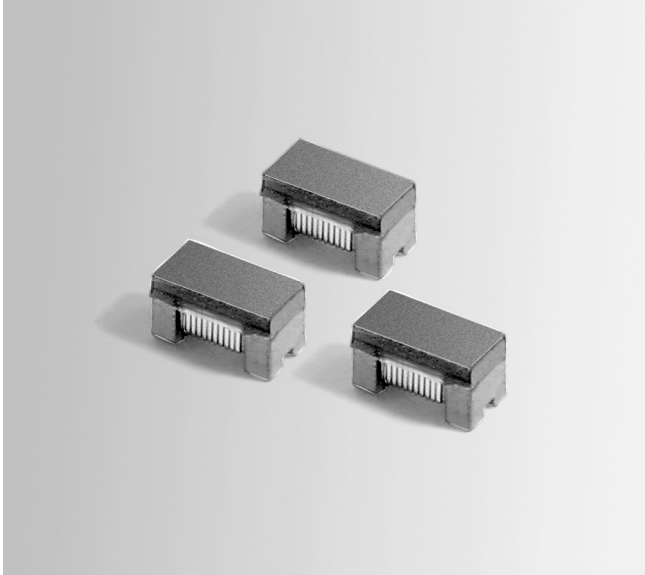


# USB 3.0 Common Mode Choke 0603



- 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 <sup>1</sup>	Common mode peak impedance (kOhms)	Cutoff frequency <sup>2</sup> (GHz)	Common mode attenuation typ (dB)			Inductance <sup>3</sup> min (nH)	DCR max <sup>4</sup> (Ohms)	Isolation <sup>5</sup> (Vrms)	Irms <sup>6</sup> (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**

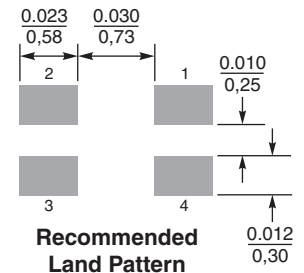
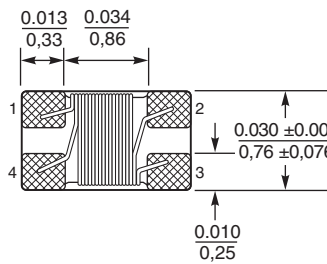
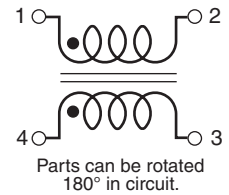
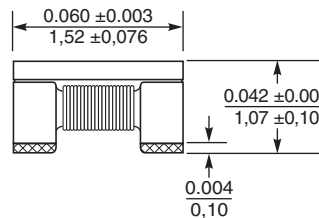
**Packaging: C** = 7" machine-ready reel. EIA-481 embossed plastic tape (2000 parts per full reel).

