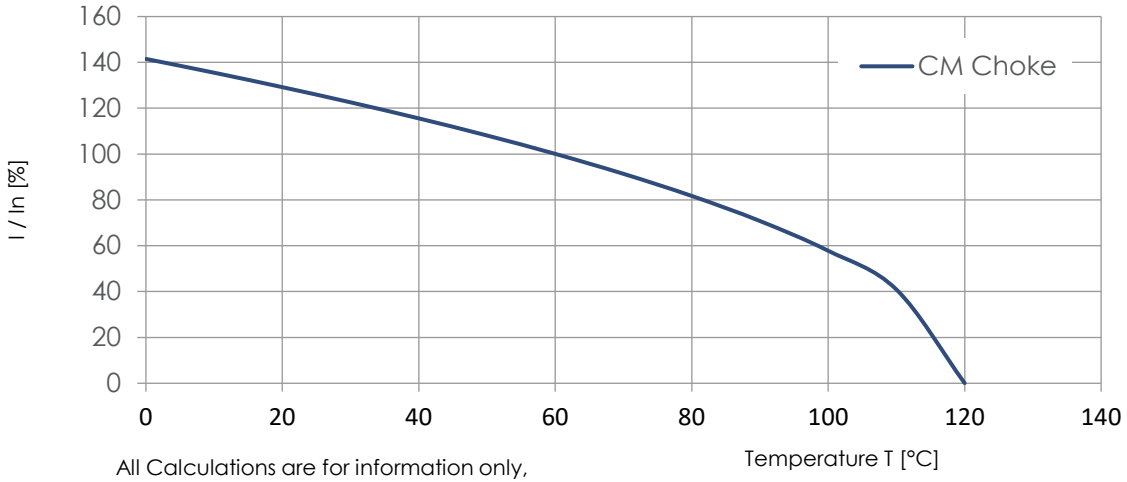
Nanoperm®

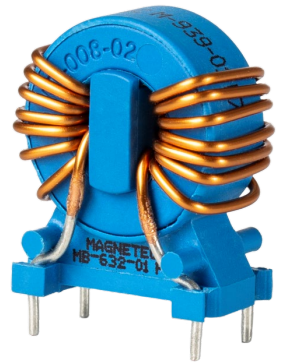
Derating over temperature – Common Mode Choke

Magnetec

- High inductance and high impedance in a wide frequency range
- Advanced EMI suppression over a wide frequency range
- Low saturation flux density drop at high temperatures
- High operational temperature up to 130°C
- Curie temperature as high as app. 600°C



All Calculations are for information only, not guaranteed values.



The nominal currents stated for our components refer to an ambient temperature of 60°C (or 70°C) - as indicated on the component data-sheet. Without any further indication free convection is assumed. The maximum operating current at any other ambient temperature can be calculated by means of the following formula

$$I = Inom \sqrt{\frac{Tmax - T}{Tmax - Tnom}}$$

where
- I_{nom} = rated current at T_{nom}
- T = actual ambient temperature
- T_{nom} = temperature at which the rated current is defined
- T_{max} = rated maximum temperature of the choke

Example CMC MB-007:
I_{nom} = 16A, T_{nom} = 60°C
At T = 40°C the max. operating current I can be ca. 18,5 A, at T = 80° it can be ca. 13 A only.
If forced cooling is applied to the component operating current can be increased by ca. 40%.

Note: All these figures are estimations and in particular overtemperature has to be verified by testing in the real application.

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