



Film Capacitors – AC Capacitors

Motor run capacitors

Series/Type: CBB65A-1
Ordering code: B33331I6*
Date: Feb-2023
Version: 01

Preliminary data
Constructions

- Metallized polypropylene film
- Aluminum can and top
- Filling material: Resinol

Features

- Self-healing properties
- Low dissipation factor
- Overpressure disconnection safety device
- S2 safety class as per IEC 60252-1:2010/AMD1:2013
- High insulation resistance
- EN 60335-1 (Ed 6, 2020) compliance

Application

- For general sine wave application, mainly as motor run

Terminals

- 2+2 fast-on terminals 6.3 x 0.8mm # 250 style, other on request





Mounting parts (optional)

- Threaded stud at bottom of can (M8) as option


Technical data and specifications

Reference standards	DIN EN 60252-1:2014-07; EN 60252-1:2011 + A1:2013; IEC 60252-1:2010/AMD1:2013 UL 810 (Ed6, 2019)
Safety class to IEC 60252-1:2010/AMD1:2013	S2
Life expectancy to IEC 60252-1:2010/AMD1:2013	450 V : 10000 h (Class B)
UL 810 (Ed6, 2019)	Approved component
Rated capacitance C_R	See table ordering code, page 5
Tolerance Tx	± 5%, other tolerance on request
Rated voltage V_{rms}	450 V AC, others on request
Rated frequency f_R	50/60 Hz

Preliminary data

Test data	
AC test voltage terminal to terminal V_{TT}	$2.0 \cdot V_R$, 2 s (routine test)
AC test voltage terminal to can V_{TC}	3000 V AC, 2 s (routine test)
Insulation resistance R_{ins} or time constant at 20 °C, rel. Humidity $\leq 65\%$ (minimum as-delivered values)	10000 s
Dissipation factor $\tan \delta$ at 20 °C	$\leq 7 \times 10^{-3}$ (1 kHz)
Maximum rate of voltage rise dV/dt_{max}	10 V/ μ s
Climatic data	
Climatic category	40/85/21 to IEC 60068-1 (2013)
Lower category T_{min}	-40° C
Upper category T_{max}	+85° C
Damp heat test t_{test}	21 days
Mechanical and thermal properties of terminal insulator material	
Terminal insulation plastic material <ul style="list-style-type: none"> ■ UL 94 (Ed6, 2013) compatible ■ Compliance to Glow wire test as per IEC60335-1 (Ed6, 2020) 	
Compatibility to RoHS	
Compliance to directive 2011/65/EU	
Approvals: See table for approved ratings	
UL File : E238746 	Approved component 10,000 AFC
Certificate no: 40052996 	Approved from 1 μ F to 20 μ F, 450 V AC, 85 °C: 10000 h (Class B)
	Compliance to LV directive 2014/35/EU

