



Film Capacitors - Power Factor Correction

PhaseCap Compact Capacitors

Series/Type:	MKK400-D-5-02
Ordering code:	B25673A4052A000
Date:	2014-09-8
Version:	3

© EPCOS AG 2015. Reproduction, publication and dissemination of this publication, enclosures hereto and the information contained therein without EPCOS' prior express consent is prohibited.

EPCOS AG is a TDK Group Company.

Construction

- Dielectric: Polypropylene film
- Non-PCB, semi-dry biodegradable resin
- Concentric winding
- Wave cut
- Extruded round aluminium can with stud
- Provided with ceramic discharge module
- Overpressure disconnecter.

Features

- Three-phase, delta connected
- Self-healing technology
- Naturally air cooled (or forced air cooling)
- Indoor mounting

Typical applications

- For Power Factor Correction

Terminals

- Optimized capacitor safety terminals

Mounting

- Threaded stud at bottom of can
(max. torque for M12 = 10 Nm)



Technical data and specifications

Characteristics	MKK400-D-5-02	
Rated capacitance C_N	3 • 33.2 μ F	
Tolerance	-5 / +10%	
Connection	D (Delta)	
Rated voltage V_N	400 V AC	
Rated frequency f_N	50 Hz	60 Hz
Output	5.0 kvar	6.0 kvar
Rated current I_R	7 A	9 A
$\tan \delta_0$ (dielectric)	~0.2 W / kvar	
W_N	16 Ws	
R_S	3.19 m Ω	
$R_{is} \cdot C$	30000 s	
* $\tan \delta$ (50 Hz)	≤ 0.3 W / kvar	

* Without discharge resistor

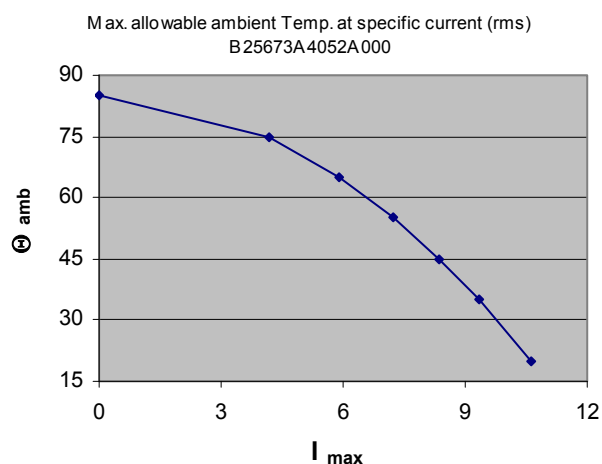
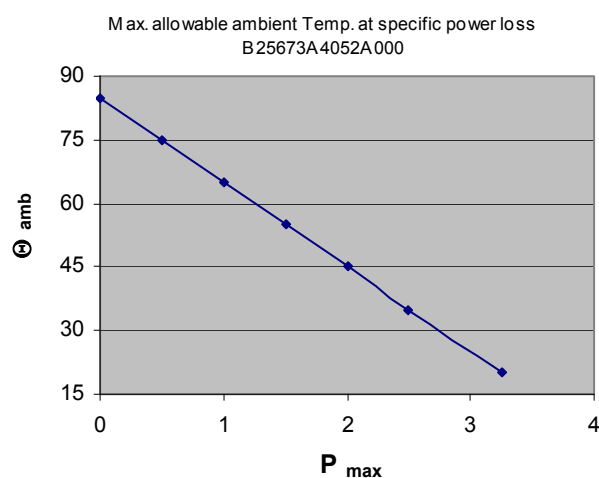
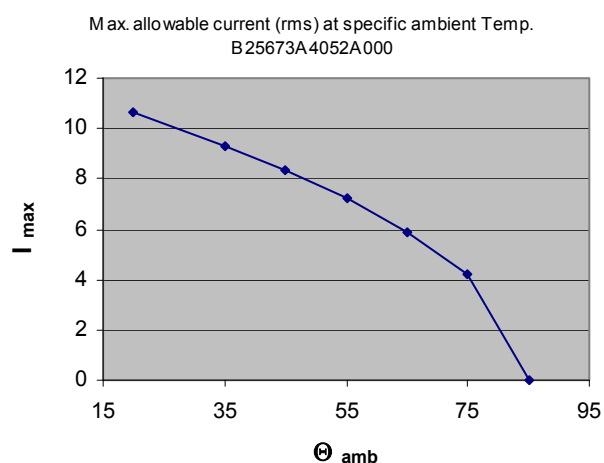
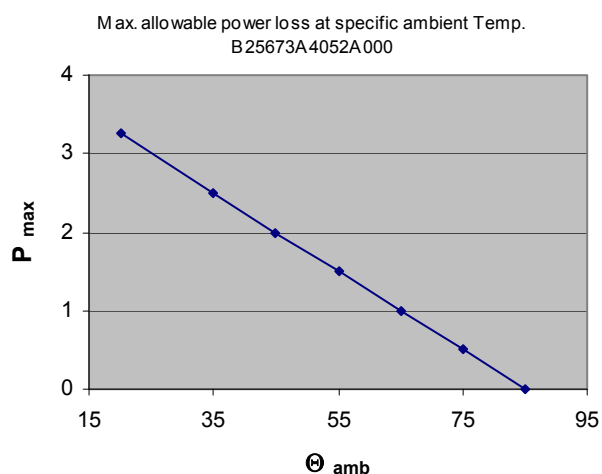
Maximum ratings	
V_{max} (up to 8 h daily)	440 V AC rms / 622 V peak
V_{max} (up to 1 min)	520 V AC rms / 735 V peak
I_{max}	Up to $2.2 \cdot I_R$ (A) including combined effects of harmonics, overvoltages and capacitance tolerance*
I_S	$400 \cdot I_R$ (A)
$V_{TC \text{ imp}}$	8000 Vpk (Standard 1.2/50 μ s impulse)

