



Aluminum Electrolytic Capacitors

Capacitors for Photoflash Applications
with Snap-in and Solder lug Terminals

Series/Type: **B43415 / B43416**

Date: April 2004

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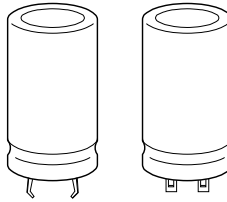
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Application

- Professional flash light generators

Features

- Miniaturized
- Outstanding reliability
- High charge/discharge proof, polar
- PAPR (prevention against polarity reverse)



B43416

B43415

KAL0911-K



Construction

- Aluminum case, fully insulated
- Overload protection by preset break point

Terminals

- Snap-in
- Solder lug

Overview

Temperature °C	Series	Useful life	Features	U _R	C _R
				VDC	μF
+60	B43416 Snap-in 	> 30000 flashes	<ul style="list-style-type: none"> – Miniaturized – Easy PCB mount – Outstanding reliability – Low leakage current – Low dissipation factor 	300 ... 500	200 ... 1500
	B43415 Solder lug 				1000 ... 6600

Specifications and characteristics in brief

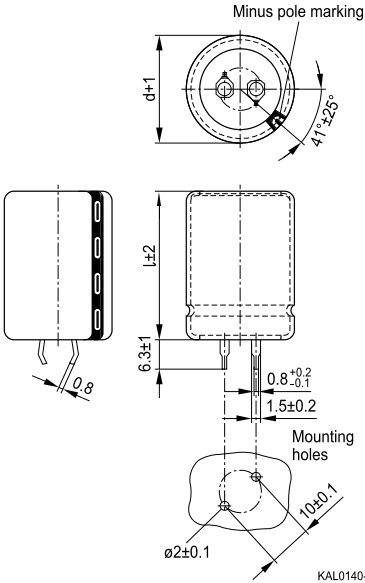
Rated voltage	U_R	300 ... 500 VDC	
Discharge voltage	$U_{\text{discharge}}$	50 VDC	
Rated capacitance	C_R	200 ... 6600 μF	
Capacitance tolerance	ΔC_R	-10/+20%	
Leakage current (5 min, 20 °C)	I_L	$I_L \leq 0.3 \mu\text{A} \cdot \left(\frac{C_R}{\mu\text{F}} \cdot \frac{U_R}{\text{V}} \right)^{0.7} + 4 \mu\text{A}$	
Dissipation factor	$\tan \delta$	15%	
Useful life	> 30000 flashes at:		Requirements:
	Case temperature	$\leq 60 \text{ }^\circ\text{C}$	$\Delta C/C \leq \pm 30\%$ of initial value
	Flash repetition rate	$\geq 2 \text{ s}$	ESR ≤ 3 times initial specified limit
	Max. flashes per week	≤ 10000	$I_L \leq$ initial specified limit
	Charge resistance	10 Ω	
	Discharge resistance	0.5 Ω	
Vibration resistance	To IEC 60068-2-6, test F _C : displacement amplitude 0.35 mm, frequency range 10 ... 55 Hz, acceleration max. 5 g, duration 3 · 2 h		
IEC climatic category	$U_R \leq 400 \text{ VDC}$: 40/060/56 (-40 °C/+60 °C/56 days damp heat test)		
	$U_R > 400 \text{ VDC}$: 25/060/56 (-25 °C/+60 °C/56 days damp heat test)		

B43416

Miniaturized up to

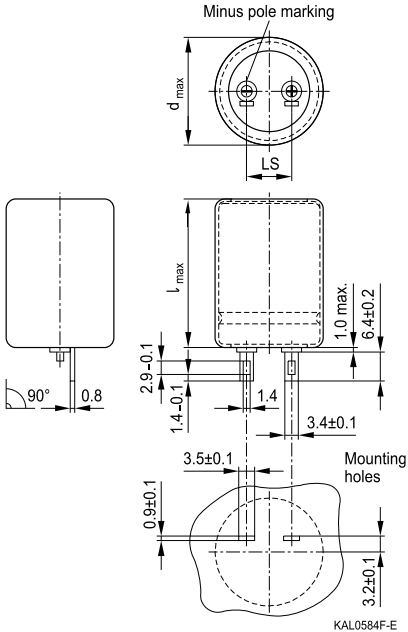
Dimensional drawing

B43416, snap-in terminals



Dimensions in mm

Dimensions $d \times l$ mm	Approx. weight g	Packing units pieces
25 × 45	25	130
30 × 40	36	80
30 × 50	46	80
35 × 45	56	60
35 × 50	70	60

