Film Capacitors

Metallized Polypropylene Film Capacitors (MKP)

Series/Type: **B32656S**
Date: August 2004

Typical applications
- IGBT
- Snubbering

Climatic
- Max. operating temperature: 100 °C
- Climatic category (IEC 60068-1): 55/100/56

Construction
- Dielectric: polypropylene (PP)
- Wound capacitor technology with internal series connection
- Plastic case (UL 94 V-0)
- Epoxy resin sealing (UL 94 V-0)

Features
- High pulse strength and high contact reliability
- Very low inductance

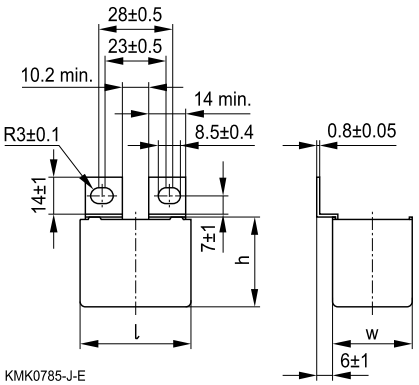
Terminals
- Strap terminals, tinned copper (max. torque 10 Nm)

Marking
Manufacturer's logo, ordering code, style (MKP)
rated capacitance (coded), cap. tolerance (code letter),
rated DC voltage, date of manufacture (coded)

Delivery mode
Bulk

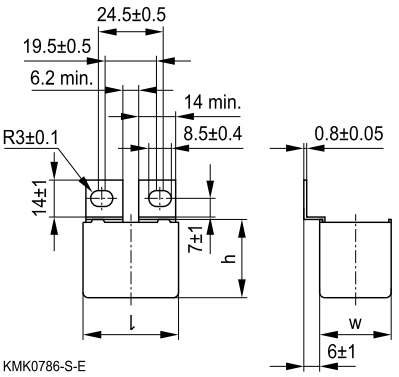
Dimensional drawings

T1 (code no. 561)



KMK0785-J-E

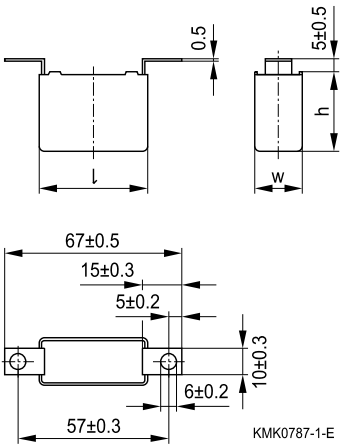
T2 (code no. 562)



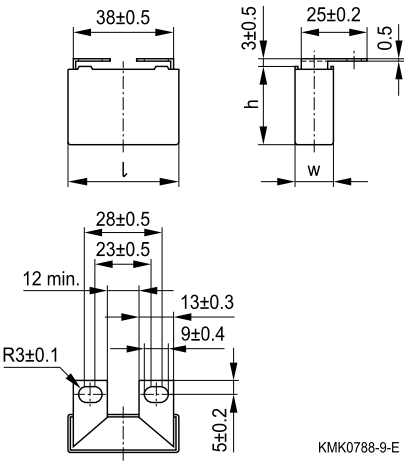
KMK0786-S-E

Dimensional drawings (continued)

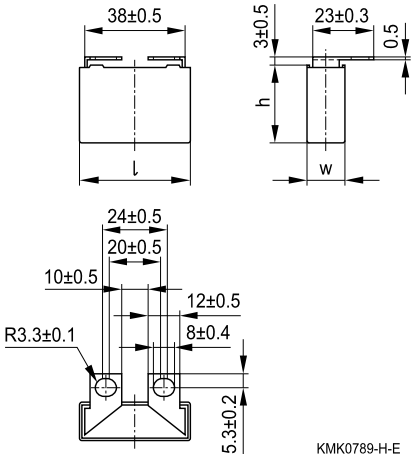
T3 (code no. 563)

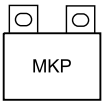


T4 (code no. 564)



T5 (code no. 565)



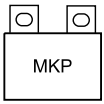


B32656S

Snubbering (wound)

