Snubber (wound)

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
1000	480	1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+408	T8	192
		1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+409	T9	192
		1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+410	T10	240
		1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+411	T11	192
		1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+418	T18	192
		1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+561	T1	192
		1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+562	T2	192
		1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+563	T3	208
		1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+564	T4	192
		1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+565	T5	192
		1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+566	T6	192
		1000	20.0 x 39.5 x 42.0	13.0	6.0	B32656S0105+577	T7	288
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+408	T8	192
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+409	T9	192
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+410	T10	240
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+411	T11	192
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+418	T18	192
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+561	T1	192
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+562	T2	192
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+563	T3	208
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+564	T4	192
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+565	T5	192
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+566	T6	192
		1200	20.0 x 39.5 x 42.0	14.0	5.0	B32656S0125+577	T7	288
		1500	30.0 x 45.0 x 42.0	16.5	5.0	B32656S0155+408	T8	96
		1500	30.0 x 45.0 x 42.0	16.5	5.0	B32656S0155+409	T9	96
		1500	30.0 x 45.0 x 42.0	16.5	5.0	B32656S0155+410	T10	160
		1500	30.0 x 45.0 x 42.0	16.5	5.0	B32656S0155+411	T11	128
		1500	30.0 x 45.0 x 42.0	16.5	5.0	B32656S0155+418	T18	96
		1500	30.0 x 45.0 x 42.0	16.5	5.0	B32656S0155+561	T1	96
		1500	30.0 x 45.0 x 42.0	16.5	5.0	B32656S0155+562	T2	96
		1500	30.0 x 45.0 x 42.0	16.5	5.0	B32656S0155+563	T3	192
		1500	30.0 x 45.0 x 42.0	16.5	5.0	B32656S0155+566	T6	96
		1500	30.0 x 45.0 x 42.0	16.5	5.0	B32656S0155+577	T7	192

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
1000	480	1800	30.0 x 45.0 x 42.0	17.0	4.5	B32656S0185+408	T8	96
		1800	30.0 x 45.0 x 42.0	17.0	4.5	B32656S0185+409	T9	96
		1800	30.0 x 45.0 x 42.0	17.0	4.5	B32656S0185+410	T10	96
		1800	30.0 x 45.0 x 42.0	17.0	4.5	B32656S0185+411	T11	128
		1800	30.0 x 45.0 x 42.0	17.0	4.5	B32656S0185+418	T18	96
		1800	30.0 x 45.0 x 42.0	17.0	4.5	B32656S0185+561	T1	96
		1800	30.0 x 45.0 x 42.0	17.0	4.5	B32656S0185+562	T2	96
		1800	30.0 x 45.0 x 42.0	17.0	4.5	B32656S0185+563	T3	192
		1800	30.0 x 45.0 x 42.0	17.0	4.5	B32656S0185+566	T6	96
		1800	30.0 x 45.0 x 42.0	17.0	4.5	B32656S0185+577	T7	192
		2200	30.0 x 45.0 x 42.0	19.0	4.0	B32656S0225+408	T8	96
		2200	30.0 x 45.0 x 42.0	19.0	4.0	B32656S0225+409	T9	96
		2200	30.0 x 45.0 x 42.0	19.0	4.0	B32656S0225+410	T10	160
		2200	30.0 x 45.0 x 42.0	19.0	4.0	B32656S0225+411	T11	128
		2200	30.0 x 45.0 x 42.0	19.0	4.0	B32656S0225+418	T18	96
		2200	30.0 x 45.0 x 42.0	19.0	4.0	B32656S0225+561	T1	96
		2200	30.0 x 45.0 x 42.0	19.0	4.0	B32656S0225+562	T2	96
		2200	30.0 x 45.0 x 42.0	19.0	4.0	B32656S0225+563	T3	192
		2200	30.0 x 45.0 x 42.0	19.0	4.0	B32656S0225+566	T6	96
		2200	30.0 x 45.0 x 42.0	19.0	4.0	B32656S0225+577	T7	192
		2700	33.0 x 48.0 x 43.0	22.0	3.3	B32656S0275+408	T8	168
		2700	33.0 x 48.0 x 43.0	22.0	3.3	B32656S0275+409	T9	168
		2700	33.0 x 48.0 x 43.0	22.0	3.3	B32656S0275+410	T10	120
		2700	33.0 x 48.0 x 43.0	22.0	3.3	B32656S0275+411	T11	112
		2700	33.0 x 48.0 x 43.0	22.0	3.3	B32656S0275+418	T18	128
		2700	33.0 x 48.0 x 43.0	22.0	3.3	B32656S0275+561	T1	128
		2700	33.0 x 48.0 x 43.0	22.0	3.3	B32656S0275+562	T2	128
		2700	33.0 x 48.0 x 43.0	22.0	3.3	B32656S0275+563	T3	128
		2700	33.0 x 48.0 x 43.0	22.0	3.3	B32656S0275+566	T6	168
		2700	33.0 x 48.0 x 43.0	22.0	3.3	B32656S0275+577	T7	168

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
1250	500	220	14.0 x 25.0 x 42.0	7.0	11.5	B32656S7224+408	T8	576
		220	14.0 x 25.0 x 42.0	7.0	11.5	B32656S7224+418	T18	576
		220	14.0 x 25.0 x 42.0	7.0	11.5	B32656S7224+563	T3	336
		220	14.0 x 25.0 x 42.0	7.0	11.5	B32656S7224+564	T4	576
		220	14.0 x 25.0 x 42.0	7.0	11.5	B32656S7224+565	T5	576
		270	14.0 x 25.0 x 42.0	8.0	10.0	B32656S7274+408	T8	576
		270	14.0 x 25.0 x 42.0	8.0	10.0	B32656S7274+418	T18	576
		270	14.0 x 25.0 x 42.0	8.0	10.0	B32656S7274+563	T3	336
		270	14.0 x 25.0 x 42.0	8.0	10.0	B32656S7274+564	T4	576
		270	14.0 x 25.0 x 42.0	8.0	10.0	B32656S7274+565	T5	576
		330	16.0 x 28.5 x 42.0	8.5	9.5	B32656S7334+408	T8	384
		330	16.0 x 28.5 x 42.0	8.5	9.5	B32656S7334+409	T9	384
		330	16.0 x 28.5 x 42.0	8.5	9.5	B32656S7334+411	T11	256
		330	16.0 x 28.5 x 42.0	8.5	9.5	B32656S7334+418	T18	384
		330	16.0 x 28.5 x 42.0	8.5	9.5	B32656S7334+561	T1	384
		330	16.0 x 28.5 x 42.0	8.5	9.5	B32656S7334+562	T2	384
		330	16.0 x 28.5 x 42.0	8.5	9.5	B32656S7334+563	T3	288
		330	16.0 x 28.5 x 42.0	8.5	9.5	B32656S7334+564	T4	384
		330	16.0 x 28.5 x 42.0	8.5	9.5	B32656S7334+565	T5	384
		330	16.0 x 28.5 x 42.0	8.5	9.5	B32656S7334+566	T6	384
		330	16.0 x 28.5 x 42.0	8.5	9.5	B32656S7334+577	T7	360
		390	18.0 x 32.5 x 42.0	9.0	9.0	B32656S7394+408	T8	280
		390	18.0 x 32.5 x 42.0	9.0	9.0	B32656S7394+409	T9	280
		390	18.0 x 32.5 x 42.0	9.0	9.0	B32656S7394+411	T11	224
		390	18.0 x 32.5 x 42.0	9.0	9.0	B32656S7394+418	T18	280
		390	18.0 x 32.5 x 42.0	9.0	9.0	B32656S7394+561	T1	280
		390	18.0 x 32.5 x 42.0	9.0	9.0	B32656S7394+562	T2	280
		390	18.0 x 32.5 x 42.0	9.0	9.0	B32656S7394+563	T3	240
		390	18.0 x 32.5 x 42.0	9.0	9.0	B32656S7394+564	T4	256
		390	18.0 x 32.5 x 42.0	9.0	9.0	B32656S7394+565	T5	256
		390	18.0 x 32.5 x 42.0	9.0	9.0	B32656S7394+566	T6	280
		390	18.0 x 32.5 x 42.0	9.0	9.0	B32656S7394+577	T7	312

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
1250	500	470	18.0 x 32.5 x 42.0	9.0	8.5	B32656S7474+408	T8	280
		470	18.0 x 32.5 x 42.0	9.0	8.5	B32656S7474+409	T9	280
		470	18.0 x 32.5 x 42.0	9.0	8.5	B32656S7474+411	T11	224
		470	18.0 x 32.5 x 42.0	9.0	8.5	B32656S7474+418	T18	280
		470	18.0 x 32.5 x 42.0	9.0	8.5	B32656S7474+561	T1	280
		470	18.0 x 32.5 x 42.0	9.0	8.5	B32656S7474+562	T2	280
		470	18.0 x 32.5 x 42.0	9.0	8.5	B32656S7474+563	T3	240
		470	18.0 x 32.5 x 42.0	9.0	8.5	B32656S7474+564	T4	256
		470	18.0 x 32.5 x 42.0	9.0	8.5	B32656S7474+565	T5	256
		470	18.0 x 32.5 x 42.0	9.0	8.5	B32656S7474+566	T6	280
		470	18.0 x 32.5 x 42.0	9.0	8.5	B32656S7474+577	T7	312
		470	19.0 x 37.5 x 42.0	17.0	4.0	B32656S7474+412*	T12	528
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+408	T8	192
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+409	T9	192
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+410	T10	240
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+411	T11	192
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+418	T18	192
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+561	T1	192
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+562	T2	192
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+563	T3	208
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+564	T4	192
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+565	T5	192
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+566	T6	192
		560	20.0 x 39.5 x 42.0	11.0	7.0	B32656S7564+577	T7	288
		680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+408	T8	192
		680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+409	T9	192
		680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+410	T10	240
		680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+411	T11	192
		680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+418	T18	192
		680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+561	T1	192
		680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+562	T2	192

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

* This part is affected by "Dual Use" regulations according to the law of the country the production site is located in. Deliveries of such products are subject to prior approval of the respective local authorities based on customer declarations. The delivery to certain countries may be restricted.

Ordering codes and packing units

V_R V DC	V_{RMS} f ≤1kHz V AC	C_R nF	Max. dimensions w x h x l mm	I_{RMS} 100 kHz A	ESR_{typ} 100 kHz mΩ	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
1250	500	680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+563	T3	208
		680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+564	T4	192
		680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+565	T5	192
		680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+566	T6	192
		680	20.0 x 39.5 x 42.0	13.0	6.0	B32656S7684+577	T7	288
		820	28.0 x 37.0 x 42.0	14.0	5.5	B32656S7824+408	T8	216
		820	28.0 x 37.0 x 42.0	14.0	5.5	B32656S7824+409	T9	216
		820	28.0 x 37.0 x 42.0	14.0	5.5	B32656S7824+410	T10	160
		820	28.0 x 37.0 x 42.0	14.0	5.5	B32656S7824+411	T11	144
		820	28.0 x 37.0 x 42.0	14.0	5.5	B32656S7824+418	T18	216
		820	28.0 x 37.0 x 42.0	14.0	5.5	B32656S7824+561	T1	216
		820	28.0 x 37.0 x 42.0	14.0	5.5	B32656S7824+562	T2	216
		820	28.0 x 37.0 x 42.0	14.0	5.5	B32656S7824+563	T3	192
		820	28.0 x 37.0 x 42.0	14.0	5.5	B32656S7824+566	T6	216
		820	28.0 x 37.0 x 42.0	14.0	5.5	B32656S7824+577	T7	192
		1000	28.0 x 37.0 x 42.0	15.5	5.0	B32656S7105+408	T8	216
		1000	28.0 x 37.0 x 42.0	15.5	5.0	B32656S7105+409	T9	216
		1000	28.0 x 37.0 x 42.0	15.5	5.0	B32656S7105+410	T10	160
		1000	28.0 x 37.0 x 42.0	15.5	5.0	B32656S7105+411	T11	144
		1000	28.0 x 37.0 x 42.0	15.5	5.0	B32656S7105+418	T18	216
		1000	28.0 x 37.0 x 42.0	15.5	5.0	B32656S7105+561	T1	216
		1000	28.0 x 37.0 x 42.0	15.5	5.0	B32656S7105+562	T2	216
		1000	28.0 x 37.0 x 42.0	15.5	5.0	B32656S7105+563	T3	192
		1000	28.0 x 37.0 x 42.0	15.5	5.0	B32656S7105+566	T6	216
		1000	28.0 x 37.0 x 42.0	15.5	5.0	B32656S7105+577	T7	192
		1200	30.0 x 45.0 x 42.0	17.0	4.5	B32656S7125+408	T8	96
		1200	30.0 x 45.0 x 42.0	17.0	4.5	B32656S7125+409	T9	96
		1200	30.0 x 45.0 x 42.0	17.0	4.5	B32656S7125+410	T10	160
		1200	30.0 x 45.0 x 42.0	17.0	4.5	B32656S7125+411	T11	128
		1200	30.0 x 45.0 x 42.0	17.0	4.5	B32656S7125+418	T18	96

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R V DC	V_{RMS} f ≤1kHz V AC	C_R nF	Max. dimensions w x h x l mm	I_{RMS} 100 kHz A	ESR_{typ} 100 kHz mΩ	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
1250	500	1200	30.0 x 45.0 x 42.0	17.0	4.5	B32656S7125+561	T1	96
		1200	30.0 x 45.0 x 42.0	17.0	4.5	B32656S7125+562	T2	96
		1200	30.0 x 45.0 x 42.0	17.0	4.5	B32656S7125+563	T3	192
		1200	30.0 x 45.0 x 42.0	17.0	4.5	B32656S7125+566	T6	96
		1200	30.0 x 45.0 x 42.0	17.0	4.5	B32656S7125+577	T7	192
		1500	30.0 x 45.0 x 42.0	19.0	4.0	B32656S7155+408	T8	96
		1500	30.0 x 45.0 x 42.0	19.0	4.0	B32656S7155+409	T9	96
		1500	30.0 x 45.0 x 42.0	19.0	4.0	B32656S7155+410	T10	160
		1500	30.0 x 45.0 x 42.0	19.0	4.0	B32656S7155+411	T11	128
		1500	30.0 x 45.0 x 42.0	19.0	4.0	B32656S7155+418	T18	96
		1500	30.0 x 45.0 x 42.0	19.0	4.0	B32656S7155+561	T1	96
		1500	30.0 x 45.0 x 42.0	19.0	4.0	B32656S7155+562	T2	96
		1500	30.0 x 45.0 x 42.0	19.0	4.0	B32656S7155+563	T3	192
		1500	30.0 x 45.0 x 42.0	19.0	4.0	B32656S7155+566	T6	96
		1500	30.0 x 45.0 x 42.0	19.0	4.0	B32656S7155+577	T7	192
		1800	33.0 x 48.0 x 43.0	22.0	3.5	B32656S7185+408	T8	168
		1800	33.0 x 48.0 x 43.0	22.0	3.5	B32656S7185+409	T9	168
		1800	33.0 x 48.0 x 43.0	22.0	3.5	B32656S7185+410	T10	120
		1800	33.0 x 48.0 x 43.0	22.0	3.5	B32656S7185+411	T11	112
		1800	33.0 x 48.0 x 43.0	22.0	3.5	B32656S7185+418	T18	168
		1800	33.0 x 48.0 x 43.0	22.0	3.5	B32656S7185+561	T1	168
		1800	33.0 x 48.0 x 43.0	22.0	3.5	B32656S7185+562	T2	168
		1800	33.0 x 48.0 x 43.0	22.0	3.5	B32656S7185+563	T3	128
		1800	33.0 x 48.0 x 43.0	22.0	3.5	B32656S7185+566	T6	168
		1800	33.0 x 48.0 x 43.0	22.0	3.5	B32656S7185+577	T7	168
1700	750	120	14.0 x 25.0 x 42.0	6.5	14.0	B32656S1124+408	T8	576
		120	14.0 x 25.0 x 42.0	6.5	14.0	B32656S1124+418	T18	576
		120	14.0 x 25.0 x 42.0	6.5	14.0	B32656S1124+563	T3	336
		120	14.0 x 25.0 x 42.0	6.5	14.0	B32656S1124+564	T4	576
		120	14.0 x 25.0 x 42.0	6.5	14.0	B32656S1124+565	T5	576

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
1700	750	150	14.0 x 25.0 x 42.0	7.0	13.0	B32656S1154+408	T8	576
		150	14.0 x 25.0 x 42.0	7.0	13.0	B32656S1154+418	T18	576
		150	14.0 x 25.0 x 42.0	7.0	13.0	B32656S1154+563	T3	336
		150	14.0 x 25.0 x 42.0	7.0	13.0	B32656S1154+564	T4	576
		150	14.0 x 25.0 x 42.0	7.0	13.0	B32656S1154+565	T5	576
		220	16.0 x 28.5 x 42.0	8.5	10.5	B32656S1224+408	T8	384
		220	16.0 x 28.5 x 42.0	8.5	10.5	B32656S1224+409	T9	384
		220	16.0 x 28.5 x 42.0	8.5	10.5	B32656S1224+411	T11	256
		220	16.0 x 28.5 x 42.0	8.5	10.5	B32656S1224+418	T18	384
		220	16.0 x 28.5 x 42.0	8.5	10.5	B32656S1224+561	T1	384
		220	16.0 x 28.5 x 42.0	8.5	10.5	B32656S1224+562	T2	384
		220	16.0 x 28.5 x 42.0	8.5	10.5	B32656S1224+563	T3	288
		220	16.0 x 28.5 x 42.0	8.5	10.5	B32656S1224+564	T4	384
		220	16.0 x 28.5 x 42.0	8.5	10.5	B32656S1224+565	T5	384
		220	16.0 x 28.5 x 42.0	8.5	10.5	B32656S1224+566	T6	384
		220	16.0 x 28.5 x 42.0	8.5	10.5	B32656S1224+577	T7	360
		270	18.0 x 32.5 x 42.0	9.5	9.0	B32656S1274+408	T8	280
		270	18.0 x 32.5 x 42.0	9.5	9.0	B32656S1274+409	T9	280
		270	18.0 x 32.5 x 42.0	9.5	9.0	B32656S1274+411	T11	224
		270	18.0 x 32.5 x 42.0	9.5	9.0	B32656S1274+418	T18	280
		270	18.0 x 32.5 x 42.0	9.5	9.0	B32656S1274+561	T1	280
		270	18.0 x 32.5 x 42.0	9.5	9.0	B32656S1274+562	T2	280
		270	18.0 x 32.5 x 42.0	9.5	9.0	B32656S1274+563	T3	240
		270	18.0 x 32.5 x 42.0	9.5	9.0	B32656S1274+564	T4	256
		270	18.0 x 32.5 x 42.0	9.5	9.0	B32656S1274+565	T5	256
		270	18.0 x 32.5 x 42.0	9.5	9.0	B32656S1274+566	T6	280
		270	18.0 x 32.5 x 42.0	9.5	9.0	B32656S1274+577	T7	312
		330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+408	T8	192
		330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+409	T9	192
		330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+410	T10	240
		330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+411	T11	192
		330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+418	T18	192
		330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+561	T1	192
		330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+562	T2	192

