

Common Mode Chokes for DC/DC Embedded Applications

CMC 15 xxx 2WR Series

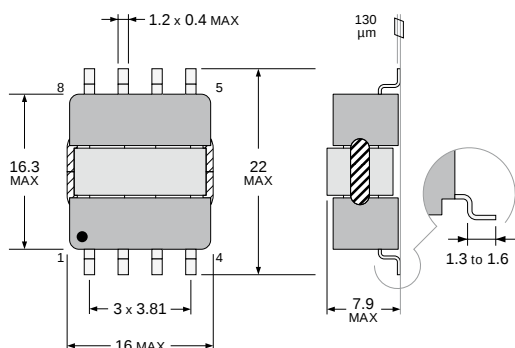


- Based on Microspire's «SESI15 Planar Technology»
- Low-profile SMD package (2x4 pins)
- Applied standards: MIL-STD-202, ECSS-Q-70-02, DO-160
- RMS current range: from 0.6 A to 6.7 A for 40 °C heating above 25 °C
- Excellent impedance attenuation >100 Ω from 300 kHz to 65 MHz
- Dielectric strength test up to 500 V (50 Hz - 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: 5 grams

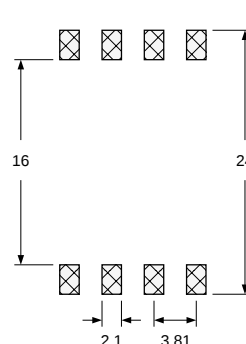
Electrical Data

ID Code	Inductance Value at 25°C ($\pm 40\%$)	Typical SRF	Max Impedance (Typical)	Max Attenuation ($Z = 50\Omega$)	MAX RMS Current for $\Delta T = 40^\circ\text{C}$	MAX DC Resistance (25°C)	Dielectric Strength (50Hz - 1min)
CMC15 52K 2WR	0.05 mH	7.3 MHz	1.6 k Ω	25 dB	6.7 A	15 m Ω	500 Vrms
CMC15 M11 2WR	0.11 mH	5.8 MHz	3.7 k Ω	32 dB	4.4 A	35 m Ω	500 Vrms
CMC15 M22 2WR	0.22 mH	3.9 MHz	7.3 k Ω	37 dB	3.3 A	65 m Ω	500 Vrms
CMC15 M47 2WR	0.47 mH	2.4 MHz	15 k Ω	44 dB	2.2 A	150 m Ω	500 Vrms
CMC15 1M0 2WR	1.0 mH	1.8 MHz	33.5 k Ω	51 dB	1.4 A	350 m Ω	500 Vrms
CMC15 2M0 2WR	2.0 mH	1.2 MHz	66.9 k Ω	57 dB	0.95 A	770 m Ω	500 Vrms
CMC15 4M0 2WR	4.0 mH	0.9 MHz	151 k Ω	64 dB	0.55 A	1750 m Ω	500 Vrms

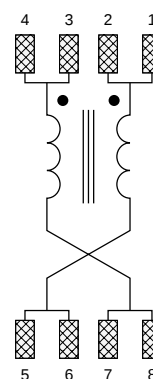
Typical Dimensions (mm, top view)



PCB Layout (suggested)



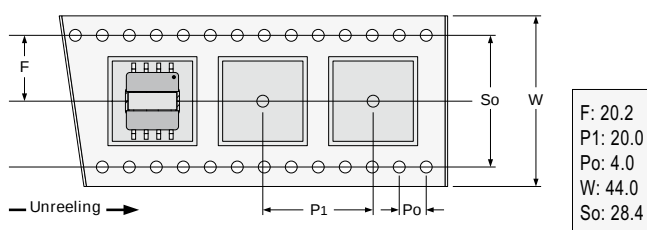
Connections (top view)



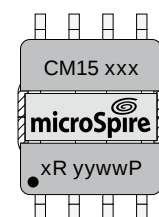
⚠ internal crossing
for correct connection

