



Capacitors for Power Electronics

Series/Type: **B25839**

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B25839C6684M000		2002-12-06	2002-06-30	
B25839K6474M000		2002-12-06	2002-06-30	
B25839C6474M000		2002-12-06	2002-06-30	
B25839K6334M000		2002-12-06	2002-06-30	
B25839C6334M000		2002-12-06	2002-06-30	
B25839K6224M000		2002-12-06	2002-06-30	
B25839C6224M000		2002-12-06	2002-06-30	
B25839K6104M000		2002-12-06	2002-06-30	
B25839C6104M000		2002-12-06	2002-06-30	

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	$\alpha_{FQ(\text{co})}$	100 failures per 10^9 component hours (B 25 839-K) 1000 failures per 10^9 component hours (B 25 839-C)	
Load duration	$t_{LD(\text{co})}$	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	$\Delta \tan \delta$	≤ $1 \cdot 10^{-4}$	≤ $3 \cdot 10^{-4}$
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)	$\tan \delta$	≤ $3 \cdot 10^{-4}$	

B 25 839

Coupling, Damping

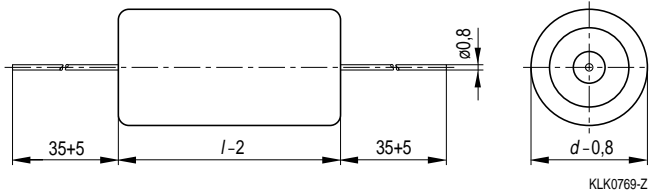
Characteristics and ordering codes

$C_N^{1)}$	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	m Ω	nH	mm	g		
$U_N = \text{AC } 700 \text{ V}$		$\hat{u} = 880 \text{ V}$			$u_s = 1200 \text{ V}$		$U_{\text{TT}} = \text{AC } 880 \text{ V}, 10 \text{ s}$		
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

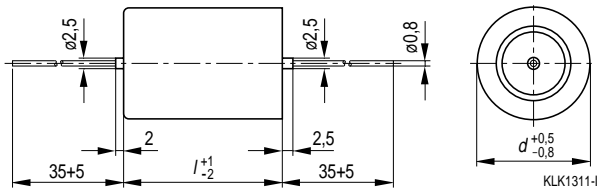
1) Capacitance tolerances: For $C_N < 1,0 \mu\text{F} \pm 20 \%$, for $C_N \geq 1,0 \mu\text{F} \pm 10 \%$

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

B 25 839

Coupling, Damping

0,47 μ F / 700 Vac

Ordering code: B25839-K6474-M000

Characteristics

C_N , tol.	0,47 μ F \pm 10 %
U_N	AC 700 V
I_{max}	10 A
L_{self}	40 nH
$\tan \delta_0$	$2 \cdot 10^{-4}$
R_S	13 m Ω

Maximum ratings

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

Test data

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

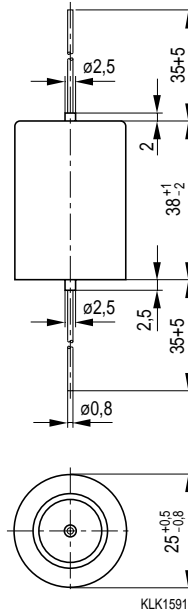
Climatic data

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

IEC climatic category: 25/085/56

(IEC 68-1 and 2)

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



Design data

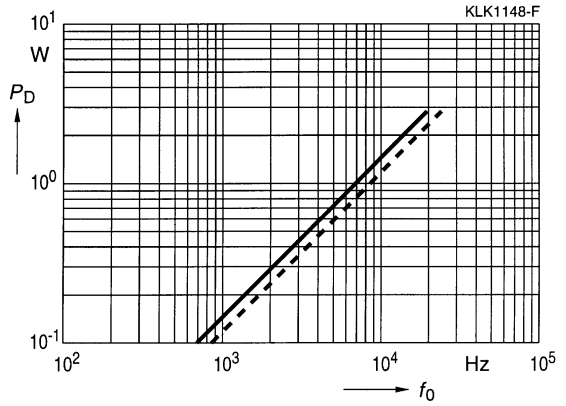
Dimensions $\varnothing \times l$	25 mm \times 38 mm
Approx. weight	30 g
Impregnation	Oil
Terminals	Leads
Creepage distance	6 mm
Clearance	6 mm

Thermal data

B25839-K6474-M000

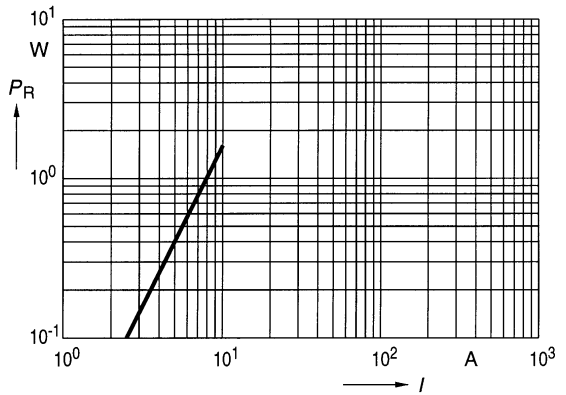
Dielectric power dissipation P_D
 versus repetition frequency f_0