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
1700	750	330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+563	T3	208
		330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+564	T4	192
		330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+565	T5	192
		330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+566	T6	192
		330	20.0 x 39.5 x 42.0	12.0	8.0	B32656S1334+577	T7	288
		390	28.0 x 37.0 x 42.0	13.5	7.0	B32656S1394+408	T8	216
		390	28.0 x 37.0 x 42.0	13.5	7.0	B32656S1394+409	T9	216
		390	28.0 x 37.0 x 42.0	13.5	7.0	B32656S1394+410	T10	160
		390	28.0 x 37.0 x 42.0	13.5	7.0	B32656S1394+411	T11	144
		390	28.0 x 37.0 x 42.0	13.5	7.0	B32656S1394+418	T18	216
		390	28.0 x 37.0 x 42.0	13.5	7.0	B32656S1394+561	T1	216
		390	28.0 x 37.0 x 42.0	13.5	7.0	B32656S1394+562	T2	216
		390	28.0 x 37.0 x 42.0	13.5	7.0	B32656S1394+563	T3	192
		390	28.0 x 37.0 x 42.0	13.5	7.0	B32656S1394+566	T6	216
		390	28.0 x 37.0 x 42.0	13.5	7.0	B32656S1394+577	T7	192
		470	28.0 x 37.0 x 42.0	14.5	6.0	B32656S1474+408	T8	216
		470	28.0 x 37.0 x 42.0	14.5	6.0	B32656S1474+409	T9	216
		470	28.0 x 37.0 x 42.0	14.5	6.0	B32656S1474+410	T10	144
		470	28.0 x 37.0 x 42.0	14.5	6.0	B32656S1474+411	T11	216
		470	28.0 x 37.0 x 42.0	14.5	6.0	B32656S1474+418	T18	216
		470	28.0 x 37.0 x 42.0	14.5	6.0	B32656S1474+561	T1	216
		470	28.0 x 37.0 x 42.0	14.5	6.0	B32656S1474+562	T2	216
		470	28.0 x 37.0 x 42.0	14.5	6.0	B32656S1474+563	T3	192
		470	28.0 x 37.0 x 42.0	14.5	6.0	B32656S1474+566	T6	216
		470	28.0 x 37.0 x 42.0	14.5	6.0	B32656S1474+577	T7	192
		560	30.0 x 45.0 x 42.0	16.5	5.5	B32656S1564+408	T8	96
		560	30.0 x 45.0 x 42.0	16.5	5.5	B32656S1564+409	T9	96
		560	30.0 x 45.0 x 42.0	16.5	5.5	B32656S1564+410	T10	160
		560	30.0 x 45.0 x 42.0	16.5	5.5	B32656S1564+411	T11	128
		560	30.0 x 45.0 x 42.0	16.5	5.5	B32656S1564+418	T18	96
		560	30.0 x 45.0 x 42.0	16.5	5.5	B32656S1564+561	T1	96
		560	30.0 x 45.0 x 42.0	16.5	5.5	B32656S1564+562	T2	96
		560	30.0 x 45.0 x 42.0	16.5	5.5	B32656S1564+563	T3	192
		560	30.0 x 45.0 x 42.0	16.5	5.5	B32656S1564+566	T6	96
		560	30.0 x 45.0 x 42.0	16.5	5.5	B32656S1564+577	T7	192

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
1700	750	680	30.0 x 45.0 x 42.0	18.0	5.0	B32656S1684+408	T8	96
		680	30.0 x 45.0 x 42.0	18.0	5.0	B32656S1684+409	T9	96
		680	30.0 x 45.0 x 42.0	18.0	5.0	B32656S1684+410	T10	160
		680	30.0 x 45.0 x 42.0	18.0	5.0	B32656S1684+411	T11	128
		680	30.0 x 45.0 x 42.0	18.0	5.0	B32656S1684+418	T18	96
		680	30.0 x 45.0 x 42.0	18.0	5.0	B32656S1684+561	T1	96
		680	30.0 x 45.0 x 42.0	18.0	5.0	B32656S1684+562	T2	96
		680	30.0 x 45.0 x 42.0	18.0	5.0	B32656S1684+563	T3	192
		680	30.0 x 45.0 x 42.0	18.0	5.0	B32656S1684+566	T6	96
		680	30.0 x 45.0 x 42.0	18.0	5.0	B32656S1684+577	T7	192
		820	33.0 x 48.0 x 43.0	20.0	4.0	B32656S1824+408	T8	168
		820	33.0 x 48.0 x 43.0	20.0	4.0	B32656S1824+409	T9	168
		820	33.0 x 48.0 x 43.0	20.0	4.0	B32656S1824+410	T10	120
		820	33.0 x 48.0 x 43.0	20.0	4.0	B32656S1824+411	T11	112
		820	33.0 x 48.0 x 43.0	20.0	4.0	B32656S1824+418	T18	168
		820	33.0 x 48.0 x 43.0	20.0	4.0	B32656S1824+561	T1	168
		820	33.0 x 48.0 x 43.0	20.0	4.0	B32656S1824+562	T2	168
		820	33.0 x 48.0 x 43.0	20.0	4.0	B32656S1824+563	T3	128
		820	33.0 x 48.0 x 43.0	20.0	4.0	B32656S1824+566	T6	168
		820	33.0 x 48.0 x 43.0	20.0	4.0	B32656S1824+577	T7	168
2000	800	68	14.0 x 25.0 x 42.0	6.0	17.0	B32656S2683+408	T8	576
		68	14.0 x 25.0 x 42.0	6.0	17.0	B32656S2683+418	T18	576
		68	14.0 x 25.0 x 42.0	6.0	17.0	B32656S2683+563	T3	336
		68	14.0 x 25.0 x 42.0	6.0	17.0	B32656S2683+564	T4	576
		68	14.0 x 25.0 x 42.0	6.0	17.0	B32656S2683+565	T5	576
		100	14.0 x 25.0 x 42.0	6.5	15.0	B32656S2104+408	T8	576
		100	14.0 x 25.0 x 42.0	6.5	15.0	B32656S2104+418	T18	576
		100	14.0 x 25.0 x 42.0	6.5	15.0	B32656S2104+563	T3	336
		100	14.0 x 25.0 x 42.0	6.5	15.0	B32656S2104+564	T4	576
		100	14.0 x 25.0 x 42.0	6.5	15.0	B32656S2104+565	T5	576
		120	16.0 x 28.5 x 42.0	7.0	14.0	B32656S2124+408	T8	384
		120	16.0 x 28.5 x 42.0	7.0	14.0	B32656S2124+409	T9	384
		120	16.0 x 28.5 x 42.0	7.0	14.0	B32656S2124+411	T11	256
		120	16.0 x 28.5 x 42.0	7.0	14.0	B32656S2124+418	T18	384

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
2000	800	120	16.0 x 28.5 x 42.0	7.0	14.0	B32656S2124+561	T1	384
		120	16.0 x 28.5 x 42.0	7.0	14.0	B32656S2124+562	T2	384
		120	16.0 x 28.5 x 42.0	7.0	14.0	B32656S2124+563	T3	288
		120	16.0 x 28.5 x 42.0	7.0	14.0	B32656S2124+564	T4	384
		120	16.0 x 28.5 x 42.0	7.0	14.0	B32656S2124+565	T5	384
		120	16.0 x 28.5 x 42.0	7.0	14.0	B32656S2124+566	T6	384
		120	16.0 x 28.5 x 42.0	7.0	14.0	B32656S2124+577	T7	360
		150	18.0 x 32.5 x 42.0	8.0	13.0	B32656S2154+408	T8	280
		150	18.0 x 32.5 x 42.0	8.0	13.0	B32656S2154+409	T9	280
		150	18.0 x 32.5 x 42.0	8.0	13.0	B32656S2154+411	T11	224
		150	18.0 x 32.5 x 42.0	8.0	13.0	B32656S2154+418	T18	280
		150	18.0 x 32.5 x 42.0	8.0	13.0	B32656S2154+561	T1	280
		150	18.0 x 32.5 x 42.0	8.0	13.0	B32656S2154+562	T2	280
		150	18.0 x 32.5 x 42.0	8.0	13.0	B32656S2154+563	T3	240
		150	18.0 x 32.5 x 42.0	8.0	13.0	B32656S2154+564	T4	256
		150	18.0 x 32.5 x 42.0	8.0	13.0	B32656S2154+565	T5	256
		150	18.0 x 32.5 x 42.0	8.0	13.0	B32656S2154+566	T6	280
		150	18.0 x 32.5 x 42.0	8.0	13.0	B32656S2154+577	T7	312
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+408	T8	192
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+409	T9	192
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+410	T10	240
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+411	T11	192
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+418	T18	192
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+561	T1	192
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+562	T2	192
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+563	T3	208
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+564	T4	192
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+565	T5	192
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+566	T6	192
		220	20.0 x 39.5 x 42.0	11.0	9.0	B32656S2224+577	T7	288
		270	28.0 x 37.0 x 42.0	12.5	8.0	B32656S2274+408	T8	216
		270	28.0 x 37.0 x 42.0	12.5	8.0	B32656S2274+409	T9	216
		270	28.0 x 37.0 x 42.0	12.5	8.0	B32656S2274+410	T10	160
		270	28.0 x 37.0 x 42.0	12.5	8.0	B32656S2274+411	T11	144

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
2000	800	270	28.0 x 37.0 x 42.0	12.5	8.0	B32656S2274+418	T18	216
		270	28.0 x 37.0 x 42.0	12.5	8.0	B32656S2274+561	T1	216
		270	28.0 x 37.0 x 42.0	12.5	8.0	B32656S2274+562	T2	216
		270	28.0 x 37.0 x 42.0	12.5	8.0	B32656S2274+563	T3	192
		270	28.0 x 37.0 x 42.0	12.5	8.0	B32656S2274+566	T6	216
		270	28.0 x 37.0 x 42.0	12.5	8.0	B32656S2274+577	T7	192
		330	28.0 x 37.0 x 42.0	14.0	6.5	B32656S2334+408	T8	216
		330	28.0 x 37.0 x 42.0	14.0	6.5	B32656S2334+409	T9	216
		330	28.0 x 37.0 x 42.0	14.0	6.5	B32656S2334+410	T10	160
		330	28.0 x 37.0 x 42.0	14.0	6.5	B32656S2334+411	T11	144
		330	28.0 x 37.0 x 42.0	14.0	6.5	B32656S2334+418	T18	216
		330	28.0 x 37.0 x 42.0	14.0	6.5	B32656S2334+561	T1	216
		330	28.0 x 37.0 x 42.0	14.0	6.5	B32656S2334+562	T2	216
		330	28.0 x 37.0 x 42.0	14.0	6.5	B32656S2334+563	T3	192
		330	28.0 x 37.0 x 42.0	14.0	6.5	B32656S2334+566	T6	216
		330	28.0 x 37.0 x 42.0	14.0	6.5	B32656S2334+577	T7	192
		390	30.0 x 45.0 x 42.0	15.0	6.5	B32656S2394+408	T8	96
		390	30.0 x 45.0 x 42.0	15.0	6.5	B32656S2394+409	T9	96
		390	30.0 x 45.0 x 42.0	15.0	6.5	B32656S2394+410	T10	160
		390	30.0 x 45.0 x 42.0	15.0	6.5	B32656S2394+411	T11	128
		390	30.0 x 45.0 x 42.0	15.0	6.5	B32656S2394+418	T18	96
		390	30.0 x 45.0 x 42.0	15.0	6.5	B32656S2394+561	T1	96
		390	30.0 x 45.0 x 42.0	15.0	6.5	B32656S2394+562	T2	96
		390	30.0 x 45.0 x 42.0	15.0	6.5	B32656S2394+563	T3	192
		390	30.0 x 45.0 x 42.0	15.0	6.5	B32656S2394+566	T6	96
		390	30.0 x 45.0 x 42.0	15.0	6.5	B32656S2394+577	T7	192
		470	30.0 x 45.0 x 42.0	17.0	5.5	B32656S2474+408	T8	96
		470	30.0 x 45.0 x 42.0	17.0	5.5	B32656S2474+409	T9	96
		470	30.0 x 45.0 x 42.0	17.0	5.5	B32656S2474+410	T10	160
		470	30.0 x 45.0 x 42.0	17.0	5.5	B32656S2474+411	T11	128
		470	30.0 x 45.0 x 42.0	17.0	5.5	B32656S2474+418	T18	96
		470	30.0 x 45.0 x 42.0	17.0	5.5	B32656S2474+561	T1	96
		470	30.0 x 45.0 x 42.0	17.0	5.5	B32656S2474+562	T2	96

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
2000	800	470	30.0 x 45.0 x 42.0	17.0	5.5	B32656S2474+563	T3	192
		470	30.0 x 45.0 x 42.0	17.0	5.5	B32656S2474+566	T6	96
		470	30.0 x 45.0 x 42.0	17.0	5.5	B32656S2474+577	T7	192
		560	33.0 x 48.0 x 43.0	19.0	4.5	B32656S2564+408	T8	168
		560	33.0 x 48.0 x 43.0	19.0	4.5	B32656S2564+409	T9	168
		560	33.0 x 48.0 x 43.0	19.0	4.5	B32656S2564+410	T10	120
		560	33.0 x 48.0 x 43.0	19.0	4.5	B32656S2564+411	T11	112
		560	33.0 x 48.0 x 43.0	19.0	4.5	B32656S2564+418	T18	168
		560	33.0 x 48.0 x 43.0	19.0	4.5	B32656S2564+561	T1	168
		560	33.0 x 48.0 x 43.0	19.0	4.5	B32656S2564+562	T2	168
		560	33.0 x 48.0 x 43.0	19.0	4.5	B32656S2564+563	T3	128
		560	33.0 x 48.0 x 43.0	19.0	4.5	B32656S2564+566	T6	168
		560	33.0 x 48.0 x 43.0	19.0	4.5	B32656S2564+577	T7	168

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
850	450	1500	22.5 x 33.0 x 57.5	12.0	7.0	B32658S8155+414	T14	176
		1500	22.5 x 33.0 x 57.5	12.0	7.0	B32658S8155+416	T16	176
		1800	22.5 x 33.0 x 57.5	13.0	6.5	B32658S8185+414	T14	176
		1800	22.5 x 33.0 x 57.5	13.0	6.5	B32658S8185+416	T16	176
		2200	22.5 x 33.0 x 57.5	14.5	5.5	B32658S8225+414	T14	176
		2200	22.5 x 33.0 x 57.5	14.5	5.5	B32658S8225+416	T16	176
		2700	27.0 x 39.5 x 57.5	18.0	5.0	B32658S8275+414	T14	144
		2700	27.0 x 39.5 x 57.5	18.0	5.0	B32658S8275+415	T15	144
		2700	27.0 x 39.5 x 57.5	18.0	5.0	B32658S8275+416	T16	144
		2700	27.0 x 39.5 x 57.5	18.0	5.0	B32658S8275+417	T17	144
		3000	27.0 x 39.5 x 57.5	19.0	4.5	B32658S8305+414	T14	144
		3000	27.0 x 39.5 x 57.5	19.0	4.5	B32658S8305+415	T15	144
		3000	27.0 x 39.5 x 57.5	19.0	4.5	B32658S8305+416	T16	144
		3000	27.0 x 39.5 x 57.5	19.0	4.5	B32658S8305+417	T17	144
		3300	27.0 x 39.5 x 57.5	19.0	4.5	B32658S8335K414	T14	144
		3300	27.0 x 39.5 x 57.5	19.0	4.5	B32658S8335K415	T15	144
		3300	27.0 x 39.5 x 57.5	19.0	4.5	B32658S8335K416	T16	144
		3300	27.0 x 39.5 x 57.5	19.0	4.5	B32658S8335K417	T17	144
		4000	30.0 x 45.0 x 57.5	21.0	4.0	B32658S8405+414	T14	128
		4000	30.0 x 45.0 x 57.5	21.0	4.0	B32658S8405+415	T15	128
		4000	30.0 x 45.0 x 57.5	21.0	4.0	B32658S8405+416	T16	128
		4000	30.0 x 45.0 x 57.5	21.0	4.0	B32658S8405+417	T17	128
		4500	30.0 x 45.0 x 57.5	22.0	3.7	B32658S8455+414	T14	128
		4500	30.0 x 45.0 x 57.5	22.0	3.7	B32658S8455+415	T15	128
		4500	30.0 x 45.0 x 57.5	22.0	3.7	B32658S8455+416	T16	128
		4500	30.0 x 45.0 x 57.5	22.0	3.7	B32658S8455+417	T17	128
		4700	35.0 x 50.0 x 57.5	23.0	3.5	B32658S8475+414	T14	112
		4700	35.0 x 50.0 x 57.5	23.0	3.5	B32658S8475+415	T15	112
		4700	35.0 x 50.0 x 57.5	23.0	3.5	B32658S8475+416	T16	112
		4700	35.0 x 50.0 x 57.5	23.0	3.5	B32658S8475+417	T17	112

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
850	450	5000	35.0 x 50.0 x 57.5	24.0	3.2	B32658S8505+414	T14	112
		5000	35.0 x 50.0 x 57.5	24.0	3.2	B32658S8505+415	T15	112
		5000	35.0 x 50.0 x 57.5	24.0	3.2	B32658S8505+416	T16	112
		5000	35.0 x 50.0 x 57.5	24.0	3.2	B32658S8505+417	T17	112
		5600	35.0 x 50.0 x 57.5	27.0	2.8	B32658S8565+414	T14	112
		5600	35.0 x 50.0 x 57.5	27.0	2.8	B32658S8565+415	T15	112
		5600	35.0 x 50.0 x 57.5	27.0	2.8	B32658S8565+416	T16	112
		5600	35.0 x 50.0 x 57.5	27.0	2.8	B32658S8565+417	T17	112
1000	480	1000	22.5 x 33.0 x 57.5	11.0	8.0	B32658S0105+414	T14	176
		1000	22.5 x 33.0 x 57.5	11.0	8.0	B32658S0105+416	T16	176
		1500	22.5 x 33.0 x 57.5	13.5	6.5	B32658S0155+414	T14	176
		1500	22.5 x 33.0 x 57.5	13.5	6.5	B32658S0155+416	T16	176
		1800	27.0 x 39.5 x 57.5	15.5	6.0	B32658S0185+414	T14	144
		1800	27.0 x 39.5 x 57.5	15.5	6.0	B32658S0185+415	T15	144
		1800	27.0 x 39.5 x 57.5	15.5	6.0	B32658S0185+416	T16	144
		1800	27.0 x 39.5 x 57.5	15.5	6.0	B32658S0185+417	T17	144
		2200	27.0 x 39.5 x 57.5	17.0	5.0	B32658S0225+414	T14	144
		2200	27.0 x 39.5 x 57.5	17.0	5.0	B32658S0225+415	T15	144
		2200	27.0 x 39.5 x 57.5	17.0	5.0	B32658S0225+416	T16	144
		2200	27.0 x 39.5 x 57.5	17.0	5.0	B32658S0225+417	T17	144
		2700	30.0 x 45.0 x 57.5	20.0	4.5	B32658S0275+414	T14	128
		2700	30.0 x 45.0 x 57.5	20.0	4.5	B32658S0275+415	T15	128
		2700	30.0 x 45.0 x 57.5	20.0	4.5	B32658S0275+416	T16	128
		2700	30.0 x 45.0 x 57.5	20.0	4.5	B32658S0275+417	T17	128
		3000	30.0 x 45.0 x 57.5	21.0	4.0	B32658S0305+414	T14	128
		3000	30.0 x 45.0 x 57.5	21.0	4.0	B32658S0305+415	T15	128
		3000	30.0 x 45.0 x 57.5	21.0	4.0	B32658S0305+416	T16	128
		3000	30.0 x 45.0 x 57.5	21.0	4.0	B32658S0305+417	T17	128
		3300	35.0 x 50.0 x 57.5	22.0	4.0	B32658S0335+414	T14	112
		3300	35.0 x 50.0 x 57.5	22.0	4.0	B32658S0335+415	T15	112
		3300	35.0 x 50.0 x 57.5	22.0	4.0	B32658S0335+416	T16	112
		3300	35.0 x 50.0 x 57.5	22.0	4.0	B32658S0335+417	T17	112

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
1000	480	4000	35.0 x 50.0 x 57.5	24.0	3.5	B32658S0405+414	T14	112
		4000	35.0 x 50.0 x 57.5	24.0	3.5	B32658S0405+415	T15	112
		4000	35.0 x 50.0 x 57.5	24.0	3.5	B32658S0405+416	T16	112
		4000	35.0 x 50.0 x 57.5	24.0	3.5	B32658S0405+417	T17	112
		4200	35.0 x 50.0 x 57.5	24.0	3.5	B32658S0425+414	T14	112
		4200	35.0 x 50.0 x 57.5	24.0	3.5	B32658S0425+415	T15	112
		4200	35.0 x 50.0 x 57.5	24.0	3.5	B32658S0425+416	T16	112
		4200	35.0 x 50.0 x 57.5	24.0	3.5	B32658S0425+417	T17	112
1250	500	820	22.5 x 33.0 x 57.5	11.5	7.5	B32658S7824+414	T14	176
		820	22.5 x 33.0 x 57.5	11.5	7.5	B32658S7824+416	T16	176
		1000	22.5 x 33.0 x 57.5	12.5	7.0	B32658S7105+414	T14	176
		1000	22.5 x 33.0 x 57.5	12.5	7.0	B32658S7105+416	T16	176
		1200	27.0 x 39.5 x 57.5	14.5	7.0	B32658S7125+414	T14	144
		1200	27.0 x 39.5 x 57.5	14.5	7.0	B32658S7125+415	T15	144
		1200	27.0 x 39.5 x 57.5	14.5	7.0	B32658S7125+416	T16	144
		1200	27.0 x 39.5 x 57.5	14.5	7.0	B32658S7125+417	T17	144
		1500	27.0 x 39.5 x 57.5	15.0	6.5	B32658S7155+414	T14	144
		1500	27.0 x 39.5 x 57.5	15.0	6.5	B32658S7155+415	T15	144
		1500	27.0 x 39.5 x 57.5	15.0	6.5	B32658S7155+416	T16	144
		1500	27.0 x 39.5 x 57.5	15.0	6.5	B32658S7155+417	T17	144
		1800	27.0 x 39.5 x 57.5	16.5	5.5	B32658S7185+414	T14	144
		1800	27.0 x 39.5 x 57.5	16.5	5.5	B32658S7185+415	T15	144
		1800	27.0 x 39.5 x 57.5	16.5	5.5	B32658S7185+416	T16	144
		1800	27.0 x 39.5 x 57.5	16.5	5.5	B32658S7185+417	T17	144
		2200	30.0 x 45.0 x 57.5	19.0	4.7	B32658S7225+414	T14	128
		2200	30.0 x 45.0 x 57.5	19.0	4.7	B32658S7225+415	T15	128
		2200	30.0 x 45.0 x 57.5	19.0	4.7	B32658S7225+416	T16	128
		2200	30.0 x 45.0 x 57.5	19.0	4.7	B32658S7225+417	T17	128
		2700	35.0 x 50.0 x 57.5	22.0	4.0	B32658S7275+414	T14	112
		2700	35.0 x 50.0 x 57.5	22.0	4.0	B32658S7275+415	T15	112
		2700	35.0 x 50.0 x 57.5	22.0	4.0	B32658S7275+416	T16	112
		2700	35.0 x 50.0 x 57.5	22.0	4.0	B32658S7275+417	T17	112