Packaging

Tape and Reel:
400 units per reel of diameter 330 mm



Marking



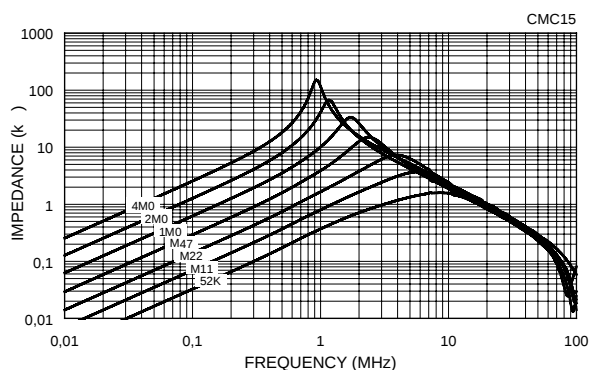
yyww :
Date code



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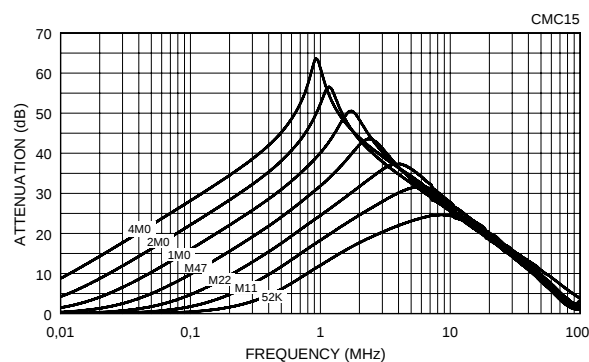
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Impedance



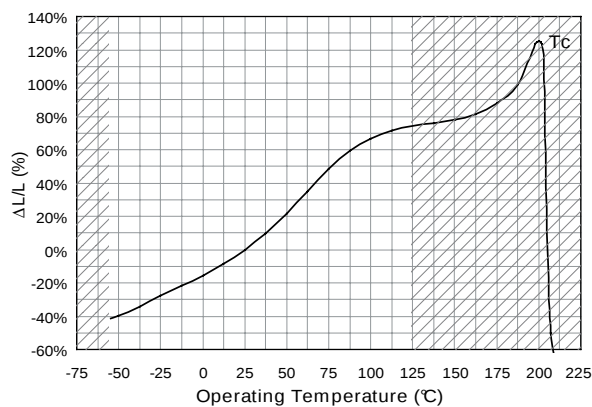
Typical values at 25°C with 1 mT at 10 kHz

Attenuation



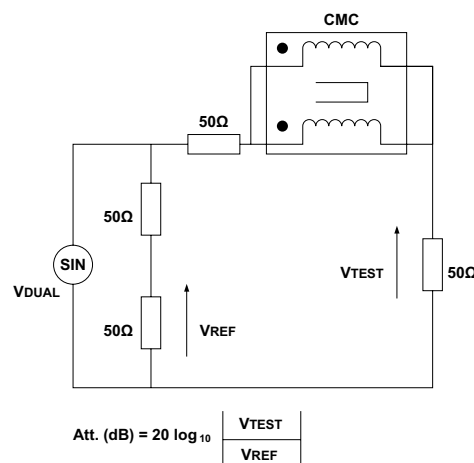
Typical values ($Z=50\Omega$) at 25°C with 1 mT at 10 kHz

