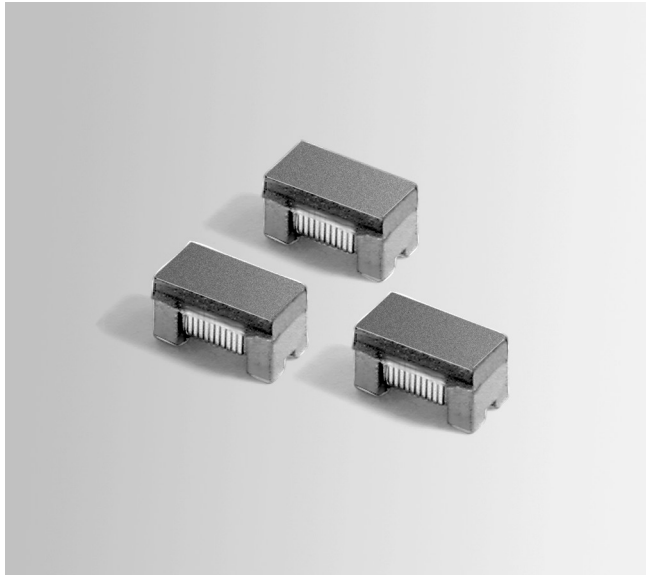


USB 3.0 Common Mode Choke 0603



- For noise suppression in super high speed signal lines: USB 3.x, HDMI 2.0, HDBaseT™, DisplayPort, DVI, etc.; and in high speed differential signal lines: USB 2.0, IEEE1394, LVDS, etc.
- Suitable for USB-type C specification 1.0
- Up to 3.7 GHz differential mode 3 dB cutoff frequency; up to 20 dB common mode noise attenuation in GHz range

Designer's Kit C470 contains 10 each of all 0603USB, 0805USB, 0805USBF, 0805USBN and 1206USB parts

Core material Ferrite

Environmental RoHS compliant, halogen free

Terminations Gold over nickel over silver-palladium-glass frit

Ambient temperature -40°C to +85°C with Irms current, +85°C to +105°C with derated current

Storage temperature Component: -40°C to +105°C.
Tape and reel packaging: -40°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)

Failures in Time (FIT) / Mean Time Between Failures (MTBF)

38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).

| 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) |
|--------------------------|------------------------------------|-------------------------------------|----------------------------------|---------|-------|----------------------------------|-----------------------------|-------------------------------|------------------------|
| | | | 10 MHz | 500 MHz | 1 GHz | | | | |
| 0603USB-251ML_ | >0.10 @ >3.0 GHz | 3.8 | 1.31 | 3.16 | 8.45 | 18 | 0.077 | 250 | 500 |
| 0603USB-601ML_ | >0.18 @ >3.0 GHz | 3.4 | 3.00 | 6.88 | 13.27 | 37 | 0.109 | 250 | 500 |
| 0603USB-951ML_ | 0.30 @ 2.6 GHz | 2.8 | 4.62 | 9.75 | 16.06 | 63 | 0.142 | 250 | 500 |
| 0603USB-142ML_ | 0.42 @ 1.9 GHz | 1.9 | 6.85 | 12.80 | 18.16 | 98 | 0.174 | 250 | 500 |
| 0603USB-222ML_ | 0.71 @ 2.9 GHz | 0.96 | 9.14 | 16.53 | 20.29 | 150 | 0.209 | 250 | 500 |

1. When ordering, please specify **packaging** code:

0603USB-222MLC

Packaging: C = 7" machine-ready reel. EIA-481 embossed plastic tape (2000 parts per full reel).

B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter C instead.

D = 13" machine-ready reel. EIA-481 embossed plastic tape (7500 parts per full reel).

2. Frequency at which the differential mode attenuation equals -3 dB

3. Inductance measured at 100 MHz using an Agilent/HP 4286A impedance analyzer and a Coilcraft SMD-A fixture.

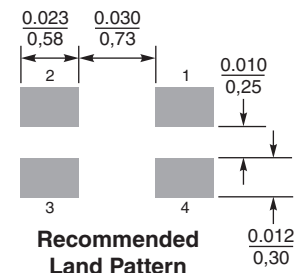
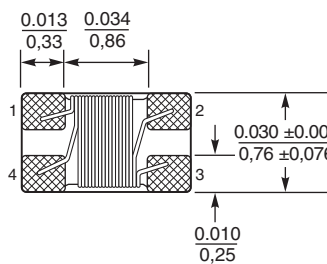
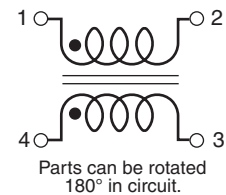
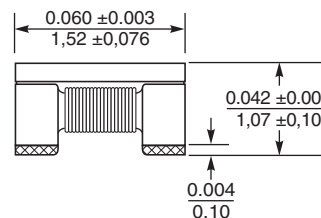
4. DCR is specified per winding.

5. Winding to winding isolation (hipot) tested for one minute.

6. Current per winding that causes a 20°C rise from 25°C ambient.

7. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



These parts have no marking.

