	1.0	B32776T
4-pin	37.5	1.2	B32776G
4-pin	37.5	1.2	B32776T
4-pin	52.5	1.2	B32778T
4-pin	52.5	1.2	B32778G
12-pin	52.5	1.2	B32778J

## Dimensional drawings 2-pin versions

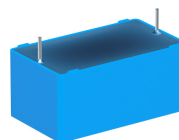
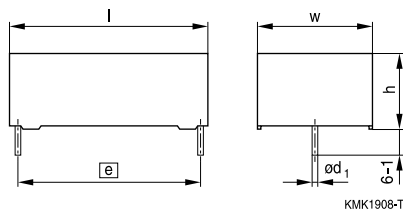
### B32774D, B32776E



	B32774D	B32776E
Lead spacing $[e] \pm 0.4$ :	27.5	37.5
Lead diameter $d_1$ :	0.8	1.0

(Dimensions in mm)

### B32776T (low profile)



Lead spacing $[e] \pm 0.4$ :	37.5
Lead diameter $d_1$ :	1.0

(Dimensions in mm)

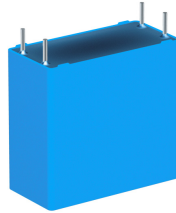
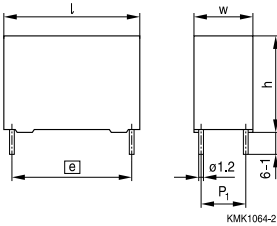


**B32774 ... B32778**

**MKP DC link – high density series up to 480  $\mu$ F**

**Dimensional drawings 4-pin versions**

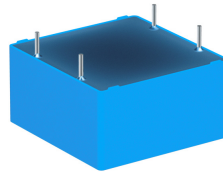
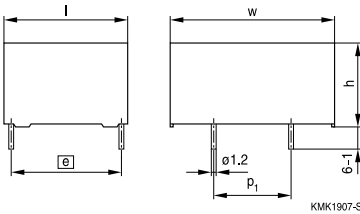
**B32776G, B32778G**



	B32776G	B32778G
Lead spacing [e] $\pm 0.4$ :	37.5	52.5
Lead diameter $d_1$ :	1.2	1.2

(Dimensions in mm)

**B32776T, B32778T (low profile)**

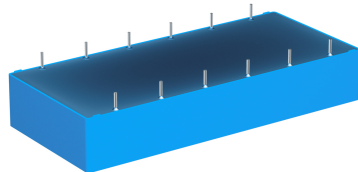
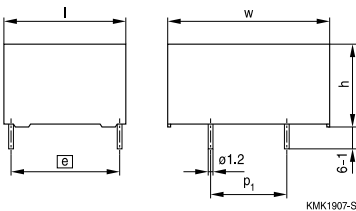


	B32776T	B32778T
Lead spacing [e] $\pm 0.4$ :	37.5	52.5
Lead diameter $d_1$ :	1.2	1.2

(Dimensions in mm)

**Dimensional drawing 12-pin version**

**B32778J**



Lead spacing [e] $\pm 0.4$ :	52.5
Lead diameter $d_1$ :	1.2

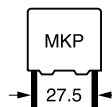
(Dimensions in mm)


**Overview of available types**

Lead spacing	27.5 mm				37.5 mm					
Type	B32774				B32776					
Page	7				8					
$V_R$ (V DC)	450	800	1100	1300	450	575	800	900	1100	1300
$C_R$ ( $\mu$ F)										
1.5										
2.0										
2.7										
3.0										
3.3										
3.5										
3.9										
5.0										
6.8										
7.0										
7.5										
8.0										
8.5										
9.0										
10										
12										
13										
14										
15										
16										
20										
22										
25										
30										
35										
40										
45										
50										
60										
65										


**B32774 ... B32778**
**MKP DC link – high density series up to 480  $\mu\text{F}$** 

Lead spacing	52.5 mm					
Type	B32778					
Page	11					
$V_R$ (V DC)	450	575	800	900	1100	1300
$C_R$ ( $\mu\text{F}$ )						
14						
20						
25						
27						
30						
35						
38						
40						
42						
45						
50						
55						
58						
60						
70						
75						
80						
90						
100						
110						
120						
130						
150						
170						
180						
200						
210						
270						
360						
480						


**Ordering codes and packing units (lead spacing 27.5 mm)**

$C_R^{1)}$	Max. dimensions $w \times h \times l$	$P_1$	Ordering code (composition see below)	$I_{RMS,max}^{2)}$ 70 °C 10 kHz A	$ESR_{typ}$ 70 °C 10 kHz m $\Omega$	$ESL_{typ}^{3)}$ 70 °C 10 kHz nH	$\tan \delta$ 1 kHz 10 <sup>-3</sup>	$\tan \delta$ 10 kHz 10 <sup>-3</sup>	pcs. MOQ
$\mu$ F	mm	mm							
<b><math>V_{R,70\text{ °C}} = 450\text{ V DC}, V_{op,85\text{ °C}} = 450\text{ V DC}</math></b>									
5.0	11.0 × 21.0 × 31.5	–	B32774D4505+000	5.0	21.1	19.0	1.2	10.7	2352
10.0	15.0 × 24.5 × 31.5	–	B32774D4106+000	8.0	10.9	24.0	1.2	11.0	1680
22.0	22.0 × 36.5 × 31.5	–	B32774D4226+000	14.5	5.4	30.0	1.3	12.1	784
<b><math>V_{R,70\text{ °C}} = 800\text{ V DC}, V_{op,85\text{ °C}} = 700\text{ V DC}</math></b>									
3.0	11.0 × 21.0 × 31.5	–	B32774D8305+000	4.5	24.8	19.0	0.9	7.6	2352
5.0	14.0 × 24.5 × 31.5	–	B32774D8505+000	6.5	15.3	23.0	0.9	7.7	1848
12.0	22.0 × 36.5 × 31.5	–	B32774D8126+000	13.0	6.8	34.0	1.0	8.3	784
<b><math>V_{R,70\text{ °C}} = 1100\text{ V DC}, V_{op,85\text{ °C}} = 920\text{ V DC}</math></b>									
2.0	12.5 × 21.5 × 31.5	–	B32774D0205+000	4.5	26.3	19.0	0.7	5.3	2100
3.3	18.0 × 27.5 × 31.5	–	B32774D0335+000	7.0	16.2	22.0	0.7	5.4	1428
5.0	19.0 × 30.0 × 31.5	–	B32774D0505+000	9.0	10.9	27.0	0.7	5.5	896
7.0	22.0 × 36.5 × 31.5	–	B32774D0705+000	12.0	8.1	30.0	0.7	5.8	784
<b><math>V_{R,70\text{ °C}} = 1300\text{ V DC}, V_{op,85\text{ °C}} = 1100\text{ V DC}</math></b>									
1.5	12.5 × 21.5 × 31.5	–	B32774D1155K000	4.4	31.3	20.0	0.6	4.8	2100
3.0	18.0 × 27.5 × 31.5	–	B32774D1305K000	7.0	16.0	24.0	0.6	4.9	1428
5.0	22.0 × 36.5 × 31.5	–	B32774D1505K000	10.5	9.8	33.0	0.7	5.1	784

MOQ = Minimum Order Quantity, consisting of 4 packing units.

