Power Capacitors

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B25839K6474M000		2014-08-14	2015-03-31	2016-09-30
B25839K6334M000		2014-08-14	2015-03-31	2016-09-30
B25839K6224M000		2014-08-14	2015-03-31	2016-09-30

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B25839K6104M000		2014-08-14	2015-03-31	2016-09-30
B25839C6684M000		2014-08-14	2015-03-31	2016-09-30
B25839C6474M000		2014-08-14	2015-03-31	2016-09-30
B25839C6334M000		2014-08-14	2015-03-31	2016-09-30
B25839C6224M000		2014-08-14	2015-03-31	2016-09-30
B25839C6105K000		2014-08-14	2015-03-31	2016-09-30
B25839C6104M000		2014-08-14	2015-03-31	2016-09-30

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at www.epcos.com/sales.

Overvoltage proof
High rate of voltage rise permitted
Also suitable for general-purpose applications

Construction

- Self-healing
- Plastic dielectric
- Oil-impregnated tubular windings (no PCB)
- Metal-sprayed end faces ensure reliable contacting
- Cylindrical aluminum case with insulating sleeve

Terminals

- Central axial leads

Individual data sheets

Individual capacitors of this series are specified in detail
(incl. thermal data) on pages 210 … 213.
Upon request, these data sheets are available for each capacitor type.

Technical data

Standards		IEC 1071-1/2 EN 61071-1/2 VDE 0560 part 120 and 121	
Dielectric dissipation factor	$\tan \delta_0$	$2 \cdot 10^{-4}$	
Max. repetitive rate of voltage rise	$(du/dt)_{max}$	$\frac{\hat{i}}{C}$	
Max. non-repetitive rate of voltage rise	$(du/dt)_s$	$\frac{I_s}{C}$	
Climatic data:			
Min. operating temperature	Θ_{min}	– 25 °C	
Max. operating temperature	Θ_{max}	+ 85 °C	
Average relative humidity		≤ 95 % (B 25 839-K) ≤ 75 % (B 25 839-C)	
Failure quota	$\alpha_{FQ(co)}$	100 failures per 10^9 component hours (B 25 839-K) 1000 failures per 10^9 component hours (B 25 839-C)	
Load duration	$t_{LD(co)}$	100 000 h	
Storage temperature limit	Θ_{stg}	– 55/+ 85 °C	
IEC climatic category (IEC 68-1 and 2)		25/085/56	
Test A, cold		– 25 °C	
Test B, dry heat		+ 85 °C	
Test Ca, damp heat, steady state		56 days/40 °C/93 % rel. humidity	
Values after test Ca:			
Capacitance change	$\Delta C/C$	≤ 1 %	
		B 25 839-K	B 25 839-C
Insulation resistance	R_{is}	≥ 10000 MΩ	≥ 1000 MΩ
Dissipation factor change	$\Delta \tan \delta$	$\leq 1 \cdot 10^{-4}$	$\leq 3 \cdot 10^{-4}$
Test data:			
AC test voltage between terminals	U_{TT}	1,25 · U_N, 50 Hz, 10 s (or DC 1,75 · U_N, 10 s)	
		B 25 839-K	B 25 839-C
Insulation resistance	R_{is}	≥ 10000 MΩ	≥ 3000 MΩ
Dissipation factor (50 Hz)	$\tan \delta$	$\leq 3 \cdot 10^{-4}$	