Preliminary data

Dimensional drawings

Figure 1

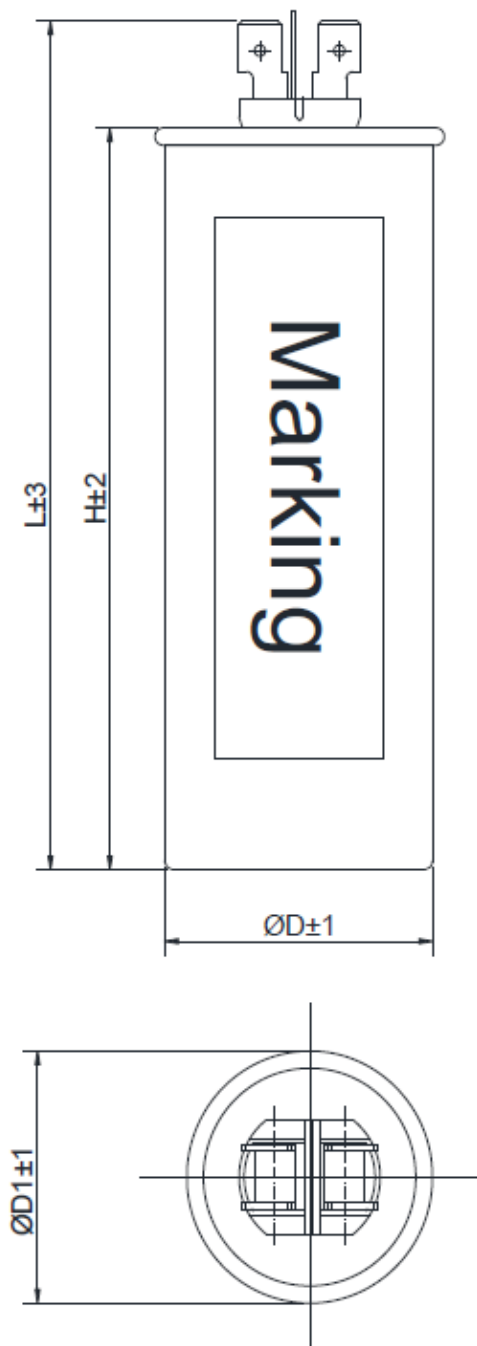
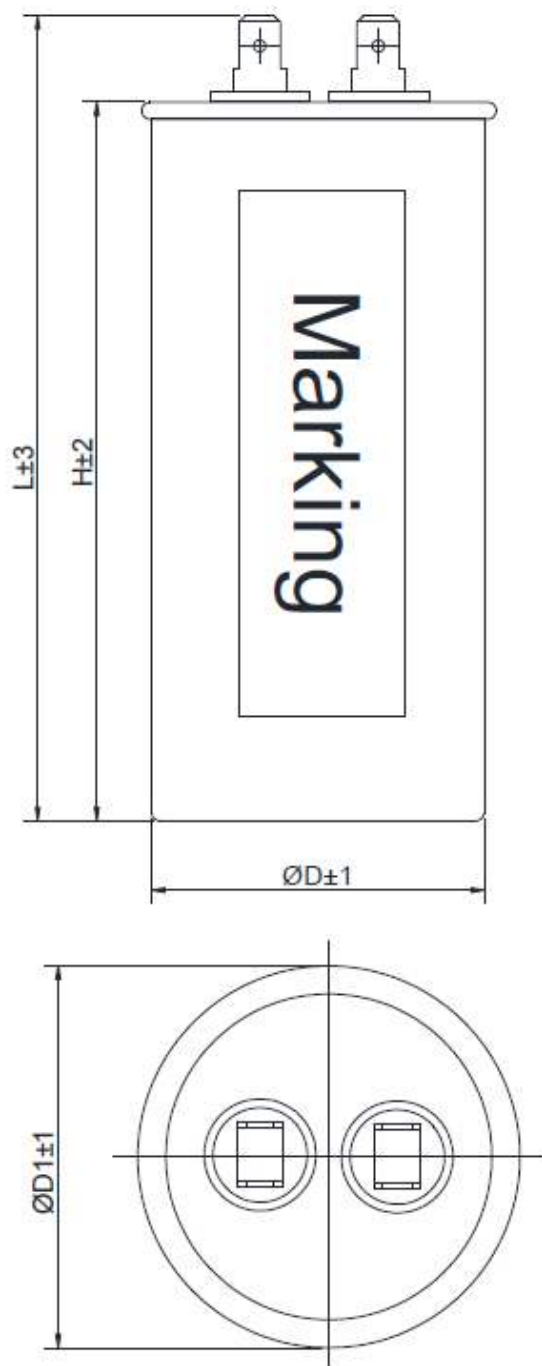
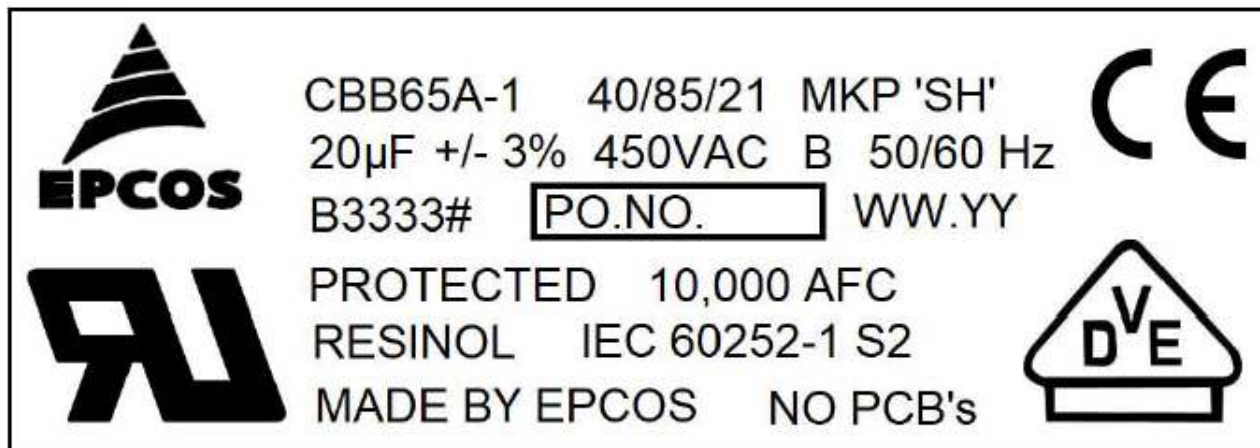


Figure 2



Preliminary data

Marking information

Nomenclature in the above marking information:

CBB65A-1 : Product family
 PO Number : Production order number
 B3333# : Series
 40/85/21 : Lower temperature limit: -40° C
 : Upper temperature limit: 85° C
 : Damp heat test: 21 days
 S2: Safety class as per IEC60252-1
 B: Life expectancy as per IEC60252-1
 SH : Self Healing type MPP capacitor
 WW : Week code
 YY : Year code