Overview of available types

Type	B32656S				
V_R (VDC)	850	1000	1250	1600	2000
V_{rms} (VAC)	450	480	500	750	800
C_R (nF)					
47					
68					
100					
120					
150					
220					
270					
330					
390					
470					
560					
680					
820					
1000					
1200					
1500					
1800					
2200					



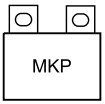
Electrical specifications, ordering codes and packing units

V_R VDC	V_{rms} f≤1kHz VAC	C_R nF	Max. dimensions w × h × l mm	I_{rms} 100 kHz A	ESR 100 kHz mΩ	Ordering code (composition see below)	Ter-minal	pcs./ unit
850	450	220	12.0 × 22.5 × 42.0	5	10.0	B32656S8224+563	T3	56
		220	12.0 × 22.5 × 42.0	5	10.0	B32656S8224+564	T4	96
		270	12.0 × 22.5 × 42.0	6	9.0	B32656S8274+563	T3	56
		270	12.0 × 22.5 × 42.0	6	9.0	B32656S8274+564	T4	96
		330	12.0 × 22.5 × 42.0	6	9.0	B32656S8334+563	T3	56
		330	12.0 × 22.5 × 42.0	6	9.0	B32656S8334+564	T4	96
		390	12.0 × 22.5 × 42.0	7	8.0	B32656S8394+563	T3	56
		390	12.0 × 22.5 × 42.0	7	8.0	B32656S8394+564	T4	96
		470	12.0 × 22.5 × 42.0	8	8.0	B32656S8474+563	T3	56
		470	12.0 × 22.5 × 42.0	8	8.0	B32656S8474+564	T4	96
		560	14.0 × 25.0 × 42.0	8	7.0	B32656S8564+563	T3	48
		560	14.0 × 25.0 × 42.0	8	7.0	B32656S8564+564	T4	72
		560	14.0 × 25.0 × 42.0	8	7.0	B32656S8564+565	T5	72
		680	16.0 × 28.5 × 42.0	9	6.0	B32656S8684+563	T3	40
		680	16.0 × 28.5 × 42.0	9	6.0	B32656S8684+564	T4	48
		680	16.0 × 28.5 × 42.0	9	6.0	B32656S8684+565	T5	48
		820	16.0 × 28.5 × 42.0	10	6.0	B32656S8824+563	T3	40
		820	16.0 × 28.5 × 42.0	10	6.0	B32656S8824+564	T4	48
		820	16.0 × 28.5 × 42.0	10	6.0	B32656S8824+565	T5	48
		1000	18.0 × 32.5 × 42.0	11	6.0	B32656S8105+563	T3	36
		1000	18.0 × 32.5 × 42.0	11	6.0	B32656S8105+564	T4	32
		1000	18.0 × 32.5 × 42.0	11	6.0	B32656S8105+565	T5	32
		1200	18.0 × 32.5 × 42.0	11	5.0	B32656S8125+563	T3	36
		1200	18.0 × 32.5 × 42.0	11	5.0	B32656S8125+564	T4	32
		1200	18.0 × 32.5 × 42.0	11	5.0	B32656S8125+565	T5	32
		1500	31.0 × 26.5 × 43.6	13	5.0	B32656S8155+561	T1	32
		1500	31.0 × 26.5 × 43.6	13	5.0	B32656S8155+562	T2	32
		1500	31.0 × 26.5 × 43.6	13	5.0	B32656S8155+563	T3	18
		1800	28.0 × 37.0 × 42.0	15	4.5	B32656S8185+561	T1	27
		1800	28.0 × 37.0 × 42.0	15	4.5	B32656S8185+562	T2	27
		1800	28.0 × 37.0 × 42.0	15	4.5	B32656S8185+563	T3	18

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:
M = ±20%
K = ±10%
J = ±5%



B32656S

Snubbering (wound)

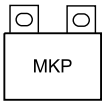
Electrical specifications, ordering codes and packing units

V_R VDC	V_{rms} f≤1kHz VAC	C_R nF	Max. dimensions w × h × l mm	I_{rms} 100 kHz A	ESR 100 kHz mΩ	Ordering code (composition see below)	Ter-minal	pcs./ unit
850	450	2200	30.0 × 45.0 × 42.0	17	3.5	B32656S8225+561	T1	12
		2200	30.0 × 45.0 × 42.0	17	3.5	B32656S8225+562	T2	12
		2200	30.0 × 45.0 × 42.0	17	3.5	B32656S8225+563	T3	18

