

OPTIMIZED FOR USB 3.0 AND HDMI



# USB 3.0 Common Mode Choke – 0603



- 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 1.07 mm tall
- Most values provide >15 dB common mode attenuation and >100 ohms impedance.

**Core material** Ferrite

**Terminations** RoHS compliant 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.  
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** Only pure water or alcohol recommended

Part number <sup>1</sup>	Common mode impedance typ (Ohms)			Common mode attenuation typ (dB)			Inductance <sup>2</sup> min (nH)	DCR max <sup>3</sup> (Ohms)	Isolation (Vrms)	Irms <sup>4</sup> (mA)
	100 MHz	500 MHz	1 GHz	100 MHz	500 MHz	1 GHz				
0603USB-251ML_	25	44	64	1.31	3.16	8.45	18	0.077	250	500
0603USB-601ML_	60	99	142	3.00	6.88	13.27	37	0.109	250	500
0603USB-951ML_	95	156	234	4.62	9.75	16.06	63	0.142	250	500
0603USB-142ML_	145	242	353	6.85	12.80	18.16	98	0.174	250	500
0603USB-222ML_	225	384	592	9.14	16.53	20.29	150	0.209	250	500

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

**0603USB-222ML C**

**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.

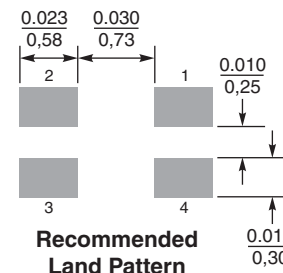
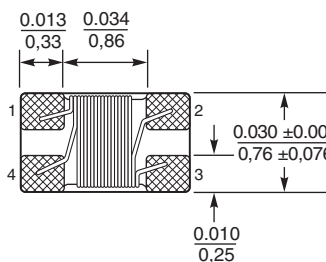
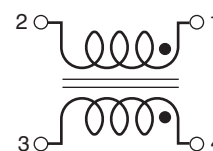
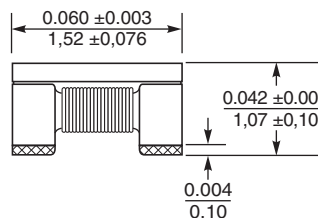
**D** = 13" machine-ready reel. EIA-481 embossed plastic tape (7500 parts per full reel).

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

3. DCR is specified per winding.

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

5. Electrical specifications at 25°C.



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

**Weight** 4.9 – 5.2 mg

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

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Specifications subject to change without notice.  
Please check our website for latest information.

