

## Common Mode Filter Chip Inductors

FASTRON added size 1210 to its CMC product portfolio. Both the 1812CMF and the 1210CMF have two coupled windings wound, providing a symmetrical coil. The ferrite plate on top of the ferrite core closes the magnetic circuit and allows accurate pick and place assembly.

Main purpose of 1210CMF and 1812CMF is protecting differential signal paths from common mode disturbances. The Common Mode Choke is Applications designed to provide highest quality for the most stringent applications e.g. automotive, industrial and automation. The part could be used in data-line filters, Ethernet networking, CAN-Bus, USB, wideband noise suppression and EMC circuit protection for incoming radiation and outgoing noise emission.

Technical Data	L – Value (rated inductance)	Measured with E4980AL Precision LCR Meter or equivalent at frequency f∟ 25°C ambient					
	Impedance,  Z	Measured with E4991B Impedance Analyzer or equivalent at frequency fz, 25°C ambient					
	DCR (max)	Measured at 25°C ambient					
	Rated DC Current	Max permissible Current that causes a 20°C component temperature rise from 25°C ambient					
	Operating Temperature	-40°C to +150°C (Including component self-heating): CMF -40°C to +105°C (Including component self-heating): CMF/E					
	Surface Finishing	Flat top for perfect pick and place assembly					
	Pad Metallization	Gold flash for 1812 Tin as top layer for 1210					
	Wire Termination	Spot welding					
	Recommended Soldering Method	Reflow					
	Moisture Sensitivity Levels (MSL)	MSL Level 1, indicating unlimited floor life at ≤ 40°C /60% relative humidity					
	Solderability	Using lead free solder (Sn 96.5) at 245°C ± 5°C for 5 ± 0.5 seconds, min 90% solder coverage metallization Standard: IEC 68-2-20 (Ta)					
	Resistance to Soldering Heat	Resistant to $260^{\circ}C \pm 5^{\circ}C$ for $10 \pm 1$ seconds Standard: IEC 68-2-20 (Tb)					
	Resistance to Solvent	Resistant to isopropyl alcohol for 5 $\pm$ 0.5 minutes at 23°C $\pm$ 5°C Standard: IEC 68-2-45					
	Climatic Test	Defined by the following standards IEC 68-2-1 for cold test: -55°C for 96 hours IEC 68-2-2 for dry heat test: 150°C for 96 hours IEC 60068-2-78 for humidity test: 40°C at RH 95% for 4 days					
	Thermal Shock Test	Temperature cycle: -40°C to +150°C to -40°C Max/Min temperature duration: 15 minutes Temperature transition duration: 5 minutes Cycles: 25 Standard: MIL-STD-202G					
	Adhesion of Soldered Component (Shear Test)	Components withstand a pushing force of 10N for $10 \pm 1$ seconds Standard: IEC 60068-2-21, method Ue <sub>3</sub>					
	Mechanical Shock	Mil-Std 202 Method 213, Condition C 3 axis, 6 times, total 18 shocks 100 G, 6 ms, half-sine					
	Vibration	Mil-Std 202 Method 204 20 mins at 5G 10 Hz to 2000 Hz 12 cycles each of 3 orientations					

### Ordering Code Example: <u>1812CMF</u>-<u>101X</u>-YY →

Case Sizes - 1210, 1812 Tolerances - +30%/-10%, +50%/-30% Packaging Code - 01, 04 (Taped / Reel)

### 1812CMF-101X-01



**Technical Data & Packaging Specification** 



# **FASTRON's Component Key Characteristics**



Approved according to AEC-Q200



Approved according to AEC-Q200 with High Temperature



Suitable for High Temperature



Part is RoHS conform and Halogen free



Mechanical Shock and Vibration Proof



Designed for High Q-values



Exceptionally High Q-values



Optimized for High Currents



**Optimized for High Voltages** 



Common Mode Filter CAN bus

### www.fastrongroup.com





## PRELIMINARY









Recommended layout for solder pads







Part No	Impedance  Z  (Ω)		fz	Inductanc	e f∟	Tol	Leakage Inductance	DCR max	Rated DC Current
	min	typ	(MHz)	L (µH)	(kHz)	± (%)	(µH) typ	(Ω)	(A)
1210CMF-800X-YY	1000	2600	10 @ 0.1 V	80	100 @ 0.1 V	+50/-30	0.13	2.00	0.20
1210CMF-101X-YY	3500	5100	10 @ 0.1 V	100	100 @ 0.1 V	+50/-30	0.13	2.30	0.15

#### Core Material: Ferrite

Top Material: Magnetically shielded

SPQ: Taped / Reel 600 [-01] 2700 [-04]

Remarks: - Rated Volt = 80 Vdc.

- Insulation Resistance =  $10 M\Omega$  min.

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