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
1250	500	3000	35.0 x 50.0 x 57.5	24.0	3.5	B32658S7305+414	T14	112
		3000	35.0 x 50.0 x 57.5	24.0	3.5	B32658S7305+415	T15	112
		3000	35.0 x 50.0 x 57.5	24.0	3.5	B32658S7305+416	T16	112
		3000	35.0 x 50.0 x 57.5	24.0	3.5	B32658S7305+417	T17	112
1700	750	470	22.5 x 33.0 x 57.5	11.5	9.0	B32658S1474+414	T14	176
		470	22.5 x 33.0 x 57.5	11.5	9.0	B32658S1474+416	T16	176
		680	27.0 x 39.5 x 57.5	14.5	7.5	B32658S1684+414	T14	144
		680	27.0 x 39.5 x 57.5	14.5	7.5	B32658S1684+415	T15	144
		680	27.0 x 39.5 x 57.5	14.5	7.5	B32658S1684+416	T16	144
		680	27.0 x 39.5 x 57.5	14.5	7.5	B32658S1684+417	T17	144
		1000	30.0 x 45.0 x 57.5	16.5	6.7	B32658S1105+414	T14	128
		1000	30.0 x 45.0 x 57.5	16.5	6.7	B32658S1105+415	T15	128
		1000	30.0 x 45.0 x 57.5	16.5	6.7	B32658S1105+416	T16	128
		1000	30.0 x 45.0 x 57.5	16.5	6.7	B32658S1105+417	T17	128
		1200	35.0 x 50.0 x 57.5	18.5	6.2	B32658S1125+414	T14	112
		1200	35.0 x 50.0 x 57.5	18.5	6.2	B32658S1125+415	T15	112
		1200	35.0 x 50.0 x 57.5	18.5	6.2	B32658S1125+416	T16	112
		1200	35.0 x 50.0 x 57.5	18.5	6.2	B32658S1125+417	T17	112
		1400	35.0 x 50.0 x 57.5	20.0	5.5	B32658S1145+414	T14	112
		1400	35.0 x 50.0 x 57.5	20.0	5.5	B32658S1145+415	T15	112
		1400	35.0 x 50.0 x 57.5	20.0	5.5	B32658S1145+416	T16	112
		1400	35.0 x 50.0 x 57.5	20.0	5.5	B32658S1145+417	T17	112
2000	800	330	22.5 x 33.0 x 57.5	11.5	9.0	B32658S2334+414	T14	176
		330	22.5 x 33.0 x 57.5	11.5	9.0	B32658S2334+416	T16	176
		470	27.0 x 39.5 x 57.5	14.0	8.0	B32658S2474+414	T14	144
		470	27.0 x 39.5 x 57.5	14.0	8.0	B32658S2474+415	T15	144
		470	27.0 x 39.5 x 57.5	14.0	8.0	B32658S2474+416	T16	144
		470	27.0 x 39.5 x 57.5	14.0	8.0	B32658S2474+417	T17	144
		680	30.0 x 45.0 x 57.5	16.5	7.0	B32658S2684+414	T14	128
		680	30.0 x 45.0 x 57.5	16.5	7.0	B32658S2684+415	T15	128
		680	30.0 x 45.0 x 57.5	16.5	7.0	B32658S2684+416	T16	128
		680	30.0 x 45.0 x 57.5	16.5	7.0	B32658S2684+417	T17	128

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Ordering codes and packing units

V_R	V_{RMS} f ≤1kHz	C_R	Max. dimensions w x h x l	I_{RMS} 100 kHz	ESR_{typ} 100 kHz	Ordering code (composition see below)	Ter-minal	pcs./ MOQ
V DC	V AC	nF	mm	A	mΩ			
2000	800	820	35.0 x 50.0 x 57.5	18.0	6.5	B32658S2824+414	T14	112
		820	35.0 x 50.0 x 57.5	18.0	6.5	B32658S2824+415	T15	112
		820	35.0 x 50.0 x 57.5	18.0	6.5	B32658S2824+416	T16	112
		820	35.0 x 50.0 x 57.5	18.0	6.5	B32658S2824+417	T17	112
		900	35.0 x 50.0 x 57.5	19.0	6.0	B32658S2904+414	T14	112
		900	35.0 x 50.0 x 57.5	19.0	6.0	B32658S2904+415	T15	112
		900	35.0 x 50.0 x 57.5	19.0	6.0	B32658S2904+416	T16	112
		900	35.0 x 50.0 x 57.5	19.0	6.0	B32658S2904+417	T17	112

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

K = ±10%
J = ±5%

Technical data

Reference standard: IEC 60384-16:2005 and AEC-Q200D. All data given at T = 20 °C, unless otherwise specified.

Operating temperature range	Max. operating temperature $T_{op,max}$ +110 °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 20 °C (upper limit values)	at	$C_R \leq 0.1$ µF	0.1 µF $< C_R \leq 1$ µF	$C_R > 1$ µF
	1 kHz	–	0.5	0.5
	10 kHz	–	0.8	1.5
	100 kHz	5.0	–	–
Insulation resistance R_{ins} or time constant $\tau = C_R \cdot R_{ins}$ at 20 °C, rel. humidity ≤65% (minimum as-delivered values)	$C_R \leq 0.33$ µF	$C_R > 0.33$ µF		
	100 GΩ	30000 s		
DC test voltage	1.6 · V_R, 2 s			
Category voltage V_C (continuous operation with V_{DC} or V_{AC} at f ≤1 kHz)	T_{op} (°C)	DC voltage derating	AC voltage derating	
	$T_{op} \leq 85$ $85 < T_{op} \leq 110$	$V_C = V_R$ $V_C = V_R \cdot (165\text{-}T_{op})/80$	$V_{C,RMS} = V_{RMS}$ $V_{C,RMS} = V_{RMS} \cdot (165\text{-}T_{op})/80$	
Operating voltage V_{op} for short operating periods (V_{DC} or V_{AC} at f ≤1 kHz)	T_{op} (°C)	DC voltage (max. hours)	AC voltage (max. hours)	
	$T_{op} \leq 85$ $85 < T_{op} \leq 100$	$V_{op} = 1.25 \cdot V_C$ (2000 h) $V_{op} = 1.25 \cdot V_C$ (1000 h)	$V_{op} = 1.0 \cdot V_{C,RMS}$ (2000 h) $V_{op} = 1.0 \cdot V_{C,RMS}$ (1000 h)	
Biased humidity Limit values after biased humidity test	1000 h / 40 °C / 93% relative humidity with $V_{R,DC}$ Capacitance change $\lvert\Delta C/C\rvert$ ≤3% Dissipation factor change ≤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 Service life t_{SL} Failure criteria: Total failure Failure due to variation of parameters	1 fit (≤1 · 10^{-9}/h) at 0.5 · V_R, 40 °C 200 000 h at 1.0 · V_R, T_{op} = 85 °C Considered self heating for this product family is 15 °C. For conversion to other operating conditions and temperatures, refer to chapter "Quality, 2 Reliability". Short circuit or open circuit Capacitance change $\lvert\Delta C/C\rvert$ >10% 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/µs.

Note:

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

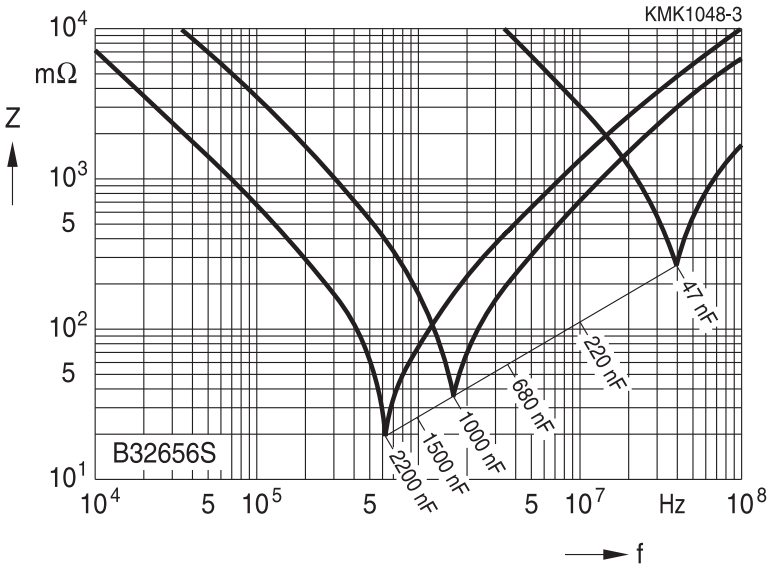
dV/dt and k_0 values B32656S

V_R (V DC)	V_{RMS} (V AC)	dV/dt in V/µs	k_0 in V^2/µs
850	450	400	680 000
1000	480	450	900 000
1250	500	500	1 250 000
1700	750	600	1 920 000
2000	800	700	2 800 000

dV/dt and k_0 values B32658S

V_R (V DC)	V_{RMS} (V AC)	dV/dt in V/µs	k_0 in V^2/µs
850	450	275	467 500
1000	480	300	600 000
1250	500	350	875 000
1700	750	400	1 360 000
2000	800	475	1 900 000

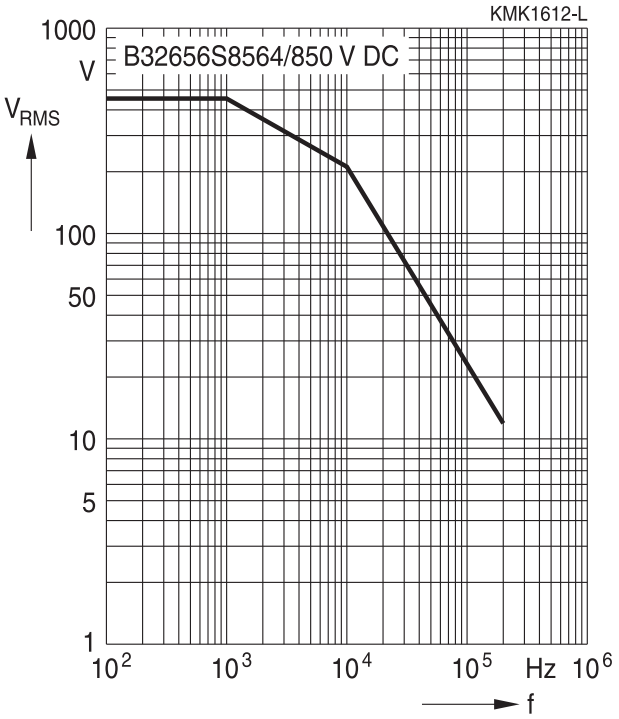
Impedance Z versus frequency f
(typical values)



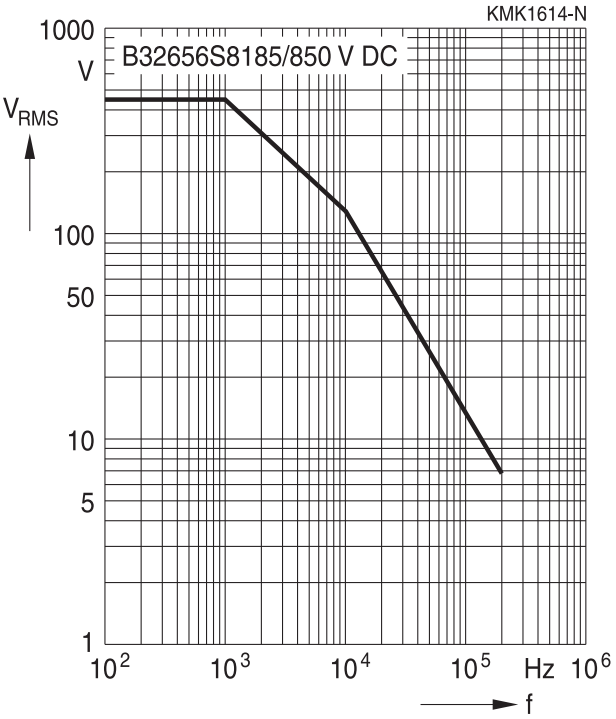
Permissible AC voltage V_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please refer to "General technical information", section 3.2.3.

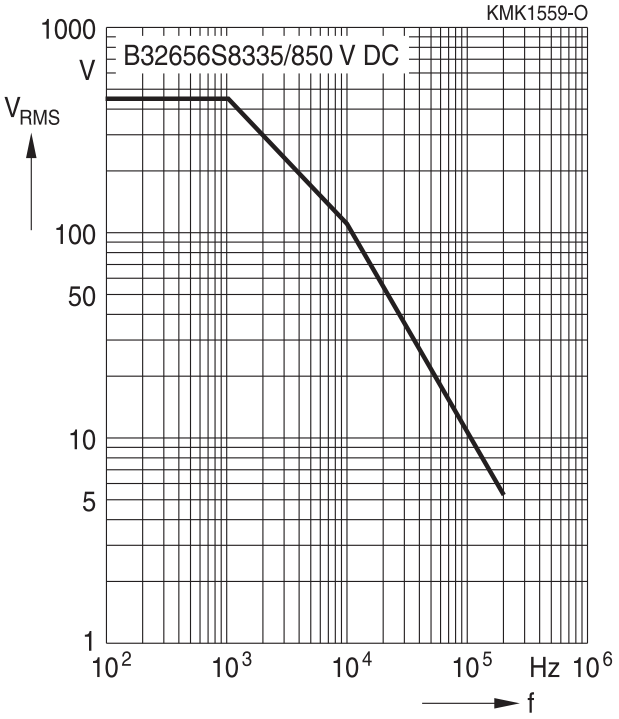
850 V DC/450 V AC



850 V DC/450 V AC



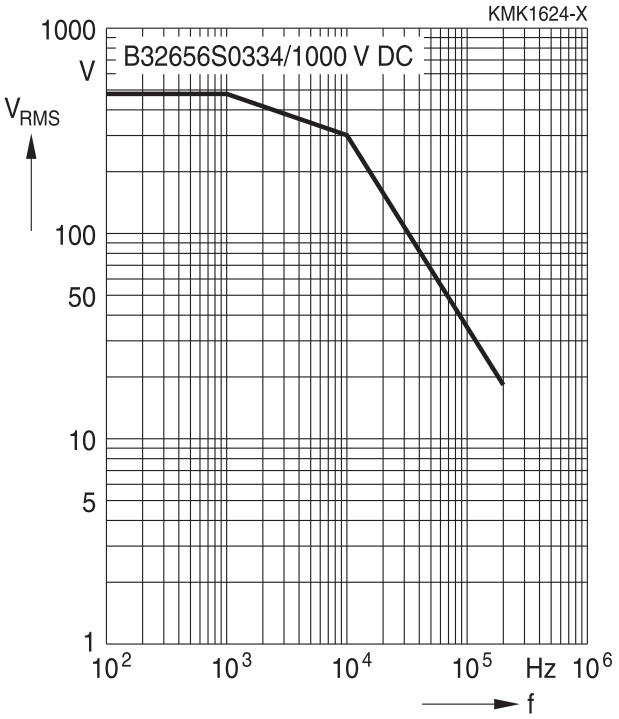
850 V DC/450 V AC



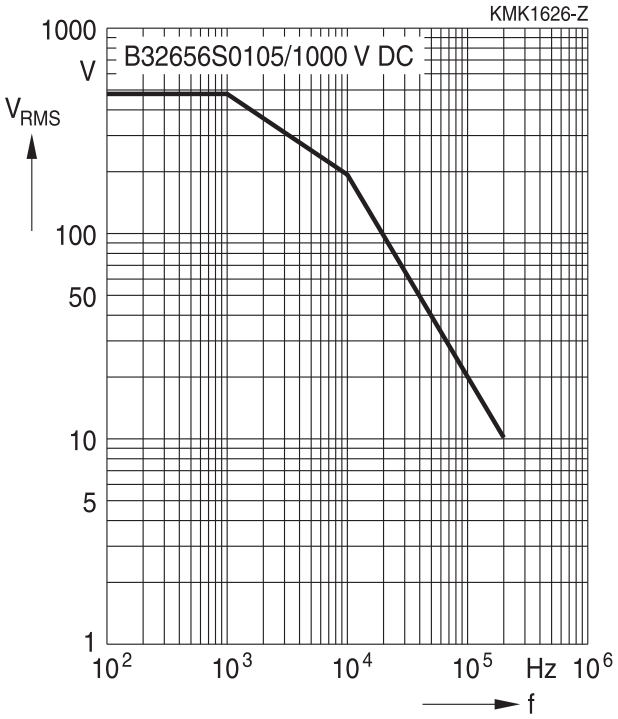
Permissible AC voltage V_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please refer to "General technical information", section 3.2.3.

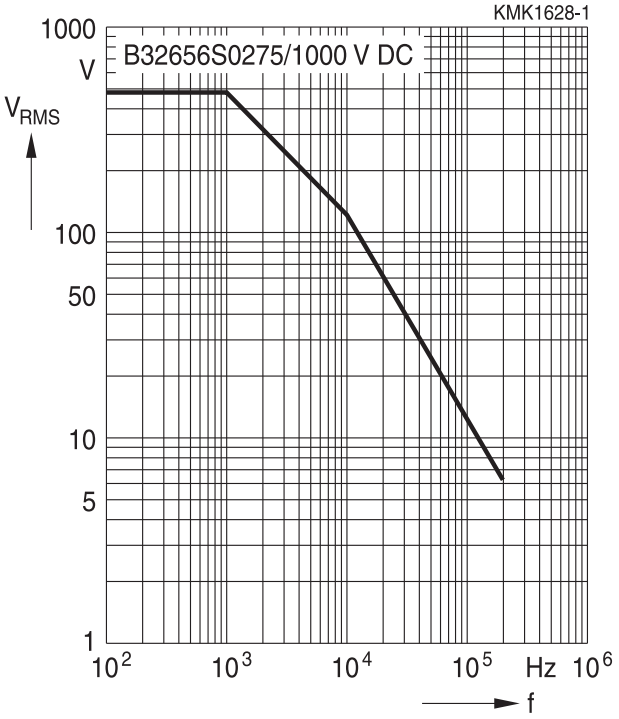
1000 V DC/480 V AC



1000 V DC/480 V AC



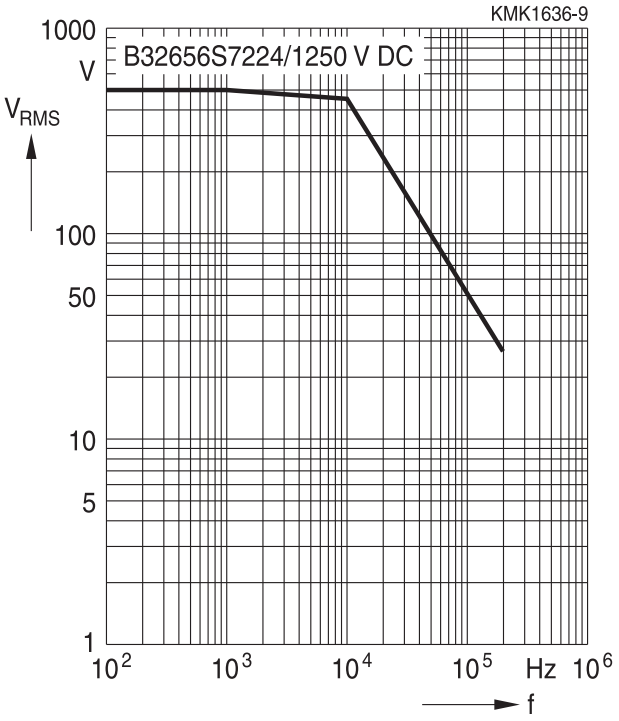
1000 V DC/480 V AC



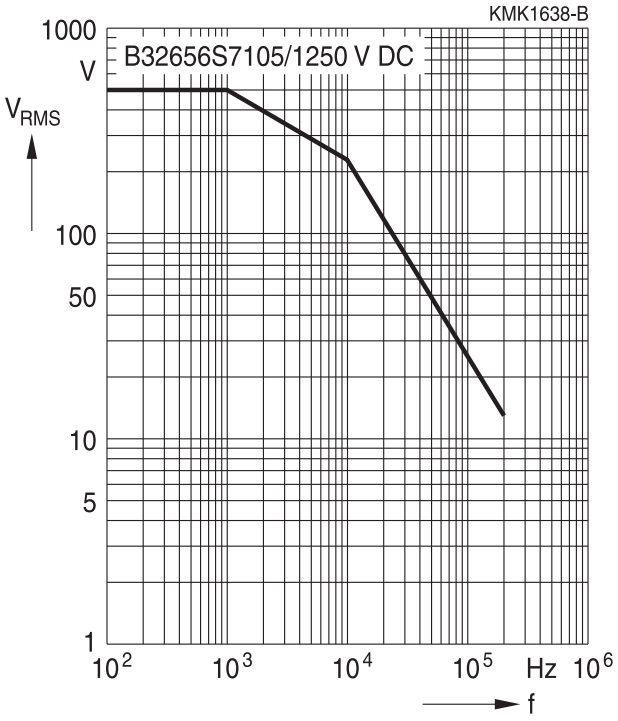
Permissible AC voltage V_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please refer to "General technical information", section 3.2.3.

