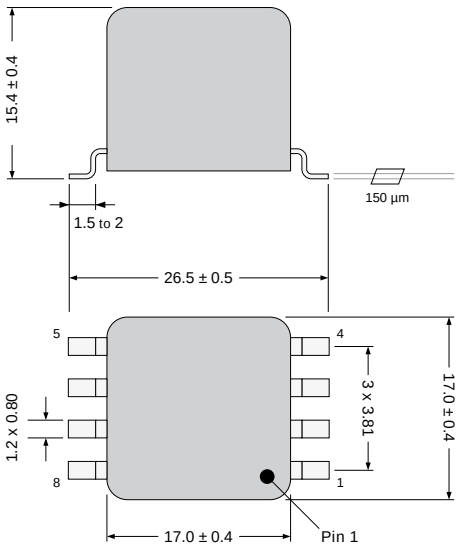
# CMC 17 Common Mode Chokes Series
# High Grade - Improved Temperature Stability

- Less than 20 % performance variations versus temperature (-55 °C / + 125 °C)
- Minimum impedance attenuation : 100 Ω from 100 kHz to 30 MHz
- Compact SMD package (2x4 pins)
- Applied standards : MIL-STD-202, ECSS-Q-ST-70-02C, DO-160 and ESCC 3201 generic specification for space products
- RMS current range : from 1.1 A to 11.7 A for 40 °C heating above 25 °C
- Materials meet UL94-V0 rating
- Thermal index according to IEC85 : H (180 °C)
- Operating/storage temperature range : -55 °C to + 125 °C
- Approx weight : 10 grams

## Electrical Data

| ID Code | Inductance Value at 25°C (-40/+35%) | Typical SRF | Max Impedance (Typical) | Max Attenuation (Z = 50Ω) | MAX RMS Current for ΔT = 40°C | MAX DC Resistance (25°C) | Typical Leakage Inductance (100kHz) |
|---|---|---|---|---|---|---|---|
| CMC17 M45 1WR | 0.45 mH | 32 MHz | 1 kΩ | 20 dB | 11.7 A | 5 mΩ | 0.5 µH |
| CMC17 1M2 1WR | 1.15 mH | 15 MHz | 1.9 kΩ | 26 dB | 8.3 A | 10 mΩ | 1.1 µH |
| CMC17 2M6 1WR | 2.59 mH | 8 MHz | 3.7 kΩ | 32 dB | 6 A | 18 mΩ | 2.3 µH |
| CMC17 5M8 1WR | 5.83 mH | 1.5 MHz | 5.3 kΩ | 35 dB | 4 A | 40 mΩ | 6.3 µH |
| CMC17 13M 1WR | 13.1 mH | 0.6 MHz | 9.4 kΩ | 40 dB | 2.7 A | 90 mΩ | 13.4 µH |
| CMC17 30M 1WR | 30.3 mH | 0.3 MHz | 15.8 kΩ | 44 dB | 1.7 A | 220 mΩ | 32 µH |
| CMC17 69M 1WR | 69.2 mH | 0.1 MHz | 29 kΩ | 49 dB | 1.1 A | 500 mΩ | 70 µH |

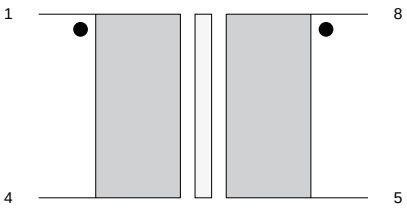
## Typical Dimensions
**(mm, top view)**