Preliminary data
Ordering code

V _R	Capacitance	Can Ø D mm	Can Height H mm	Can Length L mm	Drawing no.	Ordering code	Packing unit	Approvals
V AC	µF							
450	1	30	55	73	1	B33331I6105J0*X	100	VDE/UL
	2	30	55	73	1	B33331I6205J0*X	100	VDE/UL
	2.5	30	55	73	1	B33331I6255J0*X	100	VDE/UL
	3	30	55	73	1	B33331I6305J0*X	100	VDE/UL
	3.5	30	55	73	1	B33331I6355J0*X	100	VDE/UL
	4	30	55	73	1	B33331I6405J0*X	100	VDE/UL
	5	30	55	73	1	B33331I6505J0*X	100	VDE/UL
	7	30	55	73	1	B33331I6705J0*X	100	VDE/UL
	8.5	30	65	83	1	B33331I6855J0*X	100	VDE/UL
	10	30	65	83	1	B33331I6106J0*X	100	VDE/UL
	12	30	75	93	1	B33331I6126J0*X	100	VDE/UL
	15	30	90	108	1	B33331I6156J0*X	100	VDE/UL
	20	35	75	88	2	B3333wl6206J0*X	64	VDE/UL

$$D1 = \text{Ø}D + 3\text{mm}$$

Composition of ordering code

B33331: 2+2 fast-on terminals

B3333x: Other terminal configuration on request.

* construction:

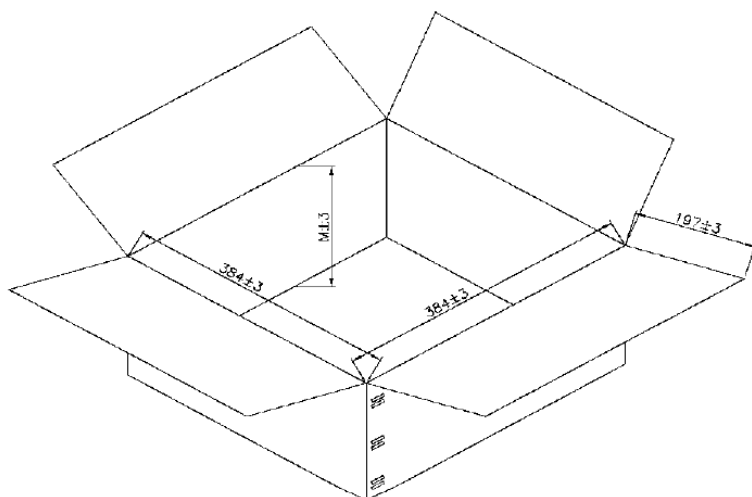
6 Aluminium Can Flat type

8 Aluminium Can with M8 bolt

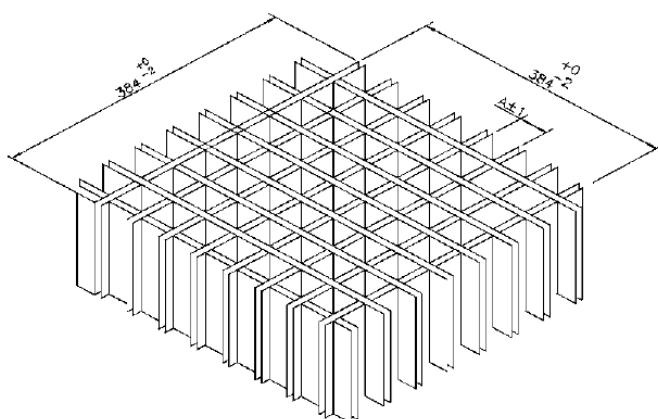
X:

0 as per this dimension and properties

1-9 special dimension and properties

Preliminary data
Packing box


$$M = H(\text{Capacitor height}) + \text{Terminal height} + 10\text{mm min.}$$


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.

Cautions and warnings

⚠ Please read “Applications warning, installation and maintenance instructions” and the “General Safety Data Sheet for Power Capacitors” issued by ZVEI, which are available on the internet at www.tdkelectronics.tdk.com/ac_capacitors, to ensure optimum performance and to prevent products from failing, and in worst case, bursting and fire. Information given in the data sheet reflects typical specifications. You are kindly requested to approve our product specifications or request our approval for our specification before ordering.

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.

Important notes

8. The trade names EPCOS, CarXield, CeraCharge, CeraDiode, CeraLink, CeraPad, CeraPlas, CSMP, CTVS, DeltaCap, DigiSiMic, ExoCore, FilterCap, FormFit, InsuGate, LeaXield, MiniBlue, MiniCell, MKD, MKK, ModCap, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PowerHap, PQSine, PQvar, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, 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 2022-07