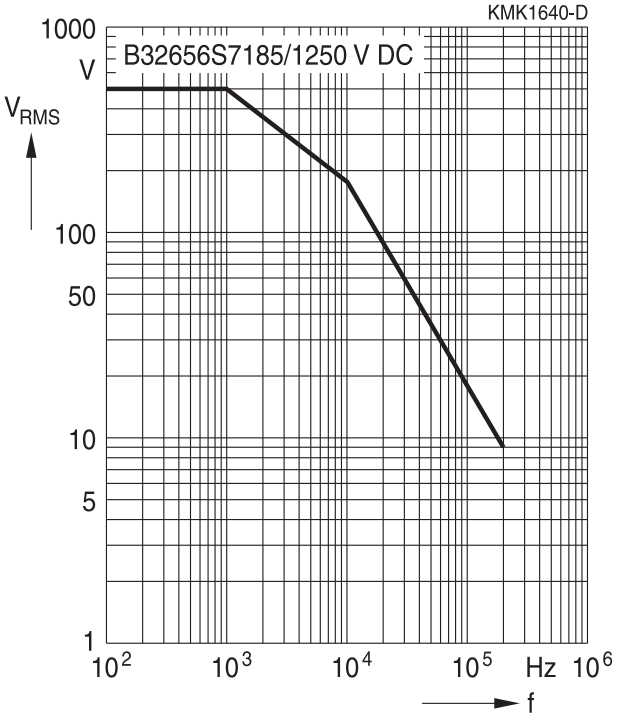
1250 V DC/500 V AC



1250 V DC/500 V AC



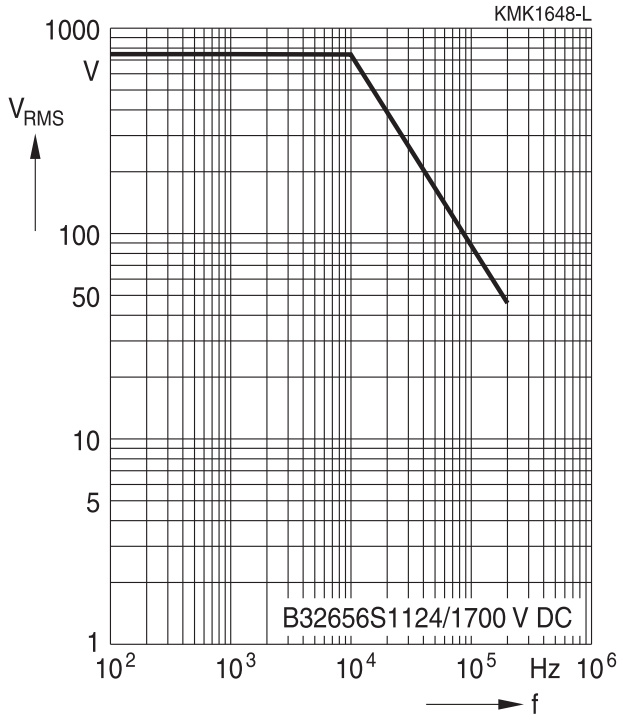
1250 V DC/500 V AC



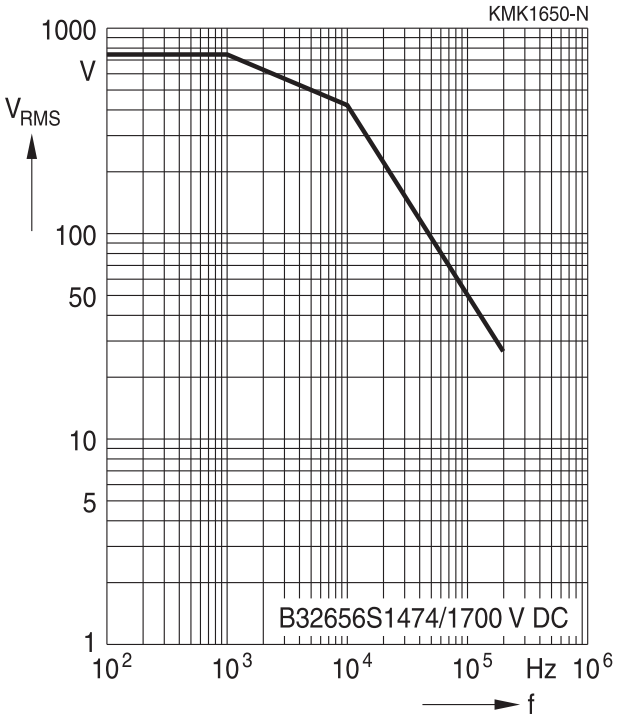
Permissible AC voltage V_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please refer to "General technical information", section 3.2.3.

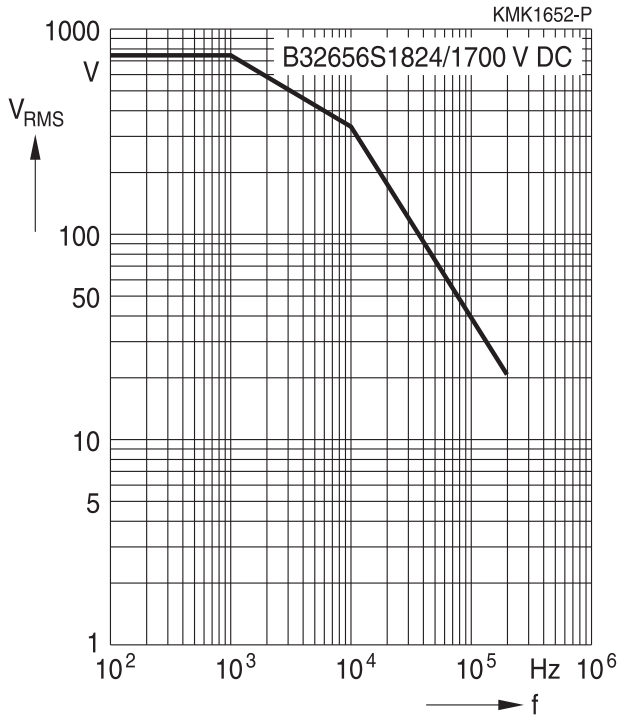
1700 V DC/750 V AC



1700 V DC/750 V AC



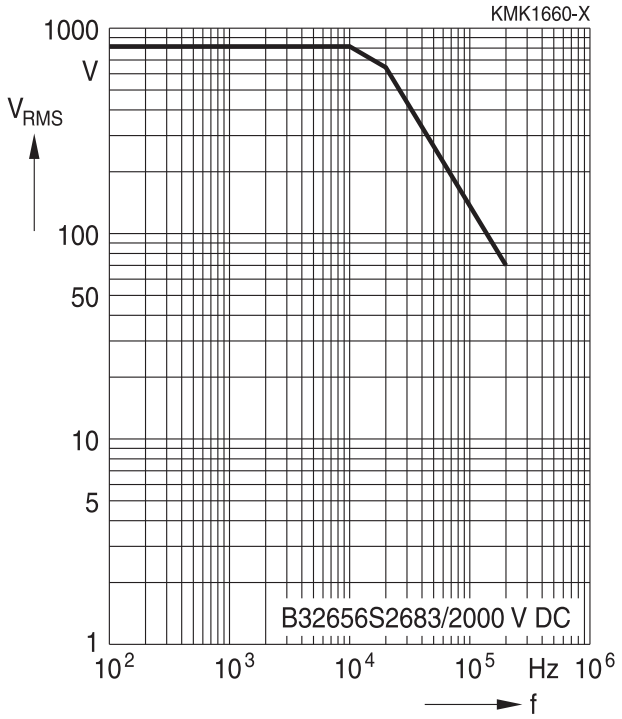
1700 V DC/750 V AC



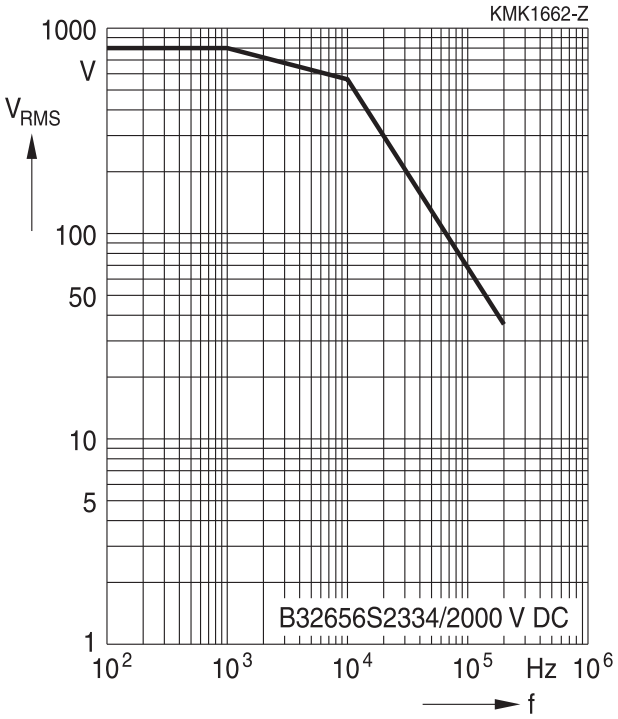
Permissible AC voltage V_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please refer to "General technical information", section 3.2.3.

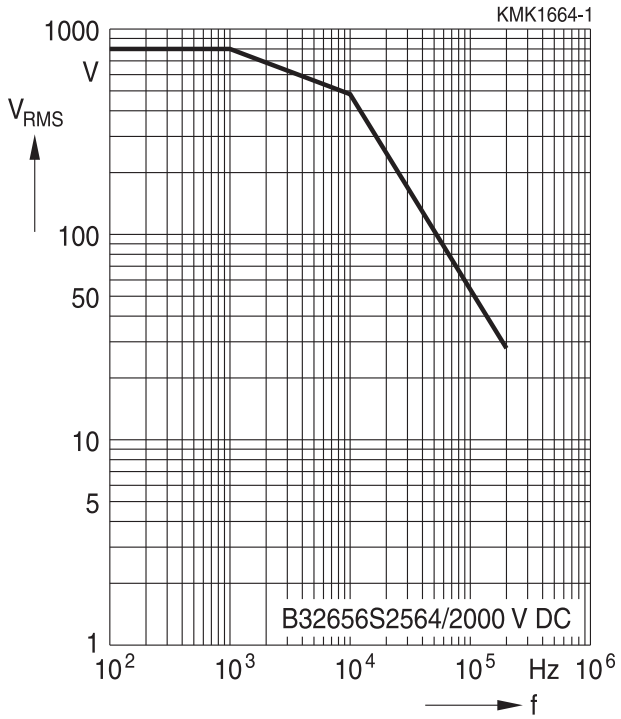
2000 V DC/800 V AC



2000 V DC/800 V AC



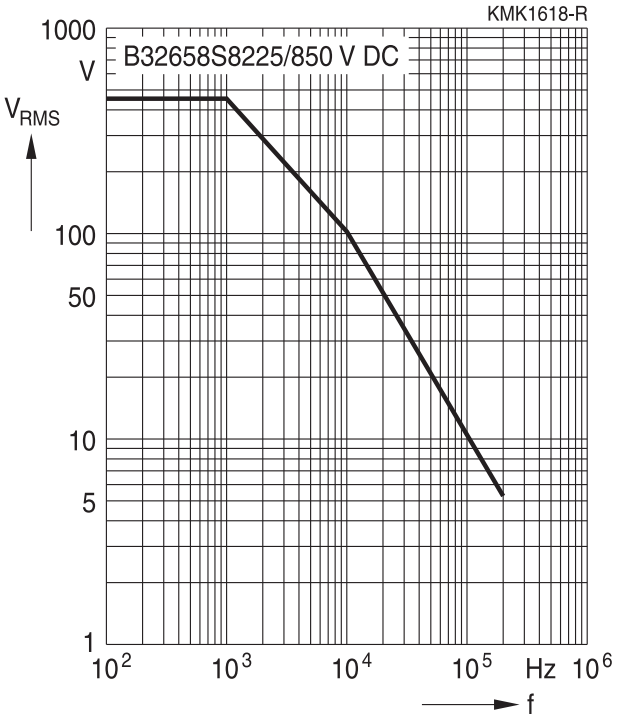
2000 V DC/800 V AC



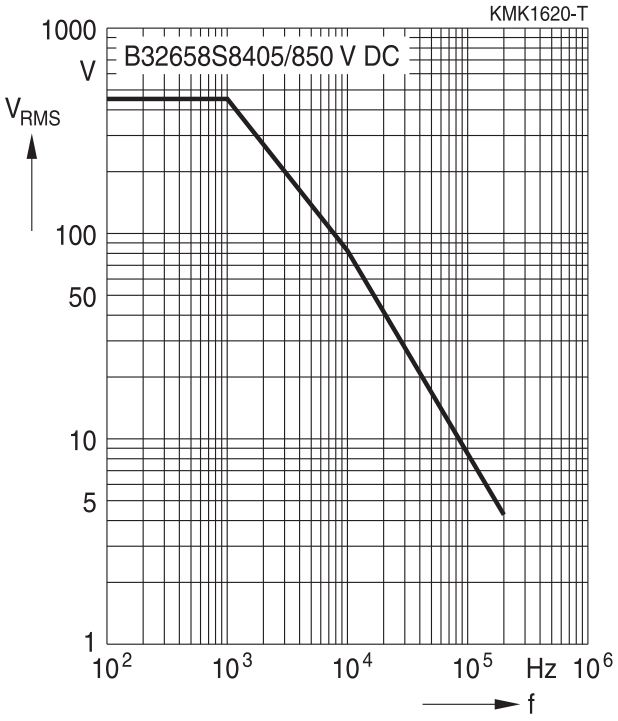
Permissible AC voltage V_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please refer to "General technical information", section 3.2.3.

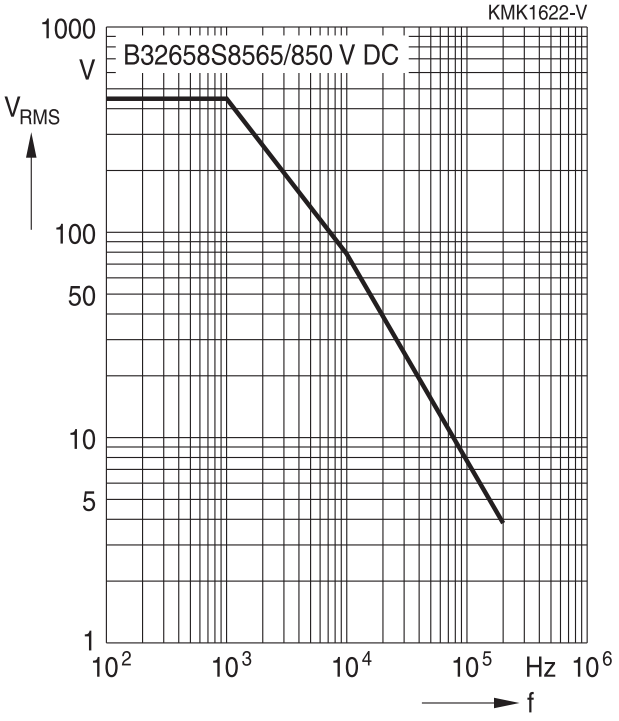
850 V DC/450 V AC



850 V DC/450 V AC



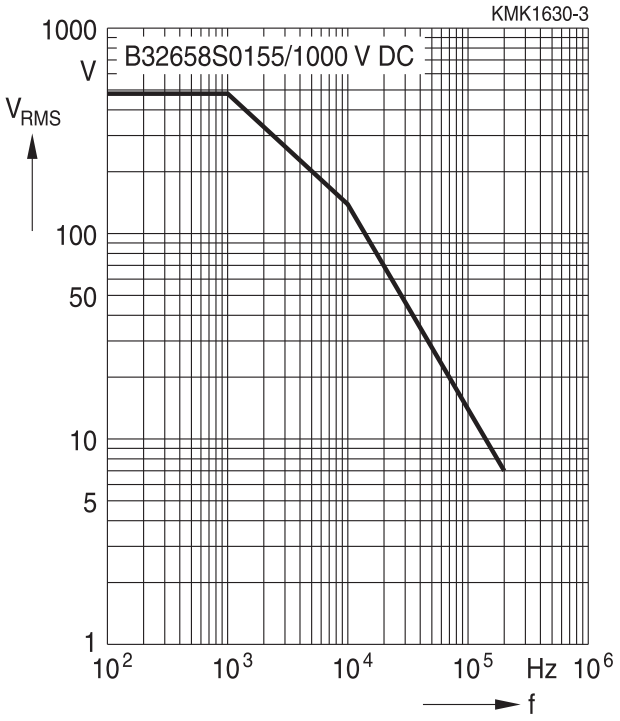
850 V DC/450 V AC



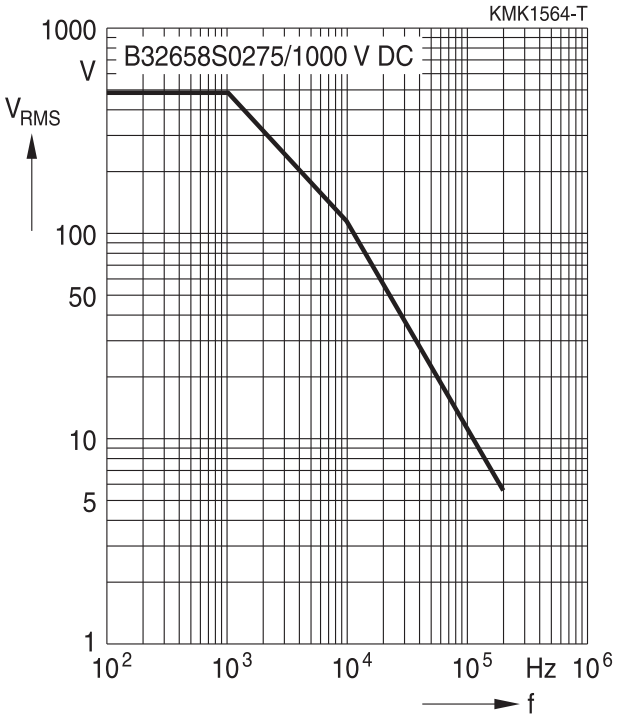
Permissible AC voltage V_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please refer to "General technical information", section 3.2.3.