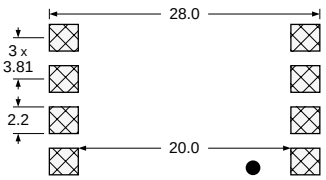

## Notes

1. Dielectric strength test : 500v (50Hz - 1min)
2. 1:1 ratio (sector wound construction)

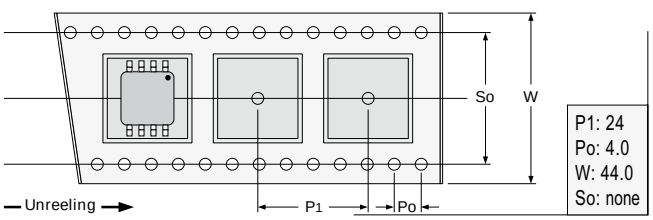
## Connections



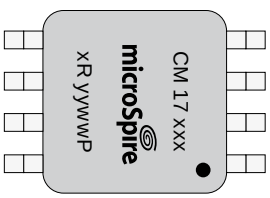

## PCB Layout (suggested)




## Packaging
Tape and Reel:
150 units per reel of diameter 330 mm




## Marking




yyww :
Date code

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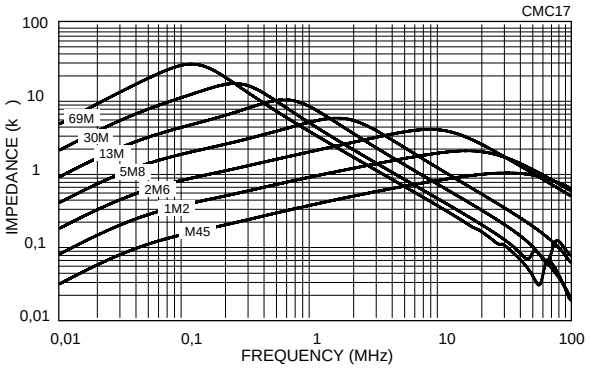
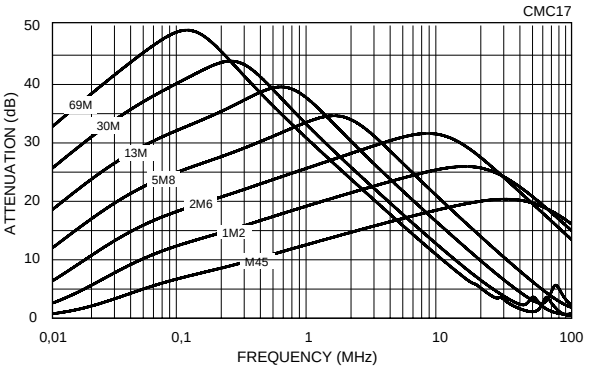
## Impedance



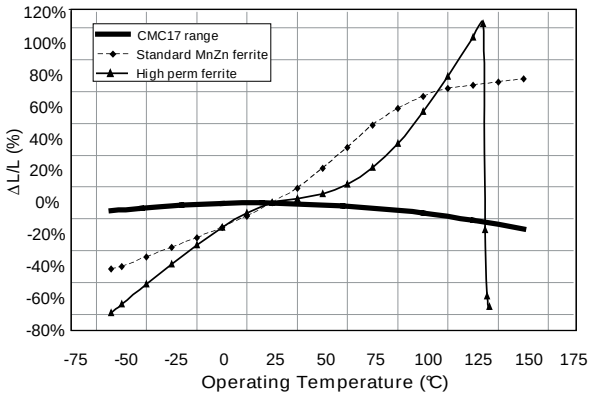

**Typical values at 25°C with 1mT at 10kHz**

## Attenuation



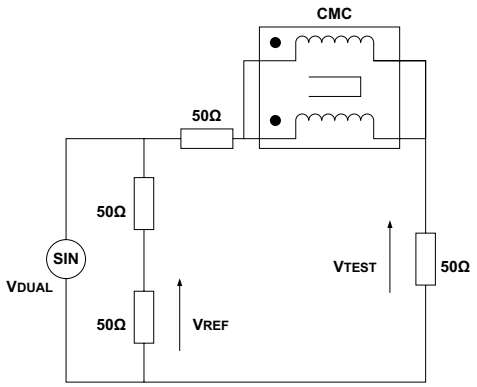

**Typical values (Z=50Ω) at 25°C with 1mT at 10kHz**

## Variation vs Temperature




**Change in inductance value (<1mT at 10kHz)**

## Attenuation Measurement Circuit




$$Att.\ (dB) = 20 \log_{10} \frac{V_{TEST}}{V_{REF}}$$

CMC17 range uses very high performance materials and therefore, offers remarkable temperature stability figures compared to standard or high-perm ferrite cores.