Dimensional drawing
B43415, solder lug terminals

Dimensions in mm

Dimensions $d_{max} \times l_{max}$	Lead spacing (LS)	Approx. weight	Packing units
mm	mm	g	pieces
35.8 × 55.8	10.0	66	59
35.8 × 65.8	10.0	82	59
40.8 × 65.8	10.0	115	42
40.8 × 70.8	10.0	130	42
40.8 × 80.8	10.0	150	42
40.8 × 90.8	10.0	160	42
40.8 × 105.8	10.0	180	42
40.8 × 110.8	10.0	190	42
50.8 × 80.8	20.0	230	28
50.8 × 100.8	20.0	270	28

B43416
Miniaturized up to
Technical data and ordering codes
B43416, 30000 flashes, snap-in capacitors

U_R	C_R 100 Hz 20 °C μF	Case dimensions $d \times l$ mm	$I_{L,max}$ 5 min. 20 °C mA	Ordering code
300	1000	30 × 50	2.0	B43416A3108A000
	1500	35 × 50	2.7	B43416A3158A000
330	1000	35 × 45	2.2	B43416A8108A000
	1200	35 × 50	2.5	B43416A8128A000
360	560	30 × 40	1.5	B43416A9567A000
	1100	35 × 50	2.6	B43416A9118A000
400	330	25 × 45	1.2	B43416A9337A000
	700	35 × 45	2.0	B43416A9707A000
500	200	25 × 45	0.9	B43416A6207A000
	560	35 × 50	2.0	B43416A6567A000

Technical data and ordering codes
B43415, 30000 flashes, solder lug capacitors

U_R	C_R 100 Hz 20 °C μF	Case dimensions $d_{max} \times l_{max}$ mm	$I_{L,max}$ 5 min. 20 °C mA	Ordering code
300	2100	35.8 × 65.8	3.4	B43415A3218A000
	3000	40.8 × 70.8	4.4	B43415A3308A000
	4700	40.8 × 105.8	6.0	B43415A3478A000
	6600	50.8 × 100.8	7.7	B43415A3668A000
330	2100	40.8 × 65.8	3.7	B43415A8218A000
	3000	40.8 × 80.8	4.7	B43415A8308A000
	3800	40.8 × 105.8	5.6	B43415A8388A000
	5600	50.8 × 100.8	7.3	B43415A8568A000
360	2100	40.8 × 65.8	3.9	B43415A9218A000
	3000	40.8 × 90.8	5.0	B43415A9308A000
	3800	40.8 × 110.8	5.9	B43415A9388A000
400	1000	35.8 × 55.8	2.5	B43415A9108A000
	2100	40.8 × 80.8	4.2	B43415B9218A000
	3000	40.8 × 110.8	5.4	B43415B9308A000
	3800	50.8 × 100.8	6.4	B43415B9388A000
500	1000	40.8 × 65.8	2.9	B43415A6108A000
	2100	50.8 × 80.8	4.9	B43415A6218A000

B43415 / B43416

Miniaturized up to 60

Packing of snap-in capacitors



Packing of solder lug capacitors



For ecological reasons the packing is pure cardboard.

General technical information

Capacitance

The DC capacitance is the decisive factor for the energy yield. This characteristic is approximately 1.2 times the AC capacitance. Since the loss angle can only be determined using alternating currents and the AC capacitance is measured together with this value, it is usual to state the AC capacitance. The values are measured at a frequency of 100 Hz.

