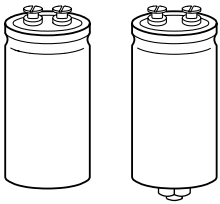
General-purpose grade



KAL0567-B

B43455 B43457

Applications

- Uninterruptible power supplies
- Frequency converters
- Professional power supplies

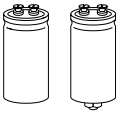
Features

- Compact, i.e. high CU product
- High reliability and ripple current capability
- All-welded construction ensures reliable electrical contact
- Version with optimized construction for base cooling (2-pad solution) available
- Version with low-inductance design available
- Self-extinguishing electrolyt

Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips, clamps or threaded stud
- The bases of types with threaded stud and $d \leq 76{,}9$ mm are not insulated, types with $d = 91$ mm have fully insulated bases

DataSheet4U.com



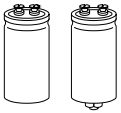
Specifications and characteristics in brief

Rated voltage U_R	350 … 450 VDC	
Surge voltage U_S	1,10 · U_R (for $U_R \geq$ 350 VDC)	
Rated capacitance C_R	470 … 12 000 µF	
Capacitance tolerance	± 20 % ≙ M	
Leakage current I_L (5 min, 20 °C)	$I_L \leq 0{,}3\ \mu A \cdot \left(\frac{C_R}{\mu F} \cdot \frac{U_R}{V}\right)^{0,7} + 4\ \mu A$	
Self-inductance *ESL*	Approx. 20 nH Capacitors with low-inductance design: *d* ≥ 64,3 mm: approx. 13 nH	
Useful life 85 °C; U_R; $I_{\sim R}$ 40 °C; U_R; 1,5 · $I_{\sim R}$	 > 10 000 h > 200 000 h	Requirements: $\Delta C/C$ ≤ ± 30 % of initial value *ESR* ≤ 3 times initial specified limit I_L ≤ initial specified limit Failure percentage: ≤ 1 % Failure rate: ≤ 40 fit (≤ 40 · 10^{-9}/h) (for definiton “fit”, refer to chapter *“Quality”*, page 62)
Voltage endurance test 85 °C; U_R	 2 000 h	Post test requirements: $\Delta C/C$ ≤ ± 10 % of initial value *ESR* ≤ 1,3 times initial specified limit I_L ≤ initial specified limit
Vibration resistance	To IEC 60068-2-6, test Fc: displacement amplitude 0,75 mm, frequency range 10 to 55 Hz, acceleration max. 10 *g*, duration 3 × 2 h	
IEC climatic category	To IEC 60068-1: 25/085/56 (– 25 °C/+ 85 °C/56 days damp heat test)	
Detail specifications Sectional specification	Similar to CECC 30301-803, CECC 30301-807 IEC 60384-4	

Ripple current capability

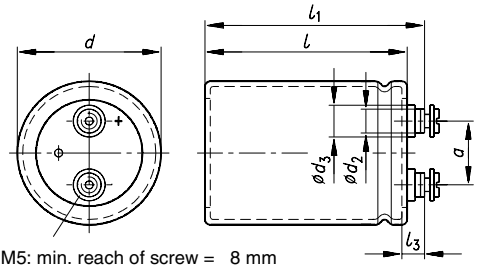
Due to the ripple current capability of the contact elements, the following current upper limits must not be exceeded:

Capacitor diameter	51,6 mm	64,3 mm	76,9 mm	91,0 mm
$I_{\sim max}$	30 A	40 A	50 A	70 A



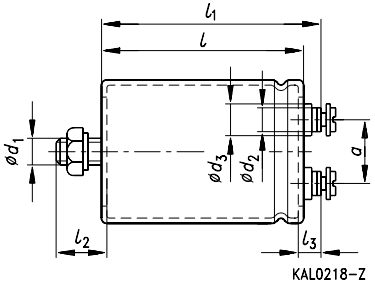
Dimensional drawings

Type B43455
Ring clip/clamp mounting



M5: min. reach of screw = 8 mm
M6: min. reach of screw = 12 mm*)
*) 8 mm for low-inductance design

Type B43457
Threaded stud mounting



Positive pole marking: +

The base of types with threaded stud and d = 91 mm is fully insulated (the lengths l and l_1 are increased by 0,5 mm in these cases). For types with threaded stud and $d \leq 76$ mm the base is not insulated. Also refer to the notes on mounting given on page 168.
Screw terminals with UNF threads are available upon request.

