



Update Figure 33-14

IEEE802.3bt

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Objectives

- Objective
 - Update Figure 33-14 to capture PSE types 1-4 preferably in single drawing

Terminology

- I_{con-2P_unb} , $I_{peak-2P}$, I_{LIM-2P} are the 2P value of the pair with maximum current due to E2EP2PUnb.
- I_{con-2P} is additional temporary parameter on the LOWER bound template for the purpose of this presentation.
- I_{con} , I_{peak} , I_{LIM} is the total 4-Pair current (unbalance effect is canceled)

Working Assumptions

- We need to specify the requirements for per pairset and the total current of bot pairsets for design flexibility
 - When total current is observed, it allows cancelation of E2EP2PRunb effect.
- Allowing design flexibility by monitoring -2P current or total 4P current.
- To show that upperbound template after 5sec/ 60sec must be limited to 99.9W

Figure 33-14 for Type 1 and 2: IEEE802.3-2012

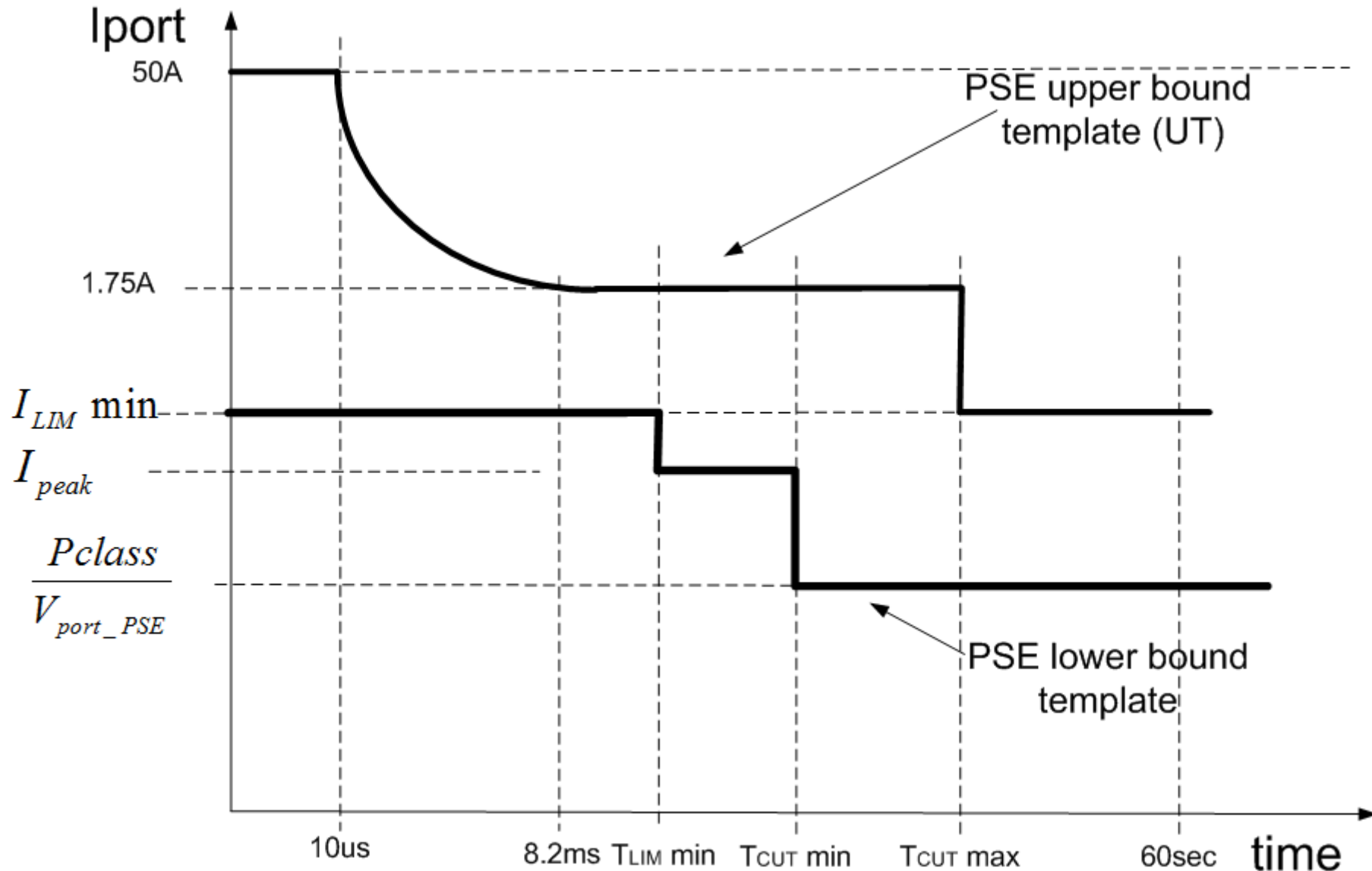
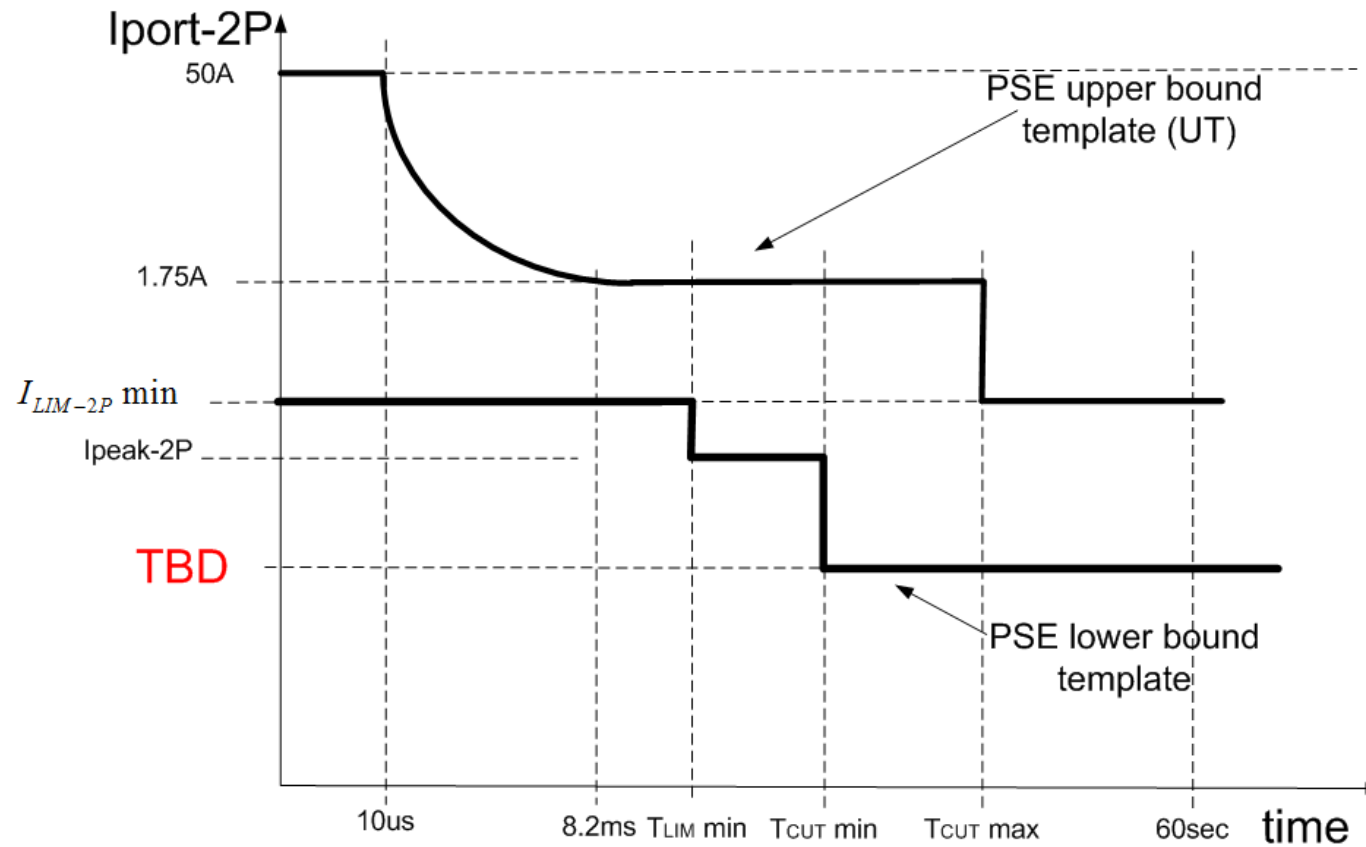


Figure 33-14: Current IEEE802.3 D1.2



- The TBD we need to address

The TBD we need to address is the long term lower bound current that PSE has to supply

Note to remember:

The TBD is the lowerbound that PSE has to supply

Option	The TBD = I_{con-2P}	Notes
1	$K_{icut} * P_{class} / V_{port}$	Shows maximum I_{con-2P_unb} in terms of P_{class} / V_{port} as in Type 1 and 2
2	I_{con-2P_unb}	Max pair current
3	$(I_{con} - I_{con-2Pmin})$ to I_{con-2P_unb}	A range of currents from I_{min} to I_{max}
4	$\min(I_{con} - I_{con-2P}, I_{con-2P_unb})$	Equation form that describes the actual value to be supported. With the constrains of I_{con-2P_unb} . (see Lenart's presentation)

If the TBD is I_{con-2P_unb} what it means?