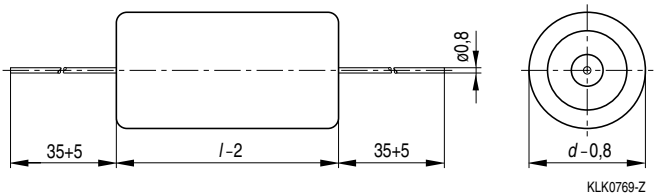
Characteristics and ordering codes

C_N [1)]	I_{max}	$\hat{i}$	I_s	R_S 20 °C	L_{self}	Dimensions $d \times l$	Appr. weight	Ordering code	Pg.
µF	A	A	A	mΩ	nH	mm	g		
U_N = AC 700 V		$\hat{u}$ = 880 V				u_s = 1200 V		U_{TT} = AC 880 V, 10 s	
0,10	6	55	140	30,0	30	16,8 × 32	10	B25839-C6104-M000	
0,10	6	55	140	28,0	30	16,0 × 32	10	B25839-K6104-M000	
0,22	6	65	170	38,0	40	16,8 × 44	20	B25839-C6224-M000	
0,22	6	120	310	15,0	30	20,5 × 32	20	B25839-K6224-M000	
0,33	10	100	250	28,0	40	20,8 × 44	20	B25839-C6334-M000	
0,33	10	130	330	16,0	30	25,0 × 38	30	B25839-K6334-M000	
0,47	10	140	350	22,0	40	20,8 × 44	20	B25839-C6474-M000	
0,47	10	190	470	13,0	40	25,0 × 38	30	B25839-K6474-M000	210
0,68	10	95	240	54,0	60	20,8 × 75	30	B25839-C6684-M000	
1,00	10	150	380	39,0	60	20,8 × 75	30	B25839-C6105-K000	212

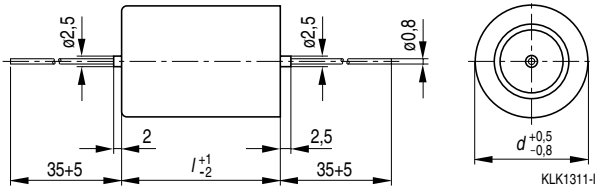
1) Capacitance tolerances: For C_N < 1,0 µF ± 20 %, for C_N ≥ 1,0 µF ± 10 %

Dimensional drawings

B 25 839-C



B 25 839-K



Dimensions in mm

Type	*d*	*l*	Creepage distance	Clearance
B 25 839-C	16,8	32	4,5	4,5
	16,8	44	4,5	4,5
	20,8	44	6,5	6,5
	20,8	75	6,5	6,5
B 25 839-K	16,0	32	4	4
	20,5	32	6	6
	25,0	38	6	6

0,47 µF / 700 Vac

Ordering code: B25839-K6474-M000

Characteristics

C_N, tol.	0,47 µF ± 10 %
U_N	AC 700 V
I_{max}	10 A
L_{self}	40 nH
tan δ_0	$2 \cdot 10^{-4}$
R_S	13 mΩ

Maximum ratings

$\hat{u}$	880 V
u_s	1200 V
$\hat{i}$	190 A
I_s	470 A
$(du/dt)_{max}$	400 V/µs
$(du/dt)_s$	1000 V/µs

Test data

U_{TT}	AC 880 V, 10 s
R_{is}	≥ 10000 MΩ
tan δ (50 Hz)	$\leq 3 \cdot 10^{-4}$

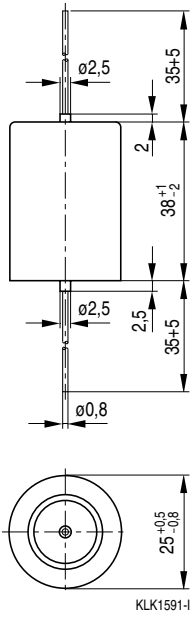
Climatic data

Θ_{min}	– 25 °C
Θ_{max}	+ 85 °C
Humidity	Average relative humidity ≤ 95 %
$\alpha_{FQ(co)}$	$100/10^9$ h
$t_{LD(co)}$	100000 h
Θ_{stg}	– 55 to + 85 °C

IEC climatic category: 25/085/56

(IEC 68-1 and 2)

Θ_{test}	+ 40 °C
Rel. humidity	93 %
t_{test}	56 days
$\Delta C/C$	≤ 1 %
Δ tan δ	$\leq 1 \cdot 10^{-4}$
R_{is}	≥ 10000 MΩ