Dimensions and weights

Terminal	Dimensions (mm) with insulating sleeve									Approx. wt. (g)
	d	$l \pm 1$	$l_1 \pm 1$	l_2 $^{+0}_{-1}$	l_3	d_1	d_2 max	d_3 max	a $^{+0,2}_{-0,4}$	
M 5	51,6 +0/–0,8	80,7	87,2	17	7,0 +0,2/– 1	M 12	8,2	13,5	22,2	220
M 5	51,6 +0/–0,8	105,7	112,2	17	7,0 +0,2/– 1	M 12	8,2	13,5	22,2	280
M 5	64,3 +0/–0,8	105,7	112,2	17	7,0 +0,2/– 1	M 12	8,2	13,5	28,5	440
M 6	76,9 +0/–0,7	105,7	111,5	17	6,4 +1,1/– 0,8	M 12	17,7	17,7	31,7	540
M 6	76,9 +0/–0,7	143,2	149,0	17	6,4 +1,1/– 0,8	M 12	17,7	17,7	31,7	840
M 6	76,9 +0/–0,7	220,7	226,5	17	6,4 +1,1/– 0,8	M 12	17,7	17,7	31,7	1300
M 6	91,0 +0/–2	97,0	103,3	17	6,4 +1,1/– 0,8	M 12	17,7	17,7	31,7	750
M 6	91,0 +0/–2	144,5	149,8	17	6,4 +1,1/– 0,8	M 12	17,7	17,7	31,7	1200
M 6	91,0 +0/–2	191,0	196,3	17	6,4 +1,1/– 0,8	M 12	17,7	17,7	31,7	1700
M 6	91,0 +0/–2	221,0	226,3	17	6,4 +1,1/– 0,8	M 12	17,7	17,7	31,7	1900

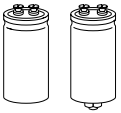
Dimensions are also valid for 2-pad solution and low-inductance design.

Packing

For ecological reasons the packing is pure cardboard.

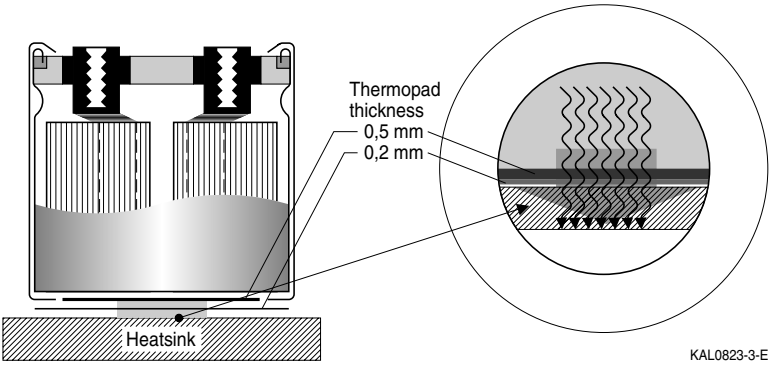
Capacitor diameter d	Packing units (pieces)
51,6 mm	22
64,3 mm	15

Capacitor diameter d	Packing units (pieces)
76,9 mm	12
91,0 mm	8



Special designs

- Low-inductance design
- 2-pad solution
  Design for optimized connection of the capacitor to the heatsink when using base cooling. This version is available for capacitors without threaded stud and for diameters ≥ 64,3 mm (cf. $I_{\sim R}$(B) in table “Technical data and ordering codes” and useful life graphs).



Ordering codes:

Design	Identification in 3rd block of ordering code	Remark
Low inductance (13 nH)	M003	For capacitors with diameter $d \geq 64{,}3$ mm
2-pad solution	M006	For capacitors with diameter $d \geq 64{,}3$ mm and without threaded stud

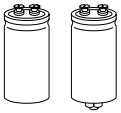
Accessories

The following items are included in the delivery package, but are not fastened to the capacitors:

	Thread	Toothed washers	Screws/Nuts	Maximum torque
For terminals	M 5	A 5,1 DIN 6797	Cylinder-head screw M 5 × 8 DIN 84-4.8	2 Nm
	M 6	A 6,4 DIN 6797	Cylinder-head screw M 6 × 12 DIN 85-4.8	2,5 Nm
For mounting	M 12	J 12,5 DIN 6797	Hex nut BM 12 DIN 439	10 Nm

The following must be ordered separately:

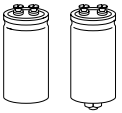
Ring clips	B44030 (cf. page 169)
Clamps for capacitors with $d \geq 64{,}3$ mm	B44030 (cf. page 173)
Insulating parts	B44020 (cf. page 166)



