Film Capacitors

Metallized Polyester Film Capacitors (MKT)

Series/Type: **B32572, B32573**
Date: August 2004

Typical applications

- Ignition for gas, engines, generators
- Energy storage

Climatic

- Max. operating temperature: 125 °C
- Climatic category (IEC 60068-1): 55/125/56

Features

- Special dimensions available on request
- High pulse strength

Construction

- Dielectric: polyethylene terephthalate (polyester, PET)
- Stacked-film technology
- Uncoated

Terminals

- Parallel wire leads, lead-free tinned

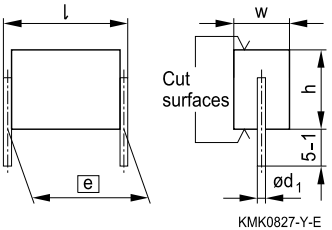
Marking

Rated capacitance (coded), rated DC voltage

Delivery mode

Bulk (untaped)

Dimensional drawing



Dimensions in mm

Lead spacing e ±0.4	Lead diameter d_1	Type
15.0	0.8	B32572
22.5	0.8	B32573

Notes on mounting

When mounting these capacitors, take into account creepage distances and clearances to adjacent live parts. The insulating strength of the cut surfaces to other live parts of the circuit is 1.5 times the capacitors rated DC voltage, but is always at least 300 VDC.

Overview of available types

Lead spacing	15.0 mm	22.5 mm
Type	B32572	B32573
Page	4	5
V_R (VDC)	250	250
V_{rms} (VAC)	160	160
C_R (µF)		
0.68		
1.0		
1.5		
2.2		

Ordering codes and packing units (lead spacing 15 mm)

V_R	V_{rms} f ≤60 Hz	C_R	Max. dimensions w × h × l	Ordering code (composition see	Untaped
VDC	VAC	µF	mm	below)	pcs./unit
250	160	0.68	7.0 × 11.0 × 16.5	B32572A3684+000	450
		1.0	9.1 × 11.7 × 16.5	B32572A3105+000	300
		1.5	11.5 × 13.5 × 16.5	B32572A3155+000	200
		2.2	11.5 × 19.8 × 16.5	B32572A3225+000	150

Further E series and intermediate capacitance values on request.

Special dimensions available on request.
For corresponding design rules, refer to chapter "General technical information".

Composition of ordering code

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

Ordering codes and packing units (lead spacing 22.5 mm)

V_R	V_{rms} f ≤60 Hz	C_R	Max. dimensions w × h × l	Ordering code (composition see	Untaped
VDC	VAC	µF	mm	below)	pcs./unit
250	160	0.68	5.6 × 9.2 × 24.0	B32573A3684+000	1180
		1.0	6.4 × 11.8 × 24.0	B32573A3105+000	1050
		1.5	7.6 × 14.3 × 24.0	B32573A3155+000	930
		2.2	8.9 × 17.4 × 24.0	B32573A3225+000	560

Further E series and intermediate capacitance values on request.

Special dimensions available on request.
For corresponding design rules, refer to chapter "General technical information".

Composition of ordering code

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

Technical data

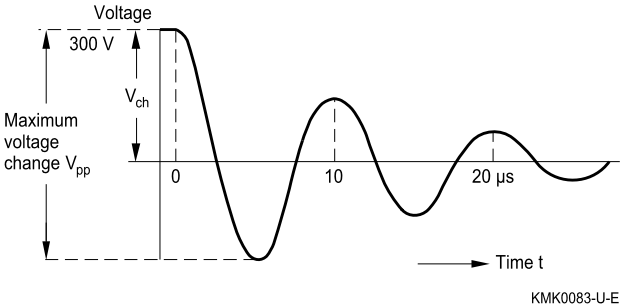
Operating temperature range	Max. operating temperature $T_{op,max}$		+125 °C
	Upper category temperature T_{max}		+125 °C
	Lower category temperature T_{min}		−55 °C
	Rated temperature T_R		+85 °C
Dissipation factor tan δ (in 10^{-3})	at	$C_R \leq 1$ µF	$C_R > 1$ µF
at 20 °C	1 kHz	8	10
(upper limit values)	10 kHz	15	−
Time constant $\tau = C_R \cdot R_{ins}$	2500 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 ≤ 60 Hz)	$85 < T_A \leq 125$	$V_C = V_R \cdot (165 - T_A)/80$	$V_{C,rms} = V_{rms} \cdot (165 - T_A)/80$
Max. charging voltage C_{ch}	1.2 · V_R for ≤ 1 s		
Damp heat test	56 days[1]/40 °C/93% relative humidity		
Limit values after damp	Capacitance change $\lvert\Delta C/C\rvert$		≤ 5%
heat test	Dissipation factor change Δ tan δ		≤ 3 · 10^{-3} (at 1 kHz)
			≤ 5 · 10^{-3} (at 10 kHz)
	Time constant $\tau = C_R \cdot R_{ins}$		≥ 50% of minimum
			as-delivered values
Reliability:			
Failure rate λ	2 fit (≤ 2 · 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		> 2 · upper limit value
	Time constant $\tau = C_R \cdot R_{ins}$		< 50 s

1) Test criteria must be met after exposure to damp heat for 21 days

Pulse handling capability

The capacitors are especially manufactured and tested to suit their intended applications.

Typical permissible loads:

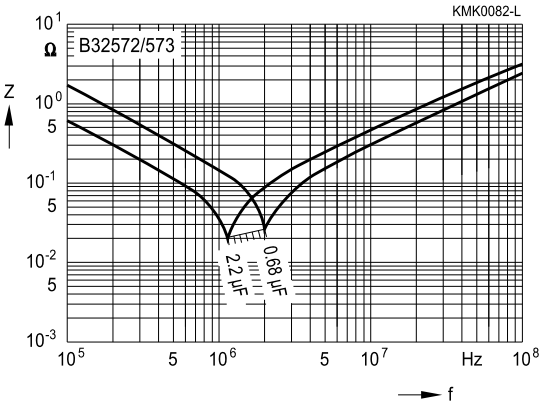


Lead spacing		15 and 22.5 mm
Max. rate of voltage rise V_{pp}/τ	(at V_{pp} = 500 V)	200 V/µs
Pulse characteristic k_0	(at $V_{pp} \leq$ 500 V)	200 000 V²/µs
Max. charging voltage V_{ch}	(≤1 s)	300 VDC
Max. voltage change V_{pp}	(at f = 100 kHz)	500 V

Unlimited number of pulses permitted.

Impedance Z versus frequency f

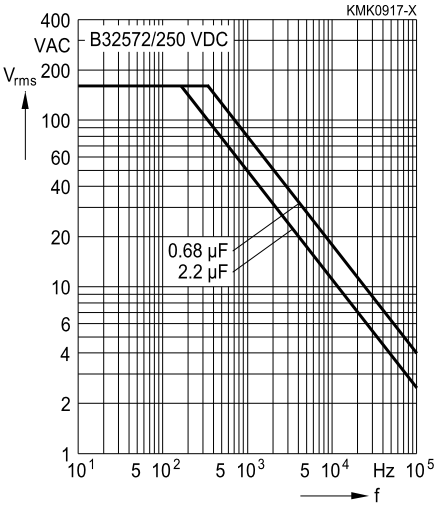
(typical values)



Permissible AC voltage V_{rms} versus frequency f (for sinusoidal waveforms, $T_A \leq 55$ °C)
For T_A >55 °C, please refer to "General technical information", section 3.2.3.

Lead spacing 15 mm

250 VDV/160 VAC



Lead spacing 22.5 mm

250 VDC/160 VAC