Product Brief 2019

# Aluminum Electrolytic Capacitors

## Automotive Capacitor Design for Motor Management Systems (ECU)

The newly designed EPCOS B41897 single-ended aluminum electrolytic capacitor series and the updated B41692 series of axial-lead aluminum electrolytic capacitors with 75 V offer:

- Very compact design
- High ripple current capability
- Low Equivalent Series Resistance (ESR)
- High operating temperature
- Axial-lead design available with vibration stability of up to 60 *g* (on request)


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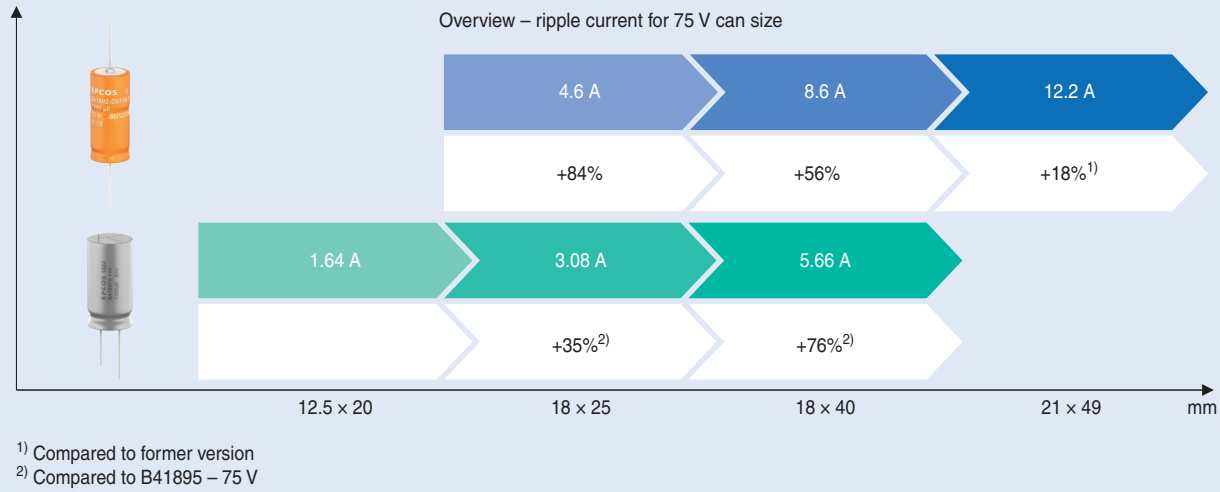
In order to offer a single capacitor solution that meets customer specifications TDK has developed two different designs, single-ended and axial-lead, for low up to the highest power requirements. These B41692 (axial-lead) and B41897 (single-ended) series are based on capacitor designs already used successfully in automotive applications.

The single-ended series offers ultra-compact design and is available in a small can size (from 12.5 × 20 mm – 18 × 40 mm) for 75 V. Due to latest design optimization this series can now withstand high temperatures of up to 135 °C with a lifetime of 3000 h. In addition, operation at 150 °C for short periods is possible.

## From low to high ripple current requirements




1) Compared to former version
2) Compared to B41895 – 75 V

Axial-lead capacitors offer advantages over standard single-ended designs when very high ripple current is requested. Special design technologies enable a significant reduction of the Equivalent Series Resistance (ESR) of the capacitors and therefore higher ripple current capability.

The materials used in the updated 75 V spectrum of the B41692 series result in a more compact design. Due to the intensive work on further improvement of mechanical strength the axial lead capacitors can now withstand acceleration forces of up to 60 *g*. This special axial-lead capacitor design is available on request.

The various mechanical configurations available for axial-lead capacitors and illustrated in the pictures on page 4 offer customers great design flexibility.

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## Single-ended series B41897 – 75 V spectrum

| $C_R$ 120 Hz, +20 °C µF | Case dimensions d × l mm | $ESR_{max}$ 100 kHz, –40 °C Ω | $ESR_{max}$ 100 kHz, +20 °C Ω | $I_{AC,max}$ 100 kHz, +125 °C mA | Ordering code |
|---|---|---|---|---|---|
| 270 | 12.5 × 20 | 0.56 | 0.072 | 1640 | B41897A0277M*** |
| 390 | 12.5 × 25 | 0.39 | 0.052 | 2520 | B41897A0397M*** |
| 470 | 16 × 20 | 0.34 | 0.053 | 2140 | B41897A0477M*** |
| 620 | 18 × 20 | 0.26 | 0.044 | 2350 | B41897A0627M*** |
| 680 | 16 × 25 | 0.23 | 0.038 | 2940 | B41897A0687M*** |
| 750 | 16 × 31.5 | 0.20 | 0.034 | 3860 | B41897A0757M*** |
| 820 | 18 × 25 | 0.19 | 0.033 | 3080 | B41897A0827M*** |
| 1000 | 16 × 35.5 | 0.15 | 0.027 | 4590 | B41897A0108M*** |
| 1100 | 18 × 31.5 | 0.15 | 0.028 | 4080 | B41897A0118M*** |
| 1300 | 16 × 40 | 0.14 | 0.025 | 5190 | B41897A0138M*** |
| 1300 | 18 × 35 | 0.12 | 0.022 | 5220 | B41897B0138M*** |
| 1600 | 18 × 40 | 0.11 | 0.021 | 5660 | B41897A0168M*** |

Different lead and packaging versions are available on request

## Axial-lead series B41692 – 75 V spectrum

| $C_R$ 100 Hz, +20 °C µF | Case dimensions d × l mm | $ESR_{max}$ 100 Hz, –40 °C mΩ | $ESR_{max}$ 10 kHz, +20 °C mΩ | $I_{AC,max}$ 10 kHz, +125 °C A | Ordering code Axial pallet |
|---|---|---|---|---|---|
| 680 | 18 × 25 | 971 | 65 | 4.6 | B41692D0687Q001 |
| 910 | 18 × 30 | 726 | 49 | 6.0 | B41692D0917Q001 |
| 1100 | 18 × 35 | 600 | 40 | 7.6 | B41692D0118Q001 |
| 1200 | 21 × 30 | 551 | 38 | 7.1 | B41692D0128Q001 |
| 1300 | 18 × 39 | 508 | 34 | 8.6 | B41692D0138Q001 |
| 1500 | 21 × 35 | 441 | 31 | 8.6 | B41692D0158Q001 |
| 1800 | 21 × 39 | 368 | 26 | 9.6 | B41692D0188Q001 |
| 2500 | 21 × 49 | 265 | 19 | 12.2 | B41692D0258Q001 |

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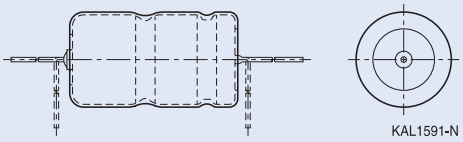
## Construction

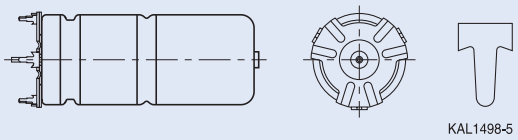
### Axial lead

B41692*



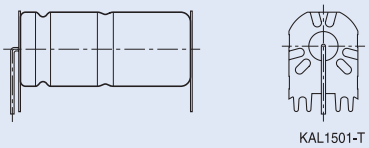

### Soldering star design

B41792*




### Axial-lead design with double-sided plates

B41792 – on request


Design available upon request

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