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

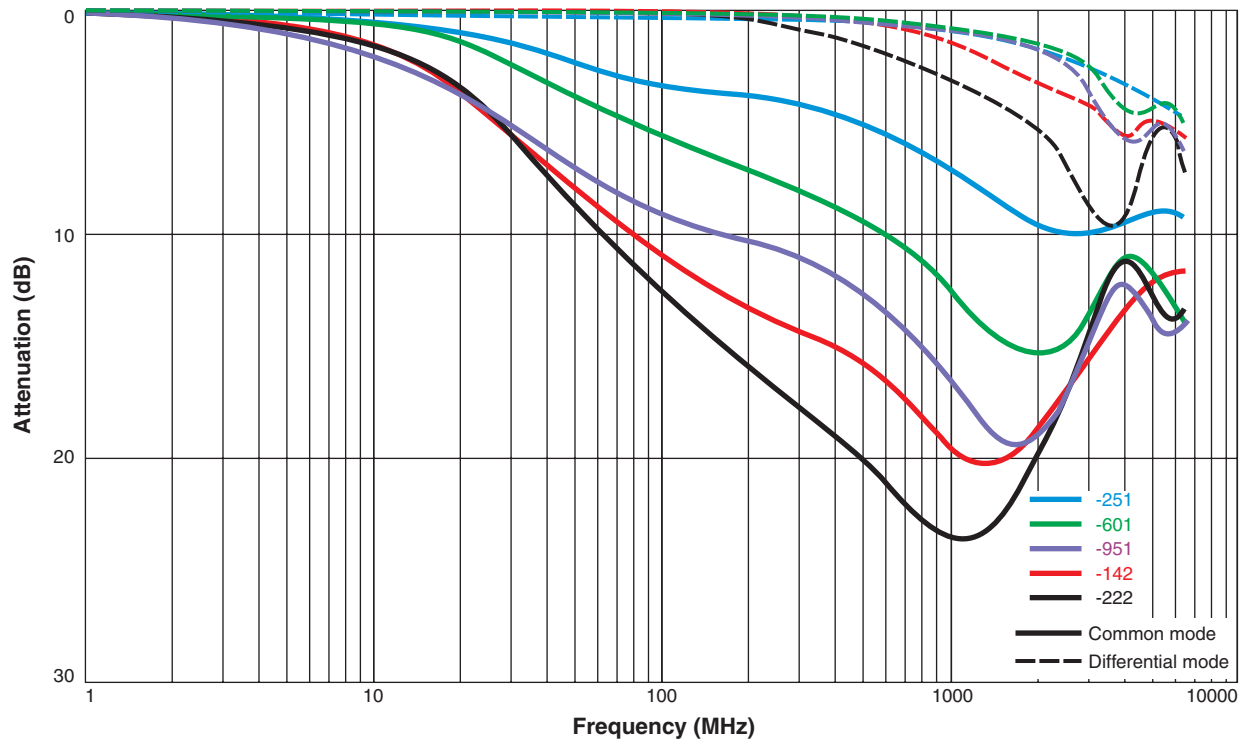
Weight 4.9 – 5.2 mg

Packaging 2000 per 7" reel; 7500 per 13" reel; Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.14 mm pocket depth

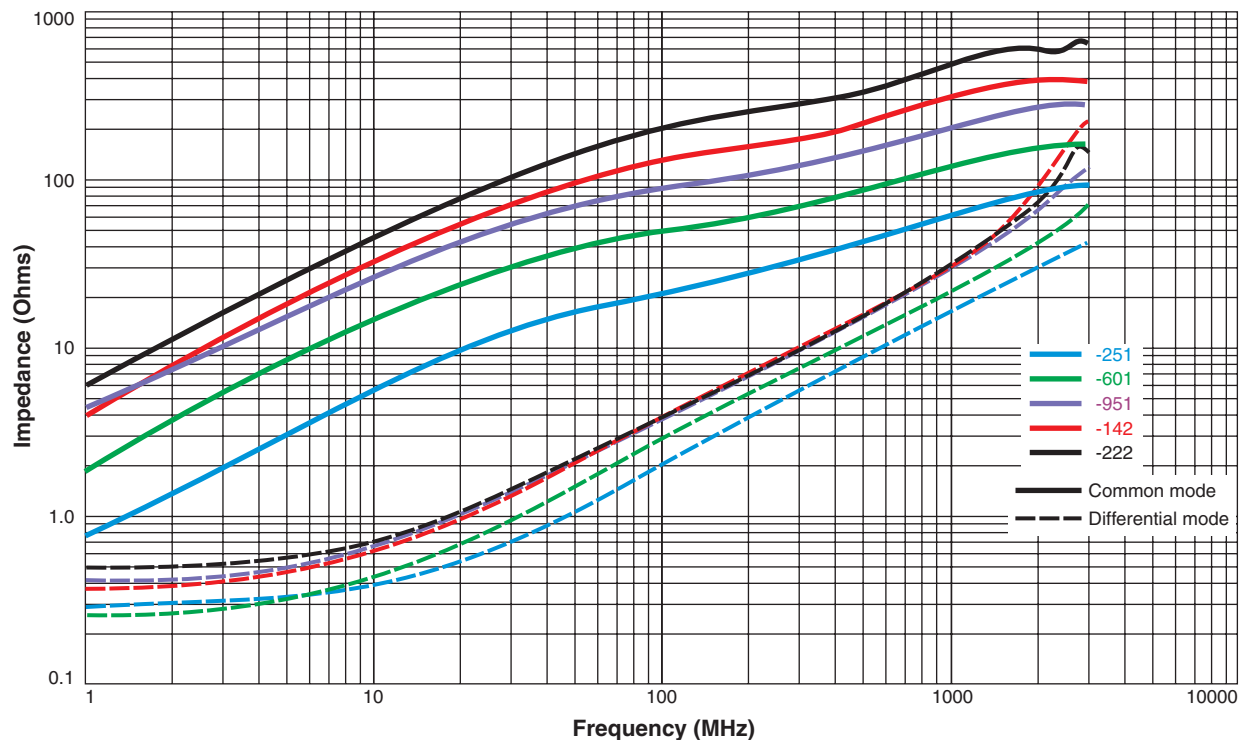


USB 3.0 Common Mode Choke – 0603

Typical attenuation (Ref: 50 Ohms)



Typical impedance vs frequency



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