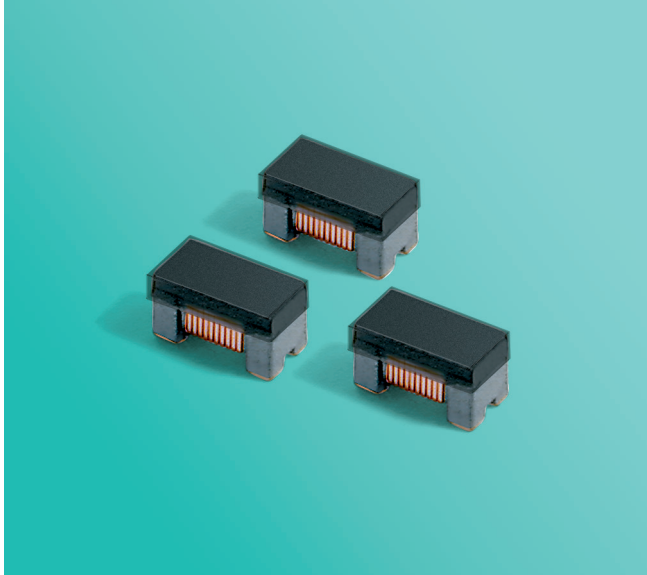


Common Mode Chokes for Critical Applications



- Designed for high-speed USB 3.0, HDMI, SATA, IEEE1394 and LVDS applications.
- Supports data rates up to 4.8 Gbit/s.
- Miniature EIA 0603 footprint; only 1.17 mm tall
- Most values provide >15 dB common mode attenuation and >100 ohms impedance.

Core material Ferrite

Terminations Gold over nickel over silver-palladium-glass frit. Other terminations available at additional cost

Weight 4.9 – 5.2 mg

Ambient temperature –40°C to +85°C with Irms current

Maximum part temperature +105°C (ambient + temp rise).

Storage temperature Component: –55°C to +105°C.
Tape and reel packaging: –55°C to +80°C

Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

Packaging 2000 per 7" reel; Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.14 mm pocket depth

| Part number ¹ | Common mode peak impedance (kOhms) | Cutoff frequency ² (GHz) | Common mode attenuation typ (dB) | | | Inductance ³ min (nH) | DCR max ⁴ (Ohms) | Isolation ⁵ (Vrms) | Irms ⁶ (mA) |
|--------------------------|------------------------------------|-------------------------------------|----------------------------------|---------|-------|----------------------------------|-----------------------------|-------------------------------|------------------------|
| | | | 100 MHz | 500 MHz | 1 GHz | | | | |
| CP312FRA251MAZ | >0.10 @ >3.0 GHz | 3.8 | 3.27 | 5.13 | 7.07 | 18 | 0.077 | 250 | 500 |
| CP312FRA601MAZ | >0.18 @ >3.0 GHz | 3.4 | 5.76 | 9.46 | 12.6 | 37 | 0.109 | 250 | 500 |
| CP312FRA951MAZ | 0.30 @ 2.6 GHz | 2.8 | 8.89 | 12.64 | 16.6 | 63 | 0.142 | 250 | 500 |
| CP312FRA142MAZ | 0.42 @ 1.9 GHz | 1.9 | 10.88 | 15.89 | 19.3 | 98 | 0.174 | 250 | 500 |
| CP312FRA222MAZ | 0.66 @ 1.8 GHz | 0.96 | 12.45 | 19.85 | 23.4 | 150 | 0.209 | 250 | 500 |

1. When ordering, please specify **termination** and **testing** codes:

CP312FRA222MAZ

Termination: A = Gold over nickel over silver-palladium-glass frit

Special order:

C = Tin-lead over gold over nickel over silver-palladium-glass frit

F = Tin-silver-copper over gold over nickel over silver-palladium-glass frit

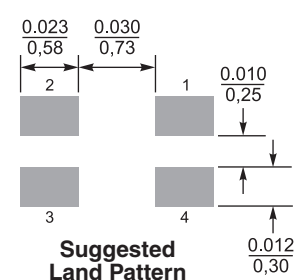
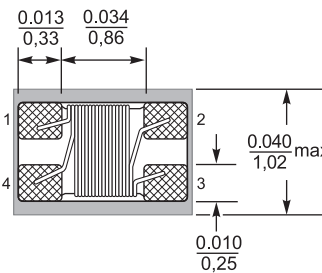
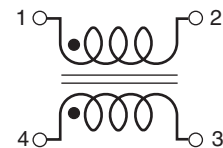
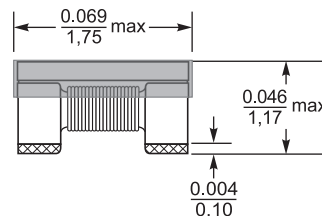
Testing:

Z = Unscreened

H = Group A screening per Coilcraft CP-SA-10001

All screening performed to the document's latest revision
Custom screening also available

- Frequency at which the differential mode attenuation equals –3 dB.
 - Inductance is measured on an Agilent 4286A (or equivalent) with a Coilcraft SMD-A test fixture using the listed correlation.
 - DCR is measured on a Keithley 580 Micro-ohmmeter (or equivalent) with a Coilcraft CCF858 test fixture.
 - Winding to winding isolation (hipot) tested for one minute.
 - Current per winding that causes a 20°C rise from 25°C ambient.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



*Note: Dimensions are before solder application. For maximum overall dimensions including solder, add 0.0025 in / 0.064 mm to width and 0.006 in / 0.15 mm to length and height.

Dimensions are in $\frac{\text{inches}}{\text{mm}}$

Coilcraft CPS
CRITICAL PRODUCTS & SERVICES

1102 Silver Lake Road
Cary, IL 60013
Phone 800-981-0363

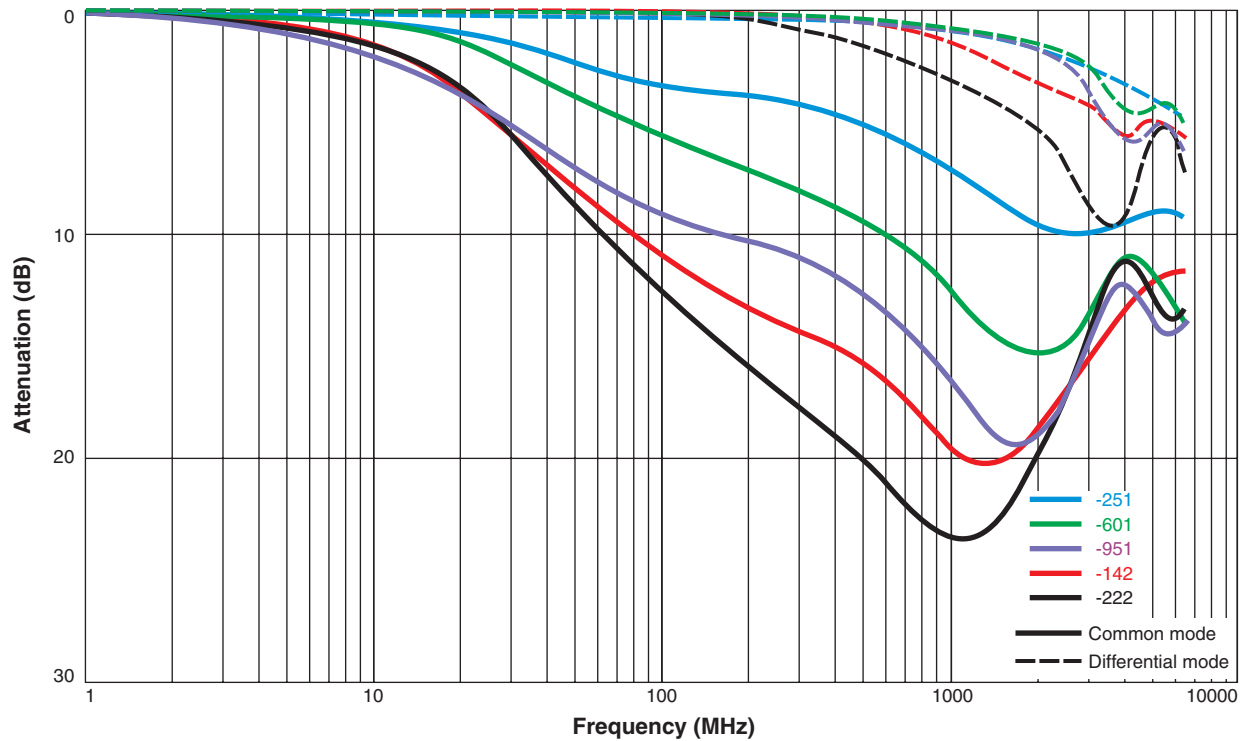
Fax 847-639-1508
Email cps@coilcraft.com
www.coilcraft-cps.com