Intermediate capacitance values are available on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

J =  $\pm 5\%$

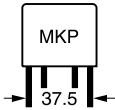
K =  $\pm 10\%$

1) Capacitance value measured at 1 kHz

2) Max ripple current  $I_{RMS}$  at 70 °C, 10 kHz for  $\Delta T \leq 20\text{ °C}$  at  $\Delta ESR_{typ} \leq \pm 5\%$

3) Typical ESL value measured at resonance frequency (see specific graphs of Z vs freq)




**B32776**
**MKP DC link – high density series – up to 480  $\mu$ F**
**Ordering codes and packing units (lead spacing 37.5 mm)**

$C_R^{1)}$	Max. dimensions $w \times h \times l$	$P_1$	Ordering code (composition see below)	$I_{RMS,max}^{2)}$ 70 °C 10 kHz A	$ESR_{typ}$ 70 °C 10 kHz m $\Omega$	$ESL_{typ}^{3)}$ 70 °C 10 kHz nH	$\tan \delta$ 1 kHz 10 <sup>-3</sup>	$\tan \delta$ 10 kHz 10 <sup>-3</sup>	pcs. MOQ
$\mu$ F	mm	mm							
<b><math>V_{R,70^\circ C} = 450</math> V DC, <math>V_{op,85^\circ C} = 450</math> V DC</b>									
12	24.0 × 15.0 × 41.5	–	B32776T4126K000	7.0	17.1	19.0	2.2	21.0	1040
16	24.0 × 19.0 × 41.5	–	B32776T4166K000	8.0	13.0	18.0	2.3	21.2	780
30	20.0 × 39.5 × 41.5	10.2	B32776G4306+000	14.0	7.0	11.0	2.3	21.3	640
30	20.0 × 39.5 × 41.5	–	B32776E4306+000	14.0	7.3	28.0	2.4	22.3	640
35	28.0 × 37.0 × 42.0	10.2	B32776G4356+000	16.5	6.0	10.0	2.3	21.4	440
35	28.0 × 37.0 × 42.0	–	B32776E4356+000	16.0	6.4	24.0	2.4	22.6	440
40	28.0 × 37.0 × 42.0	10.2	B32776G4406+000	17.5	5.3	11.0	2.3	21.4	440
40	28.0 × 37.0 × 42.0	–	B32776E4406+000	17.0	5.6	26.0	2.4	22.7	440
40	43.0 × 22.0 × 41.5	20.3	B32776T4406K000	17.0	5.2	13.0	2.3	21.2	280
50	28.0 × 42.5 × 41.5	10.2	B32776G4506+000	20.0	4.3	12.0	2.3	21.7	440
50	28.0 × 42.5 × 41.5	–	B32776E4506+000	19.0	4.7	30.0	2.5	23.8	440
60	30.0 × 45.0 × 42.0	20.3	B32776G4606+000	23.5	3.6	14.0	2.4	22.3	400
60	30.0 × 45.0 × 42.0	–	B32776E4606+000	22.0	4.0	32.0	2.5	24.2	400
65	33.0 × 48.0 × 42.0	20.3	B32776G4656+000	25.5	3.3	14.0	2.3	22.2	180
<b><math>V_{R,70^\circ C} = 575</math> V DC, <math>V_{op,85^\circ C} = 500</math> V DC</b>									
8.5	24.0 × 15.0 × 41.5	–	B32776T5855+000	6.5	19.9	19.0	1.9	17.2	1040
12	24.0 × 19.0 × 41.5	–	B32776T5126K000	8.0	14.4	18.0	1.9	17.4	780
25	20.0 × 39.5 × 41.5	10.2	B32776G5256K000	14.0	7.0	12.0	1.9	17.5	640
25	20.0 × 39.5 × 41.5	–	B32776E5256K000	13.5	7.4	28.0	2.0	18.3	640
30	28.0 × 37.0 × 42.0	10.2	B32776G5306K000	16.5	5.8	11.0	1.9	17.6	440
30	28.0 × 37.0 × 42.0	–	B32776E5306K000	16.5	6.1	26.0	2.0	18.5	440
30	43.0 × 22.0 × 41.5	20.3	B32776T5306K000	16.5	5.8	13.0	1.9	17.3	280
35	28.0 × 42.5 × 41.5	10.2	B32776G5356+000	19.0	5.0	12.0	1.9	17.8	440
35	28.0 × 42.5 × 41.5	–	B32776E5356+000	18.0	5.3	29.0	2.0	19.0	440
45	30.0 × 45.0 × 42.0	20.3	B32776G5456K000	22.0	4.0	13.0	1.9	17.9	400
45	30.0 × 45.0 × 42.0	–	B32776E5456K000	21.0	4.4	32.0	2.1	19.7	400
50	33.0 × 48.0 × 42.0	20.3	B32776G5506K000	25.0	3.5	14.0	2.0	18.1	180

MOQ = Minimum Order Quantity, consisting of 4 packing units.  
Intermediate capacitance values are available on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

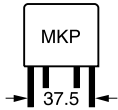
J =  $\pm 5\%$

K =  $\pm 10\%$

1) Capacitance value measured at 1 kHz

2) Max ripple current  $I_{RMS}$  at 70 °C, 10 kHz for  $\Delta T \leq 20$  °C at  $\Delta ESR_{typ} \leq \pm 5\%$

3) Typical ESL value measured at resonance frequency (see specific graphs of Z vs freq)


**Ordering codes and packing units (lead spacing 37.5 mm)**

$C_R^{1)}$	Max. dimensions $w \times h \times l$	$P_1$	Ordering code (composition see below)	$I_{RMS,max}^{2)}$ 70 °C 10 kHz A	$ESR_{typ}$ 70 °C 10 kHz m $\Omega$	$ESL_{typ}^{3)}$ 70 °C 10 kHz nH	$\tan \delta$ 1 kHz $10^{-3}$	$\tan \delta$ 10 kHz $10^{-3}$	pcs. MOQ
$\mu$ F	mm	mm							
<b><math>V_{R,70^\circ C} = 800</math> V DC, <math>V_{op,85^\circ C} = 700</math> V DC</b>									
6.8	24.0 × 15.0 × 41.5	–	B32776T8685+000	6.0	22.1	18.0	1.7	15.1	1040
8.5	24.0 × 19.0 × 41.5	–	B32776T8855+000	7.5	17.8	18.0	1.7	15.1	780
14	18.0 × 32.5 × 41.5	–	B32776E8146+000	10.0	11.5	23.0	1.8	16.3	720
15	20.0 × 39.5 × 41.5	10.2	B32776G8156+000	12.0	9.6	10.0	1.7	15.2	640
15	20.0 × 39.5 × 41.5	–	B32776E8156+000	11.5	10.3	24.0	1.7	15.7	640
20	28.0 × 37.0 × 42.0	10.2	B32776G8206+000	14.5	7.5	10.0	1.7	15.3	440
20	28.0 × 37.0 × 42.0	–	B32776E8206+000	14.5	7.8	24.0	1.7	15.9	440
20	43.0 × 22.0 × 41.5	20.3	B32776T8206K000	14.5	7.2	14.0	1.7	15.1	280
22	28.0 × 37.0 × 42.0	10.2	B32776G8226+000	15.5	6.8	11.0	1.7	15.3	440
22	28.0 × 37.0 × 42.0	–	B32776E8226+000	15.0	7.1	25.0	1.7	16.0	440
25	28.0 × 42.5 × 41.5	10.2	B32776G8256+000	17.0	6.1	11.0	1.7	15.4	440
25	28.0 × 42.5 × 41.5	–	B32776E8256+000	16.5	6.4	28.0	1.8	16.3	440
30	30.0 × 45.0 × 42.0	20.3	B32776G8306+000	19.5	5.1	12.0	1.7	15.6	400
30	30.0 × 45.0 × 42.0	–	B32776E8306+000	19.0	5.5	30.0	1.8	16.7	400
35	33.0 × 48.0 × 42.0	20.3	B32776G8356+000	22.0	4.3	14.0	1.7	15.7	180
<b><math>V_{R,70^\circ C} = 900</math> V DC, <math>V_{op,85^\circ C} = 800</math> V DC</b>									
5	24.0 × 15.0 × 41.5	–	B32776T9505+000	5.5	26.1	19.0	1.5	13.4	1040
7.5	24.0 × 19.0 × 41.5	–	B32776T9755K000	7.5	17.8	18.0	1.5	13.5	780
15	20.0 × 39.5 × 41.5	10.2	B32776G9156K000	12.5	9.1	12.0	1.5	13.6	640
15	20.0 × 39.5 × 41.5	–	B32776E9156K000	12.0	9.4	28.0	1.5	14.1	640
16	43.0 × 22.0 × 41.5	20.3	B32776T9166K000	14.0	8.1	14.0	1.5	13.5	280
20	28.0 × 37.0 × 42.0	10.2	B32776G9206K000	15.0	7.0	11.0	1.5	13.6	440
20	28.0 × 37.0 × 42.0	–	B32776E9206K000	15.0	7.3	26.0	1.6	14.2	440
22	28.0 × 42.5 × 41.5	10.2	B32776G9226K000	17.0	6.3	12.0	1.5	13.7	440
22	28.0 × 42.5 × 41.5	–	B32776E9226K000	16.5	6.6	29.0	1.6	14.5	440
25	30.0 × 45.0 × 42.0	20.3	B32776G9256+000	19.0	5.5	13.0	1.5	13.8	400
25	30.0 × 45.0 × 42.0	–	B32776E9256+000	18.5	5.9	32.0	1.6	14.7	400
30	33.0 × 48.0 × 42.0	20.3	B32776G9306+000	21.5	4.7	14.0	1.5	13.9	180

