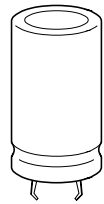
Aluminum electrolytic capacitors
Alu-X product lines

Snap-in capacitors

Series/Type: **B43255**
Date: April 2008

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Long life grade capacitors



Applications

- Frequency converters
- Professional power supplies in industrial electronics

Features

- High reliability
- High CV product
- RoHS-compatible
- Long load life of 5000 h at 105 °C

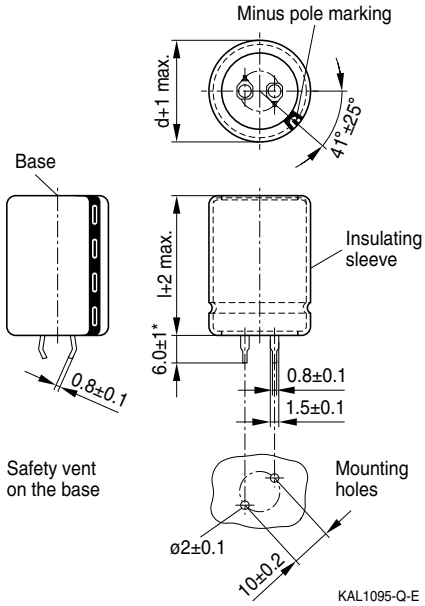
Construction

- Aluminum case, fully insulated
- Snap-in solder pins to hold component in place on PC-board
- Minus pole marking on the insulating sleeve
- Case with safety vent

Specifications and characteristics in brief

Rated voltage V_R	200 … 450 V DC				
Operating temperature range	$V_R \leq 400$ V DC: –40 °C … +105 °C $V_R \geq 450$ V DC: –25 °C … +105 °C				
Rated capacitance C_R (20 °C, 120 Hz)	47 … 1500 µF				
Capacitance tolerance	±20% ≙ M				
Load life (105 °C, V_R, $I_{AC,R}$)	5000 h	Requirements: ΔC/C ≤ ±20% of initial value tan δ ≤ 2 times initial specified limit I_{leak} ≤ initial specified limit			
Leakage current I_{leak} (20 °C, after 5 minutes)	$I_{leak} \leq 0.02\ \mu A \cdot \left(\frac{C_R}{\mu F} \cdot \frac{V_R}{V}\right)$				
Dissipation factor (max.) (20 °C, 120 Hz)	V_R (V DC)	200 ... 400		450	
	tan δ	0.15		0.20	
Low temperature stability (impedance ratio) (120 Hz)	V_R (V DC)	200 ... 400		450	
	$\frac{Z(-25\ °C)}{Z(+20\ °C)}$	4		8	
Shelf life	After storage for 1000 h at 105 °C, the capacitors shall meet the requirement of load life test after reforming process. After test: V_R to be applied for 30 minutes, 24 to 48 hours before measurement.				
Frequency multiplier for rated ripple current	50 Hz	120 Hz	1 kHz	10 kHz	20 kHz
	0.90	1.00	1.20	1.50	1.55
Temperature multiplier for rated ripple current	+40 °C	+55 °C	+70 °C	+85 °C	+105 °C
	2.7	2.5	2.1	1.7	1.0

Dimensional drawing



* = Shorter terminal (4.0 ± 0.5) is also available upon request.

Overview of available types

V_R (V DC)	200	250	315	350	400	450
	Case dimensions d × l (mm)					
C_R (µF)						
47						22 × 30
56					22 × 25	25.4 × 25
68					25.4 × 25	25.4 × 30
82			22 × 25	22 × 25	25.4 × 25	30 × 30
100			22 × 30	25.4 × 25	25.4 × 30	30 × 30
120			25.4 × 25	25.4 × 30	30 × 25	30 × 30
150		22 × 25	30 × 25	25.4 × 30	30 × 30	35 × 30
180		22 × 30	30 × 25	25.4 × 35	35 × 30	35 × 35
220	22 × 25	25.4 × 30	30 × 30	30 × 35	35 × 30	35 × 40
270	25.4 × 25	25.4 × 35	35 × 30	30 × 40	35 × 35	35 × 45
330	25.4 × 30	30 × 30	35 × 30	35 × 35	35 × 40	35 × 50
390	25.4 × 35	30 × 35	35 × 35	35 × 40	35 × 45	
470	25.4 × 40	35 × 30	35 × 40	35 × 45	35 × 50	
560	30 × 35	35 × 35	35 × 45	35 × 50		
680	30 × 40	35 × 40	35 × 50			
820	35 × 35	35 × 45				
1000	35 × 35	35 × 50				
1200	35 × 40					
1500	35 × 50					
1800						
2200						
2700						