Variation vs Temperature



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

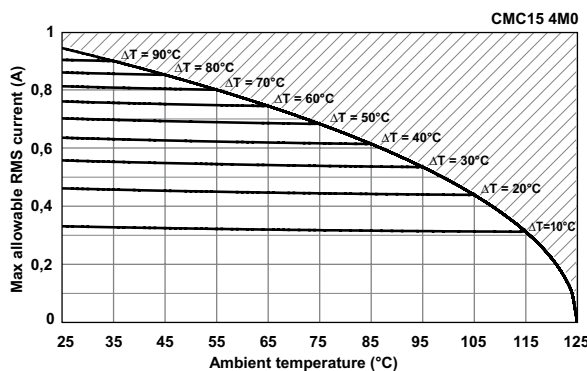
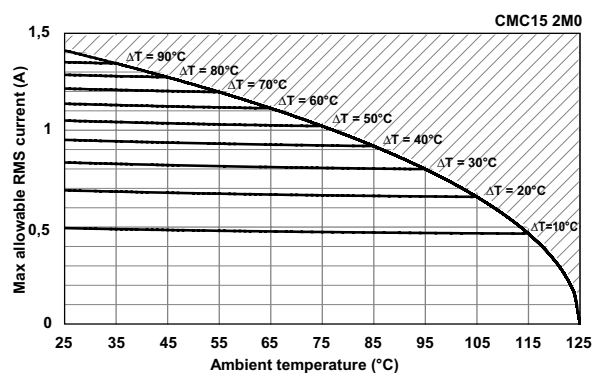
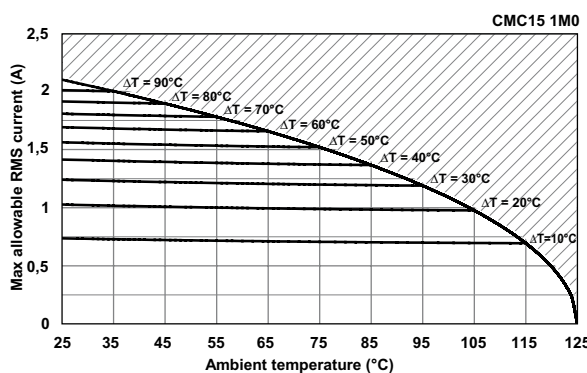
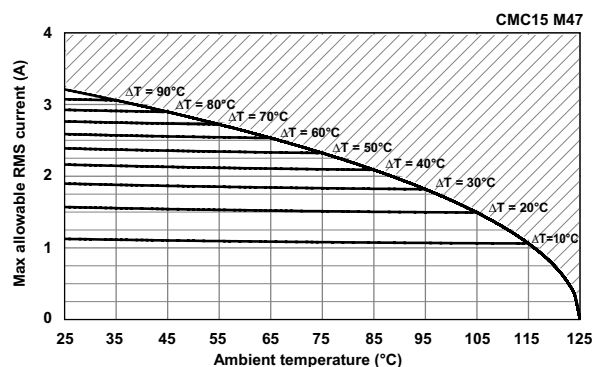
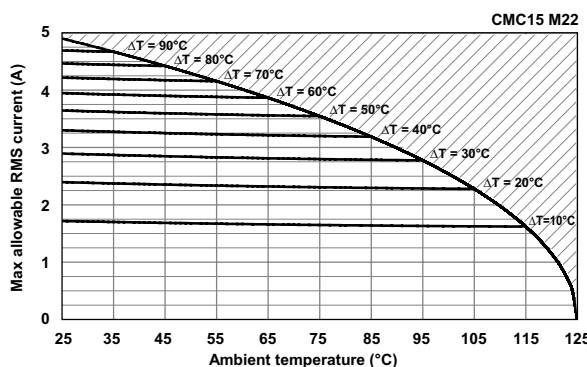
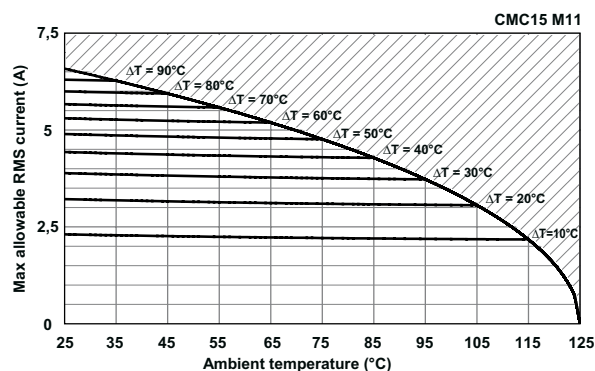
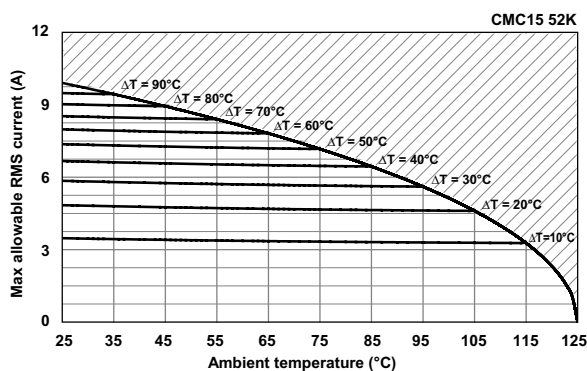
Attenuation Measurement Circuit



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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:

CMC15 52K for application with $T_{amb} = +85^\circ\text{C}$ Max current allowed is <6.5 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 4.5 Arms.

High Grade Technologies...
Power Magnetics...
Common Mode Chokes...