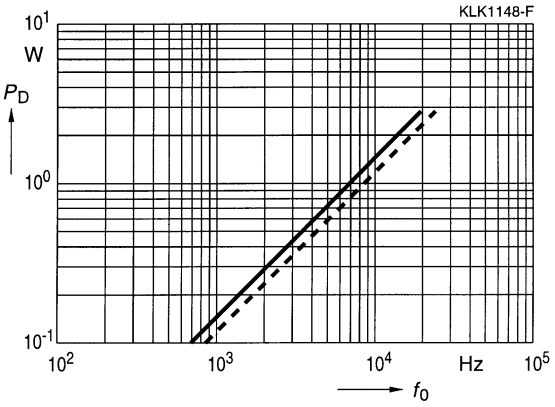


Design data

Dimensions ∅ × *l*	25 mm × 38 mm
Approx. weight	30 g
Impregnation	Oil
Terminals	Leads
Creepage distance	6 mm
Clearance	6 mm

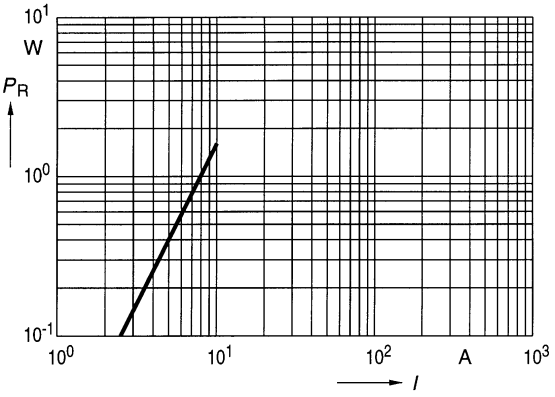
Thermal data

B25839-K6474-M000



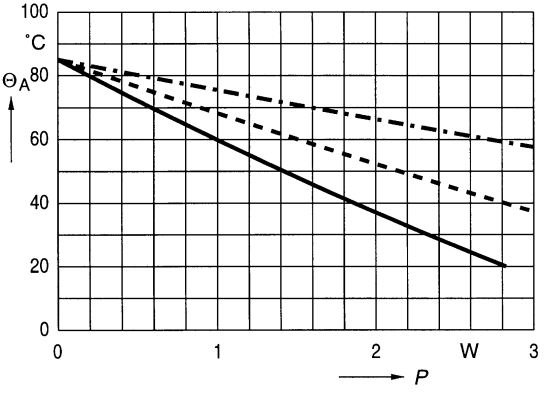
Dielectric power dissipation P_D versus repetition frequency f_0

$\hat{u}_{ac}$ = 700 V ————————
$\hat{u}_{ac}$ = 630 V ----------



Ohmic power dissipation P_R versus rms current value I

R_S (85 °C) = 16 mΩ



Permissible ambient temperature Θ_A versus total power dissipation P

(Upright mounting position)

Natural cooling ————————
Forced cooling 2 m/s ----------
Permissible capacitor temperature -·-·-·-·-·-·-

1 µF / 700 Vac

Ordering code: B25839-C6105-K000

Characteristics

C_N, tol.	1 µF ± 10 %
U_N	AC 700 V
I_{max}	10 A
L_{self}	60 nH
tan δ_0	$2 \cdot 10^{-4}$
R_S	39 mΩ

Maximum ratings

$\hat{u}$	880 V
u_s	1200 V
$\hat{i}$	150 A
I_s	380 A
$(du/dt)_{max}$	150 V/µs
$(du/dt)_s$	380 V/µs

