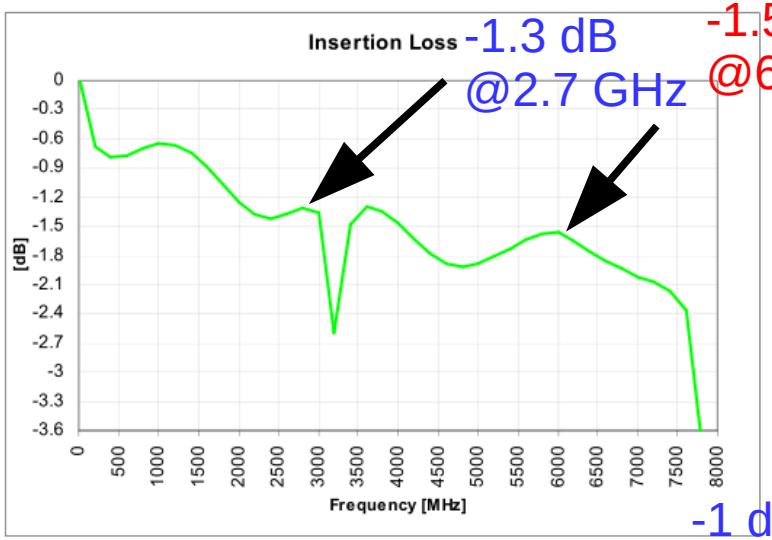
Balun selection

S21

B0310J50100AHF



-1.3 dB @2.7 GHz

-1.5 dB @6 GHz

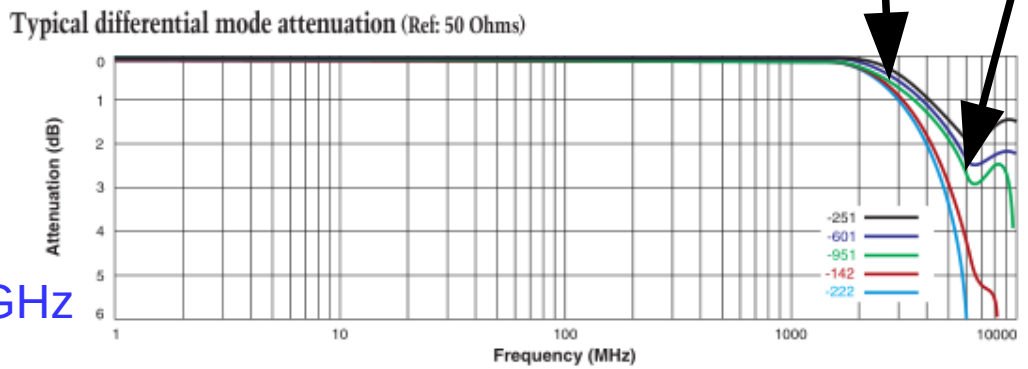
2500BL14M100

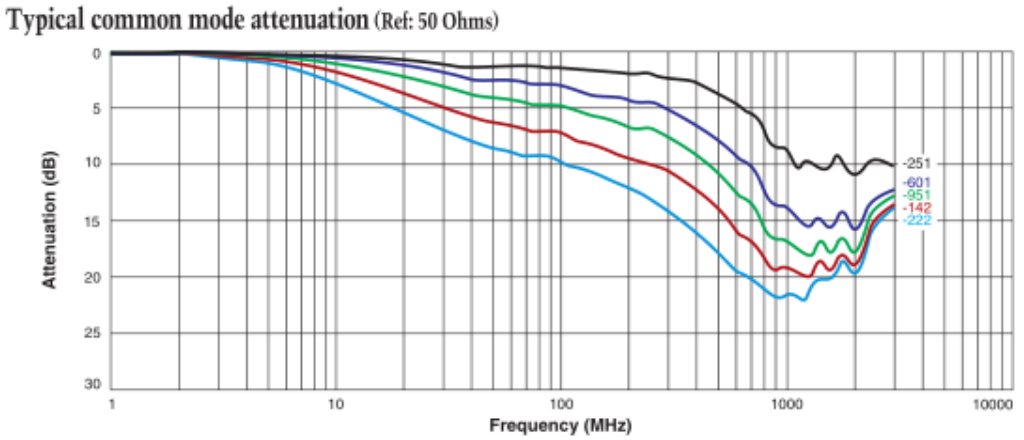
-1 dB @2.7 GHz

-0.6 dB @2.7 GHz

-2.8 dB @6 GHz

USB 3.0 Common Mode Choke 0603





S11

Passive Component

abs(S11)=sqrt(1- abs(S11)^2) 