MOQ = Minimum Order Quantity, consisting of 4 packing units.

Intermediate capacitance values are available on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

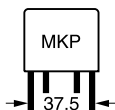
J =  $\pm 5\%$

K =  $\pm 10\%$

1) Capacitance value measured at 1 kHz

2) Max ripple current  $I_{RMS}$  at 70 °C, 10 kHz for  $\Delta T \leq 20$  °C at  $\Delta ESR_{typ} \leq \pm 5\%$

3) Typical ESL value measured at resonance frequency (see specific graphs of Z vs freq)


**B32776**
**MKP DC link – high density series – up to 480  $\mu$ F**
**Ordering codes and packing units (lead spacing 37.5 mm)**

$C_R^{1)}$	Max. dimensions $w \times h \times l$	$P_1$	Ordering code (composition see below)	$I_{RMS,max}^{2)}$ 70 °C 10 kHz A	$ESR_{typ}$ 70 °C 10 kHz m $\Omega$	$ESL_{typ}^{3)}$ 70 °C 10 kHz nH	$\tan \delta$ 1 kHz 10 <sup>-3</sup>	$\tan \delta$ 10 kHz 10 <sup>-3</sup>	pcs. MOQ
$\mu$ F	mm	mm							
<b><math>V_{R,70^\circ C} = 1100</math> V DC, <math>V_{op,85^\circ C} = 920</math> V DC</b>									
3.9	24.0 × 15.0 × 41.5	–	B32776T0395+000	5.0	30.5	18.0	1.4	12.1	1040
5	24.0 × 19.0 × 41.5	–	B32776T0505+000	6.5	23.6	18.0	1.4	12.1	780
12	20.0 × 39.5 × 41.5	10.2	B32776G0126+000	12.0	10.2	12.0	1.4	12.2	640
12	20.0 × 39.5 × 41.5	–	B32776E0126+000	11.5	10.5	28.0	1.4	12.6	640
13	43.0 × 22.0 × 41.5	20.3	B32776T0136K000	13.0	8.9	14.0	1.4	12.1	280
14	28.0 × 37.0 × 42.0	10.2	B32776G0146+000	13.5	8.7	21.0	1.4	12.2	440
14	28.0 × 37.0 × 42.0	–	B32776E0146+000	13.5	9.0	25.0	1.4	12.6	440
16	28.0 × 42.5 × 41.5	10.2	B32776G0166+000	15.5	7.4	12.0	1.4	12.3	440
16	28.0 × 42.5 × 41.5	–	B32776E0166+000	15.0	7.8	30.0	1.4	12.9	440
20	30.0 × 45.0 × 42.0	20.3	B32776G0206+000	18.0	6.0	14.0	1.4	12.4	400
20	30.0 × 45.0 × 42.0	–	B32776E0206+000	17.5	6.5	32.0	1.4	13.1	400
22	33.0 × 48.0 × 42.0	20.3	B32776G0226+000	21.0	4.9	15.0	1.3	11.4	180
<b><math>V_{R,70^\circ C} = 1300</math> V DC, <math>V_{op,85^\circ C} = 1100</math> V DC</b>									
2.7	24.0 × 15.0 × 41.5	–	B32776T1275+000	5.0	34.7	19.0	1.1	9.6	1040
3.5	24.0 × 19.0 × 41.5	–	B32776T1355+000	6.0	27.4	18.0	1.1	9.7	780
8.0	20.0 × 39.5 × 41.5	10.2	B32776G1805+000	11.0	12.1	12.0	1.1	9.7	640
8.0	20.0 × 39.5 × 41.5	–	B32776E1805+000	10.5	12.4	24.0	1.2	10.0	640
9.0	43.0 × 22.0 × 41.5	20.3	B32776T1905K000	12.0	10.7	13.0	1.1	9.7	280
10	28.0 × 37.0 × 42.0	10.2	B32776G1106+000	13.0	9.6	11.0	1.1	9.7	440
10	28.0 × 37.0 × 42.0	–	B32776E1106+000	12.5	9.9	26.0	1.2	10.0	440
12	28.0 × 42.5 × 41.5	10.2	B32776G1126+000	14.5	8.1	12.0	1.1	9.8	440
12	28.0 × 42.5 × 41.5	–	B32776E1126+000	14.0	8.5	28.0	1.2	10.1	440
14	30.0 × 45.0 × 42.0	20.3	B32776G1146+000	17.0	6.8	14.0	1.1	10.1	400
14	30.0 × 45.0 × 42.0	–	B32776E1146+000	16.5	7.3	32.0	1.2	10.4	400
16	33.0 × 48.0 × 42.0	20.3	B32776G1166+000	19.0	6.0	15.0	1.1	9.9	180

MOQ = Minimum Order Quantity, consisting of 4 packing units.

Intermediate capacitance values are available on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

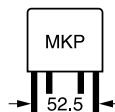
 J =  $\pm 5\%$ 

 K =  $\pm 10\%$ 

1) Capacitance value measured at 1 kHz

 2) Max ripple current  $I_{RMS}$  at 70 °C, 10 kHz for  $\Delta T \leq 20$  °C at  $\Delta ESR_{typ} \leq \pm 5\%$ 

3) Typical ESL value measured at resonance frequency (see specific graphs of Z vs freq)


