



## Film Capacitors – Power Electronic Capacitors

General purpose applications

**Series/Type:** MKP AC  
**Ordering code:** B3236\*  
Date: August 2013  
Version: 5.0

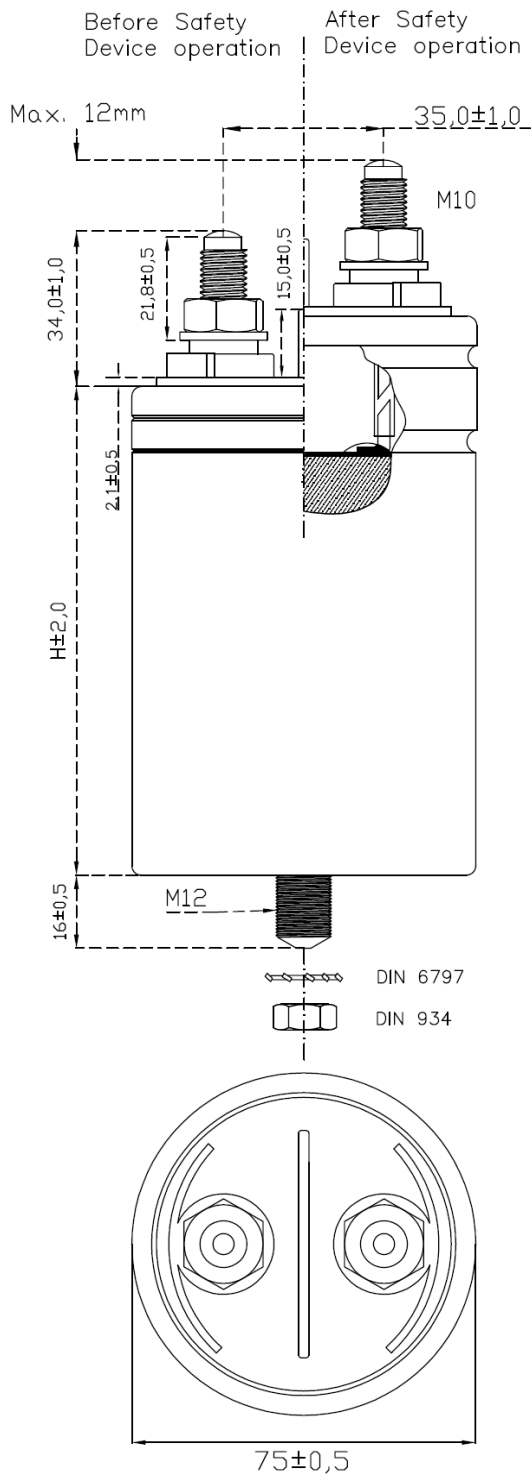
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**B32362: M10 screw terminals**