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:
M = ±20%
K = ±10%
J = ±5%



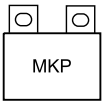
Electrical specifications, ordering codes and packing units

V_R VDC	V_{rms} f≤1kHz VAC	C_R nF	Max. dimensions w × h × l mm	I_{rms} 100 kHz A	ESR 100 kHz mΩ	Ordering code (composition see below)	Ter-minal	pcs./ unit
1000	480	220	12.0 × 22.5 × 42.0	6	10.0	B32656S0224+563	T3	56
		220	12.0 × 22.5 × 42.0	6	10.0	B32656S0224+564	T4	96
		270	12.0 × 22.5 × 42.0	7	9.0	B32656S0274+563	T3	56
		270	12.0 × 22.5 × 42.0	7	9.0	B32656S0274+564	T4	96
		330	14.0 × 25.0 × 42.0	7	9.0	B32656S0334+563	T3	48
		330	14.0 × 25.0 × 42.0	7	9.0	B32656S0334+564	T4	72
		330	14.0 × 25.0 × 42.0	7	9.0	B32656S0334+565	T5	72
		390	14.0 × 25.0 × 42.0	8	8.0	B32656S0394+563	T3	48
		390	14.0 × 25.0 × 42.0	8	8.0	B32656S0394+564	T4	72
		390	14.0 × 25.0 × 42.0	8	8.0	B32656S0394+565	T5	72
		470	14.0 × 25.0 × 42.0	9	8.0	B32656S0474+563	T3	40
		470	14.0 × 25.0 × 42.0	9	8.0	B32656S0474+564	T4	48
		470	14.0 × 25.0 × 42.0	9	8.0	B32656S0474+565	T5	48
		560	16.0 × 28.5 × 42.0	9	7.0	B32656S0564+563	T3	40
		560	16.0 × 28.5 × 42.0	9	7.0	B32656S0564+564	T4	48
		560	16.0 × 28.5 × 42.0	9	7.0	B32656S0564+565	T5	48
		680	16.0 × 28.5 × 42.0	10	6.0	B32656S0684+563	T3	36
		680	16.0 × 28.5 × 42.0	10	6.0	B32656S0684+564	T4	32
		680	16.0 × 28.5 × 42.0	10	6.0	B32656S0684+565	T5	32
		820	18.0 × 32.5 × 42.0	11	6.0	B32656S0824+563	T3	36
		820	18.0 × 32.5 × 42.0	11	6.0	B32656S0824+564	T4	32
		820	18.0 × 32.5 × 42.0	11	6.0	B32656S0824+565	T5	32
		1000	20.0 × 39.5 × 42.0	12	6.0	B32656S0105+561	T1	24
		1000	20.0 × 39.5 × 42.0	12	6.0	B32656S0105+562	T2	24
		1000	20.0 × 39.5 × 42.0	12	6.0	B32656S0105+563	T3	26
		1000	20.0 × 39.5 × 42.0	12	6.0	B32656S0105+564	T4	24
		1000	20.0 × 39.5 × 42.0	12	6.0	B32656S0105+565	T5	24
		1200	20.0 × 39.5 × 42.0	13	5.0	B32656S0125+561	T1	24
		1200	20.0 × 39.5 × 42.0	13	5.0	B32656S0125+562	T2	24
		1200	20.0 × 39.5 × 42.0	13	5.0	B32656S0125+563	T3	26
		1200	20.0 × 39.5 × 42.0	13	5.0	B32656S0125+564	T4	24

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:
M = ±20%
K = ±10%
J = ±5%



B32656S

Snubbering (wound)

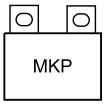
Electrical specifications, ordering codes and packing units

