

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.

Applications Main purpose of 1210CMF and 1812CMF is protecting differential signal paths from common mode disturbances. The Common Mode Choke is 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_L , 25°C ambient |
| Impedance, Z | Measured with E4991B Impedance Analyzer or equivalent at frequency f_Z , 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 | <u>Reflow</u> |
| 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 of metallization Standard: IEC 68-2-20 (Ta) |
| Resistance to Soldering Heat | Resistant to 260°C ± 5°C for 10 ± 1 seconds Standard: IEC 68-2-20 (Tb) |
| Resistance to Solvent | Resistant to isopropyl alcohol for 5 ± 0.5 minutes at 23°C ± 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 (CMF), 105°C (CMF/E) 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 (CMF) and -40°C to +105°C to -40°C (CMF/E) 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 ± 1 seconds Standard: IEC 60068-2-21, method Ue ₃ |
| 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: 1812CMF-101X-YY ➔ **1812CMF-101X-01**

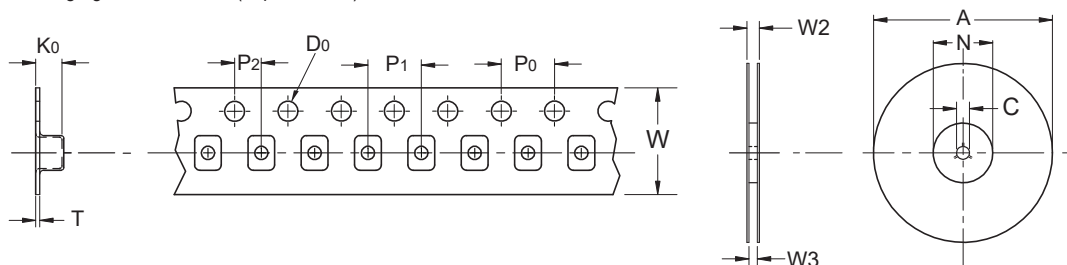
Case Sizes - 1210, 1812

Tolerances - +30%/-10%, +50%/-30%

Packaging Code - 01, 04 (Taped / Reel)

1812 **CMF** - **101** **X** - **YY**
(Case Size) (Series name) (Inductance Value) (Tolerance) (Packaging Code)

Packaging Specification Schematic



| Type | Packaging Code | A | D0 | N | C | W2 | W3 | W | P1 | P0 | P2 | K0 | T |
|------|----------------|-----|------|-----|----|------|------|----|----|----|----|------|------|
| 1210 | 01 | 180 | 1.50 | 60 | 13 | 18.4 | 13.7 | 12 | 8 | 4 | 2 | 3.00 | 0.30 |
| 1210 | 04 | 330 | 1.50 | 100 | 13 | 18.4 | 12.4 | 12 | 8 | 4 | 2 | 3.00 | 0.30 |
| 1812 | 01 | 180 | 1.50 | 60 | 13 | 18.4 | 13.7 | 12 | 8 | 4 | 2 | 3.40 | 0.35 |
| 1812 | 04 | 330 | 1.50 | 100 | 13 | 18.4 | 12.4 | 12 | 8 | 4 | 2 | 3.40 | 0.35 |