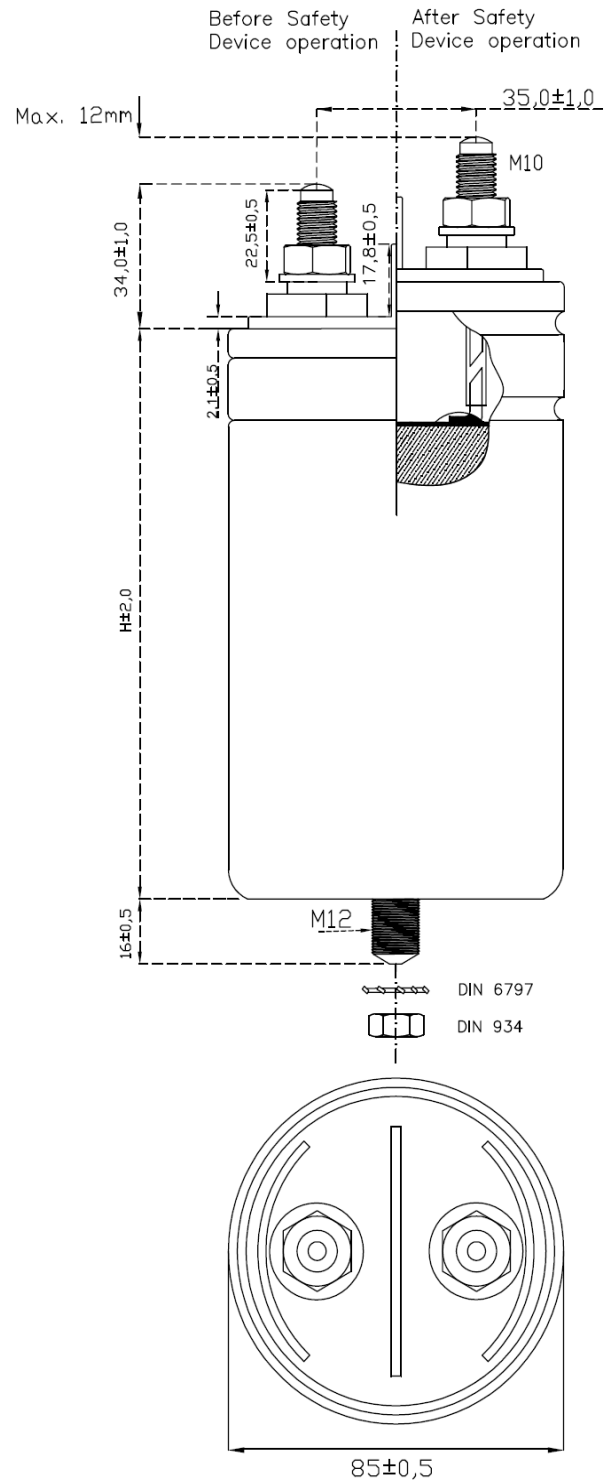
**D = 75 mm**



Picture 2

**B32362: M10 screw terminals**

**D = 85 mm**



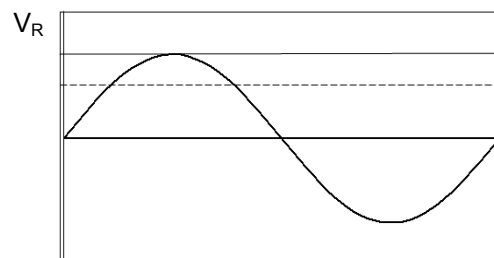
Picture 3

**Specifications and characteristics**

 Rated capacitance  $C_R$ : 10  $\mu$ F ... 600  $\mu$ F

 Tolerance:  $\pm 5\%$ 

Rated AC voltage $V_{RMS}$	Rated AC voltage $V_{RAC}$	Rated DC voltage $V_{RDC}$	Repetitive peak voltage $V_N$	Non repetitive peak voltage $V_S$
250 V	350 V	750 V	450 V	1125 V
330 V	460 V	900 V	600 V	1350 V
480 V	680 V	1200 V	850 V	1800 V


**Test data**

Voltage between terminals $V_{TT}$ :	$2.15 \cdot V_{RMS}$ , 2 s
Voltage between terminals and aluminum can $V_{TC}$ :	4000 V $V_{RMS}$ , 2 s
Dissipation factor $\tan \delta$ at 100 Hz:	$\leq 1.0 \cdot 10^{-3}$
Life test:	IEC 61071
Life expectancy:	100 000 hours for $V_{RMS}  \Delta C/C  \leq 3\%$

**Climatic category: 40/70/21**

$\theta_{stg}$ :	$-40 \text{ }^\circ\text{C} \dots +85 \text{ }^\circ\text{C}$
$\theta_{min}$ :	$-40 \text{ }^\circ\text{C}$
$\theta_{max}^{**}$ :	$+70 \text{ }^\circ\text{C}$
$\theta_{hs}^{***}$ :	$+85 \text{ }^\circ$
Max. permissible humidity:	95% ( $t_{test} = 21$ days)
Max. permissible altitude:	2000 m above sea level

**Mechanical characteristics**

Max. torque (case):	M12: 12 Nm
Max. torque (terminal):	M6: 4 Nm
	M10: 10 Nm

 \*:  $\theta_{stg}$  – Storage temperature.

\*\*: Considering mounting position with terminals to the top. For other mounting position, please request evaluation.

 \*\*\*:  $\theta_{hs}$  – Maximum temperature allowed at the capacitors hot spot.

**Electrical characteristics: Clearance and creepage distances**

Series	Diameter (mm)	Terminal to terminal		Terminal to case	
		Clearance (mm)	Creepage (mm)	Clearance (mm)	Creepage (mm)
B32361	63.5	23	30	13	12
B32362	75	25	55	14	16
	85	25	63	17	19

**Maximum current  $I_{max}$** 

The maximum RMS current for continuous operation

**Maximum peak current  $\hat{i}$** 

The maximum current amplitude which occurs instantaneously during continuous operation. The maximum peak current ( $\hat{i}$ ) and the maximum rate of voltage rise  $(dV/dt)_{max}$  on a capacitor are related as follows:

$$\hat{i} = C \cdot (dV/dt)_{max}$$

**Maximum surge current  $I_s$** 

The admissible peak current induced by a switching or any other disturbance of the system which is allowed for a limited number of times.

$$I_s = C \cdot (dV/dt)_s$$

Maximum duration: 50 ms/pulse

Maximum number of occurrences: 1000 (during load)

**Series Resistance  $R_s$** 

The series resistance of a capacitor is the result of the resistive losses that occur in the electrodes, in the contacting and in the inner wiring.

