Power electronic capacitors

General purpose applications

Series/Type: **B3236x**

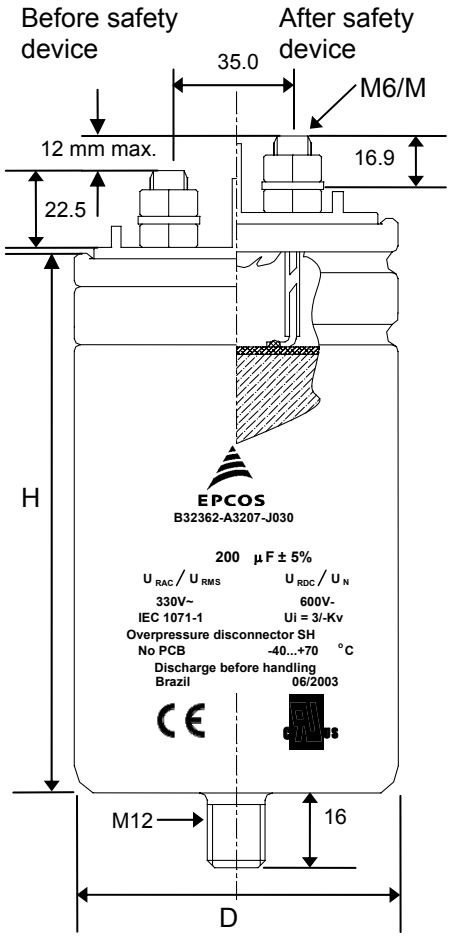
Date: 2006-07-04
Version: 2

Metallized polypropylene film capacitors - aluminum case for general purpose applications

B32360 - fast-on terminals

Picture 1

B32361 / B32362 - screw terminals



Picture 2

Characteristics

Rated capacitance C_R 3 µF … 600 µF (see table)
Tolerance ±5%

Rated voltage AC $U_{R, AC}$ / U_{RMS}	Rated voltage DC $U_{R, DC}$ / U_R	Repetitive peak voltage U_{max}	Non repetitive peak voltage
250 V	450 V	450 V	550 V
330 V	600 V	600 V	700 V
480 V	850 V	850 V	1000 V

$I_{R, AC}$ RMS max at 60°C see table
dv/dt see table
Transient inrush current 100 x $I_{R, AC}$

Test data

Voltage between terminals U_{TT} 1.35 x $U_{R, AC}$, 2 s
Voltage terminals and aluminum can U_{TC} 3000 V AC, 10 s

Dissipation factor tan δ at 50 Hz ≤ 6.0 x 10^{-4}
Life test: IEC 1071-1/2
Life expectancy: 100 000 hours for U_{RMS} $|\Delta C/C| \leq 3\%$

Climatic Category **-40/85/21**

Storage temperature: T_{min}: -40 °C, T_{max}: +85 °C
Operating temperature ambient with natural cooling: -40 °C … +70 °C
Max. hot spot temperature: +85 °C
Max. permissible humidity: 95%
Max. permissible altitude: 2000 m above sea level

General data

Resin filling Non PCB, soft polyurethane
Safety device Overpressure disconnector, self-healing technology
Mounting and grounding Stud on bottom of aluminum can
Cooling Naturally air-cooled (or forced air cooling)
Degree of protection Indoor mounting
Reference standards IEC 1071
UL approval file E106388

250 V AC/450 V DC

B32360 – fast-on terminals (picture 1)

U_R V	C_R µF	Ordering code	$I_{RMS, max}$ A	dv/dt V/µs	D mm	H mm	Stud	Weight kg	Packing unit
250 V AC (450 V DC)	10	B32360A2106J050	6	50	40	63	M8	0.1	45
	15	B32360A2156J050	10	50	40	63	M8	0.1	45
	20	B32360A2206J050	10	50	40	63	M8	0.1	45
	25	B32360A2256J050	12	50	40	63	M8	0.1	45
	30	B32360A2306J050	15	50	53	68	M8	0.2	12
	40	B32360A2406J050	20	50	53	68	M8	0.2	12
	50	B32360A2506J050	20	40	53	80	M8	0.2	12
	60	B32360A2606J050	20	30	53	80	M8	0.2	12
	70	B32360A2706J050	20	30	63.5	80	M12	0.3	12
	80	B32360A2806J050	20	25	63.5	80	M12	0.3	12
	100	B32360A2107J050	20	20	63.5	105	M12	0.4	12
	150	B32360A2157J050	20	15	63.5	142	M12	0.6	12