V_R VDC	V_{rms} f≤1kHz VAC	C_R nF	Max. dimensions w × h × l mm	I_{rms} 100 kHz A	ESR 100 kHz mΩ	Ordering code (composition see below)	Terminal	pcs./ unit
1000	480	1200	20.0 × 39.5 × 42.0	13	5.0	B32656S0125+565	T5	24
		1500	30.0 × 45.0 × 42.0	15	5.0	B32656S0155+561	T1	12
		1500	30.0 × 45.0 × 42.0	15	5.0	B32656S0155+562	T2	12
		1500	30.0 × 45.0 × 42.0	15	5.0	B32656S0155+563	T3	18
		1800	30.0 × 45.0 × 42.0	16	4.5	B32656S0185+561	T1	12
		1800	30.0 × 45.0 × 42.0	16	4.5	B32656S0185+562	T2	12
		1800	30.0 × 45.0 × 42.0	16	4.5	B32656S0185+563	T3	18

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:
M = ±20%
K = ±10%
J = ±5%



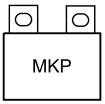
Electrical specifications, ordering codes and packing units

V_R VDC	V_{rms} f≤1kHz VAC	C_R nF	Max. dimensions w × h × l mm	I_{rms} 100 kHz A	ESR 100 kHz mΩ	Ordering code (composition see below)	Ter-minal	pcs./ unit
1250	500	120	12.0 × 22.5 × 42.0	5	15.0	B32656S7124+563	T3	56
		120	12.0 × 22.5 × 42.0	5	15.0	B32656S7124+564	T4	96
		150	12.0 × 22.5 × 42.0	6	15.0	B32656S7154+563	T3	56
		150	12.0 × 22.5 × 42.0	6	15.0	B32656S7154+564	T4	96
		220	14.0 × 25.0 × 42.0	8	10.0	B32656S7224+563	T3	48
		220	14.0 × 25.0 × 42.0	8	10.0	B32656S7224+564	T4	72
		220	14.0 × 25.0 × 42.0	8	10.0	B32656S7224+565	T5	72
		270	14.0 × 25.0 × 42.0	8	9.0	B32656S7274+563	T3	48
		270	14.0 × 25.0 × 42.0	8	9.0	B32656S7274+564	T4	72
		270	14.0 × 25.0 × 42.0	8	9.0	B32656S7274+565	T5	72
		330	16.0 × 28.5 × 42.0	8	9.0	B32656S7334+563	T3	40
		330	16.0 × 28.5 × 42.0	8	9.0	B32656S7334+564	T4	48
		330	16.0 × 28.5 × 42.0	8	9.0	B32656S7334+565	T5	48
		390	18.0 × 32.5 × 42.0	9	8.0	B32656S7394+563	T3	36
		390	18.0 × 32.5 × 42.0	9	8.0	B32656S7394+564	T4	32
		390	18.0 × 32.5 × 42.0	9	8.0	B32656S7394+565	T5	32
		470	18.0 × 32.5 × 42.0	9	8.0	B32656S7474+563	T3	36
		470	18.0 × 32.5 × 42.0	9	8.0	B32656S7474+564	T4	32
		470	18.0 × 32.5 × 42.0	9	8.0	B32656S7474+565	T5	32
		560	20.0 × 39.5 × 42.0	10	7.0	B32656S7564+561	T1	24
		560	20.0 × 39.5 × 42.0	10	7.0	B32656S7564+562	T2	24
		560	20.0 × 39.5 × 42.0	10	7.0	B32656S7564+563	T3	26
		560	20.0 × 39.5 × 42.0	10	7.0	B32656S7564+564	T4	24
		560	20.0 × 39.5 × 42.0	10	7.0	B32656S7564+565	T5	24
		680	20.0 × 39.5 × 42.0	10	6.0	B32656S7684+561	T1	24
		680	20.0 × 39.5 × 42.0	10	6.0	B32656S7684+562	T2	24
		680	20.0 × 39.5 × 42.0	10	6.0	B32656S7684+563	T3	26
		680	20.0 × 39.5 × 42.0	10	6.0	B32656S7684+564	T4	24
		680	20.0 × 39.5 × 42.0	10	6.0	B32656S7684+565	T5	24
		820	28.0 × 37.0 × 42.0	11	6.0	B32656S7824+561	T1	27
		820	28.0 × 37.0 × 42.0	11	6.0	B32656S7824+562	T2	27

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:
M = ±20%
K = ±10%
J = ±5%



B32656S

Snubbering (wound)