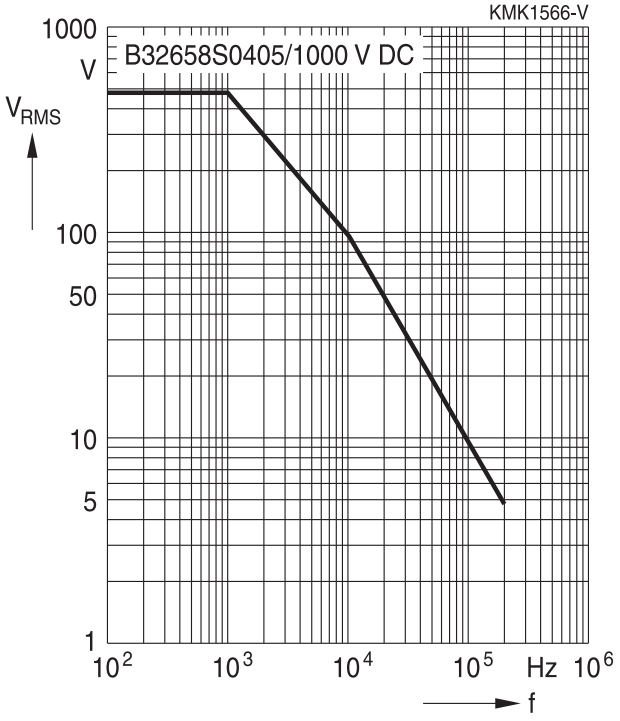
1000 V DC/480 V AC



1000 V DC/480 V AC



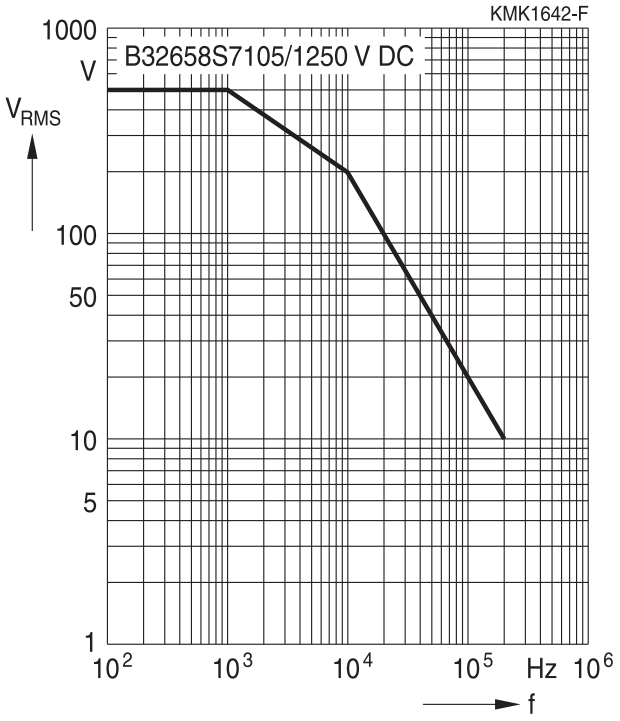
1000 V DC/480 V AC



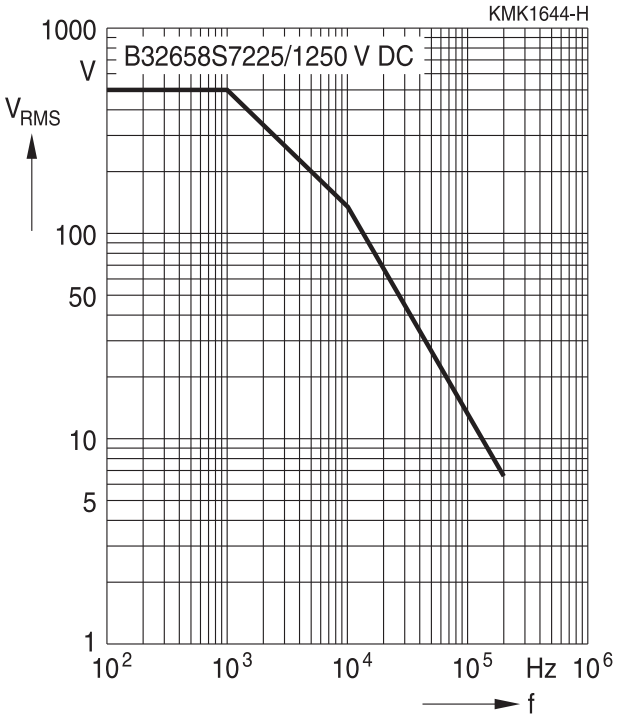
Permissible AC voltage V_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please refer to "General technical information", section 3.2.3.

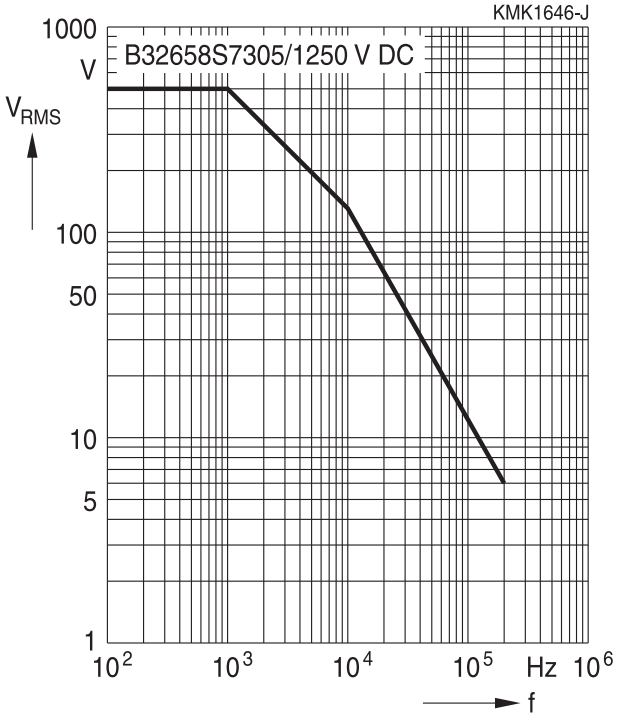
1250 V DC/500 V AC



1250 V DC/500 V AC



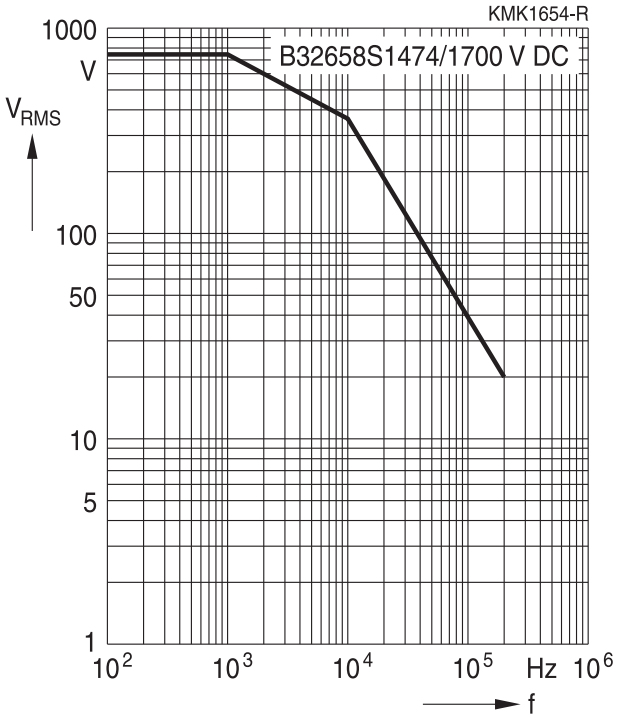
1250 V DC/500 V AC



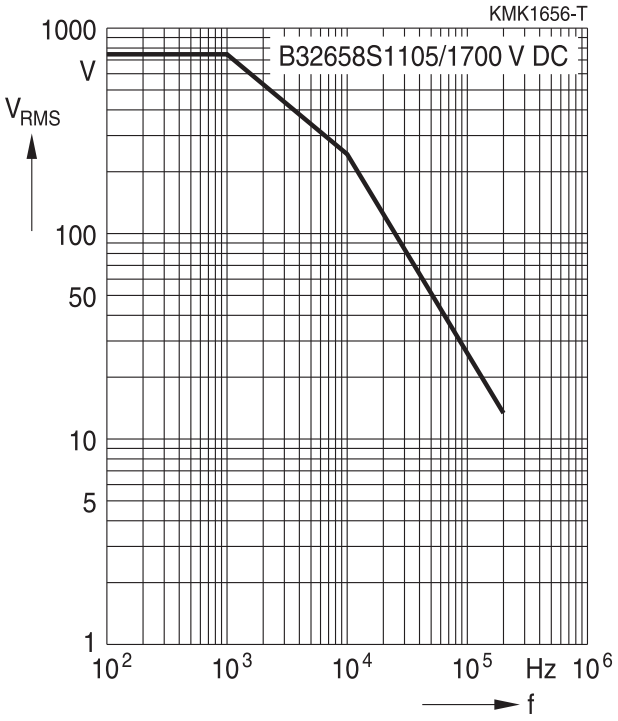
Permissible AC voltage V_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please refer to "General technical information", section 3.2.3.

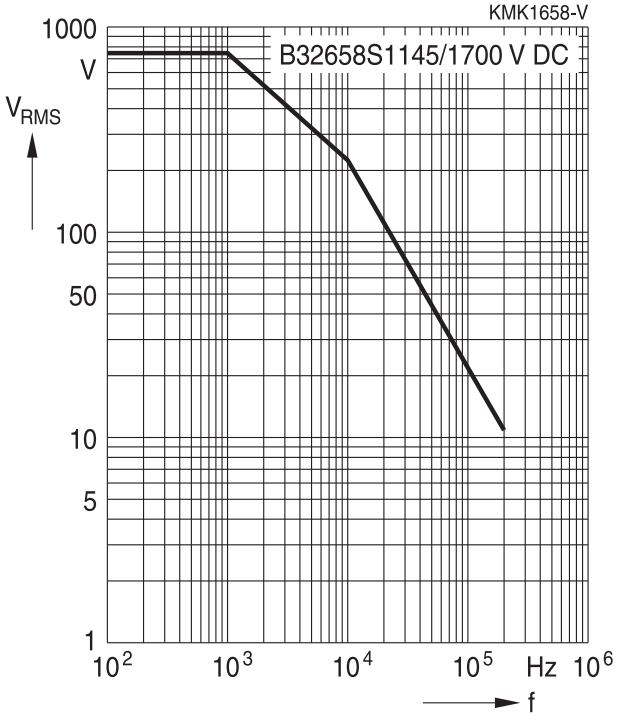
1700 V DC/750 V AC



1700 V DC/750 V AC



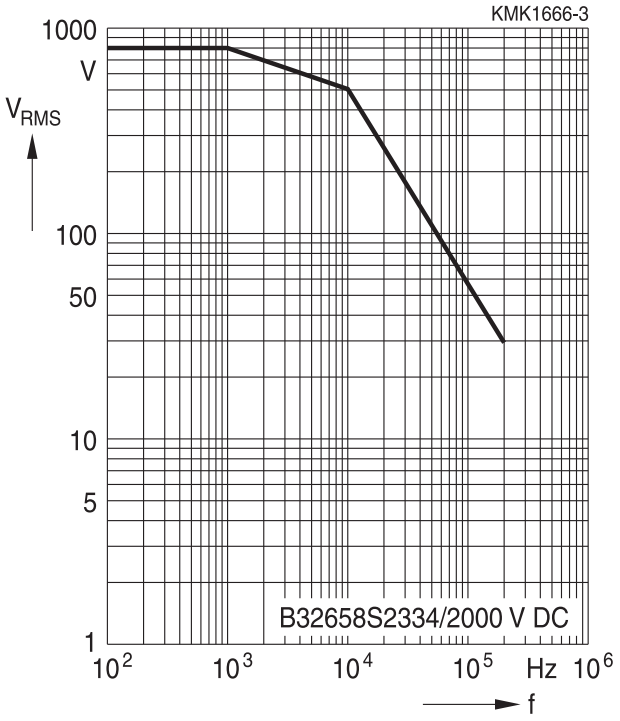
1700 V DC/750 V AC



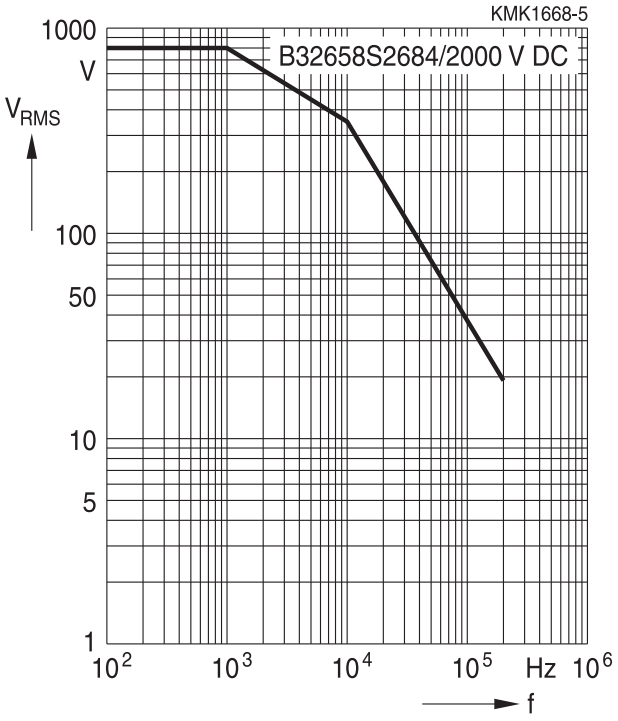
Permissible AC voltage V_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please refer to "General technical information", section 3.2.3.

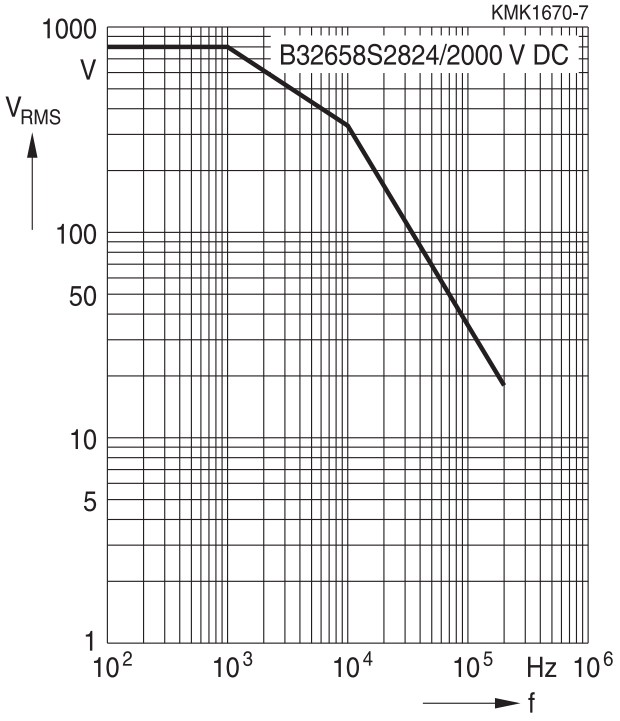
2000 V DC/800 V AC



2000 V DC/800 V AC



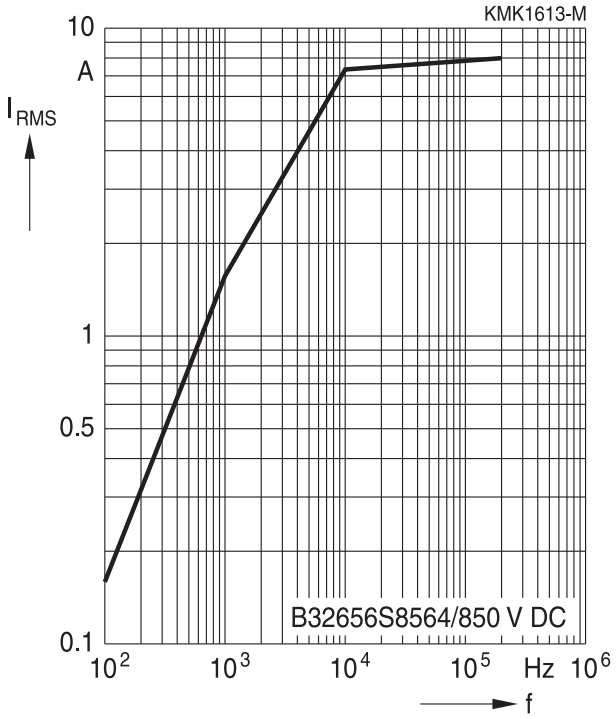
2000 V DC/800 V AC



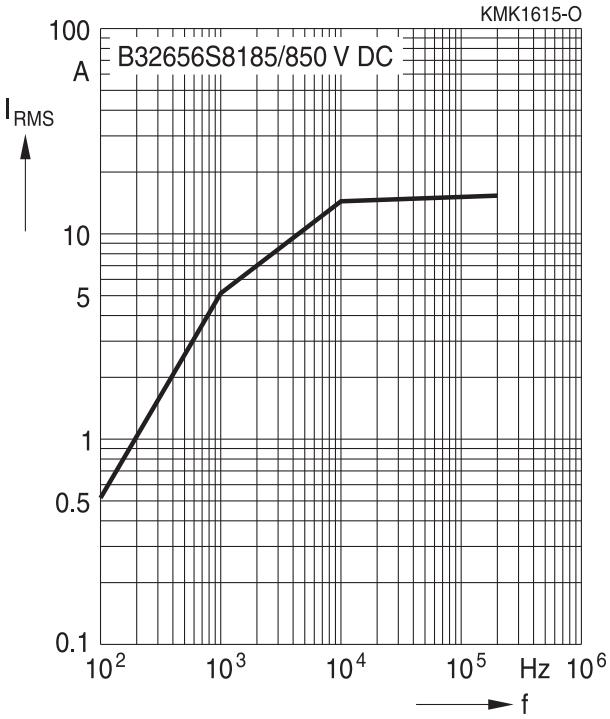
Permissible current I_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please use derating factor F_T.

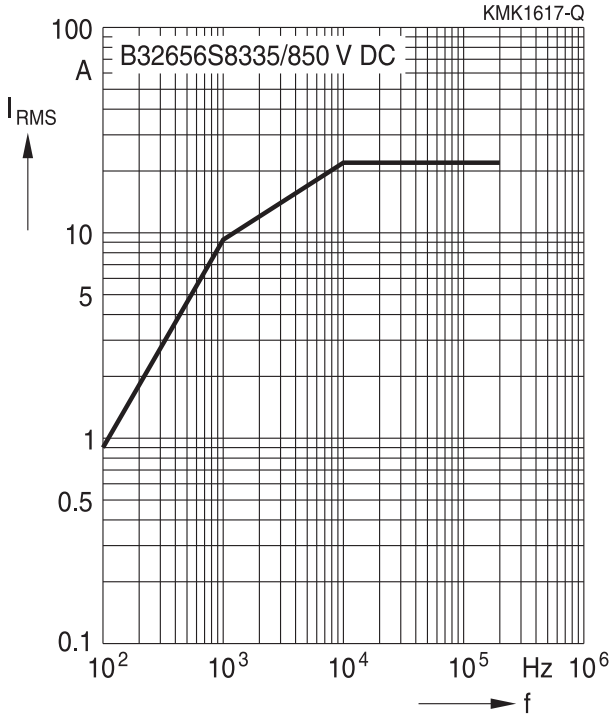
850 V DC/450 V AC



850 V DC/450 V AC



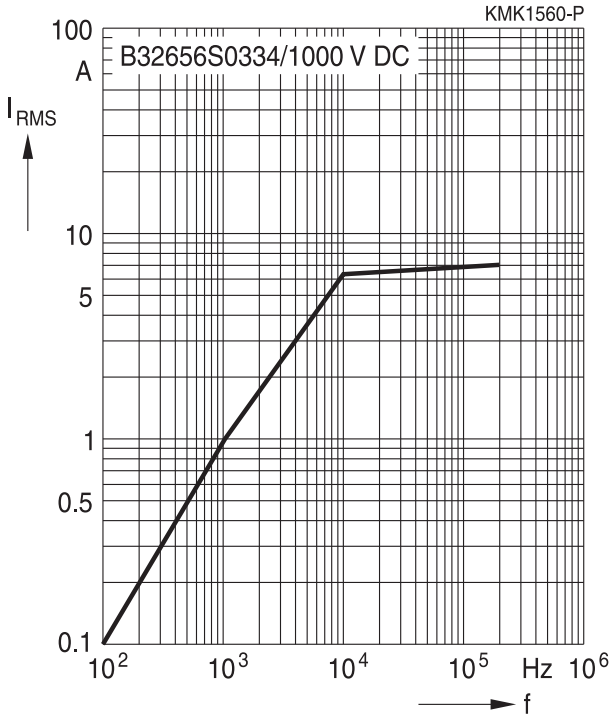
850 V DC/450 V AC



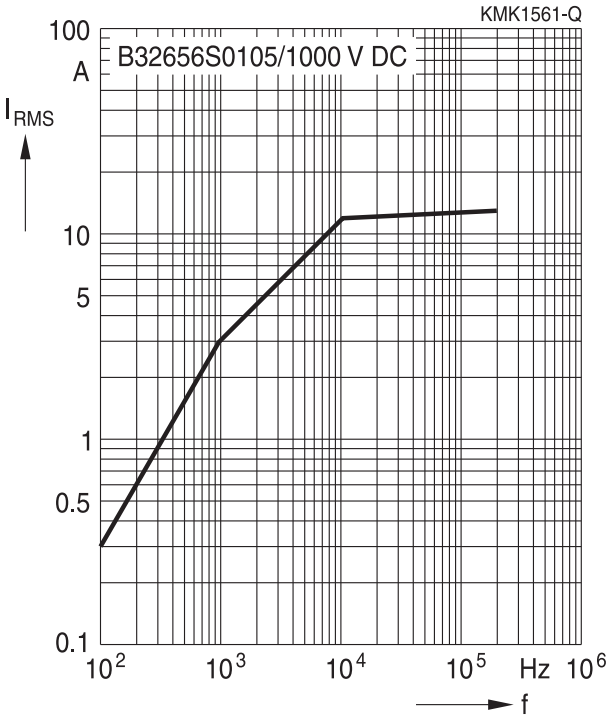
Permissible current I_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please use derating factor F_T.