Technical data and ordering codes

V_R V DC	C_R 120 Hz 20 °C µF	Case dimensions d × l mm	$I_{AC,R}$ 120 Hz 105 °C A	Ordering code
200	220	22 × 25	0.82	B43255A2227M000
	270	25.4 × 25	1.00	B43255A2277M000
	330	25.4 × 30	1.18	B43255A2337M000
	390	25.4 × 35	1.35	B43255A2397M000
	470	25.4 × 40	1.56	B43255A2477M000
	560	30 × 35	1.76	B43255A2567M000
	680	30 × 40	2.03	B43255A2687M000
	820	35 × 35	2.29	B43255A2827M000
	1000	35 × 35	2.53	B43255A2108M000
	1200	35 × 40	2.69	B43255A2128M000
	1500	35 × 50	3.25	B43255A2158M000
250	150	22 × 25	0.68	B43255E2157M000
	180	22 × 30	0.79	B43255E2187M000
	220	25.4 × 30	0.96	B43255E2227M000
	270	25.4 × 35	1.13	B43255E2277M000
	330	30 × 30	1.28	B43255E2337M000
	390	30 × 35	1.47	B43255E2397M000
	470	35 × 30	1.65	B43255E2477M000
	560	35 × 35	1.89	B43255E2567M000
	680	35 × 40	2.18	B43255E2687M000
	820	35 × 45	2.50	B43255E2827M000
	1000	35 × 50	2.87	B43255E2108M000
315	82	22 × 25	0.48	B43255A0826M000
	100	22 × 30	0.57	B43255A0107M000
	120	25.4 × 25	0.64	B43255A0127M000
	150	30 × 25	0.78	B43255A0157M000
	180	30 × 25	0.86	B43255A0187M000
	220	30 × 30	1.00	B43255A0227M000
	270	35 × 30	1.20	B43255A0277M000
	330	35 × 30	1.33	B43255A0337M000
	390	35 × 35	1.52	B43255A0397M000
	470	35 × 40	1.74	B43255A0477M000
	560	35 × 45	1.98	B43255A0567M000
	680	35 × 50	2.27	B43255A0687M000

Technical data and ordering codes

V_R V DC	C_R 120 Hz 20 °C µF	Case dimensions d × l mm	$I_{AC,R}$ 120 Hz 105 °C A	Ordering code
350	82	22 × 25	0.48	B43255A4826M000
	100	25.4 × 25	0.59	B43255A4107M000
	120	25.4 × 30	0.68	B43255A4127M000
	150	25.4 × 30	0.76	B43255A4157M000
	180	25.4 × 35	0.88	B43255A4187M000
	220	30 × 35	1.06	B43255A4227M000
	270	30 × 40	1.23	B43255A4277M000
	330	35 × 35	1.40	B43255A4337M000
	390	35 × 40	1.59	B43255A4397M000
	470	35 × 45	1.82	B43255A4477M000
	560	35 × 50	2.06	B43255A4567M000
400	56	22 × 25	0.40	B43255A9566M000
	68	25.4 × 25	0.48	B43255A9686M000
	82	25.4 × 25	0.53	B43255A9826M000
	100	25.4 × 30	0.62	B43255A9107M000
	120	30 × 25	0.70	B43255A9127M000
	150	30 × 30	0.83	B43255A9157M000
	180	35 × 30	0.98	B43255A9187M000
	220	35 × 30	1.08	B43255A9227M000
	270	35 × 35	1.26	B43255A9277M000
	330	35 × 40	1.46	B43255A9337M000
	390	35 × 45	1.66	B43255A9397M000
	470	35 × 50	1.89	B43255A9477M000
450	47	22 × 30	0.39	B43255A5476M000
	56	25.4 × 25	0.44	B43255A5566M000
	68	25.4 × 30	0.51	B43255A5686M000
	82	30 × 30	0.61	B43255A5826M000
	100	30 × 30	0.68	B43255A5107M000
	120	30 × 30	0.74	B43255A5127M000
	150	35 × 30	0.90	B43255A5157M000
	180	35 × 35	1.03	B43255A5187M000
	220	35 × 40	1.19	B43255A5227M000
	270	35 × 45	1.38	B43255A5277M000
	330	35 × 50	1.58	B43255A5337M000