The series resistance  $R_s$  generates the ohmic losses  $(I^2 \cdot R_s)$  in a capacitor, and it is largely independent of frequency.

**Self-Inductance  $L_{self}$** 

The self-inductance is produced by the inductance of the terminals and the windings. With Self-Inductance, it is possible to determine the Resonance Frequency.

$$F = \frac{1}{2\pi\sqrt{L_{self} C}}$$

<b>B32361</b>												
$V_{RAC}$ $V_{RMS}$	$C_R$ $\mu F$	Ordering code	$I_{max}$ A	$\hat{i}$ A	$I_s$ kA	$R_s$ m $\Omega$	$L_{self}$ nH	D mm	H mm	Stud	Weight kg	Packing units pcs.
350 V AC 250 V AC	50	B32361A2506J050	25	1250	3.8	3.7	195	63.5	70	M12	0.3	12
	60	B32361A2606J050	25	1500	4.5	3.6	195	63.5	70	M12	0.3	12
	70	B32361A2706J050	25	1300	3.8	4.2	220	63.5	82	M12	0.3	12
	80	B32361A2806J050	25	1500	4.4	4.1	220	63.5	82	M12	0.3	12
	100	B32361A2107J050	25	1200	3.6	5.5	225	63.5	107	M12	0.4	12
	150	B32361A2157J050	25	1300	4.0	6.3	265	63.5	132	M12	0.5	12
	200	B32361B2207J050	25	1600	4.8	6.3	275	63.5	142	M12	0.6	12
<b>B32362</b>												
$V_{RAC}$ $V_{RMS}$	$C_R$ $\mu F$	Ordering code	$I_{max}$ A	$\hat{i}$ A	$I_s$ kA	$R_s$ m $\Omega$	$L_{self}$ nH	D mm	H mm	Stud	Weight kg	Packing units pcs.
350 V AC 250 V AC	150	B32362A2157J050	35	1800	5.4	2.5	185	75	117	M12	0.7	6
	200	B32362B2207J050	50	2400	7.2	2.1	185	85	117	M12	0.8	4
	250	B32362A2257J050	40	2000	6.0	3.0	210	75	152	M12	0.9	6
	300	B32362A2307J050	50	3600	10.8	1.7	200	75	197	M12	1.1	6
	400	B32362A2407J050	50	4800	14.4	1.5	200	85	197	M12	1.3	4
	500	B32362B2507J050	50	4400	13.3	1.9	230	85	247	M12	1.7	4
	600	B32362B2607J050	50	5300	16.0	1.8	230	85	247	M12	1.7	4
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$V_{RAC}$ $V_{RMS}$	$C_R$ $\mu F$	Ordering code	$I_{max}$ A	$\hat{i}$ A	$I_s$ kA	$R_s$ m $\Omega$	$L_{self}$ nH	D mm	H mm	Stud	Weight kg	Packing units pcs.
460 V AC 330 V AC	50	B32361B3506J030	18	920	2.7	4.4	220	63.5	82	M12	0.3	12
	60	B32361A3606J030	18	720	2.1	6.2	225	63.5	107	M12	0.4	12
	70	B32361A3706J030	20	840	2.5	5.8	225	63.5	107	M12	0.4	12
	80	B32361A3806J030	25	960	2.8	5.5	225	63.5	107	M12	0.4	12
	100	B32361B3107J030	25	880	2.6	6.9	265	63.5	132	M12	0.5	12
<b>B32362</b>												
$V_{RAC}$ $V_{RMS}$	$C_R$ $\mu F$	Ordering code	$I_{max}$ A	$\hat{i}$ A	$I_s$ kA	$R_s$ m $\Omega$	$L_{self}$ nH	D mm	H mm	Stud	Weight kg	Packing units pcs.
460 V AC 330 V AC	100	B32362A3107J030	30	1450	4.3	2.8	185	75	117	M12	0.7	6
	150	B32362A3157J030	30	1450	4.3	3.7	210	75	152	M12	0.9	6
	200	B32362B3207J030	40	1900	5.8	3.1	210	85	152	M12	1.0	4
	250	B32362A3257J030	50	3600	10.8	1.7	200	85	197	M12	1.3	4
	300	B32362A3307J030	50	4300	12.9	1.6	200	85	197	M12	1.3	4
	400	B32362A3407J030	50	3850	11.6	2.1	240	85	267	M12	1.8	4