Document CP406-1 Revised 09/15/22

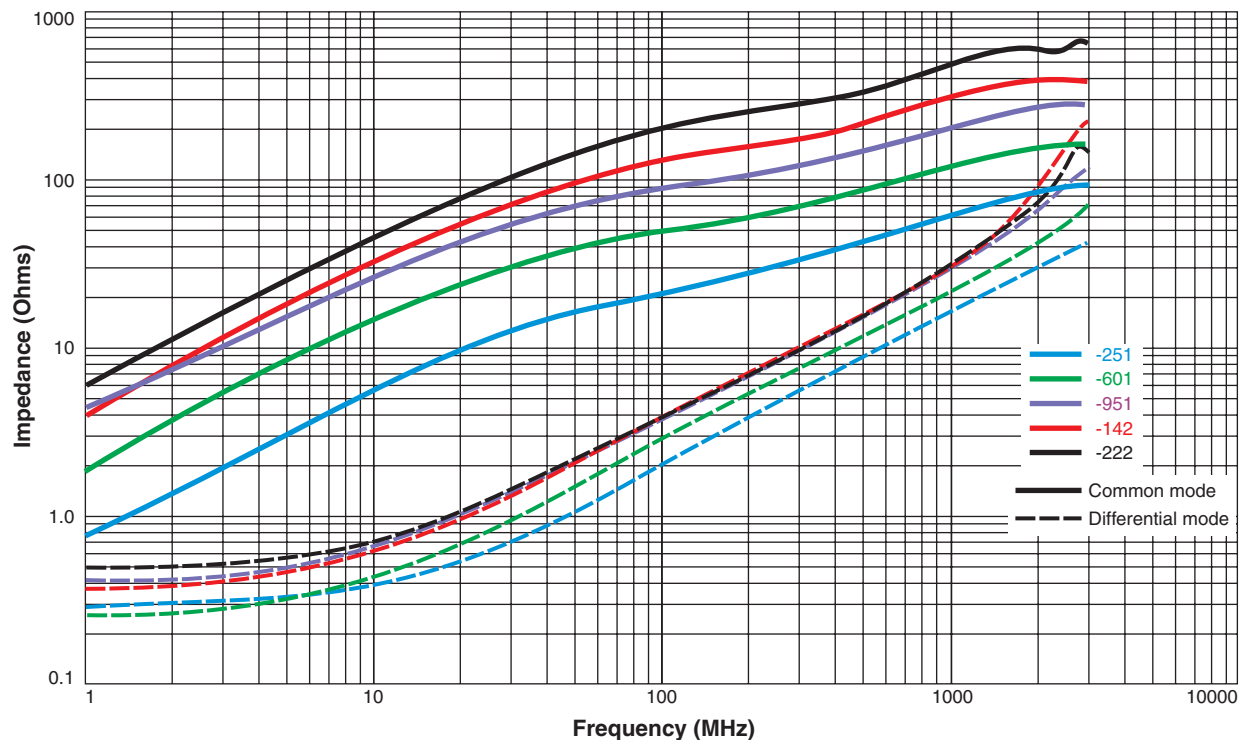
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

0603 Common Mode Choke – CP312FRA

Typical attenuation (Ref: 50 Ohms)



Typical impedance vs frequency



CRITICAL PRODUCTS & SERVICES

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Document CP406-2 Revised 09/15/22

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