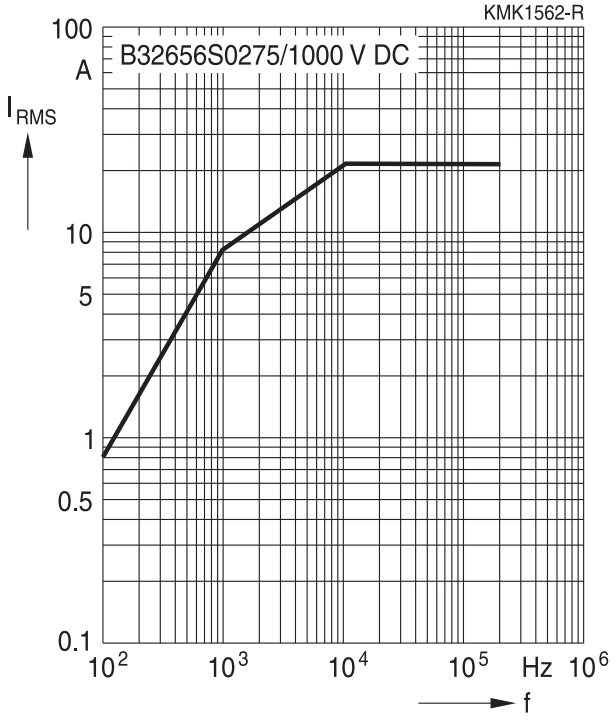
1000 V DC/480 V AC



1000 V DC/480 V AC



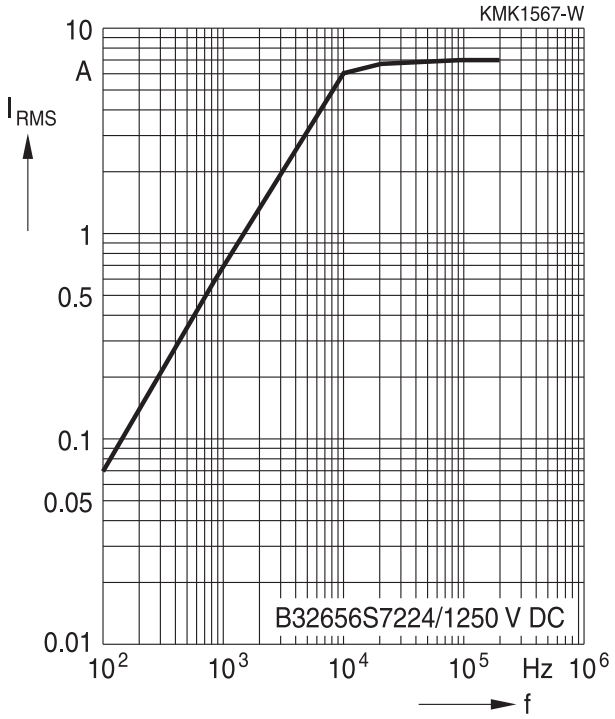
1000 V DC/480 V AC



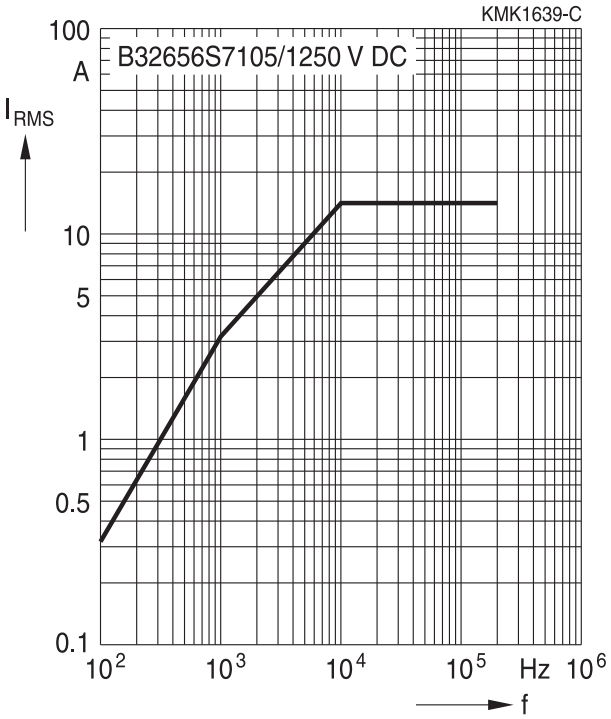
Permissible current I_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please use derating factor F_T.

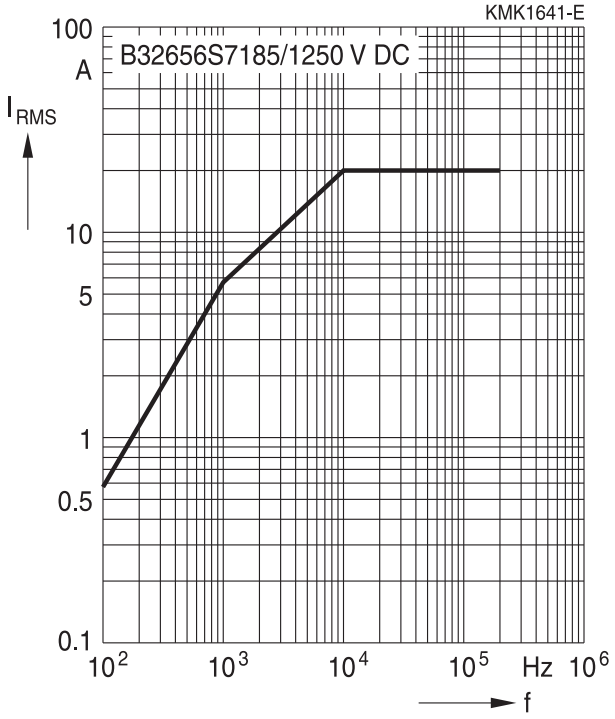
1250 V DC/500 V AC



1250 V DC/500 V AC



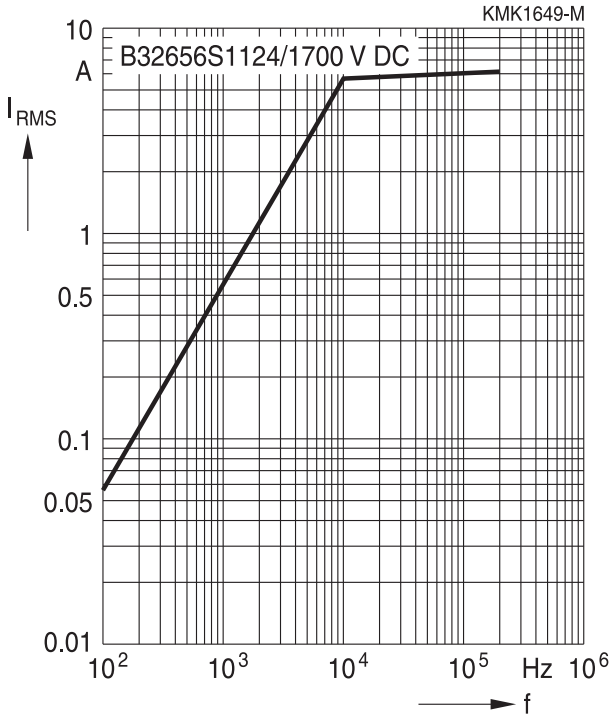
1250 V DC/500 V AC



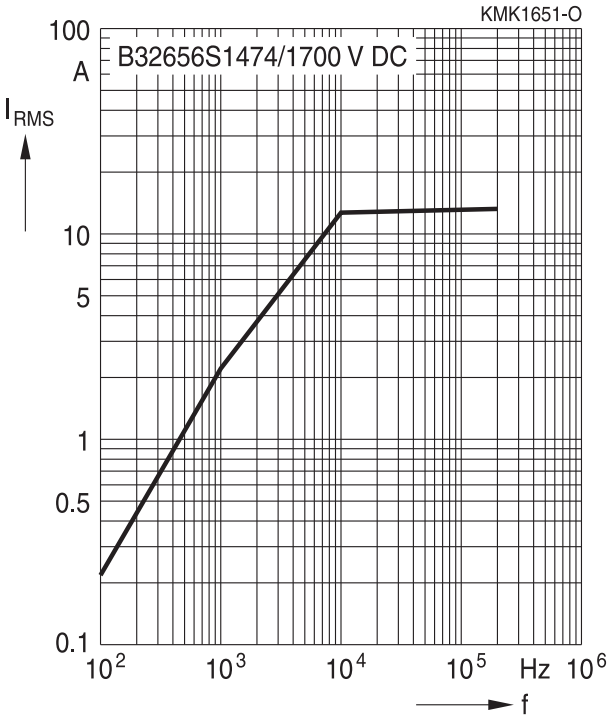
Permissible current I_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please use derating factor F_T.

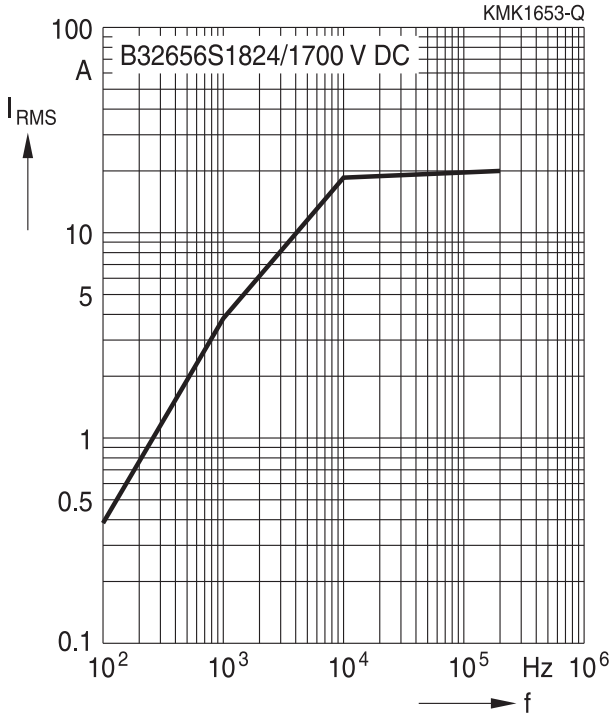
1700 V DC/750 V AC



1700 V DC/750 V AC



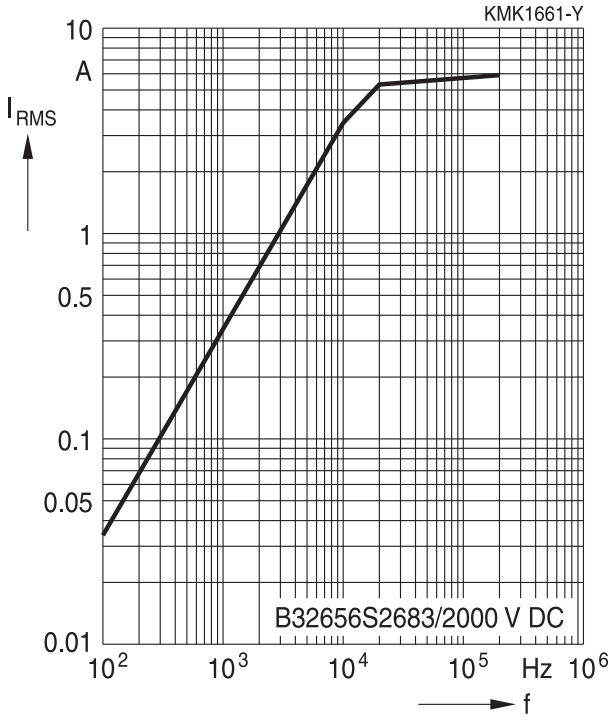
1700 V DC/750 V AC



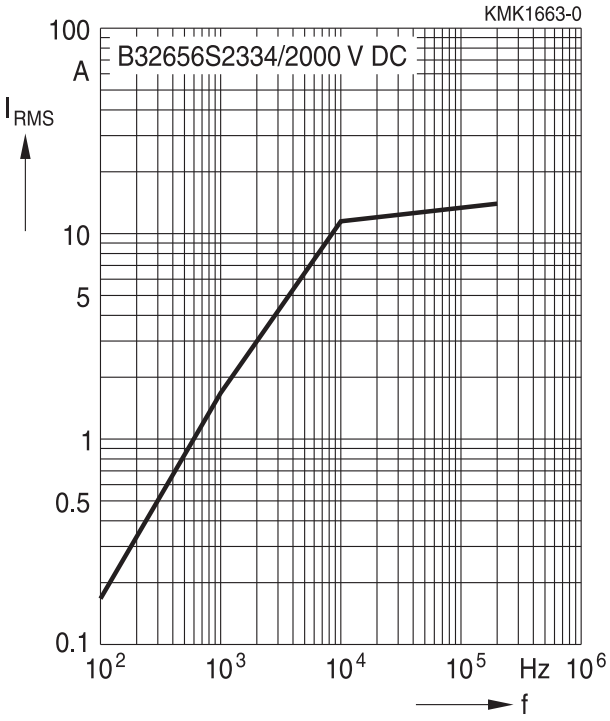
Permissible current I_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please use derating factor F_T.

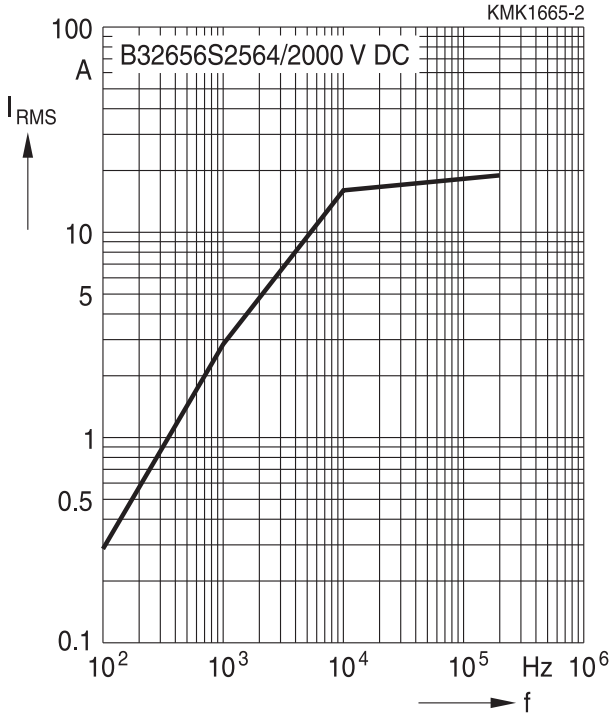
2000 V DC/800 V AC



2000 V DC/800 V AC



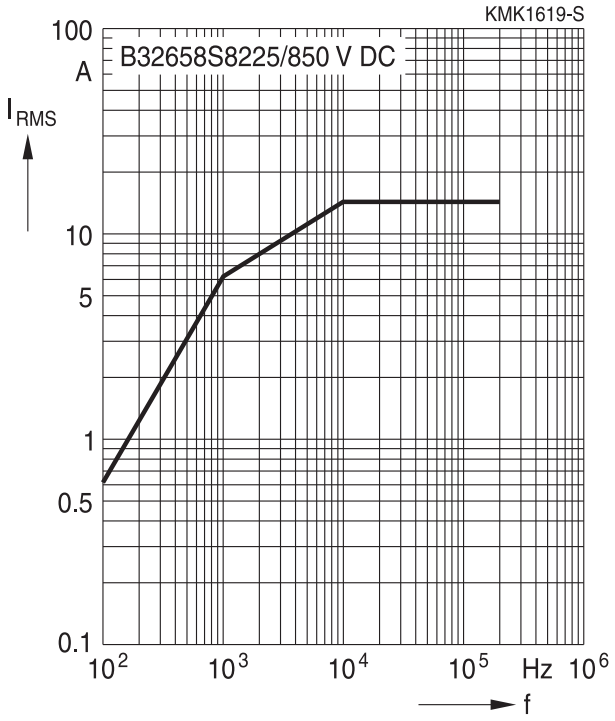
2000 V DC/800 V AC



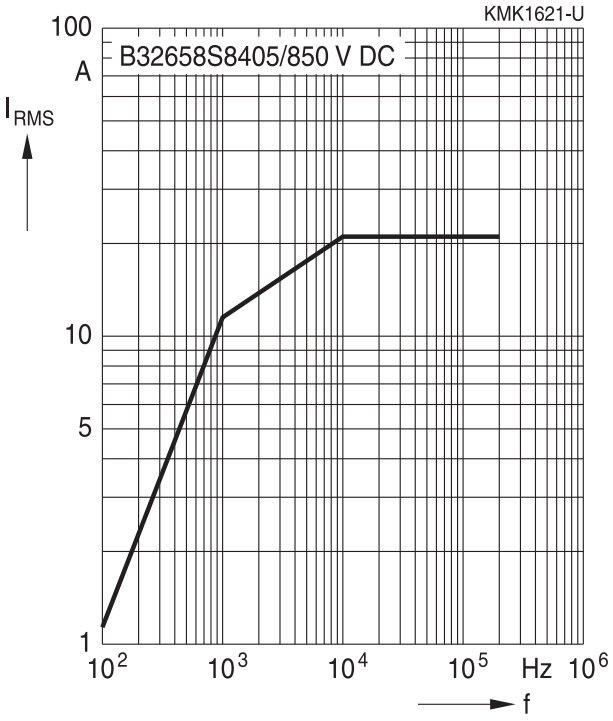
Permissible current I_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please use derating factor F_T.

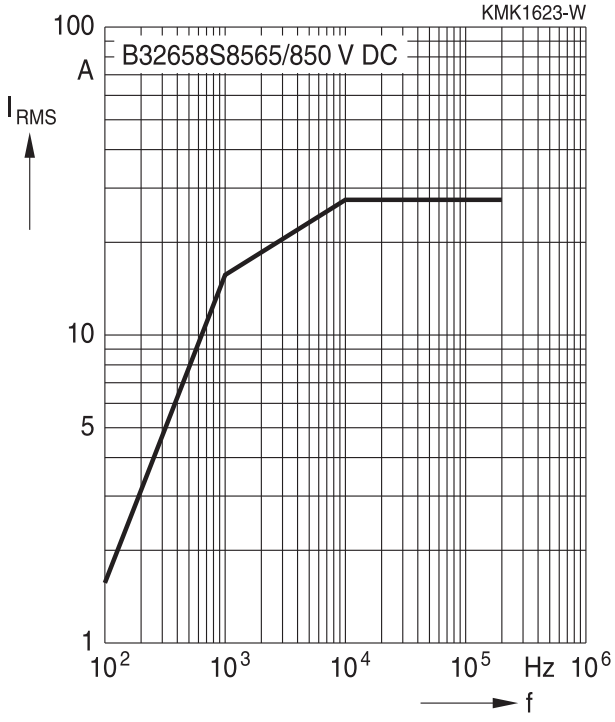
850 V DC/450 V AC



850 V DC/450 V AC



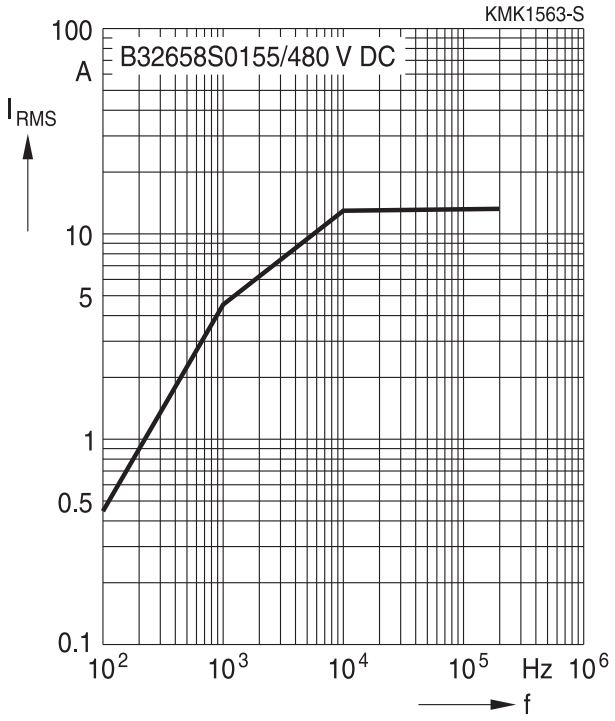
850 V DC/450 V AC



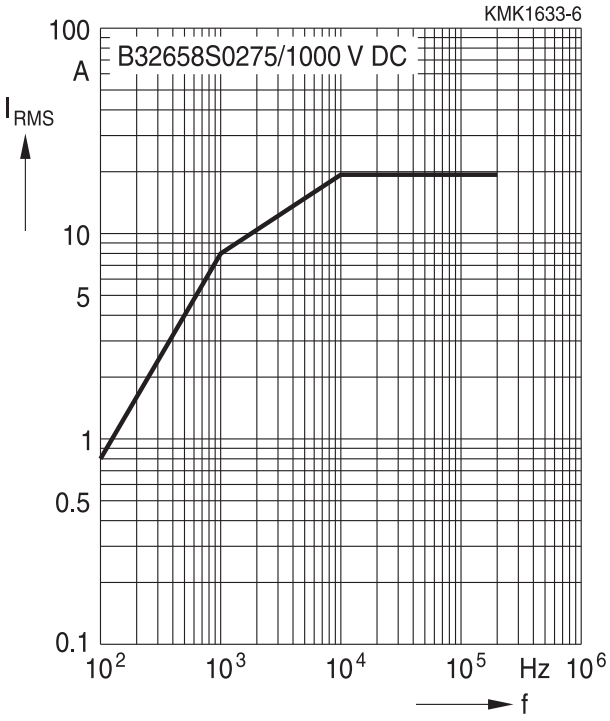
Permissible current I_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please use derating factor F_T.