Cautions and warnings

General

Also see “Important notes” on page 9.

1 Aluminum electrolytic capacitors have a bi-polar structure. This is marked on the body of the capacitor. A capacitor must not be mounted with reversed polarity. The application of an AC or reverse voltage may cause a short circuit or damage the capacitor. Bi-polar capacitors must not be used in AC applications, where the polarity may be reversed in the circuits or is unknown.

2 The DC voltage applied to the capacitor terminal must not exceed its rated operating voltage, as this will result in a rapid increase of the leakage current and may damage the capacitor. It is recommended to operate the capacitor at 70–80% of its rated voltage to optimize its service life.

3 The ripple current applied to the capacitor must be within the permitted range. An excessive ripple current leads to impaired electrical properties and may damage the capacitor. Note that the sum of the peak values of the ripple voltage and the DC operating voltage must not exceed the rated DC voltage.

4 Capacitors must be used within their permitted range of operating temperature. Operation at room temperature optimizes their service life.

5 Capacitors with case diameter ≥8 mm are equipped with a safety vent. In capacitors fitted with a lead or soldering lug, the safety vent is usually located at the base of the case. It needs sufficient space around it to operate optimally. The following dimensions are recommended: for case diameter d = 8 to 16 mm, more than 2 mm; for d =18 to 35 mm, more than 3 mm; and for d = 42 mm or more, more than 5 mm.

6 Capacitors should not be mounted with the safety vent face down on the board. Do not locate any wire or copper trace near the safety vent. Do not reverse the voltage, as this may result in excess pressure and the leakage of electrolyte.

7 Gas is released through the safety vent when the pressure inside the capacitor is too high. A gaseous liquid around the safety vent does not indicate a leakage of electrolyte.

8 The capacitor should be stored under conditions of normal temperature and in a non-acid, non-alkali environment of normal humidity. Exposure to high temperatures, for example under direct sunlight, will reduce its operating life. If the capacitor is stored in an environment containing acids or alkalis, the solderability of the leads may be affected.

9 The leakage current of an aluminum electrolytic capacitor may increase after a long period of storage. After such storage, the capacitor must be aged by applying the rated operating voltage for 6–8 hours before use.

10 Manual soldering:

a Soldering must be performed within the specified conditions.
Bit temperature: 350 °C; application time of soldering iron: 3 seconds.

b Ensure that the soldering iron does not touch any part of the capacitor body.

11 Do not apply excessive force to the leads and terminals. Do not move the capacitor after soldering it onto the PC board and do not carry the PC board by gripping the capacitor. Observe the following rules to prevent undue stress to the capacitor:

a Do not tilt or bend the capacitor after soldering.
b Ensure that the terminal spacing matches the corresponding hole spacing on the PC board.

12 The aluminum case is not insulated from the cathode. Do not place a conductor under the aluminum capacitors on the PC board as this may cause a short circuit. The case and top of capacitors used in switched mode power supplies have a high-voltage-resistant heat shrink sleeve to ensure safe usage.

13 The leads of capacitors with a case diameter exceeding 14 mm cannot be used for fixing.

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