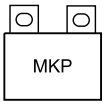
Electrical specifications, ordering codes and packing units

V_R VDC	V_{rms} f≤1kHz VAC	C_R nF	Max. dimensions w × h × l mm	I_{rms} 100 kHz A	ESR 100 kHz mΩ	Ordering code (composition see below)	Terminal	pcs./ unit
1250	500	820	28.0 × 37.0 × 42.0	11	6.0	B32656S7824+563	T3	18
		1000	28.0 × 37.0 × 42.0	13	6.0	B32656S7105+561	T1	27
		1000	28.0 × 37.0 × 42.0	13	6.0	B32656S7105+562	T2	27
		1000	28.0 × 37.0 × 42.0	13	6.0	B32656S7105+563	T3	18
		1200	30.0 × 45.0 × 42.0	14	5.0	B32656S7125+561	T1	12
		1200	30.0 × 45.0 × 42.0	14	5.0	B32656S7125+562	T2	12
		1200	30.0 × 45.0 × 42.0	14	5.0	B32656S7125+563	T3	18

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:
M = ±20%
K = ±10%
J = ±5%



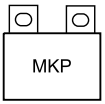
Electrical specifications, ordering codes and packing units

V_R VDC	V_{rms} f≤1kHz VAC	C_R nF	Max. dimensions w × h × l mm	I_{rms} 100 kHz A	ESR 100 kHz mΩ	Ordering code (composition see below)	Ter-minal	pcs./ unit
1600	750	68	12.0 × 22.5 × 42.0	5	25.0	B32656S1683+563	T3	56
		68	12.0 × 22.5 × 42.0	5	25.0	B32656S1683+564	T4	96
		100	12.0 × 22.5 × 42.0	6	20.0	B32656S1104+563	T3	56
		100	12.0 × 22.5 × 42.0	6	20.0	B32656S1104+564	T4	96
		120	14.0 × 25.0 × 42.0	6	15.0	B32656S1124+563	T3	48
		120	14.0 × 25.0 × 42.0	6	15.0	B32656S1124+564	T4	72
		120	14.0 × 25.0 × 42.0	6	15.0	B32656S1124+565	T5	72
		150	14.0 × 25.0 × 42.0	7	15.0	B32656S1154+563	T3	48
		150	14.0 × 25.0 × 42.0	7	15.0	B32656S1154+564	T4	72
		150	14.0 × 25.0 × 42.0	7	15.0	B32656S1154+565	T5	72
		220	16.0 × 28.5 × 42.0	9	10.0	B32656S1224+563	T3	40
		220	16.0 × 28.5 × 42.0	9	10.0	B32656S1224+564	T4	48
		220	16.0 × 28.5 × 42.0	9	10.0	B32656S1224+565	T5	48
		270	18.0 × 32.5 × 42.0	10	9.0	B32656S1274+563	T3	36
		270	18.0 × 32.5 × 42.0	10	9.0	B32656S1274+564	T4	32
		270	18.0 × 32.5 × 42.0	10	9.0	B32656S1274+565	T5	32
		330	20.0 × 39.5 × 42.0	10	9.0	B32656S1334+561	T1	24
		330	20.0 × 39.5 × 42.0	10	9.0	B32656S1334+562	T2	24
		330	20.0 × 39.5 × 42.0	10	9.0	B32656S1334+563	T3	26
		330	20.0 × 39.5 × 42.0	10	9.0	B32656S1334+564	T4	24
		330	20.0 × 39.5 × 42.0	10	9.0	B32656S1334+565	T5	24
		390	28.0 × 37.0 × 42.0	11	8.0	B32656S1394+561	T1	27
		390	28.0 × 37.0 × 42.0	11	8.0	B32656S1394+562	T2	27
		390	28.0 × 37.0 × 42.0	11	8.0	B32656S1394+563	T3	18
		470	28.0 × 37.0 × 42.0	12	8.0	B32656S1474+561	T1	27
		470	28.0 × 37.0 × 42.0	12	8.0	B32656S1474+562	T2	27
		470	28.0 × 37.0 × 42.0	12	8.0	B32656S1474+563	T3	18
		560	30.0 × 45.0 × 42.0	13	7.0	B32656S1564+561	T1	12
		560	30.0 × 45.0 × 42.0	13	7.0	B32656S1564+562	T2	12
		560	30.0 × 45.0 × 42.0	13	7.0	B32656S1564+563	T3	18
		680	30.0 × 45.0 × 42.0	14	6.0	B32656S1684K561	T1	12