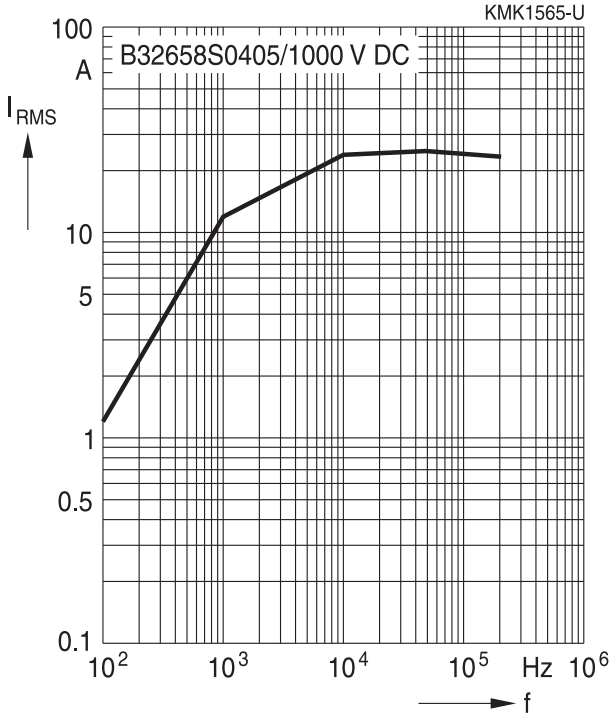
1000 V DC/480 V AC



1000 V DC/480 V AC



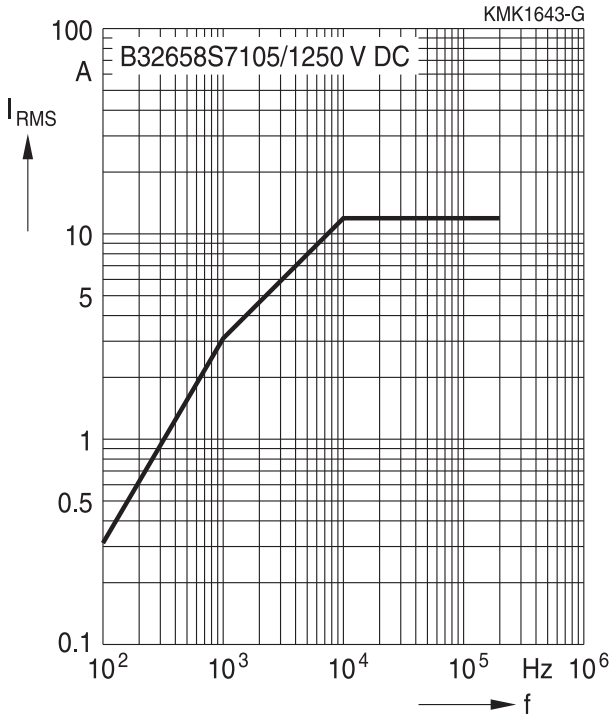
1000 V DC/480 V AC



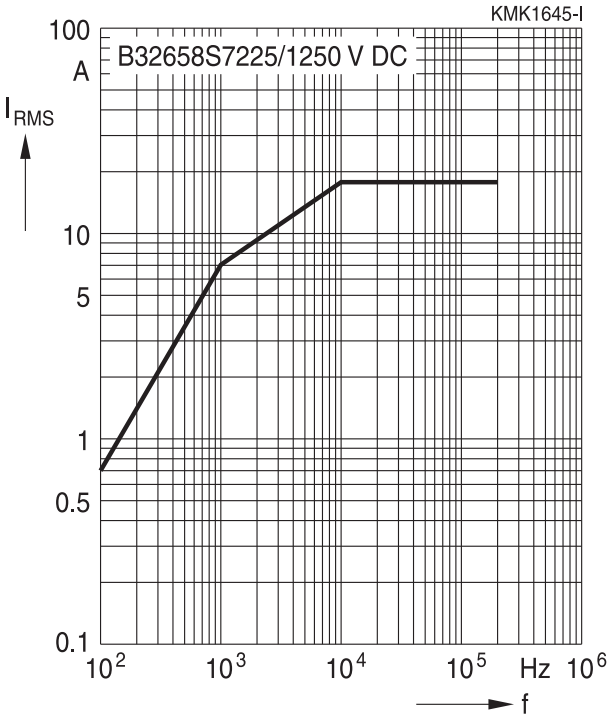
Permissible current I_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please use derating factor F_T.

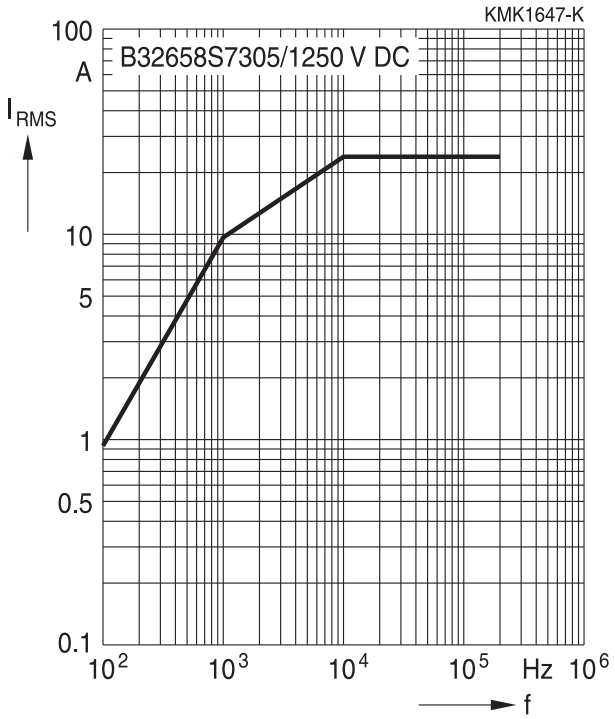
1250 V DC/500 V AC



1250 V DC/500 V AC



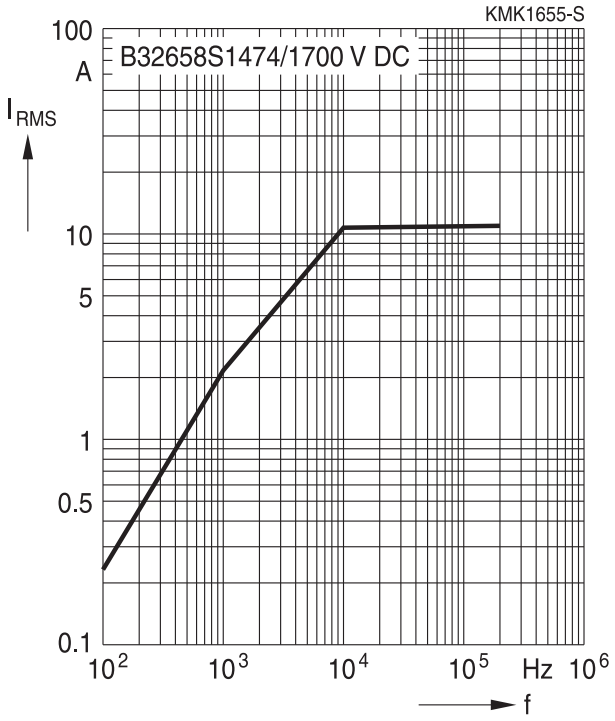
1250 V DC/500 V AC



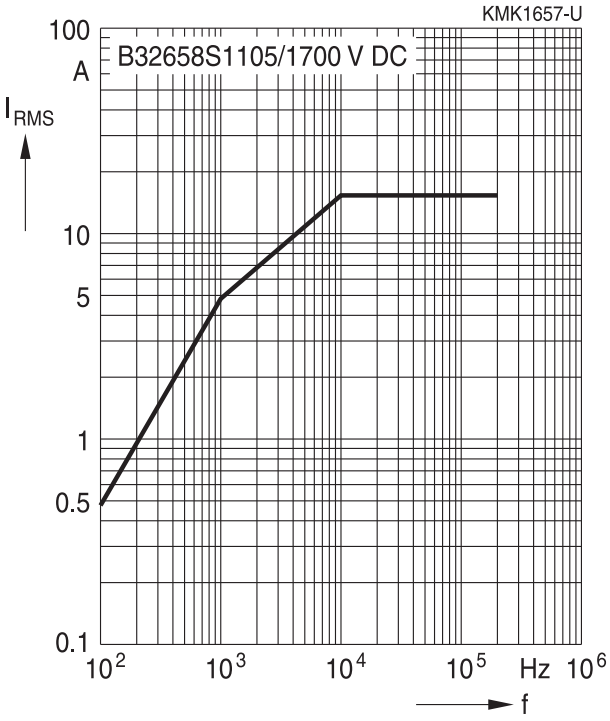
Permissible current I_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please use derating factor F_T.

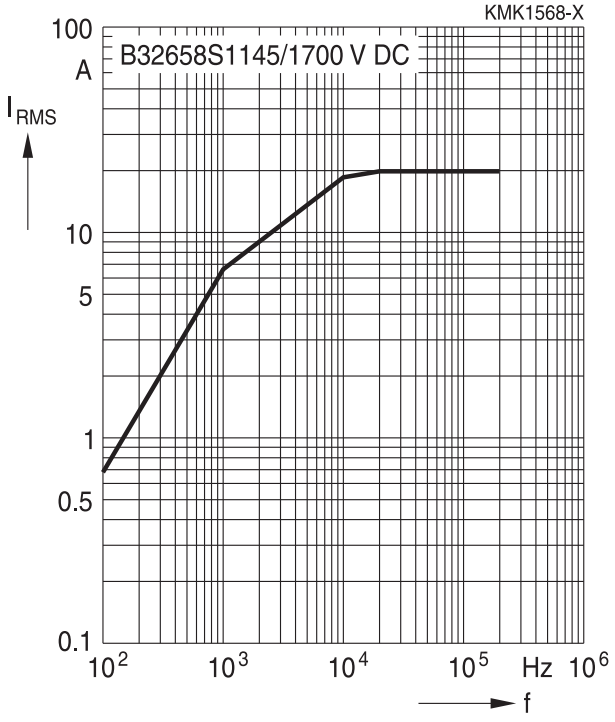
1700 V DC/750 V AC



1700 V DC/750 V AC



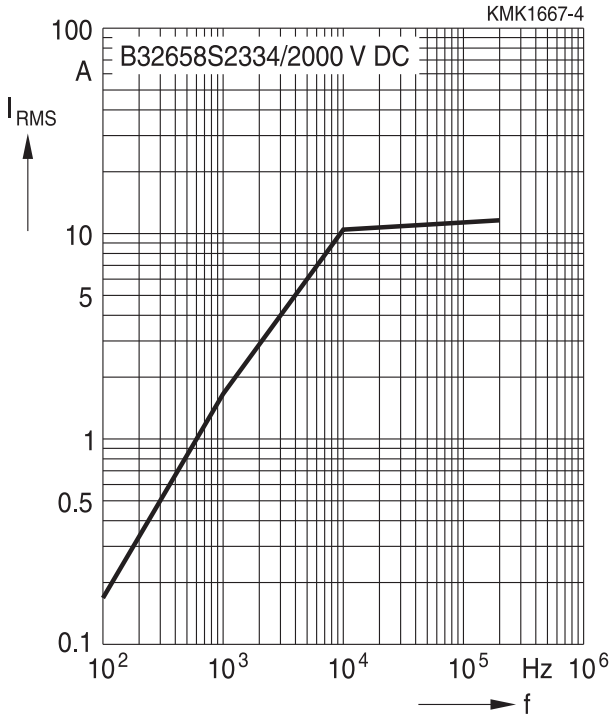
1700 V DC/750 V AC



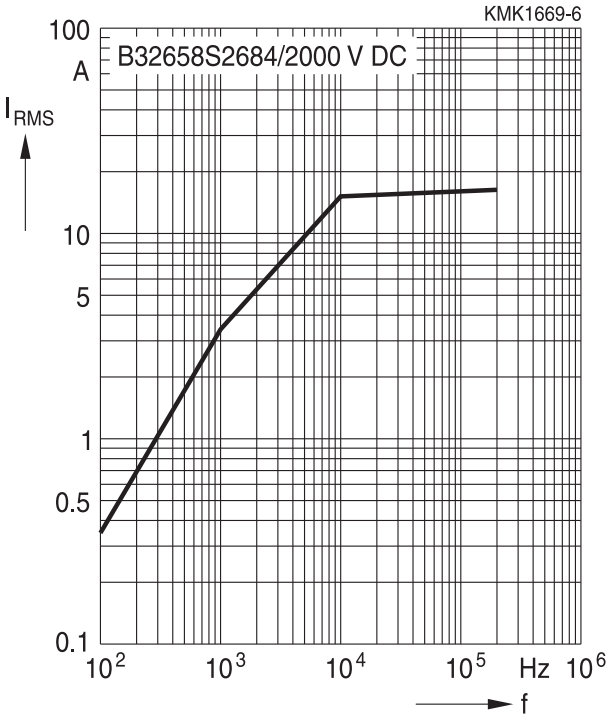
Permissible current I_{RMS} versus frequency f (for sinusoidal waveforms, T_A ≤90 °C)

For T_A >90 °C, please use derating factor F_T.

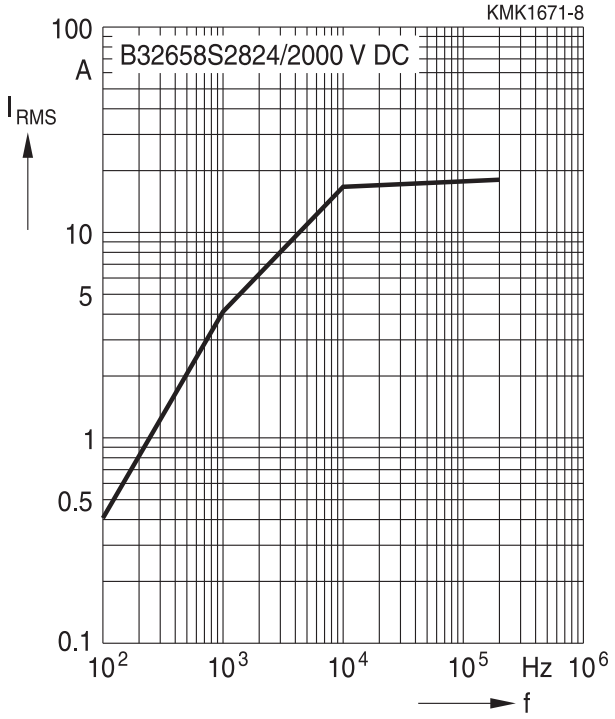
2000 V DC/800 V AC



2000 V DC/800 V AC



2000 V DC/800 V AC



Maximum AC voltage (V_{RMS}), current (I_{RMS}) versus frequency and temperature for T_A >90 °C

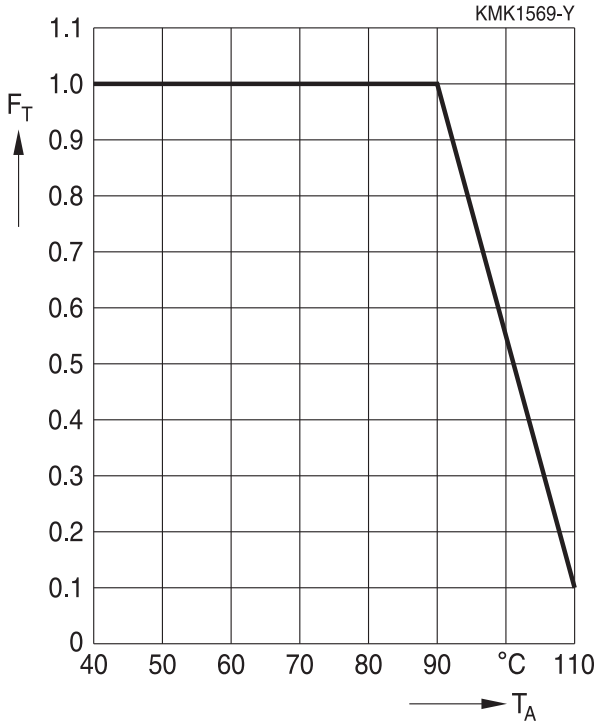
The graphs described in the previous section for the permissible AC voltage (V_{RMS}) or current (I_{RMS}) versus frequency are given for a maximum ambient temperature T_A ≤90 ºC. In case of higher ambient temperatures (T_A), the self-heating (ΔT) of the component must be reduced to avoid that temperature of the component (T_{op}= T_A + ΔT) reaches values above maximum operating temperature.

The factor F_T shall be applied in the following way:

$I_{RMS}\ (T_A) = I_{RMS,T_A \leq 90\ °C} \cdot F_T\ (T_A)$
$V_{RMS}\ (T_A) = V_{RMS,T_A \leq 90\ °C} \cdot F_T\ (T_A)$

And F_T is given by the following curve:

Curves characteristics (I_{RMS} derating versus temperature)



Maximum I_{RMS} current as function of the ambient temperature: $I_{RMS}\ (T_A)$ = Factor x I_{RMS} (90 °C)

Testing and Standards

Test	Reference	Conditions of test	Performance requirements
Electrical parameters	IEC 60384-16:2005	Voltage proof, 1.6 V_R, 1 minute Insulation resistance, R_{ins} Capacitance, C Dissipation factor, tan δ	Within specified limits
Robustness of terminations	IEC 60068-2-21:2006	Only tests Ua1 (20N) and Ud	Capacitance and tan δ within specified limits
Rapid change of temperature	IEC 60384-16:2005	T_A = lower category temperature T_B = upper category temperature Five cycles, duration t = 30 min	$\lvert\Delta C/C_0\rvert \leq 2\%$ $\lvert\Delta \tan \delta\rvert \leq 0.002$ $R_{ins} \geq 50\%$ of initial limit
Vibration	IEC 60384-16:2005	Test F_C: vibration sinusoidal Displacement: 0.75 mm Accleration: 98 m/s^2 Frequency: 10 Hz ... 500 Hz Test duration: 3 orthogonal axes, 2 hours each axe	No visible damage
Bump	IEC 60384-16:2005	Test Eb: Total 4000 bumps with 390 m/s^2 mounted on PCB Duration: 6 ms	No visible damage $\lvert\Delta C/C_0\rvert \leq 2\%$ $\lvert\Delta \tan \delta\rvert \leq 0.002$ $R_{ins} \geq 50\%$ of initial limit
Climatic sequence	IEC 60384-16:2005	Dry heat Tb[T_B] / 16 h Damp heat cyclic, 1st cycle +55 °C / 24 h / 95% ... 100% RH Cold Ta[T_A] / 2 h Damp heat cyclic, 5 cycles +55 °C / 24 h / 95% ... 100% RH	No visible damage $\lvert\Delta C/C_0\rvert \leq 3\%$ $\lvert\Delta \tan \delta\rvert \leq 0.003$ $R_{ins} \geq 50\%$ of initial limit
Damp heat, steady state	IEC 60384-16:2005	Test Ca 40 °C / 93% RH / 56 days	No visible damage $\lvert\Delta C/C_0\rvert \leq 3\%$ $\lvert\Delta \tan \delta\rvert \leq 0.002$ $R_{ins} \geq 50\%$ of initial limit
Advanced biased humidity		60 °C / 95% RH / 1000 hours with V_R DC	No visible damage $\lvert\Delta C/C_0\rvert \leq 10\%$ $\lvert\Delta \tan \delta\rvert \leq 0.002$ $R_{ins} \geq 50\%$ of initial limit
Endurance A		85 °C / 1.25 V_R / 2000 hours	No visible damage $\lvert\Delta C/C_0\rvert \leq 3\%$ $\lvert\Delta \tan \delta\rvert \leq 0.002$ $R_{ins} \geq 50\%$ of initial limit
Endurance B		110 °C / 1.25 V_C / 2000 hours	No visible damage $\lvert\Delta C/C_0\rvert \leq 3\%$ $\lvert\Delta \tan \delta\rvert \leq 0.002$ $R_{ins} \geq 50\%$ of initial limit

Mounting guidelines

1 Soldering

1.1 Solderability of leads

The solderability of terminal leads is tested to IEC 60068-2-20:2008, test Ta, method 1.