Leakage current (measuring conditions)

The leakage current value limits quoted by EPCOS apply to the capacitors in new condition. When the leakage current is determined, the current is measured after the capacitor has been connected, for a period of five minutes, via a 1 k Ω resistor to a stabilized power supply set to the rated voltage.

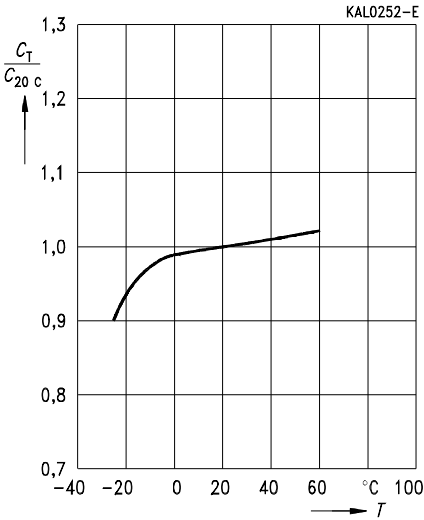
Temperature

The attached diagram shows the temperature dependence of the leakage current. In order to prevent thermal instabilities, switching loads that can lead to overtemperatures of more than 15 K shall not be applied.

AC capacitance versus temperature

$U_R = 350$ VDC

Typical behaviour

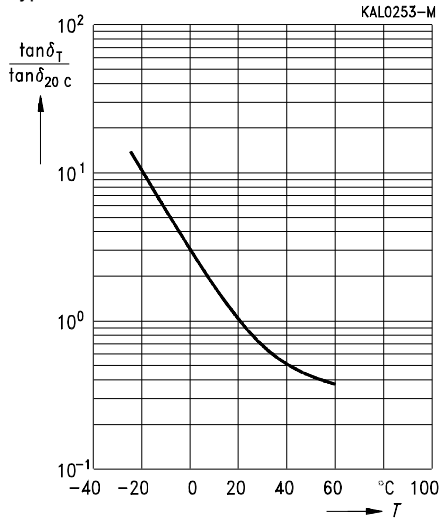


Dissipation factor $\tan \delta$ versus temperature

$U_R = 350$ VDC

Measuring frequency = 120 Hz

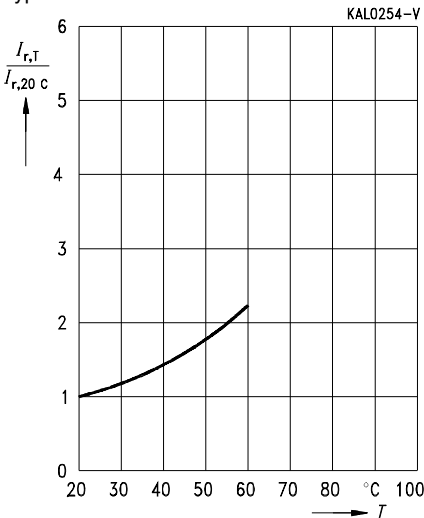
Typical behaviour



Leakage current I_L versus temperature

Measurement duration = 5 minutes.

Typical behaviour



Questionnaire

Please use the questionnaire when having other, improved or additional technical requirements which cannot be covered by our standard series.

The characteristic data listed in the questionnaire below are essentially the most important information for determining design dimensions of electrolytic capacitors for professional photo flash applications.

Rated capacitance per capacitor _____ μF

Rated voltage per capacitor _____ VDC

Charge/discharge voltage _____ / _____ V

Required dimensions: Diameter (max.) _____ mm

Length (max.) _____ mm

Style of terminals _____

Ambient temperature _____ °C

Method of cooling _____

Discharge conditions

Internal resistance of the discharge tube (if applicable) _____ Ω

Charging resistance (series resistance) _____ Ω

No. of capacitors in series _____

No. of capacitors in parallel _____

Flash sequence _____

Pause periods _____

Other special operating conditions _____

Expected useful life _____ flashes

Annual demand of capacitors _____

For any further support, please contact your nearest EPCOS representative.