B32361 – M6 screw terminals (picture 2)

U_R V	C_R µF	Ordering code	$I_{RMS, max}$ A	dv/dt V/µs	D mm	H mm	Stud	Weight kg	Packing unit
250 V AC (450 V DC)	50	B32361A2506J050	25	50	63.5	68	M12	0.3	12
	60	B32361A2606J050	25	40	63.5	68	M12	0.3	12
	70	B32361A2706J050	25	35	63.5	80	M12	0.3	12
	80	B32361A2806J050	25	30	63.5	80	M12	0.3	12
	100	B32361A2107J050	25	25	63.5	105	M12	0.4	12
	150	B32361A2157J050	25	15	63.5	132	M12	0.5	12
	200	B32361A2207J050	25	15	63.5	132	M12	0.5	12

B32362 – M10 screw terminals (picture 2)

U_R V	C_R µF	Ordering code	$I_{RMS, max}$ A	dv/dt V/µs	D mm	H mm	Stud	Weight kg	Packing unit
250 V AC (450 V DC)	150	B32362A2157J050	35	25	75	120	M12	0.7	6
	200	B32362A2207J050	50	25	75	120	M12	0.7	6
	250	B32362A2257J050	40	15	75	155	M12	0.9	6
	300	B32362A2307J050	50	15	75	200	M12	1.1	6
	400	B32362A2407J050	50	15	85	200	M12	1.4	4
	500	B32362A2507J050	50	10	85	266	M12	1.9	4
	600	B32362A2607J050	50	10	85	266	M12	1.9	4

330 V AC/600 V DC

B32360 – Fast-on terminals (picture 1)

U_R V	C_R µF	Ordering code	$I_{RMS, max}$ A	dv/dt V/µs	D mm	H mm	Stud	Weight kg	Packing unit
330 V AC (600 V DC)	10	B32360A3106J030	6	60	53	68	M8	0.2	12
	15	B32360A3156J030	10	60	53	68	M8	0.2	12
	20	B32360A3206J030	12	60	53	68	M8	0.2	12
	25	B32360A3256J030	15	60	53	68	M8	0.2	12
	30	B32360A3306J030	15	50	53	80	M8	0.2	12
	40	B32360A3406J030	12	30	53	105	M8	0.3	12
	50	B32360A3506J030	15	30	53	105	M8	0.3	12
	60	B32360A3606J030	18	30	63.5	105	M12	0.4	12
	70	B32360A3706J030	20	30	63.5	105	M12	0.4	12
	80	B32360A3806J030	20	25	63.5	105	M12	0.4	12
	100	B32360A3107J030	20	20	63.5	142	M12	0.6	12

B32361 - M6 screw terminals (picture 2)

U_R V	C_R µF	Ordering code	$I_{RMS, max}$ A	dv/dt V/µs	D mm	H mm	Stud	Weight kg	Packing unit
330 V AC (600 V DC)	50	B32361A3506J030	15	30	63.5	105	M12	0.4	12
	60	B32361A3606J030	18	30	63.5	105	M12	0.4	12
	70	B32361A3706J030	20	30	63.5	105	M12	0.4	12
	80	B32361A3806J030	25	30	63.5	105	M12	0.4	12
	100	B32361A3107J030	20	20	63.5	142	M12	0.6	12

B32362 – M10 screw terminals (picture 2)

U_R V	C_R µF	Ordering code	$I_{RMS, max}$ A	dv/dt V/µs	D mm	H mm	Stud	Weight kg	Packing unit
330 V AC (600 V DC)	100	B32362A3107J030	30	30	75	120	M12	0.7	6
	150	B32362A3157J030	30	20	75	155	M12	0.9	6
	200	B32362A3207J030	40	20	75	155	M12	0.9	6
	250	B32362A3257J030	50	20	85	200	M12	1.4	4
	300	B32362A3307J030	50	15	85	200	M12	1.4	4
	400	B32362A3407J030	50	10	85	270	M12	2.0	4

