Type CBB65 Motor Run Capacitor

Main applications:

Type CBB65 Capacitors (including round, oval, single and dual) are used in motor run, HVAC/R, UPS, refrigerator and other general purpose applications, are designed for continuous operation and are energized the entire time the motor is running.

Advantages:

Low DF (dissipation factor)
Protected with a pressure-sensitive interrupter
Small size and light weight
Special high temperature 100C versions available
High insulation resistance
UL-810 fault current protection
Made to EIA-456-A standards
RoHS compliant

Specifications:

Capacitance Range: 0.5uF to 100uF
Capacitance Tolerance: +/-10% standard; +/-3% to +/-6% optional
AC Voltage Range: 150VAC to 600VAC
Voltage Testing:
  T-T(terminal to terminal): 2.0Un (rated voltage)/2S
  T-C(terminal to case): 2200VAC/2S
Frequency: 50/60Hz
DF(dissipation factor): shall not be greater than 0.1% at 60Hz
Temperature Range: -40C to +80C standard; +90C or +100C optional
Approval Certification: UL, cUL, CE, VDE, TUV, CQC

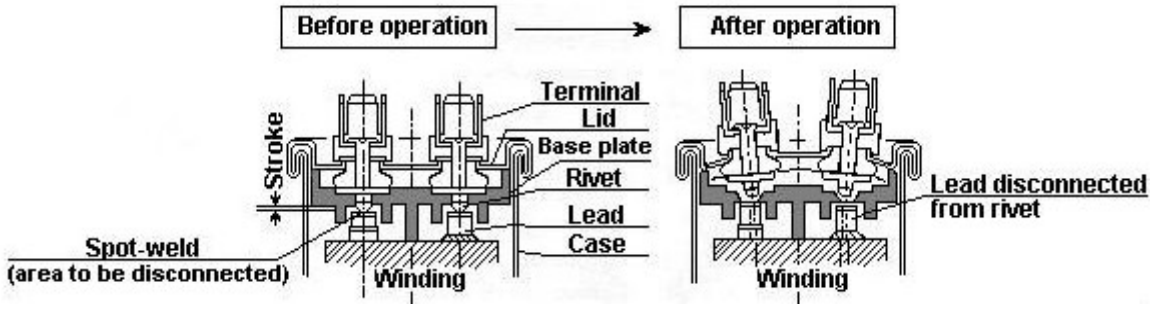
Construction characters:

MPP film: The capacitors' windings are manufactured with MPP film which is metalized with a thin self-healing mixture of zinc and aluminum directly on one side of the polypropylene film under vacuum. The film is wound into stable cylindrical windings. The ends of the capacitor windings are sprayed with metal powder which facilitating a high current load and ensuring a low-inductance connection between the terminals and windings.

Oil-filled: The capacitors are filled with environmental friendly vegetable oil which protects metalized polypropylene film from corrosion, helps optimum heat transfer, and is good to decrease the degrading effects of corona (which may make premature failures).

Lead material: There are many kinds of lead types: 2+2, 2+4, 4+4, 2+3+4, 4+4+4 tabs AMP250 quick disconnecting terminals (for easy assembly).

Pressure-sensitive interrupter: Type CBB65 capacitors have a pressure-sensitive interrupter approved by UL to remove the capacitors from the electric circuit at end of life. When over-voltage or ageing happens at the end of the capacitor's life, an increasing number of self-healing breakdowns may cause the capacitor's inner pressure rising. To prevent them from bursting, the pressure-sensitive interrupter which is based on an attenuated spot at one of the connecting wires inside the capacitor will operate. With rising pressure the metal case begins to expand, mainly by opening the folded crimp and pushing the cover upwards. As the result, the prepared connecting wire is separated at the attenuated spot, and the current path is interrupted irreversibly.
(Below diagram shows the operation)



Knowledge points:

"Self-healing": CBB65 is a kind of self-healing capacitor. In the event of a voltage breakdown in the dielectric the metal layers around the breakdown channel are evaporated by the temperature of the electric arc that forms between the electrodes. They are removed within a few microseconds and pushed apart by the overpressure generated in the center of the breakdown spot. An insulation area is formed which is reliably resistive and voltage proof for all operating requirements of the capacitor. The capacitor remains fully functional during and after the breakdown.