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:
M = ±20%
K = ±10%
J = ±5%



B32656S

Snubbering (wound)

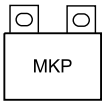
Electrical specifications, ordering codes and packing units

V_R	V_{rms} f≤1kHz	C_R	Max. dimensions w × h × l	I_{rms} 100 kHz	ESR 100 kHz	Ordering code (composition see	Ter-	pcs./
VDC	VAC	nF	mm	A	mΩ	below)	minal	unit
1600	750	680	30.0 × 45.0 × 42.0	14	6.0	B32656S1684K562	T2	12
		680	30.0 × 45.0 × 42.0	14	6.0	B32656S1684K563	T3	18

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:
M = ±20%
K = ±10%
J = ±5%



Electrical specifications, ordering codes and packing units

V_R VDC	V_{rms} f≤1kHz VAC	C_R nF	Max. dimensions w × h × l mm	I_{rms} 100 kHz A	ESR 100 kHz mΩ	Ordering code (composition see below)	Ter-minal	pcs./ unit
2000	800	47	12.0 × 22.5 × 42.0	5	35.0	B32656S2473+563	T3	56
		47	12.0 × 22.5 × 42.0	5	35.0	B32656S2473+564	T4	96
		68	14.0 × 25.0 × 42.0	6	25.0	B32656S2683+563	T3	48
		68	14.0 × 25.0 × 42.0	6	25.0	B32656S2683+564	T4	72
		68	14.0 × 25.0 × 42.0	6	25.0	B32656S2683+565	T5	72
		100	14.0 × 25.0 × 42.0	7	20.0	B32656S2104+563	T3	48
		100	14.0 × 25.0 × 42.0	7	20.0	B32656S2104+564	T4	72
		100	14.0 × 25.0 × 42.0	7	20.0	B32656S2104+565	T5	72
		120	16.0 × 28.5 × 42.0	7	15.0	B32656S2124+563	T3	40
		120	16.0 × 28.5 × 42.0	7	15.0	B32656S2124+564	T4	48
		120	16.0 × 28.5 × 42.0	7	15.0	B32656S2124+565	T5	48
		150	18.0 × 32.5 × 42.0	8	15.0	B32656S2154+563	T3	40
		150	18.0 × 32.5 × 42.0	8	15.0	B32656S2154+564	T4	48
		150	18.0 × 32.5 × 42.0	8	15.0	B32656S2154+565	T5	48
		220	20.0 × 39.5 × 42.0	10	10.0	B32656S2224+561	T1	24
		220	20.0 × 39.5 × 42.0	10	10.0	B32656S2224+562	T2	24
		220	20.0 × 39.5 × 42.0	10	10.0	B32656S2224+563	T3	26
		220	20.0 × 39.5 × 42.0	10	10.0	B32656S2224+564	T4	24
		220	20.0 × 39.5 × 42.0	10	10.0	B32656S2224+565	T5	24
		270	28.0 × 37.0 × 42.0	11	9.0	B32656S2274+561	T1	27
		270	28.0 × 37.0 × 42.0	11	9.0	B32656S2274+562	T2	27
		270	28.0 × 37.0 × 42.0	11	9.0	B32656S2274+563	T3	18
		330	28.0 × 37.0 × 42.0	12	9.0	B32656S2334+561	T1	27
		330	28.0 × 37.0 × 42.0	12	9.0	B32656S2334+562	T2	27
		330	28.0 × 37.0 × 42.0	12	9.0	B32656S2334+563	T3	18
		390	30.0 × 45.0 × 42.0	13	8.0	B32656S2394+561	T1	12
		390	30.0 × 45.0 × 42.0	13	8.0	B32656S2394+562	T2	12
		390	30.0 × 45.0 × 42.0	13	8.0	B32656S2394+563	T3	18
		470	30.0 × 45.0 × 42.0	15	8.0	B32656S2474+561	T1	12
		470	30.0 × 45.0 × 42.0	15	8.0	B32656S2474+562	T2	12
		470	30.0 × 45.0 × 42.0	15	8.0	B32656S2474+563	T3	18