Overview of available types

U_R (VDC)	350	400	450
C_R (µF)	Case dimensions $d \times l$ (mm)		
470			51,6 × 80,7
1 000	51,6 × 80,7	51,6 × 80,7	51,6 × 80,7
1 500	51,6 × 105,7	51,6 × 105,7	64,3 × 105,7
2 200	51,6 × 105,7	64,3 × 105,7	64,3 × 105,7
3 300	64,3 × 105,7	76,9 × 105,7	76,9 × 143,2
4 700	76,9 × 105,7	76,9 × 143,2 91,0 × 97,0	76,9 × 220,7 91,0 × 144,5
6 000	76,9 × 143,2	76,9 × 220,7	76,9 × 220,7
6 800	76,9 × 143,2	91,0 × 144,5	
8 200	91,0 × 144,5		91,0 × 221,0
10 000	91,0 × 144,5	91,0 × 191,0	
12 000	91,0 × 191,0	91,0 × 221,0	

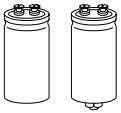
The capacitance and voltage ratings listed above are available in different cases upon request.
Other voltage and capacitance ratings are also available upon request.



Technical data and ordering codes

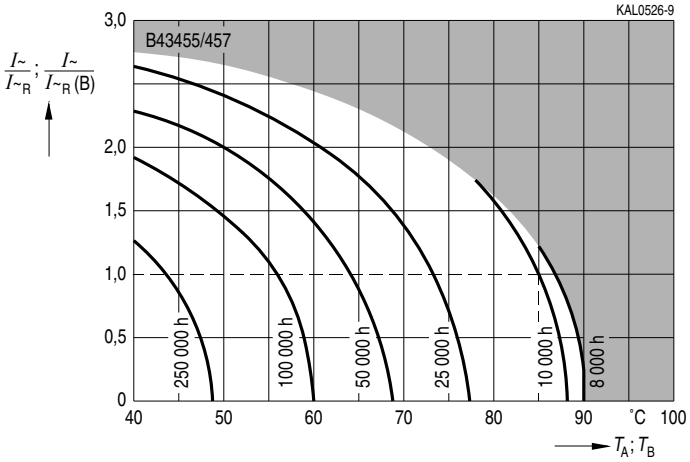
U_R	C_R 100 Hz 20 °C	Case dimensions $d \times l$	ESR_{max} 100 Hz 20 °C	Z_{max} 10 kHz 20 °C	$I_{\sim max}$ 100 Hz 40 °C	$I_{\sim max}$ 100 Hz 85 °C	$I_{\sim R}$ 100 Hz 85 °C	$I_{\sim R}(B)$ 100 Hz 85 °C	Ordering code[1]
VDC	µF	mm	mΩ	mΩ	A	A	A	A	
350	1 000	51,6 × 80,7	129	140	13	5,4	4,5	7,8	B4345*A4108M000
	1 500	51,6 × 105,7	93	110	16	7,0	5,8	9,2	B4345*A4158M000
	2 200	51,6 × 105,7	72	63	20	8,5	7,1	13	B4345*B4228M000
	3 300	64,3 × 105,7	48	43	23	9,8	8,2	14	B4345*B4338M000[2]
	4 700	76,9 × 105,7	38	35	28	12	10	19	B4345*B4478M000[2]
	6 000	76,9 × 143,2	32	30	32	14	12	19	B4345*A4608M000[2]
	6 800	76,9 × 143,2	27	27	36	16	13	22	B4345*A4688M000[2]
	8 200	91,0 × 144,5	23	23	42	18	15	26	B4345*A4828M000[2]
	10 000	91,0 × 144,5	20	22	48	21	17	31	B4345*B4109M000[2]
	12 000	91,0 × 191,0	17	21	54	23	20	30	B4345*A4129M000[2]
400	1 000	51,6 × 80,7	129	140	13	5,2	4,8	8,9	B4345*A0108M000
	1 500	51,6 × 105,7	93	110	17	6,8	6,2	11	B4345*A9158M000
	2 200	64,3 × 105,7	72	63	21	8,4	7,6	13	B4345*A0228M000[2]
	3 300	76,9 × 105,7	54	48	23	8,5	8,5	16	B4345*A0338M000[2]
	4 700	76,9 × 143,2	41	37	29	11	11	17	B4345*A0478M000[2]
	4 700	91,0 × 97,0	41	37	30	13	11	23	B4345*K0478M000[2]
	6 000	76,9 × 220,7	32	30	35	15	13	17	B4345*A0608M000[2]
	6 800	91,0 × 144,5	38	35	39	17	14	24	B4345*A0688M000[2]
	10 000	91,0 × 191,0	26	26	50	22	18	28	B4345*A0109M000[2]
	12 000	91,0 × 221,0	22	22	58	25	21	31	B4345*A0129M000[2]
450	470	51,6 × 80,7	390	420	7,0	3,1	2,6	4,1	B4345*A5477M000
	1 000	51,6 × 80,7	180	200	12	5,1	4,2	8,6	B4345*B5108M000
	1 500	64,3 × 105,7	120	130	16	6,9	5,8	9,4	B4345*A5158M000[2]
	2 200	64,3 × 105,7	81	70	18	7,9	6,6	12	B4345*B5228M000[2]
	3 300	76,9 × 143,2	54	48	25	11	9,1	14	B4345*A5338M000[2]
	4 700	76,9 × 220,7	42	39	31	14	11	15	B4345*A5478M000[2]
	4 700	91,0 × 144,5	42	39	31	14	11	19	B4345*J5478M000[2]
	6 000	76,9 × 220,7	33	31	38	17	14	19	B4345*A5608M000[2]
	8 200	91,0 × 221,0	24	24	48	21	18	25	B4345*A5828M000[2]