*Care must be taken to ensure that the maximum permissible voltages and operating temperatures are not exceeded

Test data	
V_{TT}	900 V AC / 50 Hz for 10 s
V_{TC}	3000 V AC / 50 Hz for 10 s

Design data	
Dimensions (d x h)	85 x 125 mm
Weight approx	0.7 kg
Impregnation	Non PCB, semi-dry biodegradable resin
Fixing	Threaded bolt M12
Max. torque (Al can stud)	10 Nm
Mounting position	Any mounting position possible. See "Maintenance and Installation Manual" for further details.

Climatic category −40/60		
$\ominus$ min	−40 °C	
$\ominus$ max	60 °C	
Storage temperature	−40 °C....+85 °C	
Θ_{hotspot} Max.	85 °C	
Maximum power loss at Θ_{ambient}	P max	at Θ_{ambient}
	1.5 W	55 °C
	1.0 W	65 °C
	0.5 W	75 °C
	0 W	85 °C
Humidity	av. rel. < 95%	
Degree of protection	IP 20	
Maximum altitude	4,000 m	



Mean life expectancy

t_{LD}	Up to 200 000 hours (temperature class $-40/C$) ; $\Theta_{HS} \leq 70^{\circ}C$ Up to 150 000 hours (temperature class $-40/60$) ; $\Theta_{HS} \leq 70^{\circ}C$
Max. 10000 switchings per year	

Terminals

Protection degree	Isolated terminals, IP20
Max. torque	1.2 Nm
Terminal cross section	16 mm ²
Maximum terminal current	50 A
Creepage distance (min)	12.7 mm
Clearance (min)	9.6 mm

Safety

Mechanical safety	Overpressure disconnecter
Max. short circuit current	(AFC: 10 kA)
Discharge resistor time	≤ 60 s to 75 V or less

Reference standards

IEC 60831-1/2, UL 810-5th edition

Label design


**PhaseCap[®]
Compact**

MKK400-D-5-02

B25673A4052A000

$C_N = 3 \times 33.2 \mu F \pm 10/-5 \% \Delta SH$

U_N	$Q_N/50Hz$	$Q_N/60Hz$
400V	5.0 kvar	6.0 kvar
380V	4.5 kvar	5.4 kvar
240V	1.8 kvar	2.2 kvar

$U_i = 3/-kV -40/60$

Overpressure disconnecter

Non PCB

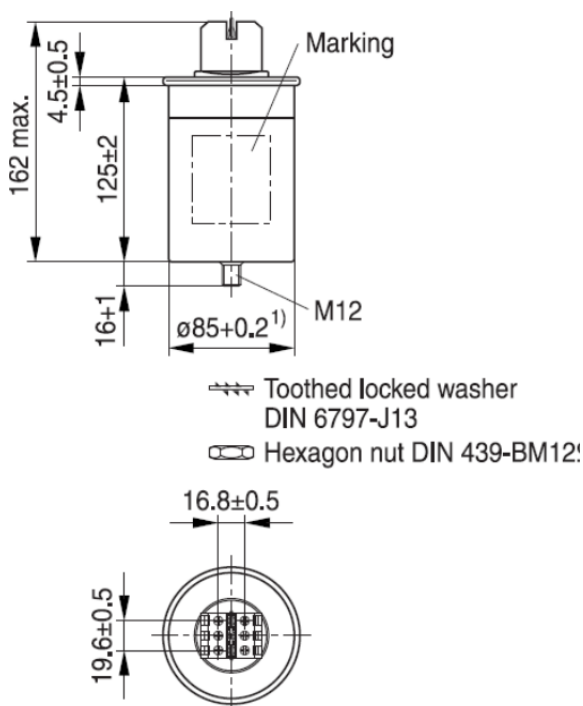
IEC 60831(96)



Made by EPCOS

09.11

DISCHARGE CAPACITOR BEFORE HANDLING



KLK1105-W

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.
8. The trade names EPCOS, CeraCharge, CeraDiode, CeraLink, CeraPad, CeraPlas, CSMP, CTVS, DeltaCap, DigiSiMic, ExoCore, FilterCap, FormFit, LeaXield, MiniBlue, MiniCell, MKD, MKK, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PowerHap, PQSine, PQvar, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, ThermoFuse, WindCap 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 2018-10

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

TDK:

[B25673A4052A000](#)