

Aluminum Electrolytic Capacitors

Capacitors for pulse applications - general information

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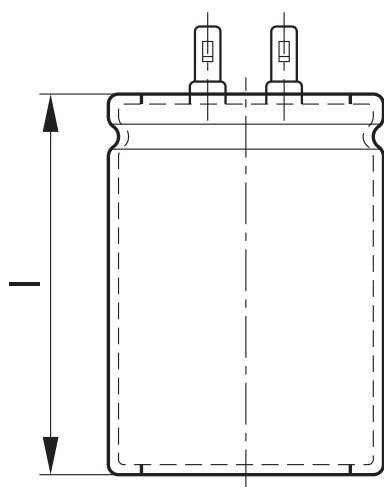
Pulse applications are subjected to widely varying demands. This must be taken into account when selecting the aluminum electrolytic capacitors to be used. In the following section, only the basic data of our relevant product range are listed. If you require such capacitors, please contact your nearest EPCOS representative, using the questionnaire at the end of this chapter as a guide. This questionnaire describes the most important selection criteria.

Features

- The design and construction of pulse capacitors by EPCOS have been optimally adapted to the wide variety of operating conditions.
- Constant capacitance values for large numbers of pulse discharges, even with short pulse repetition intervals, ensure constant pulse factors.
- Low leakage currents, even after long idle periods, guarantee a large number of pulses per battery charge and enable their use in equipment that is powered by batteries only.
- Small dimensions for given voltage-capacitance combinations enable compact equipment designs.

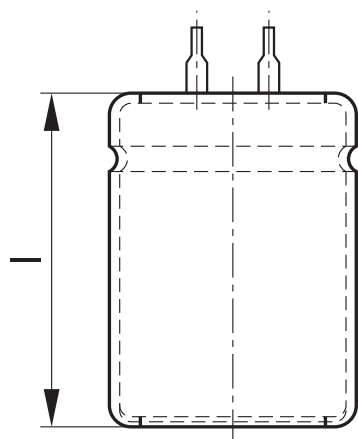
Terminal styles

Solder lugs



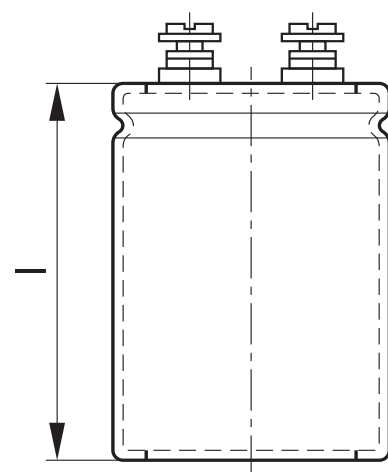
KAL0256-C

Snap-in



KAL1006-4

Screw terminals



KAL0255-4

For a list of accessories, refer to chapter "Capacitors with screw terminals – Accessories, B44020".

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Construction	Compact design with high CV-product per volume
Applications	Professional Flashlight Hair removal Mobile X-ray generator Welding machines Laser machines Other pulse applications
Case dimensions	d (mm) l (mm)
	22 ... 90 35 ... 220
Insulation	With insulating sleeve
Load capability (typical values)	
1. Discharges	100000
2. Discharge repetition rate	2 s
3. Discharges with repetition rate below average rate	200
4. Pause after case 3.	30 min
5. Average repetition rate	10 s
6. Max. discharges per week	10000
7. Charge resistance	>10 Ω
8. Discharge resistance	>0.5 Ω

Generally, the design of pulse capacitors can be optimized to customer demands. Therefore, actual values can differ greatly from the typical values listed above. Depending on customer requirements, capacitor designs with improved individual values are available on request.

If pulse capacitors are to be used in applications where they are subject to permanent voltage, this must be taken into consideration in capacitor design.

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, in agreement with the users, to state the AC capacitance. The values are measured at a frequency of 100 Hz.

Leakage current (measuring conditions)

The leakage current value 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 lower diagram at the end of this section shows the temperature dependence of the leakage current. In order to prevent thermal instabilities, no switching loads that can lead to overtemperatures of more than 15 K may be applied.