**Ordering codes and packing units (lead spacing 52.5 mm,  $P_1 = 20.3$  mm)**

$C_R^{1)}$	Max. dimensions $w \times h \times l$	Ordering code (composition see below)	$I_{RMS,max}^{2)}$ 70 °C 10 kHz A	$ESR_{typ}$ 70 °C 10 kHz m $\Omega$	$ESL_{typ}^{3)}$ 70 °C 10 kHz nH	$\tan \delta$ 1 kHz $10^{-3}$	$\tan \delta$ 10 kHz $10^{-3}$	pcs. MOQ
$\mu$ F	mm							
<b><math>V_{R,70\text{ °C}} = 450</math> V DC, <math>V_{op,85\text{ °C}} = 450</math> V DC</b>								
55	43.0 × 24.0 × 57.5	B32778T4556K000	16.5	7.2	13.0	4.3	41.7	420
75	30.0 × 45.0 × 57.5	B32778G4756+000	21.0	5.6	12.0	4.4	42.6	280
80	30.0 × 45.0 × 57.5	B32778G4806+000	21.5	5.3	13.0	4.4	42.7	280
100	35.0 × 50.0 × 57.5	B32778G4107+000	26.0	4.3	14.0	4.5	43.3	108
110	35.0 × 50.0 × 57.5	B32778G4117K000	27.0	3.9	15.0	4.5	43.6	108
150	130.0 × 24.0 × 57.5	B32778J4157K000	43.5	2.7	4.0	4.4	42.1	80
170	45.0 × 57.0 × 57.5	B32778G4177+000	36.5	2.6	17.0	4.6	45.7	140
180	60.0 × 45.0 × 57.5	B32778G4187+000	39.0	2.5	19.0	4.6	44.6	200
480	130.0 × 58.0 × 57.5	B32778J4487K000	79.5	0.9	6.0	4.8	45.4	40
<b><math>V_{R,70\text{ °C}} = 575</math> V DC, <math>V_{op,85\text{ °C}} = 500</math> V DC</b>								
40	43.0 × 24.0 × 57.5	B32778T5406K000	15.5	8.5	13.0	3.6	34.5	420
60	30.0 × 45.0 × 57.5	B32778G5606+000	20.5	5.8	13.0	3.7	35.3	280
80	35.0 × 50.0 × 57.5	B32778G5806+000	25.5	4.4	15.0	3.7	36.0	108
110	130.0 × 24.0 × 57.5	B32778J5117K000	40.5	3.0	5.0	3.6	34.5	80
120	45.0 × 57.0 × 57.5	B32778G5127+000	34.5	3.1	17.0	3.8	37.2	140
130	60.0 × 45.0 × 57.5	B32778G5137+000	36.5	2.8	19.0	3.8	36.7	200
360	130.0 × 58.0 × 57.5	B32778J5367K000	75.0	1.0	6.0	4.0	37.3	40
<b><math>V_{R,70\text{ °C}} = 800</math> V DC, <math>V_{op,85\text{ °C}} = 700</math> V DC</b>								
30	43.0 × 24.0 × 57.5	B32778T8306K000	14.5	9.8	14.0	3.2	30.2	420
45	30.0 × 45.0 × 57.5	B32778G8456+000	19.5	6.6	14.0	3.2	30.9	280
50	30.0 × 45.0 × 57.5	B32778G8506+000	20.0	6.3	13.0	3.2	30.9	280
55	35.0 × 50.0 × 57.5	B32778G8556+000	23.0	5.6	14.0	3.2	31.1	108
60	35.0 × 50.0 × 57.5	B32778G8606+000	23.5	5.1	15.0	3.3	31.2	108
80	130.0 × 24.0 × 57.5	B32778J8806K000	37.5	3.6	4.0	3.2	30.2	80
90	45.0 × 57.0 × 57.5	B32778G8906+000	32.5	3.5	17.0	3.3	32.2	140
100	60.0 × 45.0 × 57.5	B32778G8107+000	34.5	3.2	19.0	3.3	31.9	200
270	130.0 × 58.0 × 57.5	B32778J8277K000	70.5	1.2	6.0	3.5	32.4	40

MOQ = Minimum Order Quantity, consisting of 4 packing units.

Intermediate capacitance values are available on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

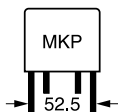
J =  $\pm 5\%$

K =  $\pm 10\%$

1) Capacitance value measured at 1 kHz

2) Max ripple current  $I_{RMS}$  at 70 °C, 10 kHz for  $\Delta T \leq 20$  °C at  $\Delta ESR_{typ} \leq \pm 5\%$

3) Typical ESL value measured at resonance frequency (see specific graphs of Z vs freq)


**B32778**
**MKP DC link – high density series – up to 480  $\mu$ F**
**Ordering codes and packing units (lead spacing 52.5 mm, P<sub>1</sub> = 20.3 mm)**

C <sub>R</sub> <sup>1)</sup>	Max. dimensions w × h × l	Ordering code (composition see below)	I <sub>RMS,max</sub> <sup>2)</sup> 70 °C 10 kHz A	ESR <sub>typ</sub> 70 °C 10 kHz mΩ	ESL <sub>typ</sub> <sup>3)</sup> 70 °C 10 kHz nH	tan δ 1 kHz 10 <sup>-3</sup>	tan δ 10 kHz 10 <sup>-3</sup>	pcs. MOQ
<b>V<sub>R,70 °C</sub> = 900 V DC, V<sub>op,85 °C</sub> = 800 V DC</b>								
25	43.0 × 24.0 × 57.5	B32778T9256K000	13.5	10.7	13.0	2.8	26.8	420
35	30.0 × 45.0 × 57.5	B32778G9356+000	18.0	7.7	13.0	2.9	27.3	280
50	35.0 × 50.0 × 57.5	B32778G9506K000	22.5	5.6	15.0	2.9	27.7	108
70	45.0 × 57.0 × 57.5	B32778G9706+000	31.0	3.8	18.0	3.0	28.5	140
70	130.0 × 24.0 × 57.5	B32778J9706K000	36.0	3.8	4.0	2.9	27.2	80
75	60.0 × 45.0 × 57.5	B32778G9756+000	32.5	3.6	20.0	2.9	28.2	200
210	130.0 × 58.0 × 57.5	B32778J9217K000	66.0	1.3	6.0	3.1	28.6	40
<b>V<sub>R,70 °C</sub> = 1100 V DC, V<sub>op,85 °C</sub> = 920 V DC</b>								
20	43.0 × 24.0 × 57.5	B32778T0206K000	13.0	11.9	13.0	2.6	24.1	420
30	30.0 × 45.0 × 57.5	B32778G0306+000	17.5	8.2	13.0	2.6	24.5	280
40	35.0 × 50.0 × 57.5	B32778G0406+000	21.5	6.2	15.0	2.7	25.9	108
58	45.0 × 57.0 × 57.5	B32778G0586+000	29.0	4.3	17.0	2.7	25.4	140
60	60.0 × 45.0 × 57.5	B32778G0606+000	30.5	4.0	19.0	2.7	25.2	200
60	130.0 × 24.0 × 57.5	B32778J0606K000	34.5	4.1	4.0	2.7	25.1	80
200	130.0 × 58.0 × 57.5	B32778J0207K000	66.0	1.4	6.0	3.0	26.8	40
<b>V<sub>R,70 °C</sub> = 1300 V DC, V<sub>op,85 °C</sub> = 1100 V DC</b>								
14	43.0 × 24.0 × 57.5	B32778T1146K000	12.0	13.8	13.0	2.1	19.5	420
20	30.0 × 45.0 × 57.5	B32778G1206+000	16.0	9.7	13.0	2.1	19.8	280
25	35.0 × 50.0 × 57.5	B32778G1256+000	19.0	7.8	15.0	2.1	19.9	108
27	35.0 × 50.0 × 57.5	B32778G1276+000	19.5	7.3	15.0	2.1	20.0	108
38	130.0 × 24.0 × 57.5	B32778J1386K000	31.5	5.1	4.0	2.1	19.5	80
40	45.0 × 57.0 × 57.5	B32778G1406+000	26.5	5.0	17.0	2.2	20.3	140
42	60.0 × 45.0 × 57.5	B32778G1426+000	28.0	4.7	19.0	2.2	20.2	200
120	130.0 × 58.0 × 57.5	B32778J1127K000	58.5	1.7	6.0	2.3	20.5	40

MOQ = Minimum Order Quantity, consisting of 4 packing units.

