

Common Mode Chokes for DC/DC Embedded Applications

CMC 18 xxx 2WR Series

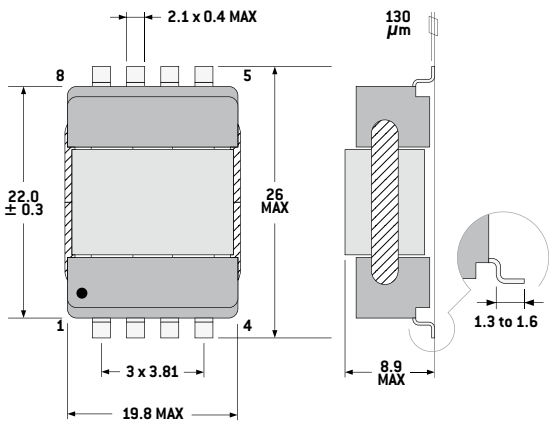


- Based on Microspire's «SESI18 Planar Technology»
- Low-profile SMD package (2x4 pins)
- Applied standards: MIL-STD-202, ECSS-Q-70-02, D0-160
- ESCC 3201/009 version upon request
- RMS current range: from 0.9A to 9.9A for 40°C heating above 25 °C
- Excellent impedance attenuation > 100Ω from 300 kHz to 45 MHz
- Dielectric strength test up to 500V (50Hz - 1 min)
- 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

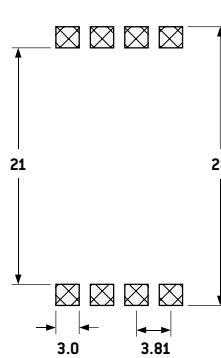
Electrical Data

ID Code	Inductance Value at 25°C (±40%)	Typical SRF	Max Impedance (Typical)	Max Attenuation (Z = 50Ω)	MAX RMS Current for ΔT = 40°C	MAX DC Resistance (25°C)	Dielectric Strength (50Hz - 1min)
CMC18 60K 2WR	0.06 mH	4.5 MHz	1.4 kΩ	23 dB	9.9 A	7 mΩ	500 Vrms
CMC18 M13 2WR	0.13 mH	3.7 MHz	3 kΩ	30 dB	6.9 A	15 mΩ	500 Vrms
CMC18 M27 2WR	0.27 mH	2.5 MHz	6.3 kΩ	36 dB	4.5 A	35 mΩ	500 Vrms
CMC18 M54 2WR	0.54 mH	2 MHz	13.2 kΩ	42 dB	3 A	75 mΩ	500 Vrms
CMC18 1M1 2WR	1.1 mH	1.4 MHz	33.7 kΩ	51 dB	2 A	175 mΩ	500 Vrms
CMC18 2M4 2WR	2.4 mH	0.8 MHz	96.8 kΩ	60 dB	1.3 A	415 mΩ	500 Vrms
CMC18 4M9 2WR	4.9 mH	0.55 MHz	325 kΩ	70 dB	0.9 A	920 mΩ	500 Vrms

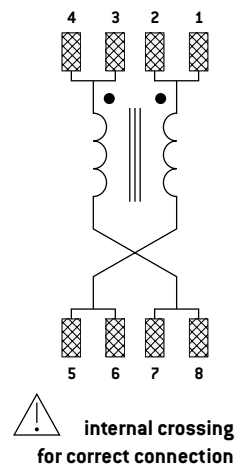
Typical Dimensions (mm, top view)



PCB Layout (suggested)

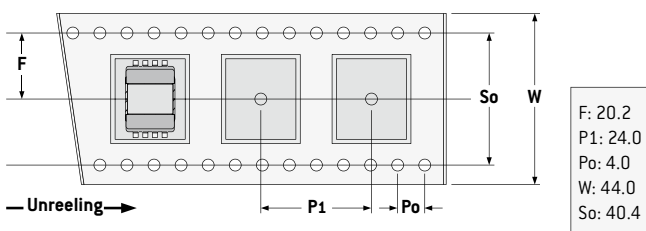


Connections (top view)

