Aluminum Electrolytic Capacitors: Optimized Base Cooling for Snap-In Capacitors

TDK-EPC presents snap-in aluminum electrolytic capacitors from EPCOS that enable optimal contact to heat sinks. This permits link circuit capacitors to be efficiently cooled, thus significantly increasing their ripple current capability and operating life. Therefore, the new capacitors are especially suited for applications in frequency converters and professional power supplies that have very high ripple current loads and offer the possibility of base cooling.

Because of their special winding design the ESR values of the new capacitors have been lowered by 30 percent at 60°C and the thermal resistance between base and windings has been reduced by 50 percent. The robust capacitors also feature a specially reinforced case for high long-term stability.

Thanks to the reduction of their longitudinal tolerance to ±0.2 mm, entire capacitor banks can be connected without problems via comparatively thin thermal pads to heat sinks. This ensures an optimal thermal connection to the heat sink and simultaneously lowers costs. Under suitable operating conditions, up to 50 percent higher ripple current capability can be achieved.

These snap-in capacitors for base cooling are available in the B43540* (85°C), B43543* (105°C), B43505* (105°C) series for dimensions of 30 mm x 35 mm to 35 mm x 55 mm. They are equipped as standard with a PET shrunk sleeve as insulation and are RoHS-compatible. If required, they can also be supplied without insulation or with mounted thermal pads.

Main applications include:

- DC link capacitors in frequency converters and professional power supplies with heat sinks.
- In DC link circuits with very high ripple current loads per capacitance.

Main features and benefits

- Long useful life
- High reliability
- Outstanding ripple current capability
- Low ESR values at operating temperatures above 50°C
- Minimized thermal resistance between base and winding

- Suitable for use of thin thermal pads
- RoHS-compatible

* ESR: The Equivalent Series Resistance represents the losses in the equivalent circuit diagram of a capacitor.

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