Intermediate capacitance values are available on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

J = ±5%

K = ±10%

1) Capacitance value measured at 1 kHz

 2) Max ripple current I<sub>RMS</sub> at 70 °C, 10 kHz for ΔT ≤ 20 °C at ΔESR<sub>typ</sub> ≤ ±5%

3) Typical ESL value measured at resonance frequency (see specific graphs of Z vs freq)



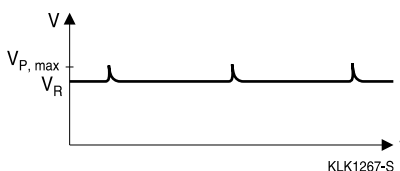
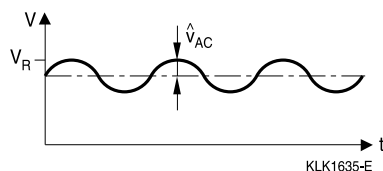
### Technical data

Reference standard: IEC 61071.

All data given at  $T = 20\text{ }^{\circ}\text{C}$ , unless otherwise specified.

Operating temperature range (case)	Max. operating temperature, $T_{op,max}$	+105 $^{\circ}\text{C}$
	Upper category temperature $T_{max}$	+105 $^{\circ}\text{C}$
	Lower category temperature $T_{min}$	-40 $^{\circ}\text{C}$
Insulation Resistance $R_{ins}$ given as time constant $\tau = C_R \cdot R_{ins}$ , rel. humidity $\leq 65\%$ (minimum as-delivered values)	$\tau > 10\,000\text{ s}$ (after 1 min.) For $V_R \geq 500\text{ V}$ measured at 500 V For $V_R < 500\text{ V}$ measured at $V_R$	
DC test voltage between terminals (10 s)	$1.5 \cdot V_R$	
Voltage test terminal to case (10 s)	2110 V AC, 50 Hz	
Pulse Handling Capability (V/ $\mu$ s)	$I_P$ (A) / C ( $\mu$ F)	
Reliability: Failure rate $\lambda$	10 fit ( $\leq 1 \cdot 10^{-9}/\text{h}$ ) at $0.5 \cdot V_R$ , 40 $^{\circ}\text{C}$ For conversion to other operating conditions and temperatures, refer to chapter "Quality, 2 Reliability".	
Service life $t_{SL}$	100 000 h at $V_R$ and 70 $^{\circ}\text{C}$	
	$V_R$ (V DC)	450    575    800    900    1100    1300
Continuous operation voltage $V_{op}$ (V DC) at 70 $^{\circ}\text{C}$		450    575    800    900    1100    1300
Continuous operation voltage $V_{op}$ (V DC) at 85 $^{\circ}\text{C}$		450    500    700    800    920    1100
For temperatures between 85 $^{\circ}\text{C}$ and 105 $^{\circ}\text{C}$		1.33%/ $^{\circ}\text{C}$ of $V_{op}$ derating compared to $V_{op}$ at 85 $^{\circ}\text{C}$

### Typical waveforms



#### Restrictions:

$V_R$ : Maximum operating peak voltage of either polarity but of a non-reversing waveform, for which the capacitor has been designed for continuous operation.

$$\hat{V}_{AC} \leq 0.2 \cdot V_R$$



**B32774 ... B32778**

**MKP DC link – high density series up to 480  $\mu$ F**

Overvoltage	Maximum duration within one day	Observation
$1.1 \cdot V_R$	30% of on-load duration	System regulation
$1.15 \cdot V_R$	30 min.	System regulation
$1.2 \cdot V_R$	5 min.	System regulation
$1.3 \cdot V_R$	1 min.	System regulation

NOTE 1 An overvoltage equal to  $1.5 \cdot V_R$  for 30 ms is permitted 1000 times during the life of the capacitor.

The amplitudes of the overvoltages that may be tolerated without significant reduction in the life time of the capacitor depend on their duration, the number of application and the capacitor temperature.

In addition these values assume that the overvoltages may appear when the internal temperature of the capacitor is less than 0 °C but within the temperature category.

NOTE 2 The average applied voltage must not be higher than the specified voltage.

### Pulse handling capability

"dV/dt" represents the maximum permissible voltage change per unit of time for non-sinusoidal voltages, expressed in V/ $\mu$ s.

Note:

The values of dV/dt provided below must not be exceeded in order to avoid damaging the capacitor.

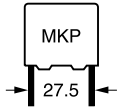
#### dV/dt values

Lead spacing	27.5 mm				37.5 mm					
Type	B32774				B32776					
$V_R$ (V DC)	450	800	1100	1300	450	575	800	900	1100	1300
dV/dt in V/ $\mu$ s	30	40	75	100	21	22	22	35	54	73

Lead spacing	52.5 mm					
Type	B32778					
$V_R$ (V DC)	450	575	800	900	1100	1300
dV/dt in V/ $\mu$ s	14	14	15	22	35	50

**B32774**

**MKP DC link – high density series – up to 480  $\mu$ F**

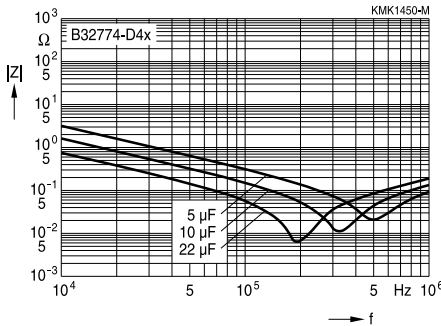


**Characteristics curves**

Additional technical information can be found under "Design support" on [www.epcos.com](http://www.epcos.com)

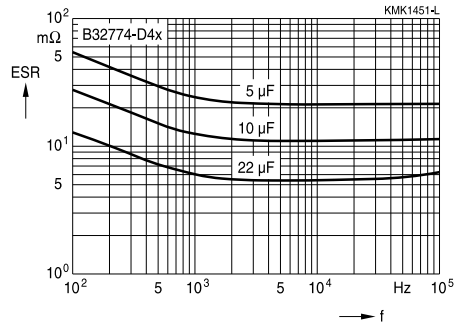
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 27.5 mm / B32774D4\***



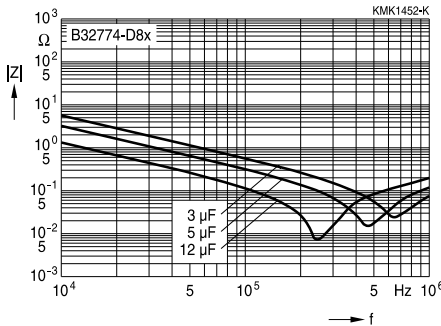
**ESR versus frequency f**  
(typical values)

**Lead spacing 27.5 mm / B32774D4\***



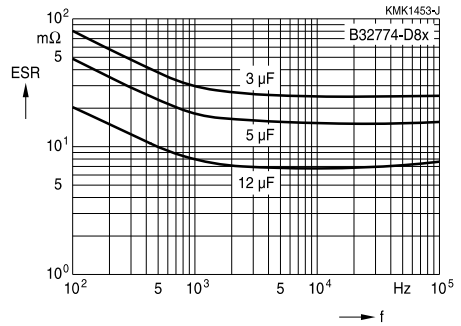
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 27.5 mm / B32774D8\***