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:
M = ±20%
K = ±10%
J = ±5%

Technical data

Operating temperature range	Max. operating temperature $T_{op,max}$			+100 °C
	Upper category temperature T_{max}			+100 °C
	Lower category temperature T_{min}			−55 °C
	Rated temperature T_R			+85 °C
Dissipation factor tan δ (in 10^{-3})	at	$C_R \leq 0.1$ µF	0.1 µF$< C_R \leq$1 µF	$C_R >$1 µF
at 20 °C	1 kHz	–	0.5	0.5
(upper limit values)	10 kHz	–	0.8	1.5
	100 kHz	5.0	–	–
Insulation resistance R_{ins}	$C_R \leq$ 0.33 µF		$C_R >$ 0.33 µF	
or time constant $\tau = C_R \cdot R_{ins}$	100 GΩ		30000 s	
at 20 °C, rel. humidity ≤ 65%				
(minimum as-delivered values)				
DC test voltage	1.6 · V_R, 2 s			
Category voltage V_C	T_A (°C)	DC voltage derating		AC voltage derating
(continuous operation with V_{DC}	$T_A \leq 85$	$V_C = V_R$		$V_{C,rms} = V_{rms}$
or V_{AC} at f ≤ 1 kHz)	$85 < T_A \leq 100$	$V_C = V_R \cdot (165 - T_A)/80$		$V_{C,rms} = V_{rms} \cdot (165 - T_A)/80$
Operating voltage V_{op} for	T_A (°C)	DC voltage (max. hours)		AC voltage (max. hours)
short operating periods	$T_A \leq 85$	$V_{op} = 1.25 \cdot V_C$ (2000 h)		$V_{op} = 1.0 \cdot V_{C,rms}$ (2000 h)
(V_{DC} or V_{AC} at f ≤ 1 kHz)	$85 < T_A \leq 100$	$V_{op} = 1.25 \cdot V_C$ (1000 h)		$V_{op} = 1.0 \cdot V_{C,rms}$ (1000 h)
Damp heat test	56 days/40 °C/93% relative humidity			
Limit values after damp	Capacitance change $\lvert\Delta C/C\rvert$			≤ 3%
heat test	Dissipation factor change Δ tan δ			≤ 0.5 · 10^{-3} (at 1 kHz)
				≤ 1.0 · 10^{-3} (at 10 kHz)
	Insulation resistance R_{ins}			≥ 50% of minimum
	or time constant $\tau = C_R \cdot R_{ins}$			as-delivered values
Reliability:				
Failure rate λ	1 fit (≤ 1 · 10^{-9}/h) at 0.5 · V_R, 40 °C			
Service life t_{SL}	200 000 h at 1.0 · V_R, 40 °C			
	For conversion to other operating conditions and temperatures, refer to chapter "Quality assurance", page .			
Failure criteria:				
Total failure	Short circuit or open circuit			
Failure due to variation	Capacitance change $\lvert\Delta C/C\rvert$			> 10%
of parameters	Dissipation factor tan δ			> 4 · upper limit value
	Insulation resistance R_{ins}			< 1500 MΩ ($C_R \leq$0.33 µF)
	or time constant $\tau = C_R \cdot R_{ins}$			< 500 s ($C_R >$0.33 µF)

Pulse handling capability

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

"k_0" represents the maximum permissible pulse characteristic of the waveform applied to the capacitor, expressed in $V^2/\mu s$.

Note:

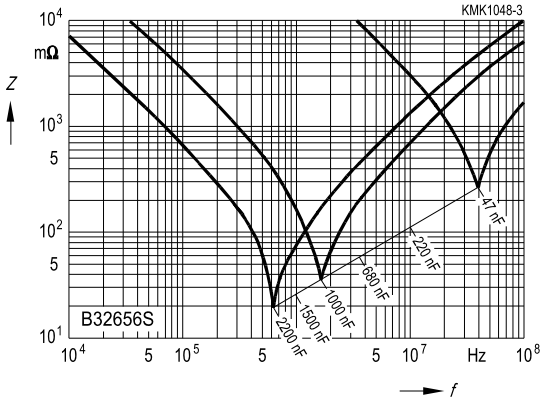
The values of dV/dt and k_0 provided below must not be exceeded in order to avoid damaging the capacitor.