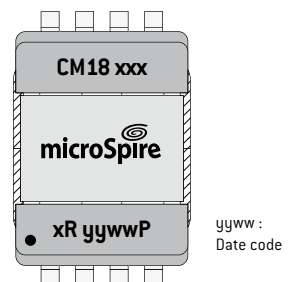


Packaging

Tape and Reel:
300 pieces per reel of diameter 330 mm



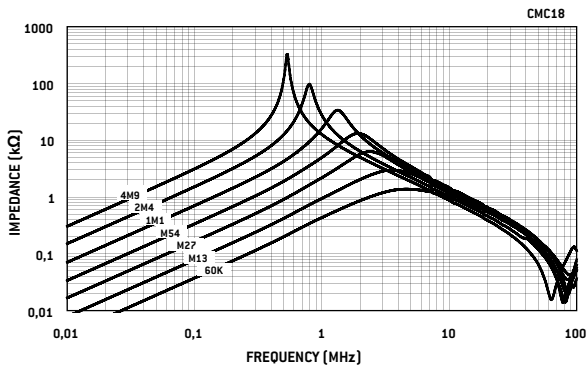
Marking



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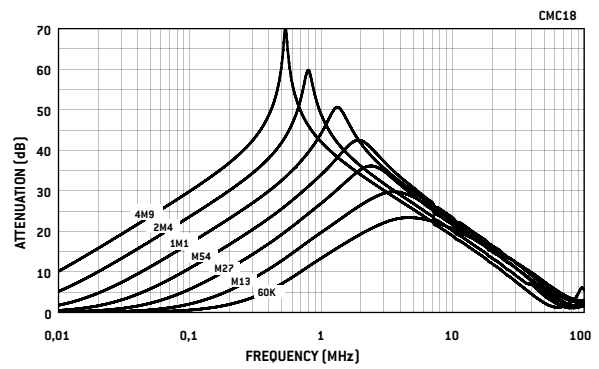
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Impedance



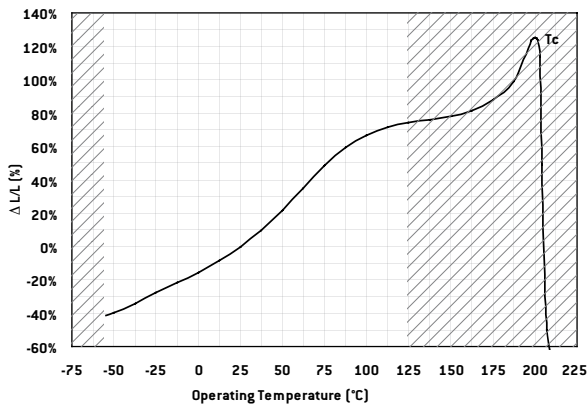
Typical values at 25 °C with 1 mT at 10 kHz

Attenuation



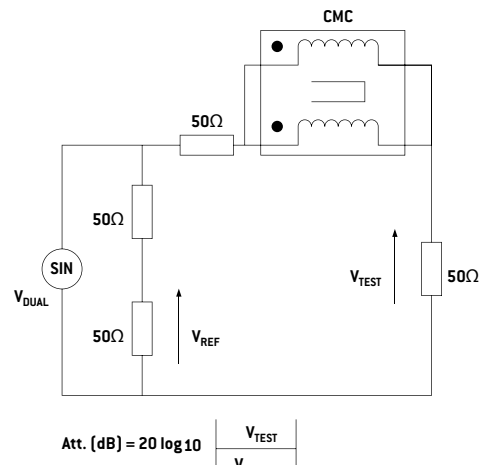
Typical values ($Z=50\ \Omega$) at 25 °C with 1 mT at 10 kHz

Variation vs Temperature



Change in inductance value ($< 1\ \text{mT}$ at 10 kHz)