1) * "5" = for capacitors with ring clip/clamp mounting
"7" = for capacitors with threaded stud
2) For 2-pad solution (types withoud threaded stud) and for low-inductance design, see page 120.



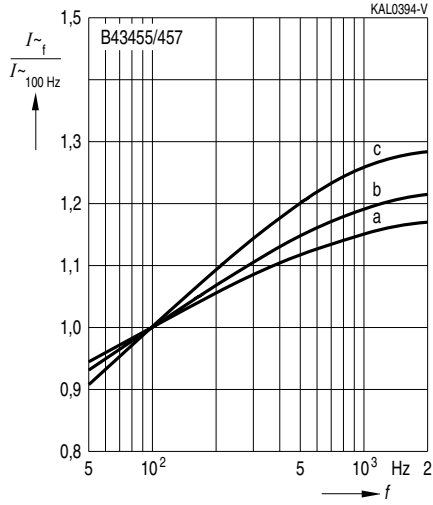
Useful life

depending on ambient temperature T_A (for natural cooling) and versus temperature of case base T_B (for base cooling) under ripple current operating conditions[1)]



Frequency factor of permissible ripple current *I*~

versus frequency *f*

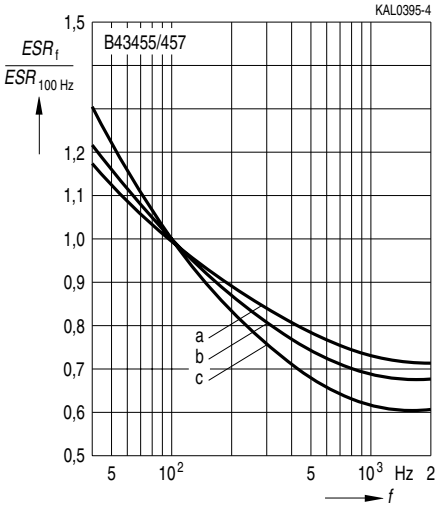


d (mm)	51,6	64,3	76,9	91,0
Curve	c	b	a	c

1) The ripple current refers to $I\sim_R$ for natural cooling or to $I\sim_R$(B) for base cooling, respectively. Refer to page 40 for an explanation on how to interpret the useful life graphs.

Frequency characteristics of *ESR*

Typical behavior

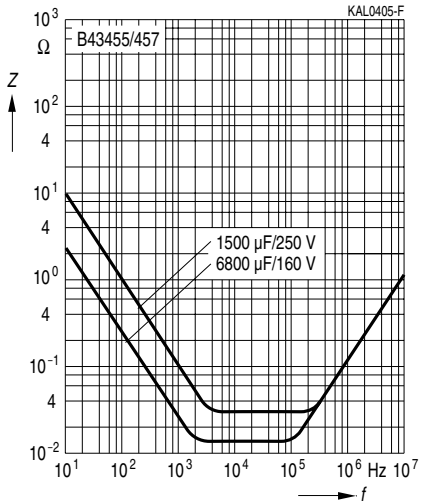


d (mm)	51,6	64,3	76,9	91,0
Curve	c	b	a	a

Impedance *Z*

versus frequency *f*

Typical behavior at 20 °C



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