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



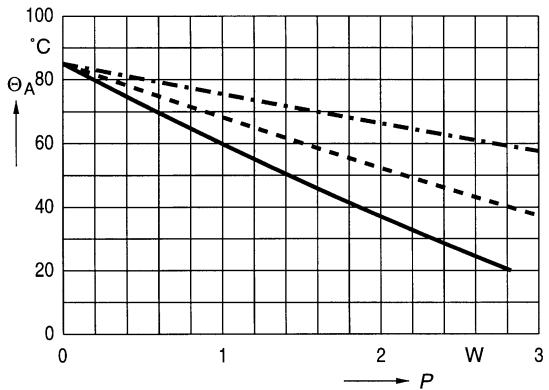
Ohmic power dissipation P_R
 versus rms current value I

$R_S (85^\circ\text{C}) = 16 \text{ m}\Omega$



Permissible ambient temperature Θ_A
 versus total power dissipation P
 (Upright mounting position)

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



B 25 839

Coupling, Damping

1 μ F / 700 Vac

Ordering code: B25839-C6105-K000

Characteristics

C_N , tol.	1 μ F \pm 10 %
U_N	AC 700 V
I_{max}	10 A
L_{self}	60 nH
$\tan \delta_0$	$2 \cdot 10^{-4}$
R_S	39 m Ω

Maximum ratings

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

Test data

U_{TT}	AC 880 V, 10 s
R_{is}	\geq 3000 M Ω
$\tan \delta$ (50 Hz)	\leq $3 \cdot 10^{-4}$

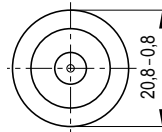
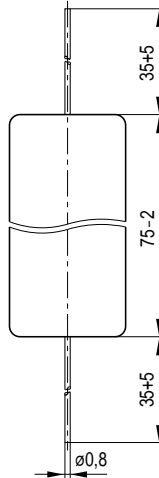
Climatic data

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

IEC climatic category: 25/085/56

(IEC 68-1 and 2)

Θ_{test}	+ 40 $^{\circ}$ C
Rel. humidity	93 %
t_{test}	56 days
$\Delta C/C$	\leq 1 %
$\Delta \tan \delta$	\leq $3 \cdot 10^{-4}$
R_{is}	\geq 1000 M Ω



KLK1590-A

Design data

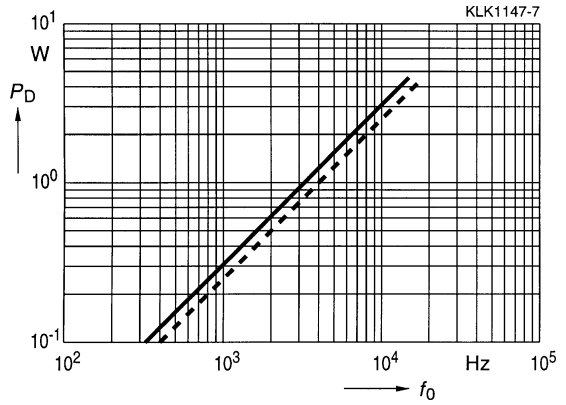
Dimensions $\varnothing \times l$	20,8 mm \times 75 mm
Approx. weight	30 g
Impregnation	Oil
Terminals	Leads
Creepage distance	6,5 mm
Clearance	6,5 mm

Thermal data

B25839-C6105-K000

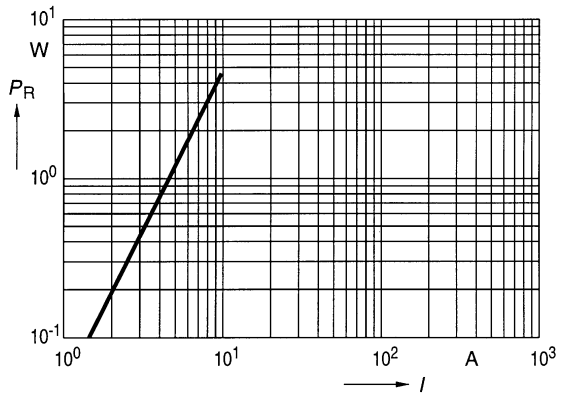
Dielectric power dissipation P_D
 versus repetition frequency f_0

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



Ohmic power dissipation P_R
 versus rms current value I

$R_S (85^\circ\text{C}) = 48 \text{ m}\Omega$



Permissible ambient temperature Θ_A
 versus total power dissipation P
 (Upright mounting position)

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

