

PD Peak unbalance specification v110

Info (not part of baseline)

Subclause 145.3.8.10 (“PD pair-to-pair current unbalance”) specifies the maximum pair current for PDs under unbalance 4-pair operation. It only specifies continuous unbalance current. Peak unbalance requirements are not specified.

- For time durations shorter than $T_{\text{CUT-2P}}$ min, the PD must not exceed the peak unbalance current $I_{\text{Peak-2P-usb}}$. ✓
- The “under all operating states” is a redundant qualifier. ✓
- The “all common source voltages” could be interpreted as “all of them at the same time” which is not what we mean. ✓
- Now that we have added a spec for $I_{\text{Con-2P-usb}}$ for all Classes, we can remove “assigned to Class 5 or higher”. ✓
- $I_{\text{Con-2P}}$ is a PSE parameter, not usable in this section. It is replaced by the equivalent $P_{\text{Class_PD-2P}}/V_{\text{PD}}$. ✓

This is not accurate. It is both PSE and PD parameter. Specifically if it is tested by 145.3.8.10 CONDITIONS. You could say that for $I_{\text{con-2P_usb}}$ too.

145.3.8.10 PD pair-to-pair current unbalance

~~Under all operating states, s~~ Single-signature PDs ~~assigned to Class 5 or higher~~ shall not exceed $I_{\text{Con-2P-usb}}$ for longer than $T_{\text{CUT-2P}}$ min, and shall ~~not~~ exceed $I_{\text{Peak-2P-usb}}$, as defined in Table 145–16 on any pair when PD PI pairs of the same polarity are connected to ~~all possible common source voltages~~ any voltage in the range of $V_{\text{Port_PSE-2P}}$ through two common mode resistances, $R_{\text{source_min}}$ and $R_{\text{source_max}}$, as defined in Equation (145–32) and shown in Figure 145–34.

~~Under all operating states, d~~ Dual-signature PDs shall not exceed $I_{\text{Con-2P}} \cdot P_{\text{Class_PD-2P}}/V_{\text{PD}}$ as defined in Equation (145–8) for longer than $T_{\text{CUT-2P}}$ min, and shall not exceed $P_{\text{Peak_PD-2P}}/V_{\text{PD}}$, as defined in Table 145–16 on any pair when PD PI pairs of the same polarity are connected to ~~all possible common source voltage~~ any voltage in the range of $V_{\text{Port_PSE-2P}}$ through two common mode resistances, $R_{\text{source_min}}$ and $R_{\text{source_max}}$, as defined in Equation (145–32) and shown in Figure 145–34.

This is odd representation of $I_{\text{con-2P}}$. Try; $I_{\text{con-2P}}$ and move the equation down with the normal format and where list e.g. $I_{\text{Con-2P}} = P_{\text{class_PD_2P}}/V_{\text{pd}}$ and move it down .
See darshan_12_0317.pdf

We need new equation number and may be a "where list"