dV/dt and k_0 values

V_R (VDC)	V_{rms} (VAC)	dV/dt in V/µs	k_0 in $V^2/\mu s$
850	450	400	680 000
1000	480	450	900 000
1250	500	500	1 250 000
1600	750	600	1 920 000
2000	800	700	2 800 000

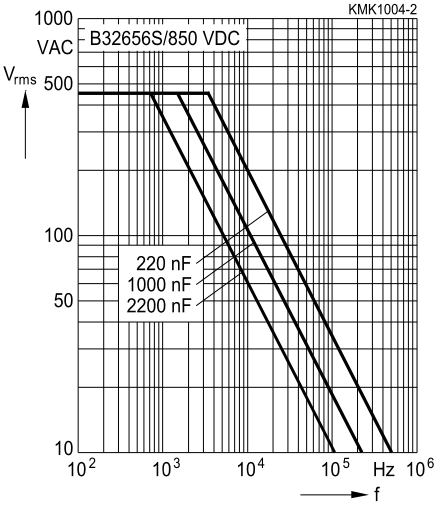
Impedance Z versus frequency f

(typical values)

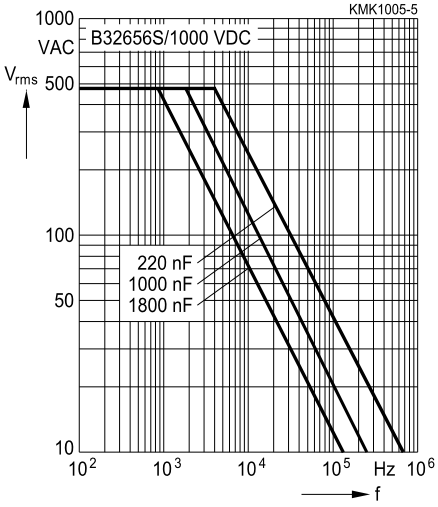


Permissible AC voltage V_{rms} versus frequency f (for sinusoidal waveforms, $T_A \leq 90$ °C)
For T_A >90 °C, please refer to "General technical information", section 3.2.3.

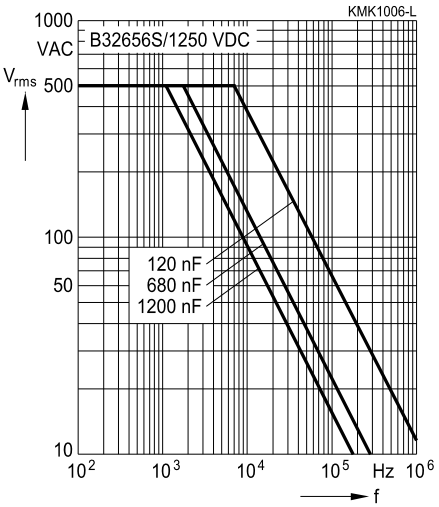
850 VDC/450 VAC



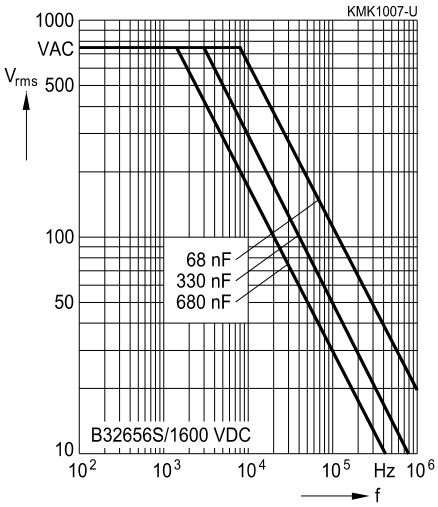
1000 VDC/480 VAC



1250 VDC/500 VAC



1600 VDC/750 VAC



Permissible AC voltage V_{rms} versus frequency f (for sinusoidal waveforms, $T_A \leq 90$ °C)
For T_A >90 °C, please refer to "General technical information", section 3.2.3.

2000 VDC/800 VAC