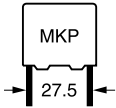


**ESR versus frequency f**  
(typical values)

**Lead spacing 27.5 mm / B32774D8\***







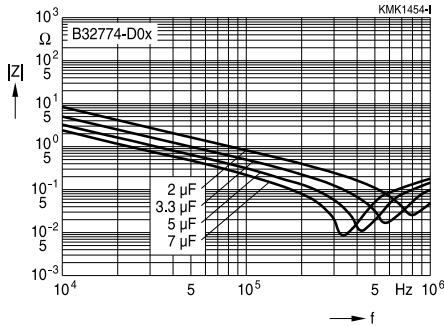
**B32774**

**MKP DC link – high density series – up to 480  $\mu\text{F}$**

**Characteristics curves**

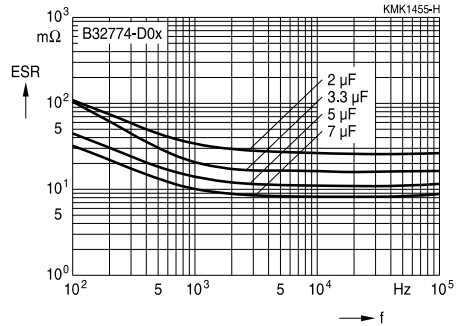
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 27.5 mm / B32774D0\***



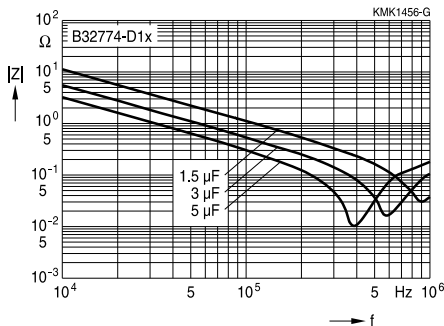
**ESR versus frequency f**  
(typical values)

**Lead spacing 27.5 mm / B32774D0\***



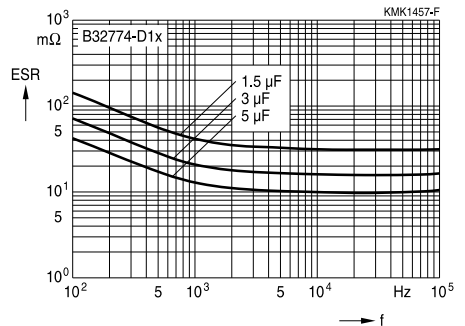
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 27.5 mm / B32774D1\***



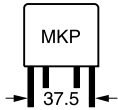
**ESR versus frequency f**  
(typical values)

**Lead spacing 27.5 mm / B32774D1\***



B32776

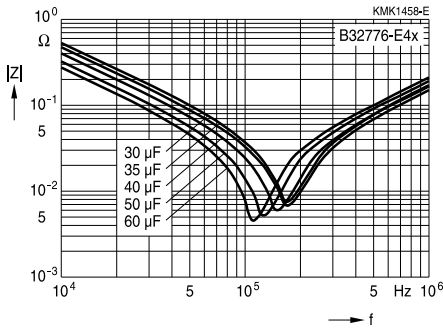
MKP DC link – high density series – up to 480  $\mu\text{F}$



**Characteristics curves**

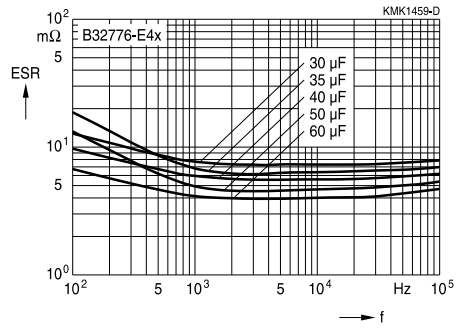
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E4x**



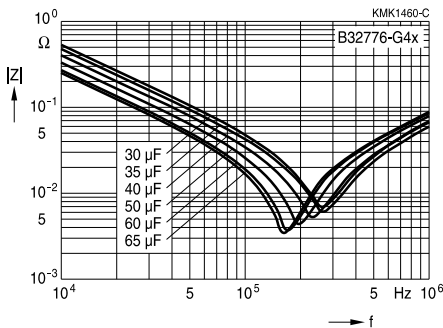
**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E4x**



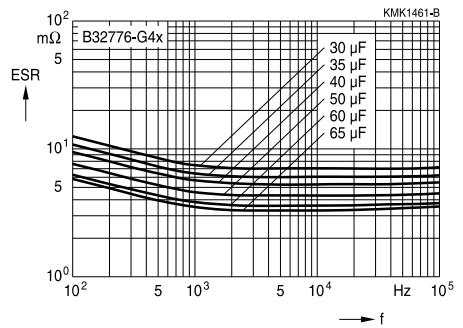
**Impedance Z versus frequency f**  
(typical values)

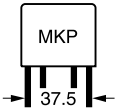
**Lead spacing 37.5 mm / B32776-G4x**



**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-G4x**





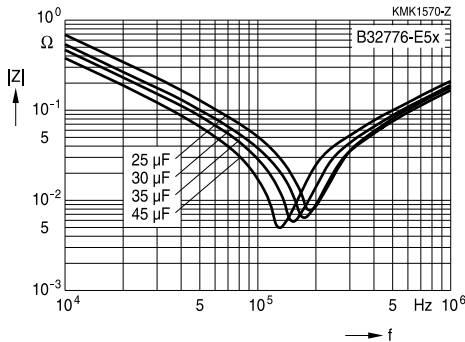
**B32776**

**MKP DC link – high density series – up to 480  $\mu$ F**

**Characteristics curves**

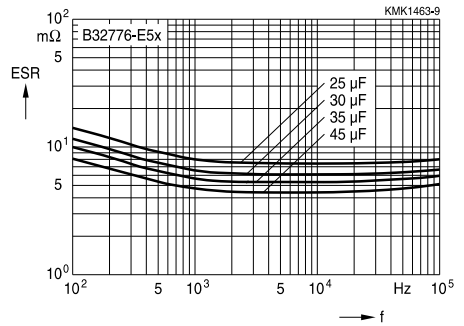
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E5x**



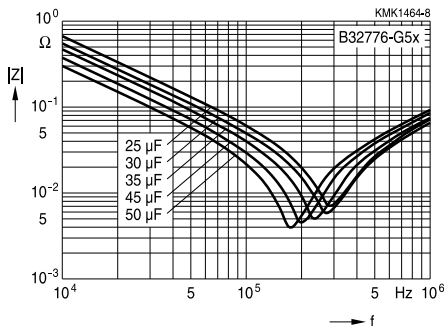
**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E5x**



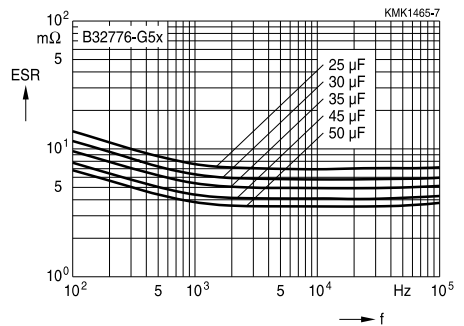
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-G5x**



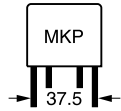
**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-G5x**



**B32776**

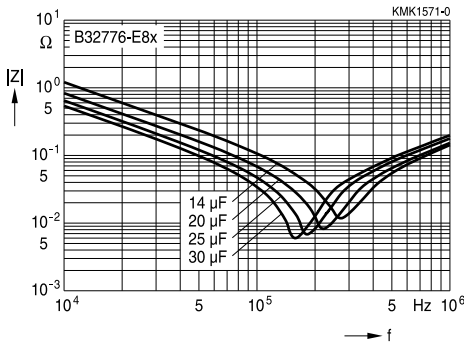
**MKP DC link – high density series – up to 480  $\mu\text{F}$**



**Characteristics curves**

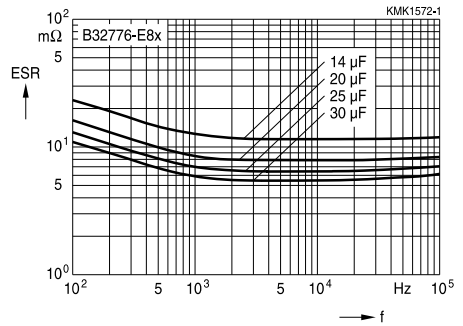
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E8x**