<b>B32361</b>												
$V_{RAC}$ $V_{RMS}$	$C_R$ $\mu F$	Ordering code	$I_{max}$ A	$\hat{i}$ A	$I_s$ kA	$R_s$ m $\Omega$	$L_{self}$ nH	D mm	H mm	Stud	Weight kg	Packing units pcs.
680 V AC 480 V AC	10	B32361A4106J080	10	400	1.2	4.8	195	63.5	70	M12	0.3	12
	15	B32361A4156J080	15	600	1.8	4.1	195	63.5	70	M12	0.3	12
	20	B32361A4206J080	20	800	2.4	4.3	195	63.5	70	M12	0.3	12
	25	B32361A4256J080	25	750	2.2	5.2	220	63.5	82	M12	0.3	12
	30	B32361A4306J080	25	800	2.6	4.8	220	63.5	82	M12	0.3	12
	40	B32361A4406J080	20	750	2.3	6.6	225	63.5	107	M12	0.4	12
	50	B32361A4506J080	25	950	2.9	6.0	225	63.5	107	M12	0.4	12
	60	B32361A4606J080	25	850	2.6	7.7	265	63.5	132	M12	0.5	12
	70	B32361A4706J080	25	900	2.7	8.0	275	63.5	142	M12	0.6	12
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$V_{RAC}$ $V_{RMS}$	$C_R$ $\mu F$	Ordering code	$I_{max}$ A	$\hat{i}$ A	$I_s$ kA	$R_s$ m $\Omega$	$L_{self}$ nH	D mm	H mm	Stud	Weight kg	Packing units pcs.
680 V AC 480 V AC	60	B32362A4606J080	30	1150	3.4	3.2	185	75	117	M12	0.7	6
	70	B32362A4706J080	50	2050	6.2	1.7	180	75	147	M12	0.9	6
	80	B32362A4806J080	50	1350	7.1	1.6	180	75	147	M12	0.9	6
	100	B32362A4107J080	50	1900	5.7	2.3	200	75	197	M12	1.1	6
	150	B32362A4157J080	50	2850	8.6	1.9	200	85	197	M12	1.3	4
	200	B32362A4207J080	50	2850	8.5	2.3	230	85	247	M12	1.7	4
	250	B32362A4257J080	50	3200	9.6	2.3	240	85	267	M12	1.8	4

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### Cautions and warnings

In case of dents of more than 1 mm depth or any other mechanical damage, capacitors must not be used at all. This applies also in cases of leakage.

- To ensure the full functionality of the overpressure disconnecter, elastic elements must not be hindered and a minimum space of 12 mm has to be kept above each capacitor.
- Check tightness of the connections/terminals periodically.
- The energy stored in capacitors may be lethal. To prevent any chance of shock, discharge and short-circuit the capacitor before handling.
- Failure to follow cautions may result, worst case, in premature failures, bursting and fire.
- EPCOS AG is not responsible for any kind of possible damages to persons or things due to improper installation and application of capacitors for power electronics.

### Safety

- Electrical or mechanical misapplication of capacitors may be hazardous. Personal injury or property damage may result from bursting of the capacitor or from expulsion of oil or melted material due to mechanical disruption of the capacitor.
- Ensure good, effective grounding for capacitor enclosures.
- Observe appropriate safety precautions during operation (self-recharging phenomena and the high energy contained in capacitors).
- Handle capacitors carefully, because they may still be charged even after disconnection.
- The terminals of capacitors, connected bus bars and cables as well as other devices may also be energized.
- Follow good engineering practice.

### Thermal load

After installation of the capacitor it is necessary to verify that maximum hot-spot temperature is not exceeded at extreme service conditions.

### Mechanical protection

The capacitor has to be installed in a way that mechanical damages and dents in the aluminum can be avoided.

### Storage and operating conditions

Do not use or store capacitors in corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. In dusty environments regular maintenance and cleaning especially of the terminals is required to avoid conductive path between phases and/or phases and ground.

The maximum storage temperature is 85 °C.



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