Vacuum and heat treatment: The capacitors are processed with vacuum oil-filling and heat treatment which ensures thorough removal of moisture, resulting in superior capacitance stability and long term reliability.

Mounting: All capacitors can be mounted in any position. A clearance of at least 10mm above the terminals is necessary for capacitors with break-action mechanism.

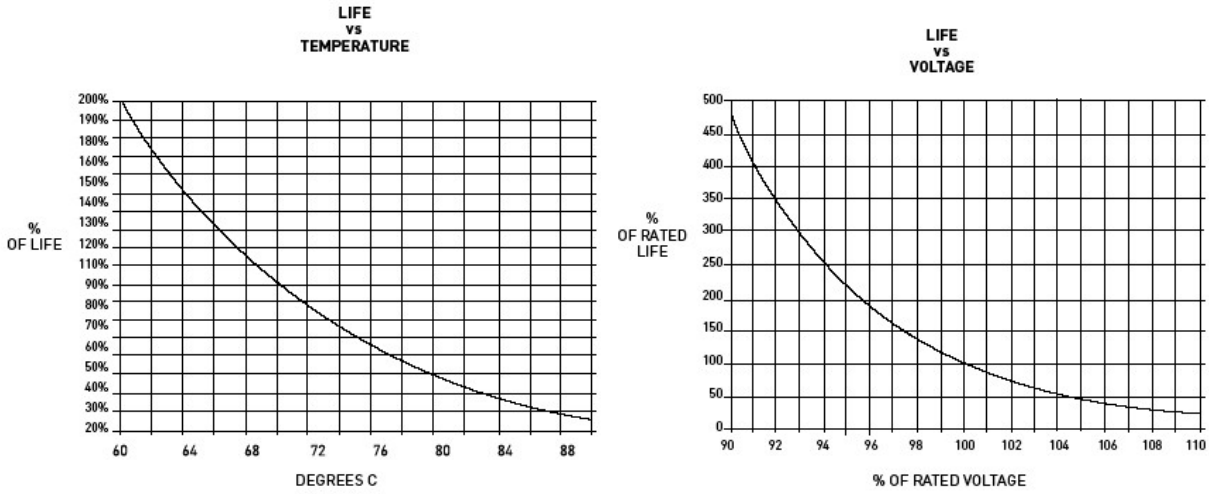
Service life: In accordance with applicable standards (such as IEC 60252-1-2010), capacitor's service life is classified in some grades (see the right chart).

Application Class	Service Life
A	30,000h
B	10,000h
C	3,000h
D	1,000h

Capacitance's tolerance under different temp.: The capacitance of all capacitors should be within the specified tolerance limits of the nominal rating when measured at temperature of +25C. When mea-

sured at the operating case temperature limits, the capacitance of the capacitors will not change by more than -5% to +2% of the +25C capacitance value. Capacitance measurements shall be made on an AC bridge at a frequency of 60Hz.

Main factors influencing capacitor's life: The service life of a capacitor will be shortened by exceeding the voltage and temperature rating.



RoHS compliant: It means the capacitor complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), Poly-Brominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

Safety protection: Degree of safety protection is always identified by one of below 3 codes to be marked on the capacitor:

(P2) indicates that the capacitor will fail in the open-circuit mode only and is protected against fire or shock hazard.

(P1) indicates that the capacitor will fail in the open-circuit OR short-circuit mode and is protected against fire or shock hazard.

(P0) indicates that the capacitor has no specific failure protection.

Accelerated Life Test (ALT):The capacitors are operated at 125% voltage rating and temperature at 10C greater than maximum rating for 2000 hours. The capacitors shall be considered to have passed the life test if none of the following has occurred:

A. Permanent short circuit between terminals or between terminals and case.

B. Continuous or intermittent open circuit.

C. Change in capacitance of greater than 3%.

D. A dissipation factor bigger than 0.15%.

Sizes: please refer to sizes of CBB65R, CBB65V, CBB65R3T and CBB65V3T.