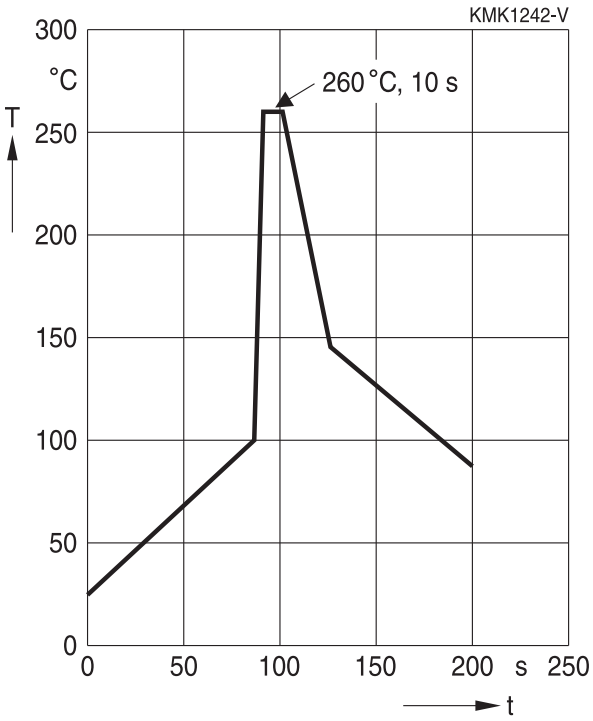
Before a solderability test is carried out, terminals are subjected to accelerated ageing (to IEC 60068-2-2:2007, test Ba: 4 h exposure to dry heat at 155 °C). Since the ageing temperature is far higher than the upper category temperature of the capacitors, the terminal wires should be cut off from the capacitor before the ageing procedure to prevent the solderability being impaired by the products of any capacitor decomposition that might occur.

Solder bath temperature	235 ±5 °C
Soldering time	2.0 ±0.5 s
Immersion depth	2.0 +0/–0.5 mm from capacitor body or seating plane
Evaluation criteria: Visual inspection	 Wetting of wire surface by new solder ≥90%, free-flowing solder

1.2 Resistance to soldering heat

Resistance to soldering heat is tested to IEC 60068-2-20:2008, test Tb, method 1. Conditions:

Series		Solder bath temperature	Soldering time
MKT	boxed (except 2.5 × 6.5 × 7.2 mm) coated uncoated (lead spacing >10 mm)	260 ±5 °C	10 ±1 s
MFP MKP	 (lead spacing >7.5 mm)		
MKT	boxed (case 2.5 × 6.5 × 7.2 mm)		5 ±1 s
MKP MKT	(lead spacing ≤7.5 mm) uncoated (lead spacing ≤10 mm) insulated (B32559)		<4 s recommended soldering profile for MKT uncoated (lead spacing ≤10 mm) and insulated (B32559)



Immersion depth	2.0 +0/–0.5 mm from capacitor body or seating plane
Shield	Heat-absorbing board, (1.5 ±0.5) mm thick, between capacitor body and liquid solder
Evaluation criteria:	
Visual inspection	No visible damage
$\Delta C/C_0$	2% for MKT/MKP/MFP 5% for EMI suppression capacitors
tan δ	As specified in sectional specification

1.3 General notes on soldering

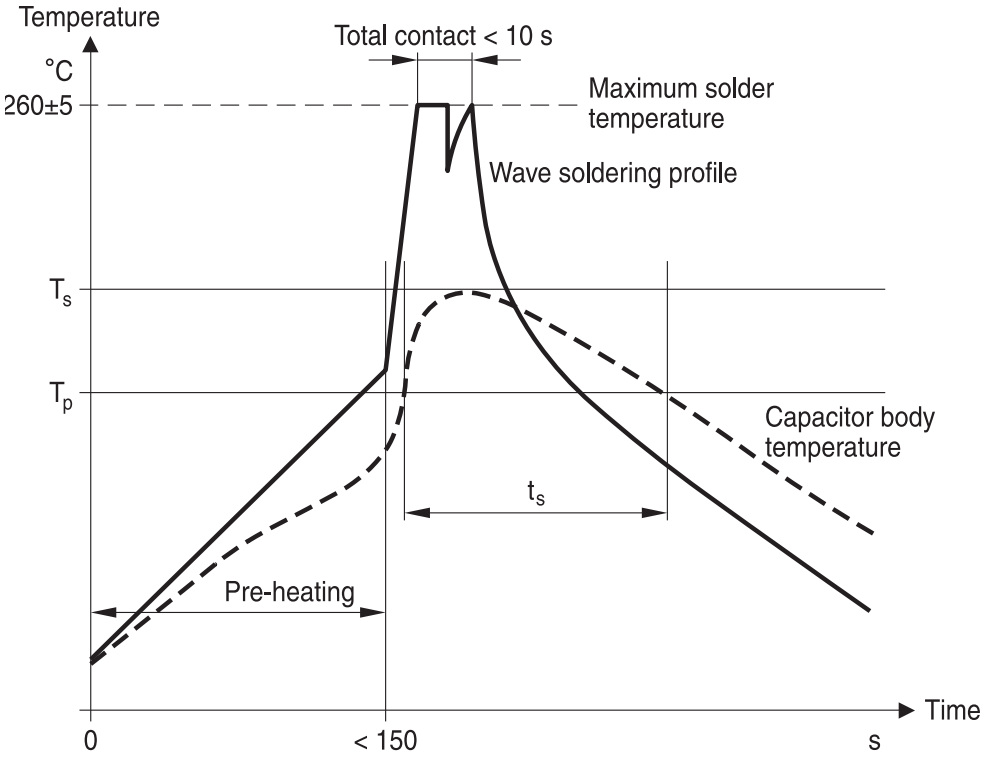
Permissible heat exposure loads on film capacitors are primarily characterized by the upper category temperature T_{max}. Long exposure to temperatures above this type-related temperature limit can lead to changes in the plastic dielectric and thus change irreversibly a capacitor's electrical characteristics. For short exposures (as in practical soldering processes) the heat load (and thus the possible effects on a capacitor) will also depend on other factors like:

- Pre-heating temperature and time
- Forced cooling immediately after soldering
- Terminal characteristics:
  diameter, length, thermal resistance, special configurations (e.g. crimping)
- Height of capacitor above solder bath
- Shadowing by neighboring components
- Additional heating due to heat dissipation by neighboring components
- Use of solder-resist coatings

The overheating associated with some of these factors can usually be reduced by suitable countermeasures. For example, if a pre-heating step cannot be avoided, an additional or reinforced cooling process may possibly have to be included.

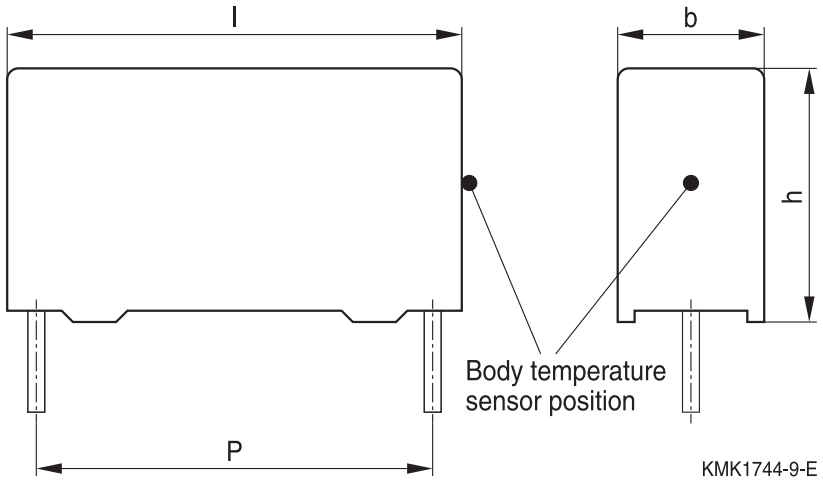
Recommendations

As a reference, the recommended wave soldering profile for our film capacitors is as follows:



T_s : Capacitor body maximum temperature at wave soldering
T_p : Capacitor body maximum temperature at pre-heating

KMK1745-A-E



KMK1744-9-E

Body temperature should follow the description below:

- MKP capacitor
  During pre-heating: $T_p \leq 110$ °C
  During soldering: $T_s \leq 120$ °C, $t_s \leq 45$ s
- MKT capacitor
  During pre-heating: $T_p \leq 125$ °C
  During soldering: $T_s \leq 160$ °C, $t_s \leq 45$ s

When SMD components are used together with leaded ones, the film capacitors should not pass into the SMD adhesive curing oven. The leaded components should be assembled after the SMD curing step.

Leaded film capacitors are not suitable for reflow soldering.

In order to ensure proper conditions for manual or selective soldering, the body temperature of the capacitor (T_s) must be ≤120 °C.

One recommended condition for manual soldering is that the tip of the soldering iron should be <360 °C and the soldering contact time should be no longer than 3 seconds.

For uncoated MKT capacitors with lead spacings ≤10 mm (B32560/B32561) the following measures are recommended:

- pre-heating to not more than 110 °C in the preheater phase
- rapid cooling after soldering

Please refer to our Film Capacitors Data Book in case more details are needed.

Cautions and warnings

- Do not exceed the upper category temperature (UCT).
- Do not apply any mechanical stress to the capacitor terminals.
- Avoid any compressive, tensile or flexural stress.
- Do not move the capacitor after it has been soldered to the PC board.
- Do not pick up the PC board by the soldered capacitor.
- Do not place the capacitor on a PC board whose PTH hole spacing differs from the specified lead spacing.
- Do not exceed the specified time or temperature limits during soldering.
- Avoid external energy inputs, such as fire or electricity.
- Avoid overload of the capacitors.
- Consult us if application is with severe temperature and humidity condition.
- There are no serviceable or repairable parts inside the capacitor. Opening the capacitor or any attempts to open or repair the capacitor will void the warranty and liability of TDK Electronics.
- Please note that the standards referred to in this publication may have been revised in the meantime.

The table below summarizes the safety instructions that must always be observed. A detailed description can be found in the relevant sections of the chapters "General technical information" and "Mounting guidelines".

Topic	Safety information	Reference chapter "General technical information"
Storage conditions	Make sure that capacitors are stored within the specified range of time, temperature and humidity conditions.	4.5 "Storage conditions"
Flammability	Avoid external energy, such as fire or electricity (passive flammability), avoid overload of the capacitors (active flammability) and consider the flammability of materials.	5.3 "Flammability"
Resistance to vibration	Do not exceed the tested ability to withstand vibration. The capacitors are tested to IEC 60068-2-6:2007. TDK Electronics offers film capacitors specially designed for operation under more severe vibration regimes such as those found in automotive applications. Consult our catalog "Film Capacitors for Automotive Electronics".	5.2 "Resistance to vibration"
Soldering	Do not exceed the specified time or temperature limits during soldering.	1 "Soldering"
Cleaning	Use only suitable solvents for cleaning capacitors.	2 "Cleaning"
Embedding of capacitors in finished assemblies	When embedding finished circuit assemblies in plastic resins, chemical and thermal influences must be taken into account. Caution: Consult us first, if you also wish to embed other uncoated component types!	3 "Embedding of capacitors in finished assemblies"

Display of ordering codes for TDK Electronics products

The ordering code for one and the same product can be represented differently in data sheets, data books, other publications, on the company website, or in order-related documents such as shipping notes, order confirmations and product labels. The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products.
Detailed information can be found on the Internet under www.tdk-electronics.tdk.com/orderingcodes.

Correlation of data sheet values and modelling tool outputs

Data sheet values and results of design tools may deviate as they have not been derived in the same context.

While data sheets show individual parameter statements without considering a possible dependency to other parameters. Tools model a complete given scenario as input and processed inside the tool.

Furthermore as we constantly strive to improve our models, the results of tools can change over time and be a non-binding indication only.

Symbols and terms

Symbol	English	German
α	Heat transfer coefficient	Wärmeübergangszahl
α_C	Temperature coefficient of capacitance	Temperaturkoeffizient der Kapazität
A	Capacitor surface area	Kondensatoroberfläche
β_C	Humidity coefficient of capacitance	Feuchtekoeffizient der Kapazität
C	Capacitance	Kapazität
C_R	Rated capacitance	Nennkapazität
ΔC	Absolute capacitance change	Absolute Kapazitätsänderung
$\Delta C/C$	Relative capacitance change (relative deviation of actual value)	Relative Kapazitätsänderung (relative Abweichung vom Ist-Wert)
$\Delta C/C_R$	Capacitance tolerance (relative deviation from rated capacitance)	Kapazitätstoleranz (relative Abweichung vom Nennwert)
dt	Time differential	Differentielle Zeit
Δt	Time interval	Zeitintervall
ΔT	Absolute temperature change (self-heating)	Absolute Temperaturänderung (Selbsterwärmung)
$\Delta \tan \delta$	Absolute change of dissipation factor	Absolute Änderung des Verlustfaktors
ΔV	Absolute voltage change	Absolute Spannungsänderung
dV/dt	Time differential of voltage function (rate of voltage rise)	Differentielle Spannungsänderung (Spannungsflankensteilheit)
$\Delta V/\Delta t$	Voltage change per time interval	Spannungsänderung pro Zeitintervall
E	Activation energy for diffusion	Aktivierungsenergie zur Diffusion
ESL	Self-inductance	Eigeninduktivität
ESR	Equivalent series resistance	Ersatz-Serienwiderstand
f	Frequency	Frequenz
f_1	Frequency limit for reducing permissible AC voltage due to thermal limits	Grenzfrequenz für thermisch bedingte Reduzierung der zulässigen Wechselspannung
f_2	Frequency limit for reducing permissible AC voltage due to current limit	Grenzfrequenz für strombedingte Reduzierung der zulässigen Wechselspannung
f_r	Resonant frequency	Resonanzfrequenz
F_D	Thermal acceleration factor for diffusion	Therm. Beschleunigungsfaktor zur Diffusion
F_T	Derating factor	Deratingfaktor
i	Current (peak)	Stromspitze
I_C	Category current (max. continuous current)	Kategoriestrom (max. Dauerstrom)
I_{RMS}	(Sinusoidal) alternating current, root-mean-square value	(Sinusförmiger) Wechselstrom
i_z	Capacitance drift	Inkonstanz der Kapazität
k_0	Pulse characteristic	Impulskennwert
L_S	Series inductance	Serieninduktivität
λ	Failure rate	Ausfallrate
λ_0	Constant failure rate during useful service life	Konstante Ausfallrate in der Nutzungsphase

Symbol	English	German
λ_{test}	Failure rate, determined by tests	Experimentell ermittelte Ausfallrate
P_{diss}	Dissipated power	Abgegebene Verlustleistung
P_{gen}	Generated power	Erzeugte Verlustleistung
Q	Heat energy	Wärmeenergie
ρ	Density of water vapor in air	Dichte von Wasserdampf in Luft
R	Universal molar constant for gases	Allg. Molarkonstante für Gas
R	Ohmic resistance of discharge circuit	Ohmscher Widerstand des Entladekreises
R_i	Internal resistance	Innenwiderstand
R_{ins}	Insulation resistance	Isolationswiderstand
R_P	Parallel resistance	Parallelwiderstand
R_S	Series resistance	Serienwiderstand
S	severity (humidity test)	Schärfegrad (Feuchtetest)
t	Time	Zeit
T	Temperature	Temperatur
τ	Time constant	Zeitkonstante
tan δ	Dissipation factor	Verlustfaktor
tan δ_D	Dielectric component of dissipation factor	Dielektrischer Anteil des Verlustfaktors
tan δ_P	Parallel component of dissipation factor	Parallelanteil des Verlfustfaktors
tan δ_S	Series component of dissipation factor	Serienanteil des Verlustfaktors
T_A	Temperature of the air surrounding the component	Temperatur der Luft, die das Bauteil umgibt
T_{max}	Upper category temperature	Obere Kategorietemperatur
T_{min}	Lower category temperature	Untere Kategorietemperatur
t_{OL}	Operating life at operating temperature and voltage	Betriebszeit bei Betriebstemperatur und -spannung
T_{op}	Operating temperature, $T_A + \Delta T$	Beriebstemperatur, $T_A + \Delta T$
T_R	Rated temperature	Nenntemperatur
T_{ref}	Reference temperature	Referenztemperatur
t_{SL}	Reference service life	Referenz-Lebensdauer
V_{AC}	AC voltage	Wechselspannung
V_C	Category voltage	Kategoriespannung
$V_{C,RMS}$	Category AC voltage	(Sinusförmige) Kategorie-Wechselspannung
V_{CD}	Corona-discharge onset voltage	Teilentlade-Einsatzspannung
V_{ch}	Charging voltage	Ladespannung
V_{DC}	DC voltage	Gleichspannung
V_{FB}	Fly-back capacitor voltage	Spannung (Flyback)
V_i	Input voltage	Eingangsspannung
V_o	Output voltage	Ausgangsspannung
V_{op}	Operating voltage	Betriebsspannung
V_p	Peak pulse voltage	Impuls-Spitzenspannung
V_{pp}	Peak-to-peak voltage Impedance	Spannungshub

Snubber (wound)

Symbol	English	German
V_R	Rated voltage	Nennspannung
$\hat{V}_R$	Amplitude of rated AC voltage	Amplitude der Nenn-Wechselspannung
V_{RMS}	(Sinusoidal) alternating voltage, root-mean-square value	(Sinusförmige) Wechselspannung
V_{SC}	S-correction voltage	Spannung bei Anwendung "S-correction"
V_{sn}	Snubber capacitor voltage	Spannung bei Anwendung "Beschaltung"
Z	Impedance	Scheinwiderstand
e	Lead spacing	Rastermaß

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.

2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.

3. **The warnings, cautions and product-specific notes must be observed**.

4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.tdk-electronics.tdk.com/material). Should you have any more detailed questions, please contact our sales offices.

5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order. We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

6. Unless otherwise agreed in individual contracts, **all orders are subject to our General Terms and Conditions of Supply**.

7. **Our manufacturing sites serving the automotive business apply the IATF 16949 standard**. The IATF certifications confirm our compliance with requirements regarding the quality management system in the automotive industry. Referring to customer requirements and customer specific requirements (“CSR”) TDK always has and will continue to have the policy of respecting individual agreements. Even if IATF 16949 may appear to support the acceptance of unilateral requirements, we hereby like to emphasize that **only requirements mutually agreed upon can and will be implemented in our Quality Management System**. For clarification purposes we like to point out that obligations from IATF 16949 shall only become legally binding if individually agreed upon.
8. The trade names EPCOS, CarXield, CeraCharge, CeraDiode, CeraLink, CeraPad, CeraPlas, CSMP, CTVS, DeltaCap, DigiSiMic, FilterCap, FormFit, InsuGate, LeaXield, MediPlas, MiniBlue, MiniCell, MKD, MKK, ModCap, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PiezoBrush, PlasmaBrush, PowerHap, PQSine, PQvar, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, SurfIND, ThermoFuse, WindCap, XieldCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.tdk-electronics.tdk.com/trademarks.

Release 2024-02