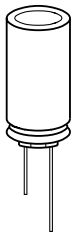
Long-life grade capacitors
for professional applications



KAL0707-F

Applications

- For use in output circuits of switch-mode power supplies of compact design
- For professional industrial electronics, telecommunications and data processing equipment

Features

- Lowest impedance at high frequency
- Lowest equivalent series resistance *ESR*
- High ripple current capability

Construction

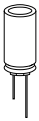
- Radial leads
- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Minus pole marking on the insulating sleeve
- Case with safety vent
- Stand off rubber seal

Delivery mode

Special terminal configurations and packing:

- Bulk
- Taped, Ammo pack
- Cut
- Kinked

Refer to page 503 for further details and ordering example.

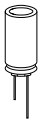


B41886

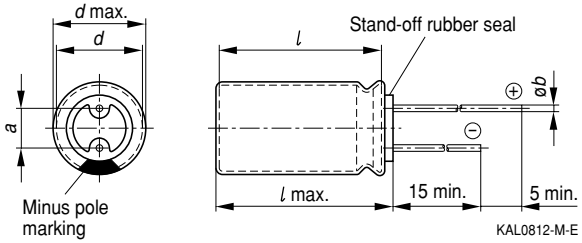
Lowest Impedance – 105 °C

Specifications and characteristics in brief

Rated voltage U_R	6,3 … 25 VDC	
Surge voltage U_S	1,15 · U_R	
Rated capacitance C_R	100 … 2 200 µF	
Capacitance tolerance	± 20 % ≙ M	
Useful life 105 °C; U_R; $I_{\sim R}$	 > 4 000 h	Requirements: $\Delta C/C$ ≤ ± 40 % of initial value tan δ ≤ 3 times initial specified limit I_L ≤ initial specified limit Failure percentage: ≤ 1 % Failure rate: ≤ 100 fit (≤ 100 · 10^{-9}/h) (for definiton “fit”, refer to chapter *“Quality”*, page 62)
Voltage endurance test 105 °C; U_R	 2 000 h	Post test requirements: ΔC/C ≤ ± 30 % of initial value tan δ ≤ 2 times initial specified limit I_L ≤ initial specified limit
Vibration resistance	To IEC 68068-2-6, test Fc: displacement amplitude 0,75 mm, frequency range 10 … 2 000 Hz, acceleration max.10 *g*, duration 3 × 2 h	
IEC climatic category	To IEC 60068-1: 40/105/56 (– 40 °C/+ 105 °C/56 days damp heat test)	
Sectional specification	IEC 60384-4	



Dimensional drawing



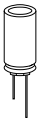
Dimensions and weights

Dimensions (mm)				Approx. weight
$d \times l$	$d_{max} \times l_{max}$	$a \pm 0{,}5$	b	g
8 × 11	8,5 × 12	3,5	0,60 ± 0,05	1,0
10 × 16	10,5 × 17	5,0	0,60 ± 0,05	1,9
10 × 20	10,5 × 22	5,0	0,60 ± 0,05	2,6
12,5 × 25	13 × 27	5,0	0,60 ± 0,05	4,5

Overview of available types

U_R (VDC)	6,3	10	16	25
C_R (µF)	Case dimensions $d \times l$ (mm)			
100				8 × 11
220			8 × 11	10 × 16
330		8 × 11	10 × 16	10 × 16
470	8 × 11	10 × 16	10 × 16	10 × 20
680	8 × 11			
1 000	10 × 16	10 × 20	10 × 20	12,5 × 25
1 500	10 × 20			
2 200	12,5 × 25	12,5 × 25		

Other capacitance and voltage ratings are available upon request.



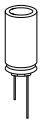
B41886

Lowest Impedance – 105 °C

Technical data and ordering codes

U_R	C_R 120 Hz 20 °C	Case dimensions $d \times l$	$I_{L,\,max}$ 5 min 20 °C	tan δ_{max} 120 Hz 20 °C	ESR_{max} 120 Hz 20 °C	Z_{max} 100 kHz 20 °C	$I_{\sim R}$ 100 kHz 105 °C	Ordering code[1)]
VDC	µF	mm	µA		Ω	Ω	mA	
6,3	470	8 × 11	30	0,22	0,78	0,130	550	B41886A2477M00*
	680	8 × 11	43	0,22	0,54	0,110	660	B41886A2687M00*
	1 000	10 × 16	63	0,22	0,36	0,048	930	B41886A2108M00*
	1 500	10 × 20	95	0,22	0,24	0,028	1 440	B41886A2158M00*
	2 200	12,5 × 25	139	0,24	0,18	0,021	1 650	B41886A2228M00*
10	330	8 × 11	33	0,19	0,95	0,120	500	B41886A3337M00*
	470	10 × 16	47	0,19	0,67	0,084	760	B41886A3477M00*
	1 000	10 × 20	100	0,19	0,31	0,043	1 340	B41886A3108M00*
	2 200	12,5 × 25	220	0,21	0,16	0,024	1 940	B41886A3228M00*
16	220	8 × 11	35	0,16	1,21	0,084	640	B41886A4227M00*
	330	10 × 16	53	0,16	0,80	0,070	760	B41886A4337M00*
	470	10 × 16	75	0,16	0,56	0,059	1 050	B41886A4477M00*
	1 000	10 × 20	160	0,16	0,27	0,035	1 600	B41886A4108M00*
25	100	8 × 11	25	0,14	2,32	0,125	405	B41886A5107M00*
	220	10 × 16	55	0,14	1,06	0,084	740	B41886A5227M00*
	330	10 × 16	83	0,14	0,70	0,059	995	B41886A5337M00*
	470	10 × 20	118	0,14	0,49	0,043	1 300	B41886A5477M00*
	1 000	12,5 × 25	250	0,14	0,23	0,024	2 050	B41886A5108M00*