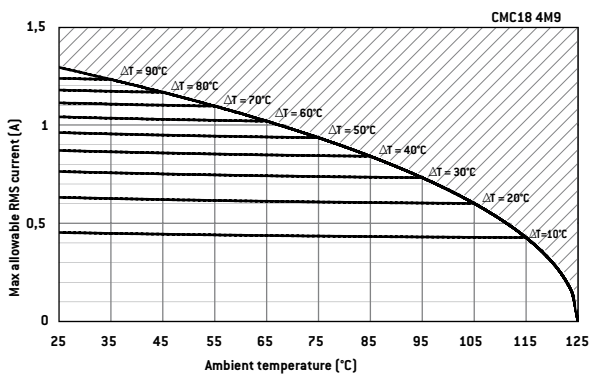
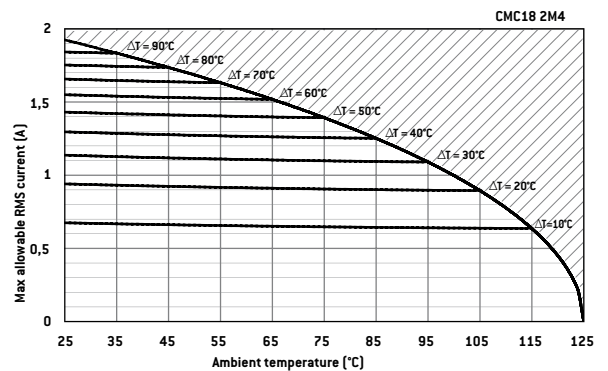
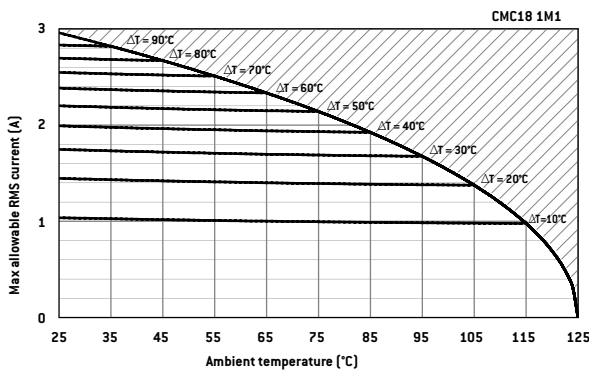
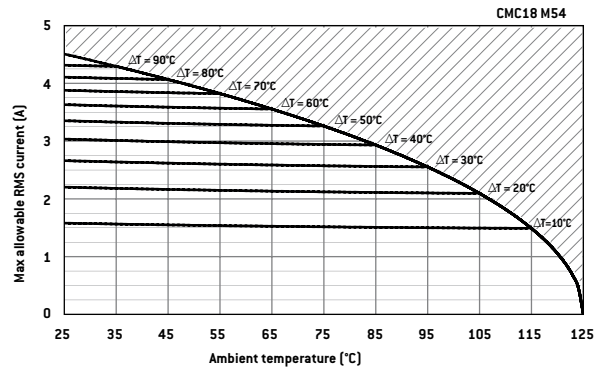
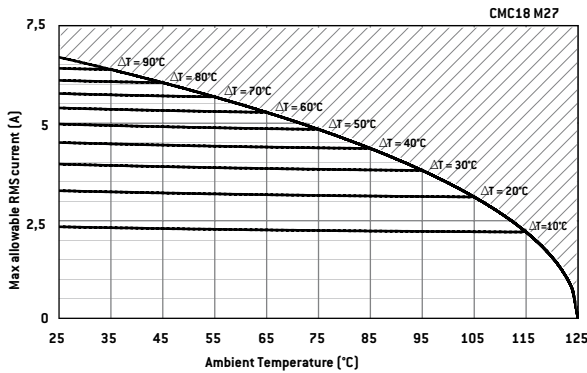
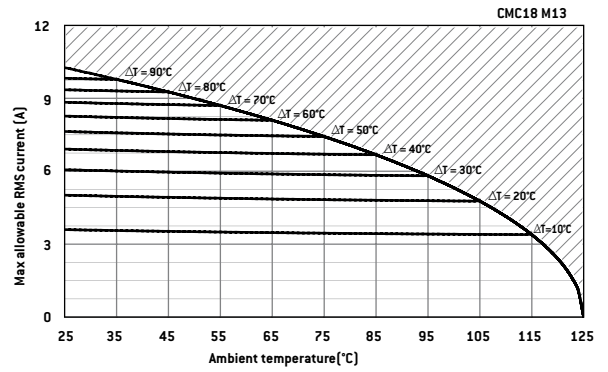
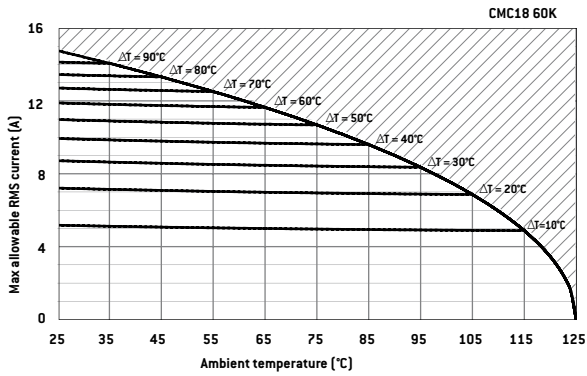
Attenuation Measurement Circuit



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Derating Curves



All thermal measurements under atmospheric conditions with component mounted on 1 dm² 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:

CMC18 60K for application with $T_{amb} = +85^\circ\text{C}$ Max current allowed is < 9.6 Arms with $\Delta T < 40^\circ\text{C}$.

If temp increase allowed in application is limited to $\Delta T < 20^\circ\text{C}$, current must be reduced to 7 Arms.