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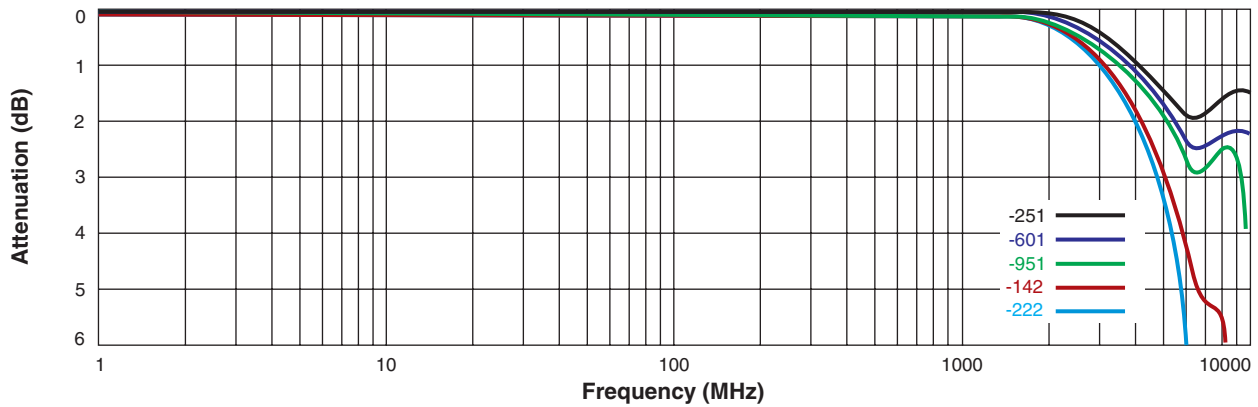
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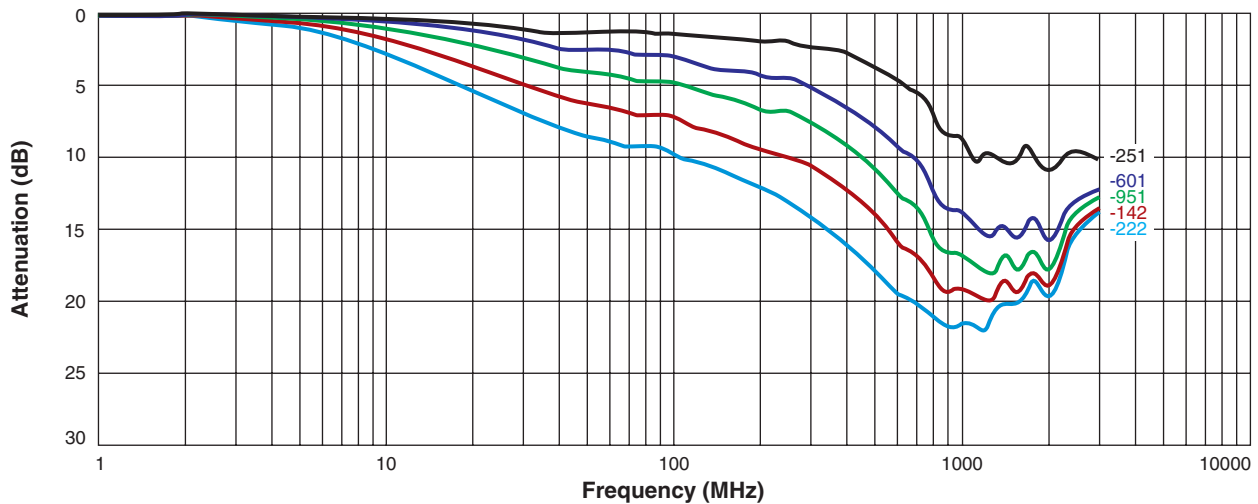


# USB 3.0 Common Mode Filter – 0603

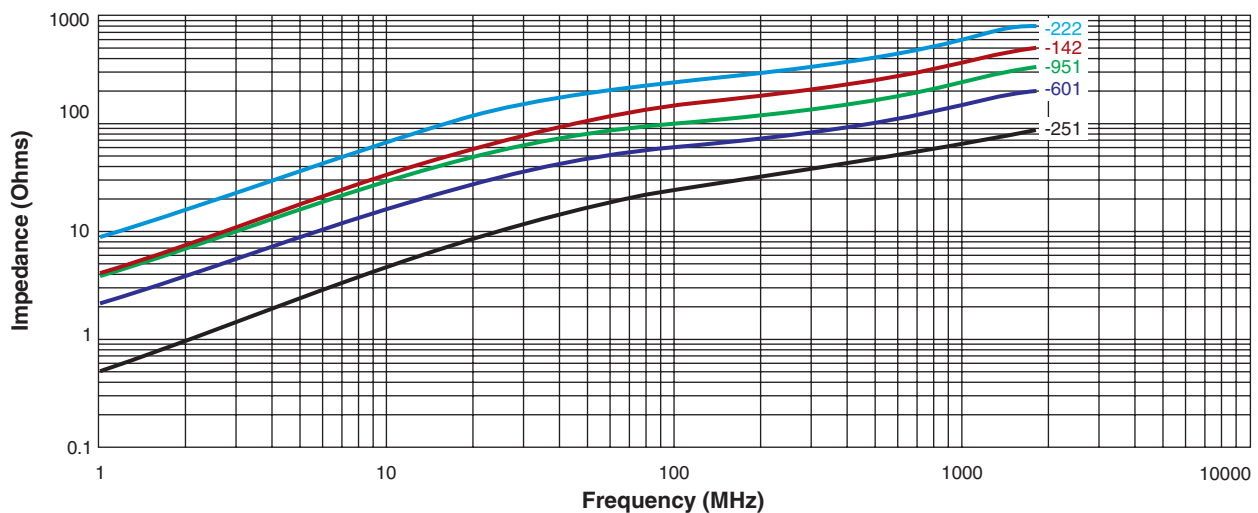
Typical differential mode attenuation (Ref: 50 Ohms)



Typical common mode attenuation (Ref: 50 Ohms)



Typical impedance vs frequency



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