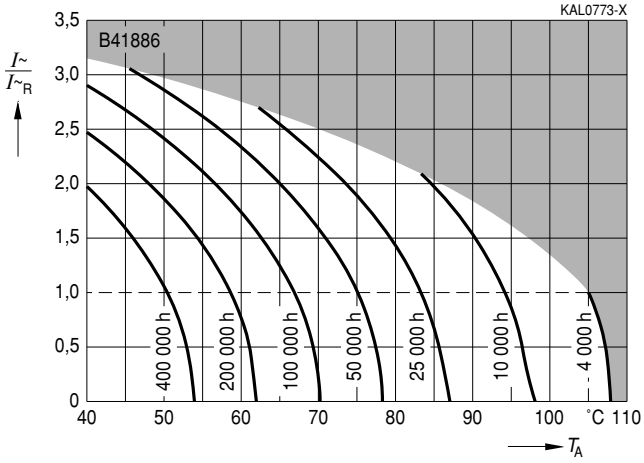
1) * = "0" for bulk version.
For taping versions, other lead configurations and packing information see page 503.



Useful life

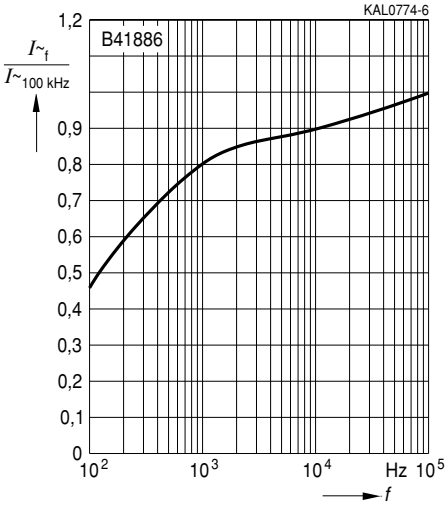
depending on ambient temperature T_A under ripple current operating conditions [1)]

U_R = 6,3 … 25 VDC



Frequency factor of permissible ripple current *I~*

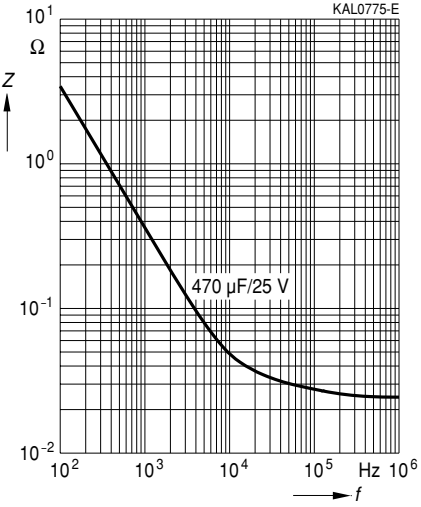
versus frequency *f*



Impedance Z

versus frequency *f*

Typical behavior at 20 °C



1) Refer to page 40 for an explanation on how to interpret the useful life graphs.

Herausgegeben von EPCOS AG
Unternehmenskommunikation, Postfach 80 17 09, 81617 München, DEUTSCHLAND
☎ ++49 89 636 09, FAX (0 89) 636-2 26 89

Bestellungen unterliegen den vom ZVEI empfohlenen Allgemeinen Lieferbedingungen für Erzeugnisse und Leistungen der Elektroindustrie, soweit nichts anderes vereinbart wird.

Diese Broschüre ersetzt die vorige Ausgabe.

Fragen über Technik, Preise und Liefermöglichkeiten richten Sie bitte an den Ihnen nächstgelegenen Vertrieb der EPCOS AG oder an unsere Vertriebsgesellschaften im Ausland. Bauelemente können aufgrund technischer Erfordernisse Gefahrstoffe enthalten. Auskünfte darüber bitten wir unter Angabe des betreffenden Typs ebenfalls über die zuständige Vertriebsgesellschaft einzuholen.

Published by EPCOS AG
Corporate Communications, P.O. Box 80 17 09, 81617 Munich, GERMANY
☎ ++49 89 636 09, FAX (0 89) 636-2 26 89

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.