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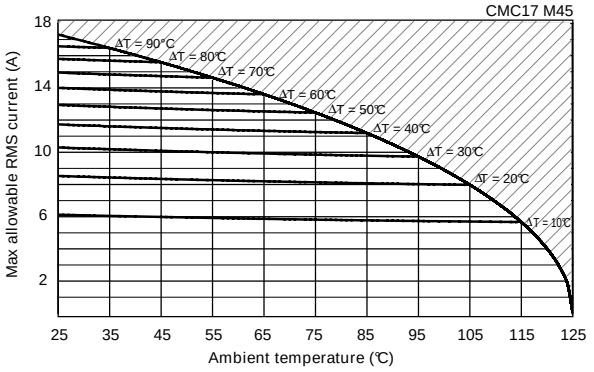
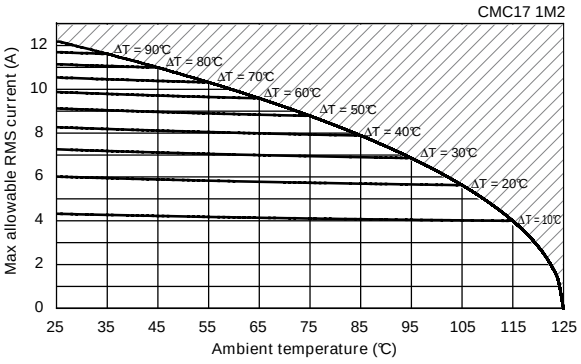
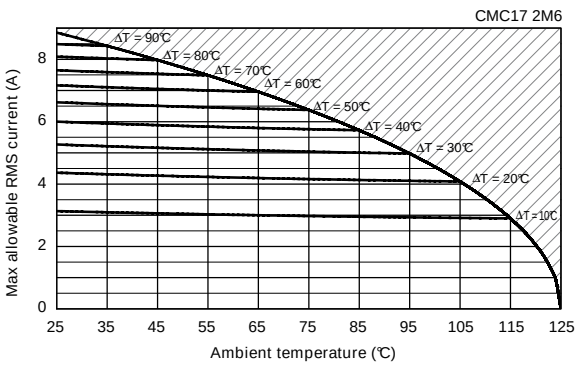
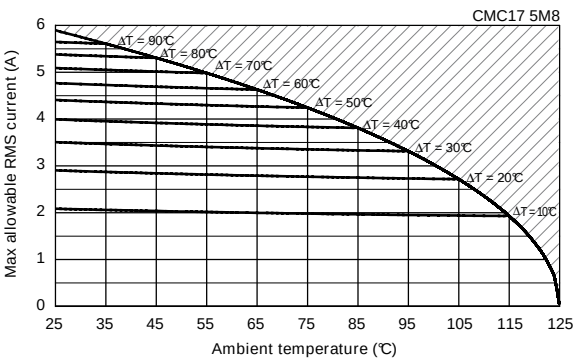
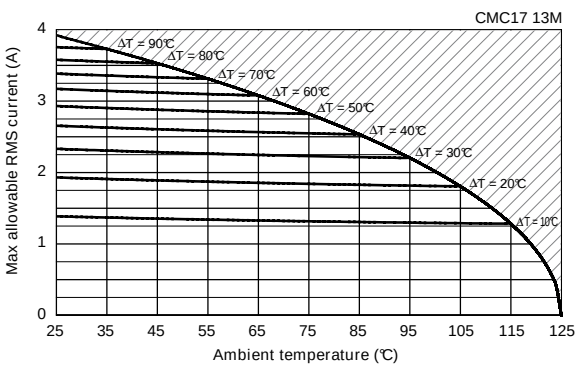
## Derating Curves

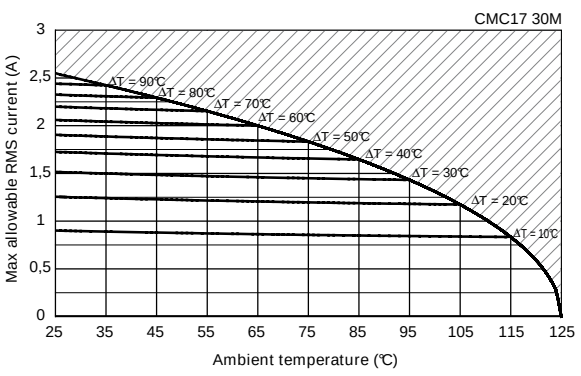


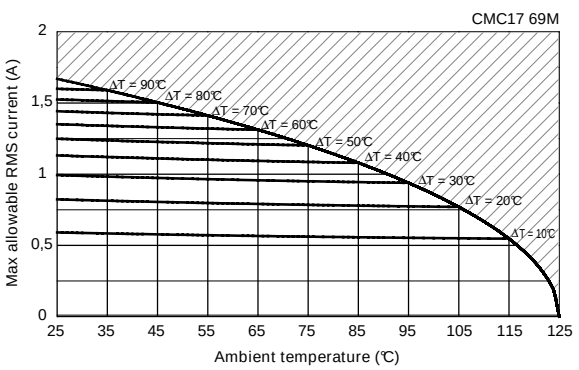




All thermal measurements under atmospheric conditions with component mounted on 1 $dm^2$ PCB without cooling device.

All above graphs indicate maximum RMS current allowed through component v. ambient temperature for a defined ΔT.

Maximum operating temperature is +125 °C.

**Example :**

CMC17 M45 for application with Tamb = + 85 °C Max current allowed is < 11 Arms with ΔT < 40 °C.

If temp increase allowed in application is limited to ΔT < 20 °C, current must be reduced to 8 Arms.