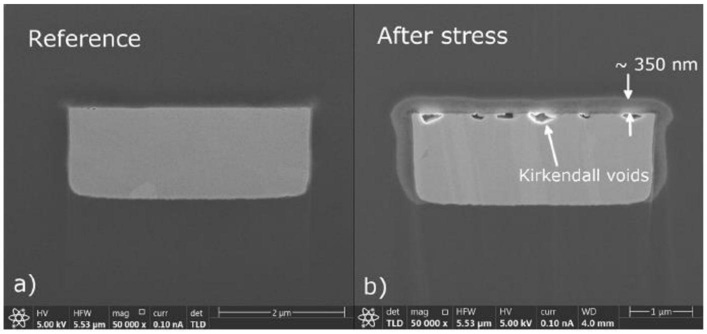

Figure 1: FIB cross section of copper line (a) before exposure to high temp storage (150°C, 1000 hours) (b) after HTS exposure.

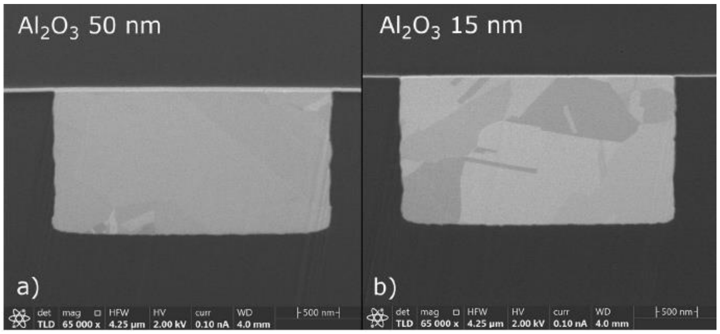

Figure 2: FIB cross section of copper line with ALD Al2O3 coating after exposure to high temp storage (150°C, 1000 hours) (a) 50nm Al2O3, (b) 15nm Al2O3

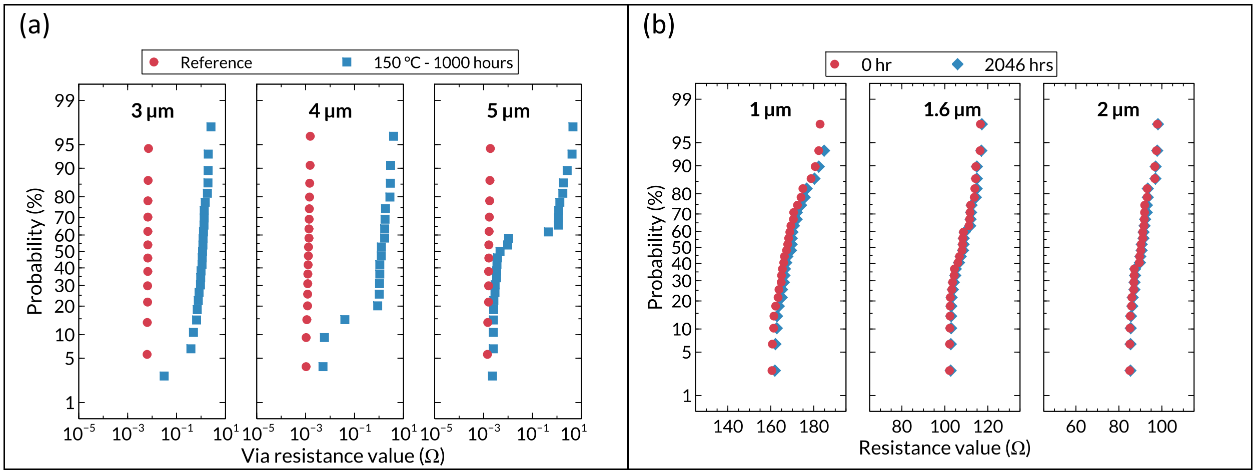

Figure 3: Via chain resistance distribution before and after exposure to high temperature stress for (a) unprotected Cu (b) Cu protected by 15nm Al2O3 + 20nm TiO2