**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  $\frac{\text{inches}}{\text{mm}}$

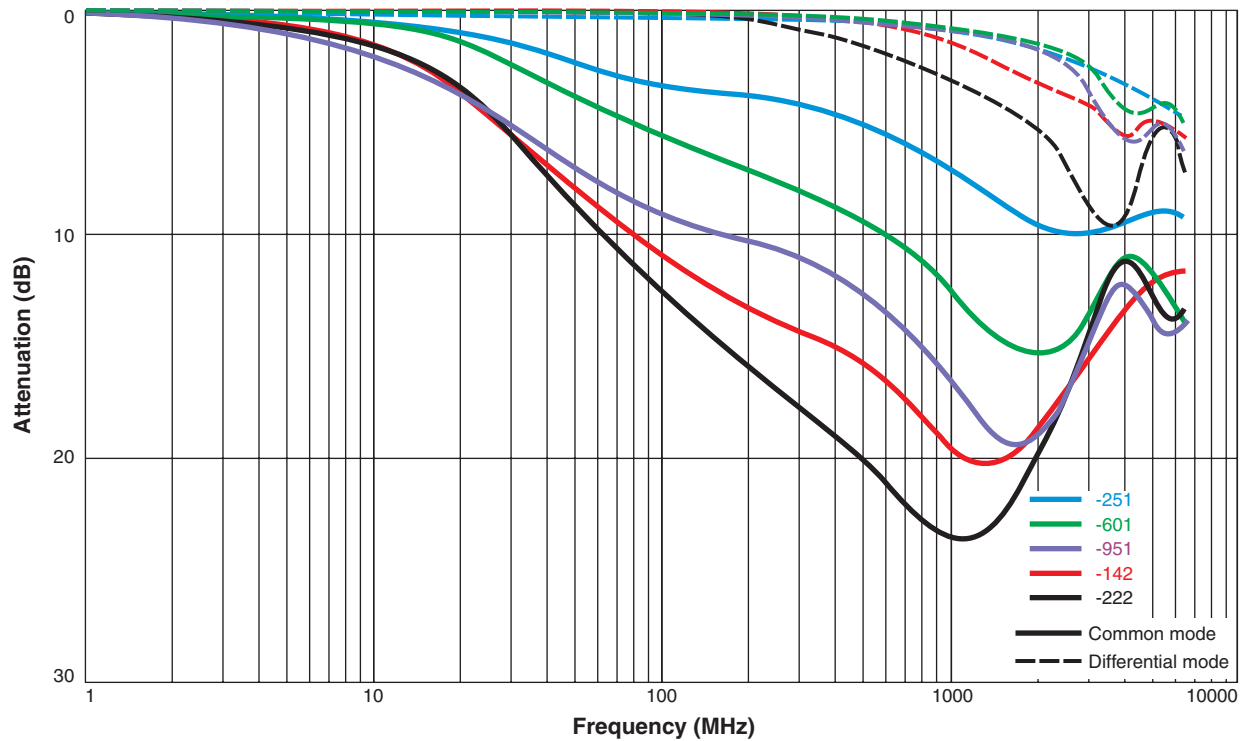
**Weight** 4.9 – 5.2 mg

**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

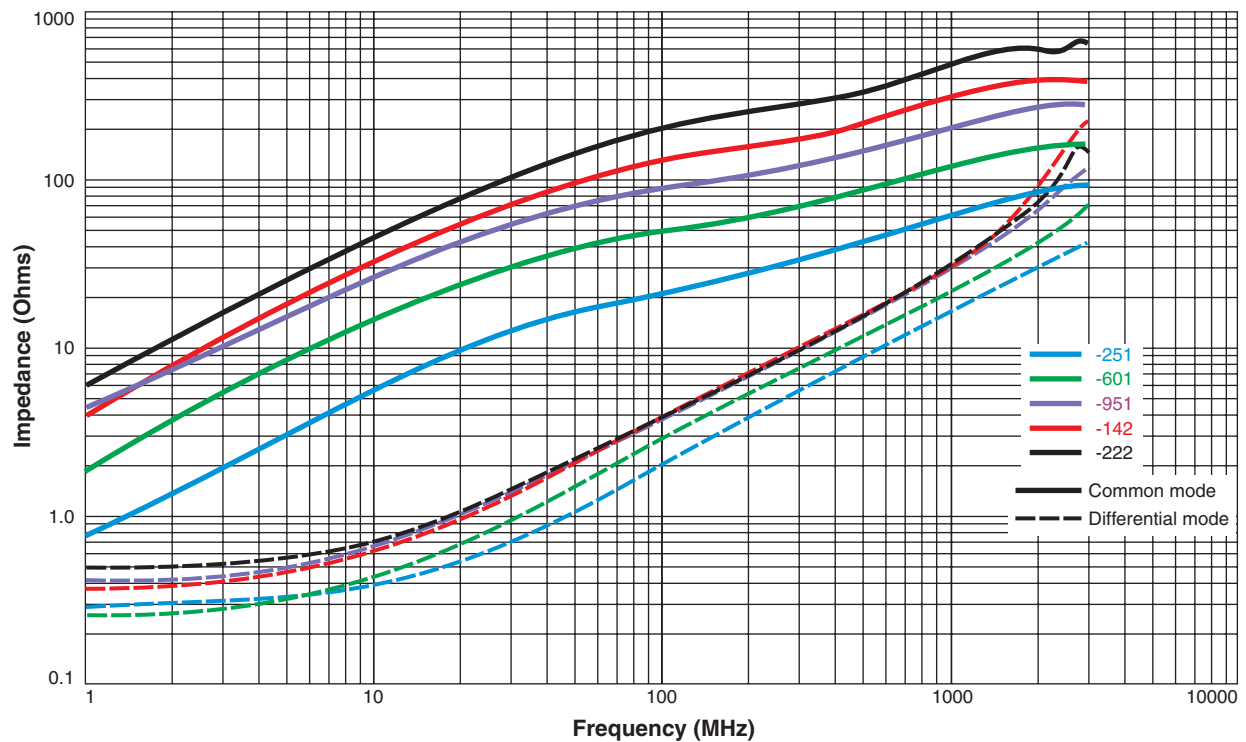


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Typical attenuation (Ref: 50 Ohms)



Typical impedance vs frequency



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