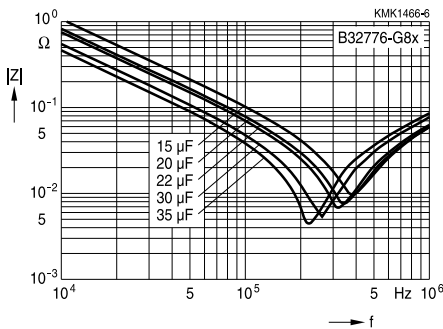
**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E8x**



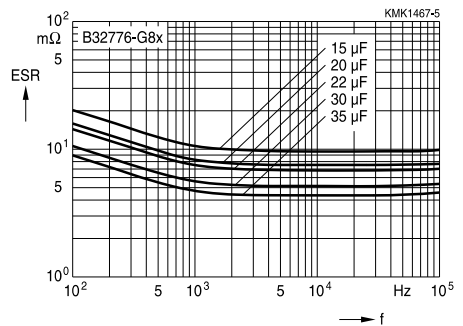
**Impedance Z versus frequency f**  
(typical values)

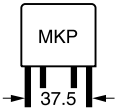
**Lead spacing 37.5 mm / B32776-G8x**



**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-G8x**





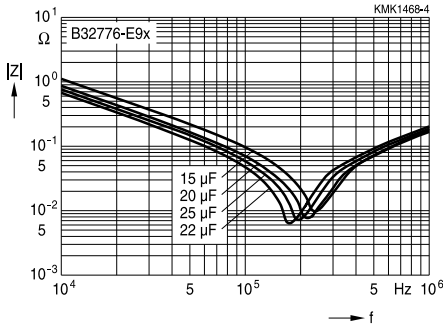
**B32776**

**MKP DC link – high density series – up to 480  $\mu\text{F}$**

**Characteristics curves**

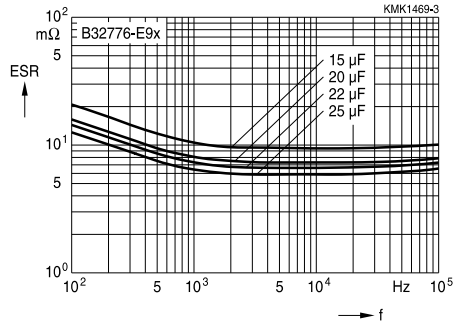
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E9x**



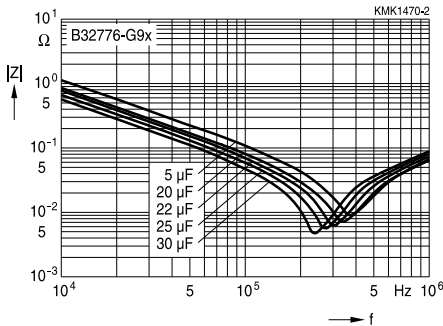
**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E9x**



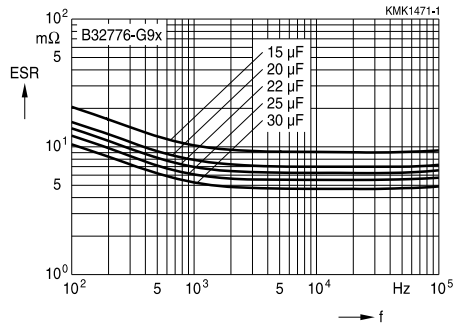
**Impedance Z versus frequency f**  
(typical values)

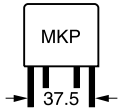
**Lead spacing 37.5 mm / B32776-G9x**



**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-G9x**

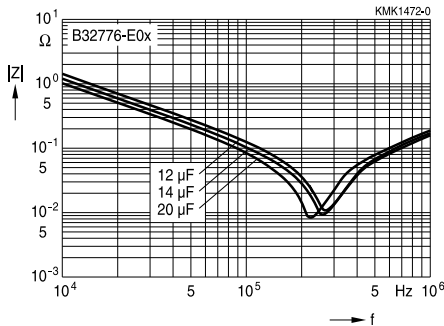




**Characteristics curves**

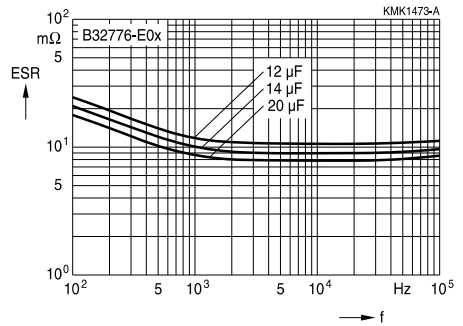
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E0x**



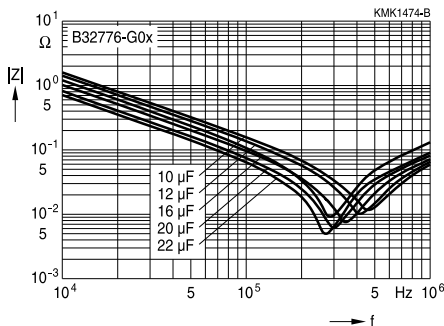
**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E0x**



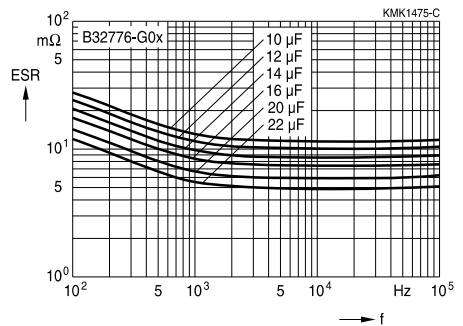
**Impedance Z versus frequency f**  
(typical values)

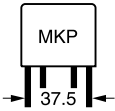
**Lead spacing 37.5 mm / B32776-G0x**



**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-G0x**





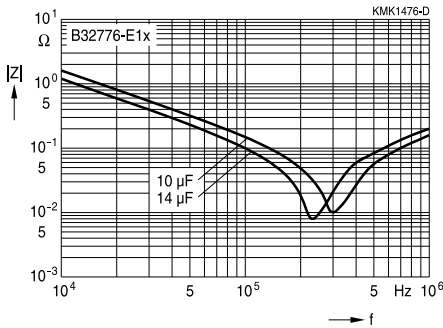
**B32776**

**MKP DC link – high density series – up to 480  $\mu\text{F}$**

**Characteristics curves**

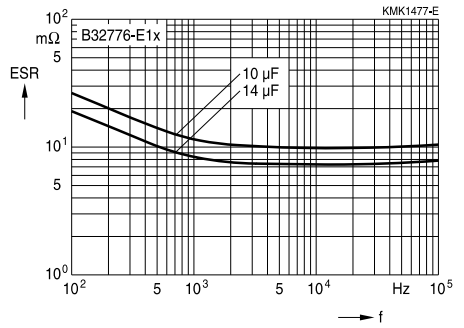
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E1x**



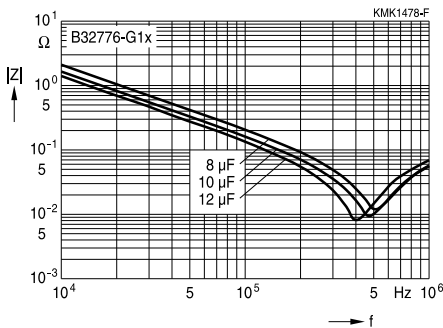
**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-E1x**