480 V AC/850 V DC

B32360 – Fast-on terminals (picture 1)

U_R V	C_R µF	Ordering code	$I_{RMS, max}$ A	dv/dt V/µs	D mm	H mm	Stud	Weight kg	Packing unit
480 V AC (850 V DC)	3	B32360A4305J080	3	70	40	63	M8	0.1	45
	5	B32360A4505J080	5	70	40	63	M8	0.1	45
	10	B32360A4106J080	10	70	53	68	M8	0.2	12
	15	B32360A4156J080	15	70	53	68	M8	0.2	12
	20	B32360A4206J080	15	50	53	80	M8	0.2	12
	25	B32360A4256J080	12	30	53	105	M8	0.3	12
	30	B32360A4306J080	15	30	53	105	M8	0.3	12
	40	B32360A4406J080	20	30	63.5	105	M12	0.4	12
	50	B32360A4506J080	20	30	63.5	105	M12	0.4	12
	60	B32360A4606J080	20	30	63.5	132	M12	0.5	12
	70	B32360A4706J080	20	30	63.5	142	M12	0.6	12

B32361 - M6 screw terminals (picture 2)

U_R V	C_R µF	Ordering code	$I_{RMS, max}$ A	dv/dt V/µs	D mm	H mm	Stud	Weight Kg	Packing unit
480 V AC (850 V DC)	20	B32361A4206J080	20	70	63.5	68	M12	0.3	12
	25	B32361A4256J080	25	70	63.5	80	M12	0.3	12
	30	B32361A4306J080	25	60	63.5	80	M12	0.3	12
	40	B32361A4406J080	20	30	63.5	105	M12	0.4	12
	50	B32361A4506J080	25	30	63.5	105	M12	0.4	12
	60	B32361A4606J080	25	30	63.5	132	M12	0.5	12
	70	B32361A4706J080	25	30	63.5	142	M12	0.6	12

B32362 – M10 screw terminals (picture 2)

U_R V	C_R µF	Ordering code	$I_{RMS, max}$ A	dv/dt V/µs	D mm	H mm	Stud	Weight Kg	Packing unit
480 V AC (850 V DC)	60	B32362A4606J080	30	30	75	120	M12	0.7	6
	70	B32362A4706J080	50	30	75	150	M12	0.8	6
	80	B32362A4806J080	50	30	75	150	M12	0.9	6
	100	B32362A4107J080	50	30	75	200	M12	1.1	6
	150	B32362A4157J080	50	30	85	200	M12	1.4	4
	200	B32362A4207J080	50	15	85	250	M12	1.8	4
	250	B32362A4257J080	50	10	85	270	M12	2.0	4

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 disconnector, 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 are 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.

Overpressure disconnector

To ensure full functionality of an overpressure disconnector, the following must be observed:

1. The elastic elements must not be hindered, i.e.
   – connecting lines must be flexible leads (cables).
   – there must be sufficient space for expansion above the connections.
   – folding crimps must not be retained by clamps.
2. Stress parameters of the capacitor must be within the IEC61071 specification.

Service life expectancy

Electrical components do not have an unlimited service life expectancy; this applies to self-healing capacitors too. The maximum service life expectancy may vary depending on the application the capacitor is used in.

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, EPCOS is 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 an EPCOS 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 passive 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 a passive 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 a passive 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.epcos.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.
6. Unless otherwise agreed in individual contracts, **all orders are subject to the current version of the "General Terms of Delivery for Products and Services in the Electrical Industry" published by the German Electrical and Electronics Industry Association (ZVEI)**.
7. The trade names EPCOS, EPCOS-JONES, Baoke, CeraDiode, CSSP, MLSC, PhaseCap, PhaseMod, SIFI, SIKOREL, SilverCap, SIMID, SIOV, SIP5D, SIP5K, UltraCap, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.epcos.com/trademarks.