



## Film capacitor

### Metallized polypropylene Film Capacitor (MKP)

**Series/Type:** B32653A0  
**Ordering code:** B32653S0474K538  
**Date:** 2016-02-04  
**Version:** Preliminary

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### Applications

- Electronic ballasts
- Switch-mode power supply

### Climatic

- Max. operating temperature: 110°C
- Climatic category (IEC 60068-1): 55/100/56

### Construction

- Dielectric: polypropylene (PP)
- Wound capacitor technology
- Plastic case (UL 94 V-0)
- Epoxy resin sealing

### Features

- High pulse strength
- High contact reliability

### Terminals

- Parallel wire leads
- Lead-free tinned

### Marking

- Manufacturer's logo
- Lot number, series number
- Rated capacitance (coded)
- Capacitance Tolerance (code letter)
- Rated DC voltage
- Date of manufacture (coded)

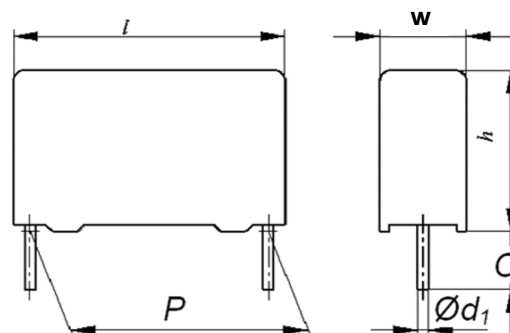
### Delivery mode

- Special arrangement

### Dimensions

- Lead spacing (P): 22.5 ± 0.4 mm
- Width max. (w): 6.0 mm
- Height max. (h): 15.0 mm
- Length max. (l): 26.5 mm
- Lead diameter: 0.8 ± 0.05 mm
- Lead length(C): 17.0+1.0 mm

### Drawing



Dimensions in mm

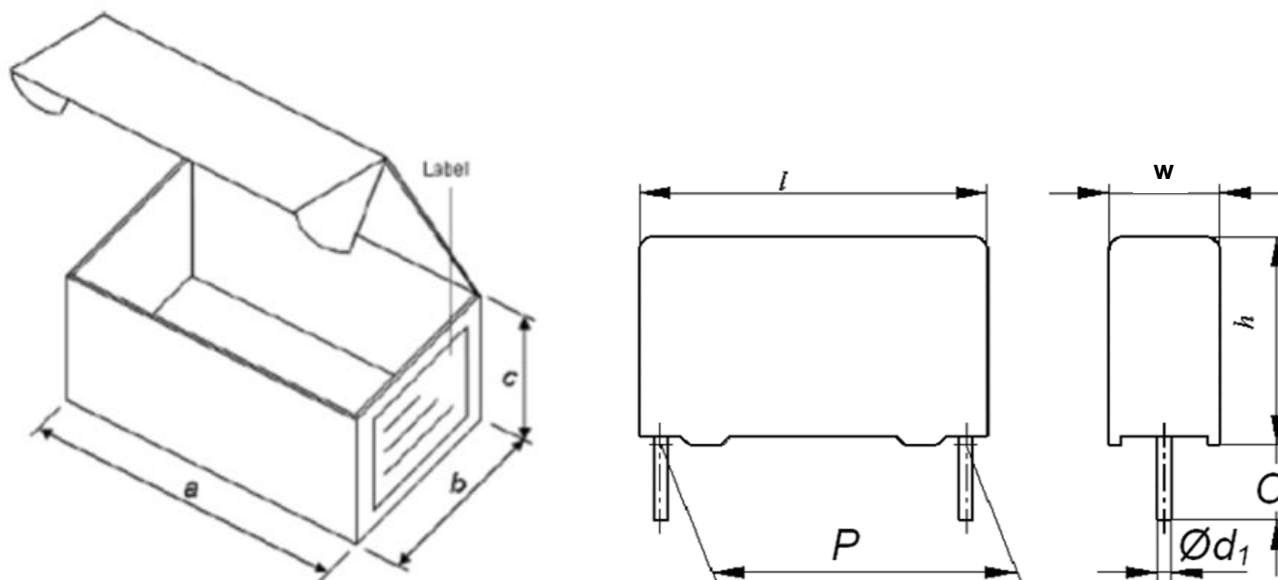
**Technical data**

Operation 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	
Rated Capacitance C	470 nF		
Capacitance tolerance	± 10 % (K)		
Rated DC voltage $U_{r_{dc}}$	1000 V DC		
Rated AC voltage $U_{r_{ac}}$	250 V AC		
Dissipation factor $\tan \delta$ (in $10^{-3}$ ) at 20 °C (upper limit values)	≤ 0.8 (at 1kHz)		
Insulation resistance $R_{ins}$ at 100V@ 20 °C, rel. humidity ≤ 65% (minimum as-delivered values)	≥ 63.8 GΩ		
Test voltage (Terminal to terminal)	1.6 · $V_R$ , 2s		
Dv/dt	600 V/us		
Category voltage $V_c$ (continuous operation with $V_{DC}$ or $V_{AC}$ at $f \leq 1$ kHz)	$T_{OP}$ (°C)	DC voltage derating	AC voltage derating
	$T_{OP} \leq 85$ $85 < T_{OP} \leq 100$	$V_C = V_R$ $V_C = V_R \cdot (165 - T_{OP})/80$	$V_C = V_{RMS}$ $V_C = V_{RMS} \cdot (165 - T_{OP})/80$
Operating voltage $V_{op}$ for short operating periods ( $V_{DC}$ or $V_{AC}$ at $f \leq 1$ kHz)	$T_{OP}$ (°C)	DC voltage (max. hours)	DC voltage (max. hours)
	$T_{OP} \leq 85$ $85 < T_{OP} \leq 100$	$V_{op} = 1.25 \cdot V_C$ (2000h) $V_{op} = 1.25 \cdot V_C$ (2000h)	$V_{op} = 1.0 \cdot V_{C,RMS}$ (2000h) $V_{op} = 1.0 \cdot V_{C,RMS}$ (2000h)
Reliability Failure rate $\lambda$ Service life $t_{SL}$  Failure criteria Total failure Failure due to variation of parameters	<p>1 fit (<math>\leq 1 \cdot 10^{-9}/h</math>) at 0.5 · <math>V_R</math>, 40 °C                  200 000 h at 1.0 · <math>V_R</math>, 85 °C                  For conversion to other operating conditions and temperatures,                  refer to chapter "Quality, 2 Reliability".</p> <p>Short circuit or open circuit                  Capacitance change <math> \Delta C/C </math> &gt; 10%                  Dissipation factor <math>\tan \delta</math> &gt; 4 · upper limit values                  Insulation resistance <math>R_{ins}</math> &lt; 1500 MΩ</p>		

**Packing**

Untaped (Long leads)

The material of inner packing: corrugated cardboard



Special arrangement:



### 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.

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. EPCOS 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"
Topic	Safety information	Reference chapter "Mounting guidelines"
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"

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