Test data

U_{TT}	AC 880 V, 10 s
R_{is}	≥ 3000 MΩ
tan δ (50 Hz)	$\leq 3 \cdot 10^{-4}$

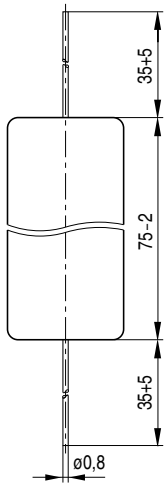
Climatic data

Θ_{min}	– 25 °C
Θ_{max}	+ 85 °C
Humidity	Average relative humidity ≤ 75 %
$\alpha_{FQ(co)}$	$1000/10^9$ h
$t_{LD(co)}$	100000 h
Θ_{stg}	– 55 to + 85 °C

IEC climatic category: 25/085/56

(IEC 68-1 and 2)

Θ_{test}	+ 40 °C
Rel. humidity	93 %
t_{test}	56 days
$\Delta C/C$	≤ 1 %
Δ tan δ	$\leq 3 \cdot 10^{-4}$
R_{is}	≥ 1000 MΩ

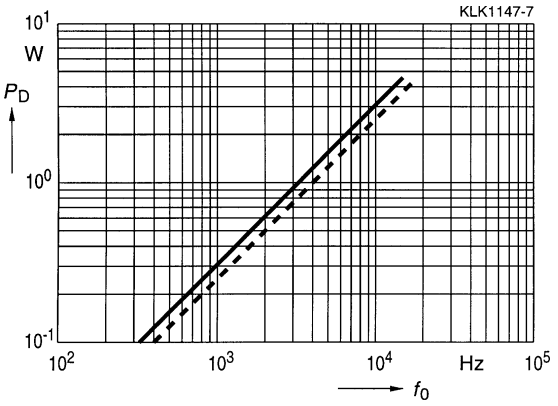


Design data

Dimensions ∅ × l	20,8 mm × 75 mm
Approx. weight	30 g
Impregnation	Oil
Terminals	Leads
Creepage distance	6,5 mm
Clearance	6,5 mm

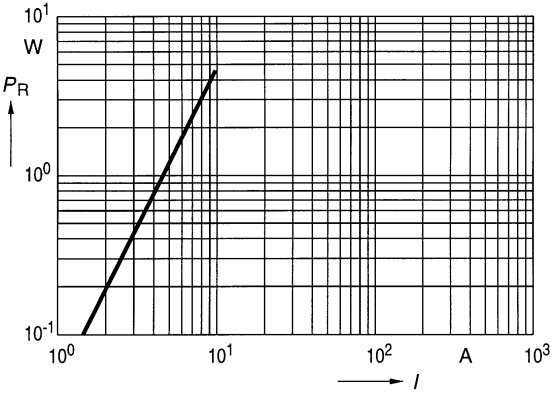
Thermal data

B25839-C6105-K000



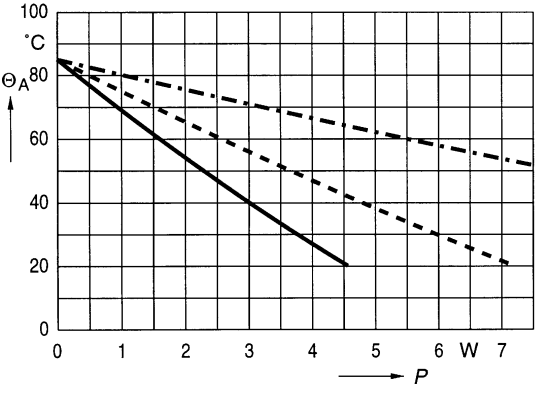
Dielectric power dissipation P_D versus repetition frequency f_0

$\hat{u}_{ac}$ = 700 V ————————
$\hat{u}_{ac}$ = 630 V ----------



Ohmic power dissipation P_R versus rms current value I

R_S (85 °C) = 48 mΩ



Permissible ambient temperature Θ_A versus total power dissipation P

(Upright mounting position)

Natural cooling ————————
Forced cooling 2 m/s ----------
Permissible capacitor temperature -·-·-·-·-·-·-·-

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.

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