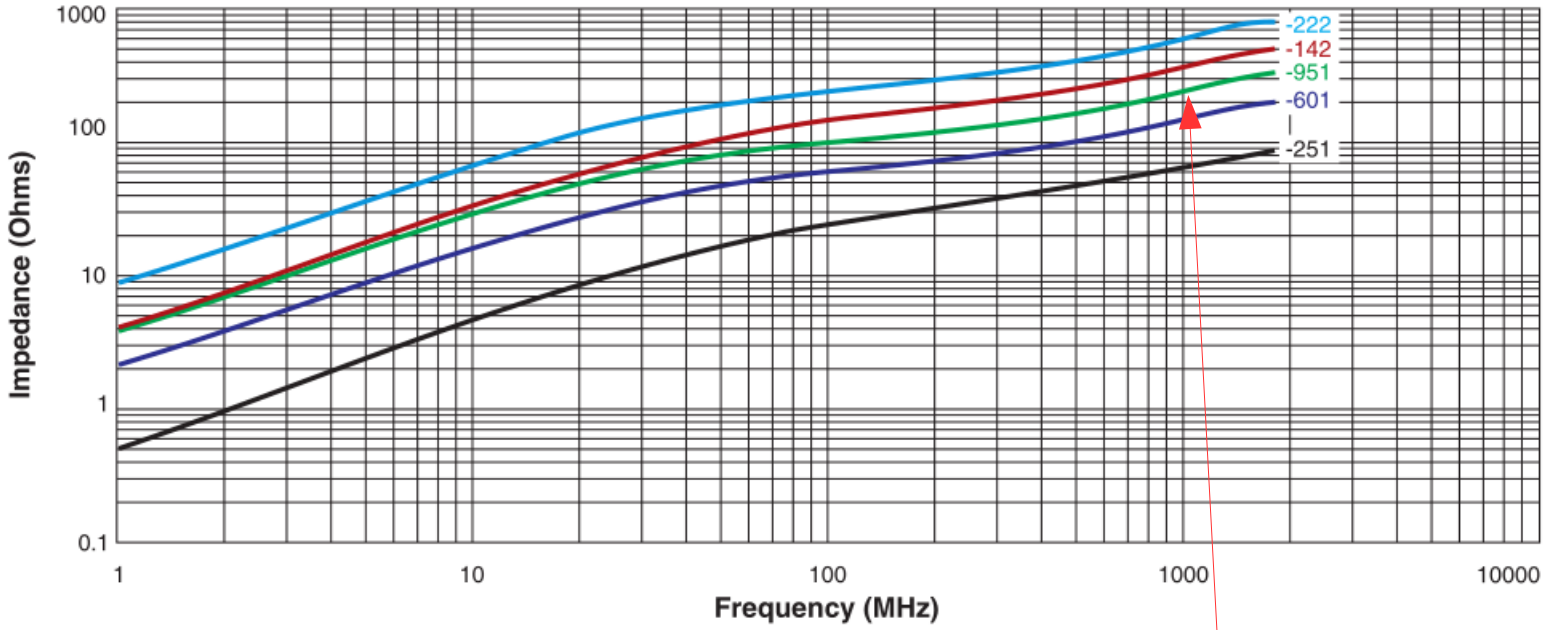
Return loss is the best
by a low insertion loss

USB-Balun is best till approx 4.5 GHz
From 4.5 GHz till 6 GHz the
B0310J50100AHF is better by 1.3 dB
maximal

This is the impedance of the inductor in common mode!
Not the differential mode

USB 3.0 Common Mode Choke 0603

Typical impedance vs frequency



63e-9*2*pi*1e9=400 Ohm

Part number[1]	Common mode impedance typ (Ohms) 100 MHz	500 MHz	1 GHz	Common mode attenuation typ (dB) 100 MHz	500 MHz	1 GHz	Inductance[2] min (nH)	DCR max[3] (Ohms)	Isolation (Vrms)	Irms[4] (mA)
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