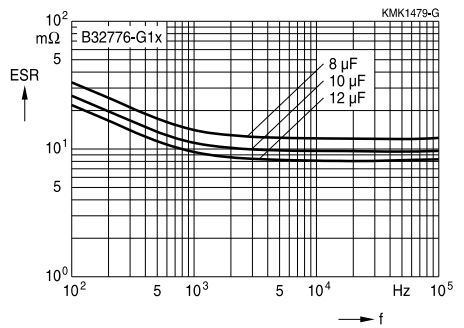
**Impedance Z versus frequency f**  
(typical values)

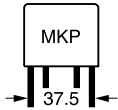
**Lead spacing 37.5 mm / B32776-G1x**



**ESR versus frequency f**  
(typical values)

**Lead spacing 37.5 mm / B32776-G1x**



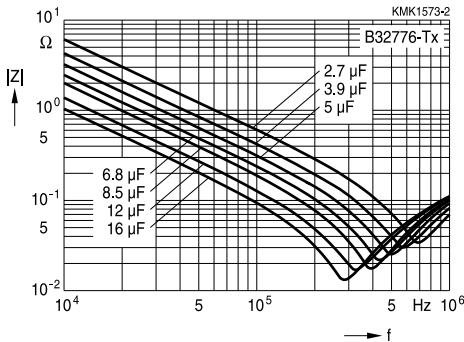


**Characteristics curves**

**Impedance Z versus frequency f**

(typical values)

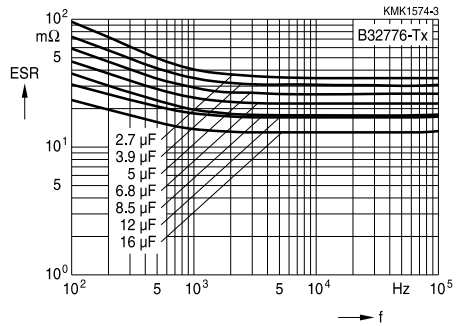
**Lead spacing 37.5 mm / B32776-Tx / 2-pins**



**ESR versus frequency f**

(typical values)

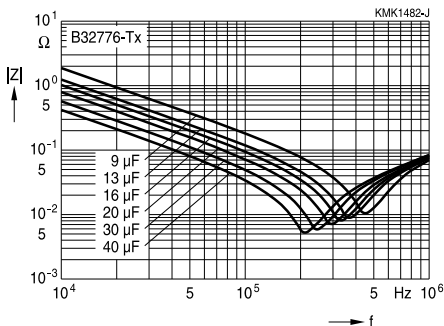
**Lead spacing 37.5 mm / B32776-Tx / 2-pins**



**Impedance Z versus frequency f**

(typical values)

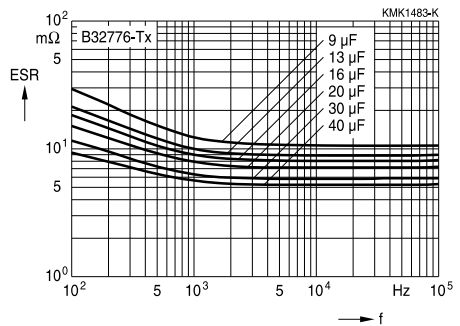
**Lead spacing 37.5 mm / B32776-Tx / 4-pins**



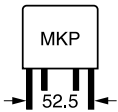
**ESR versus frequency f**

(typical values)

**Lead spacing 37.5 mm / B32776-Tx / 4-pins**







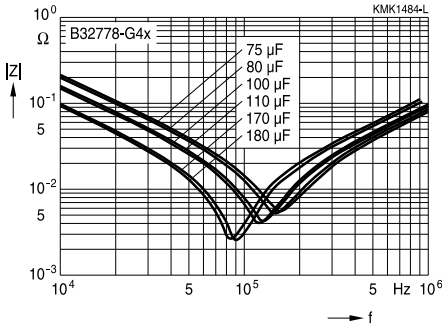
**B32778**

**MKP DC link – high density series – up to 480  $\mu\text{F}$**

**Characteristics curves**

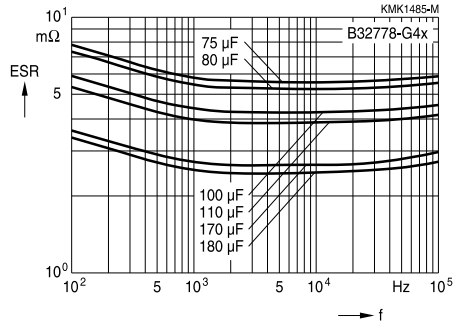
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 52.5 mm / B32778-G4x**



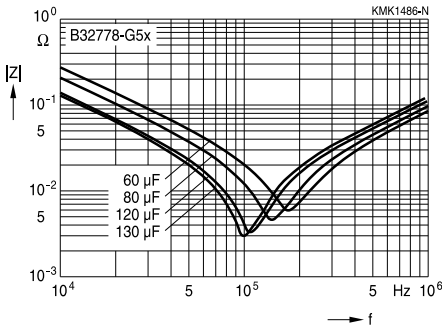
**ESR versus frequency f**  
(typical values)

**Lead spacing 52.5 mm / B32778-G4x**



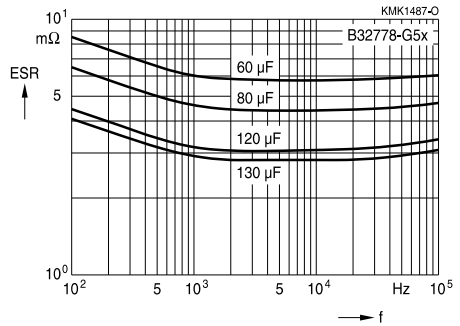
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 52.5 mm / B32778-G5x**



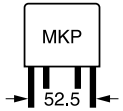
**ESR versus frequency f**  
(typical values)

**Lead spacing 52.5 mm / B32778-G5x**



**B32778**

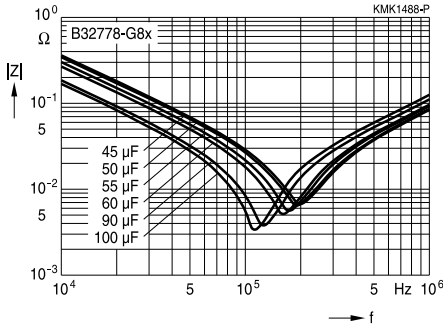
**MKP DC link – high density series – up to 480  $\mu$ F**



**Characteristics curves**

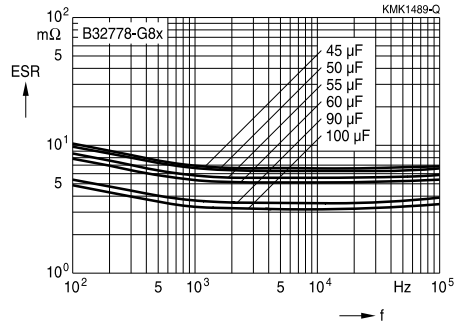
**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 52.5 mm / B32778-G8x**



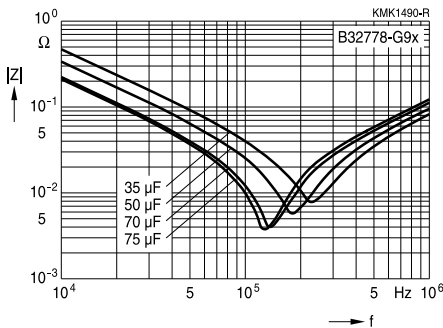
**ESR versus frequency f**  
(typical values)

**Lead spacing 52.5 mm / B32778-G8x**



**Impedance Z versus frequency f**  
(typical values)

**Lead spacing 52.5 mm / B32778-G9x**



**ESR versus frequency f**  
(typical values)

**Lead spacing 52.5 mm / B32778-G9x**