- It means that for that pairset this is the minimum current that I have to support since I don't know what PD will be connected and what are the unbalance conditions.
- Does it means that I need to supply $2 \times I_{con-2P_unb}$?

No! it means that your protections are set at I_{con-2P_unb} or above and you will supply up to total I_{con} current

We can add a normative text that says:

I_{con-2P} can vary between $I_{con} - I_1$ to I_{con-2P_unb} were I_1 it the other pair current.

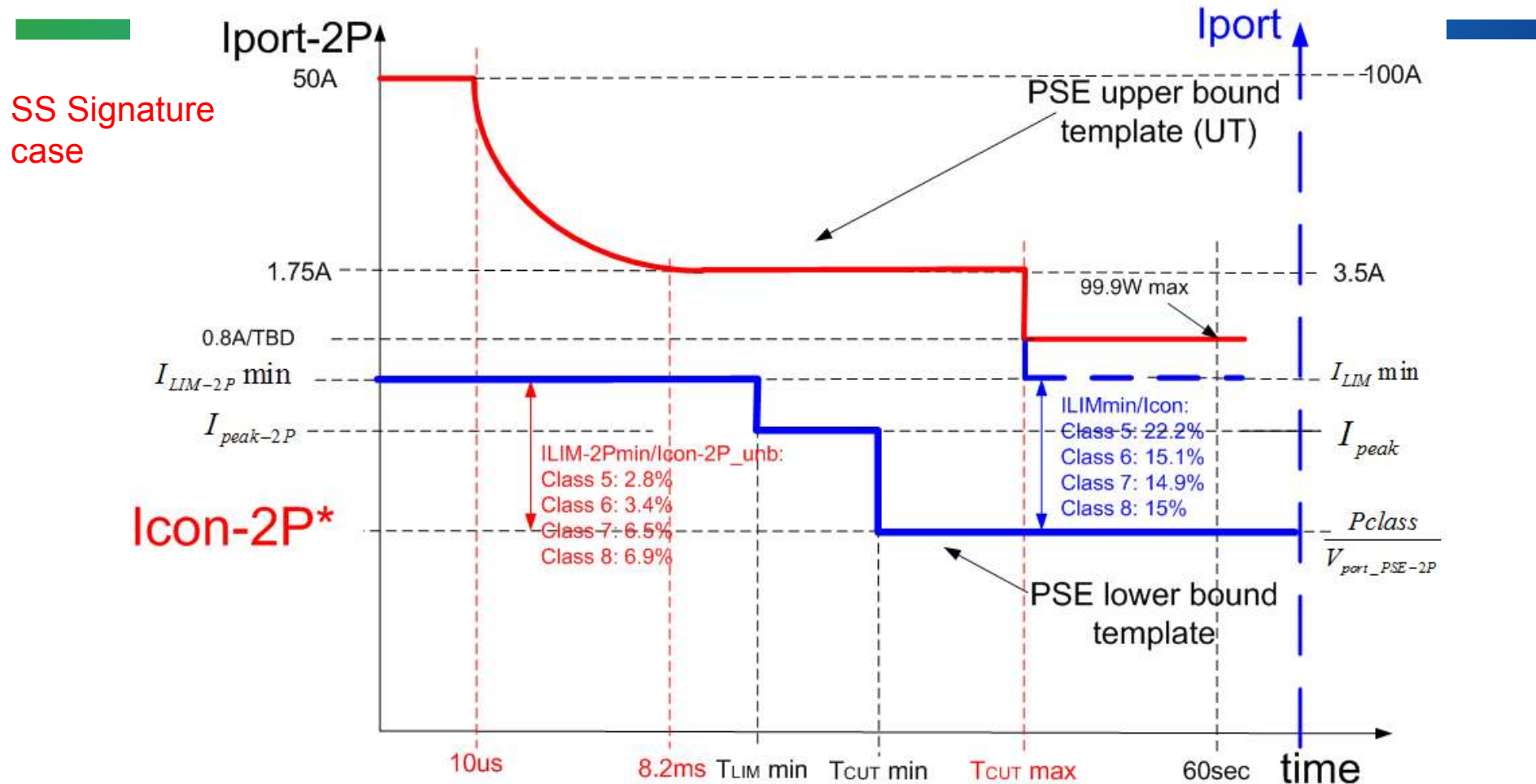
I_{con-2P} is equal to I_{con-2P_unb} at the worst case.

The total current that PSE has to support is I_{con} and not $2 \times I_{con-2P_unb}$.

The actual current on the pair set may be lower according to the following equation:

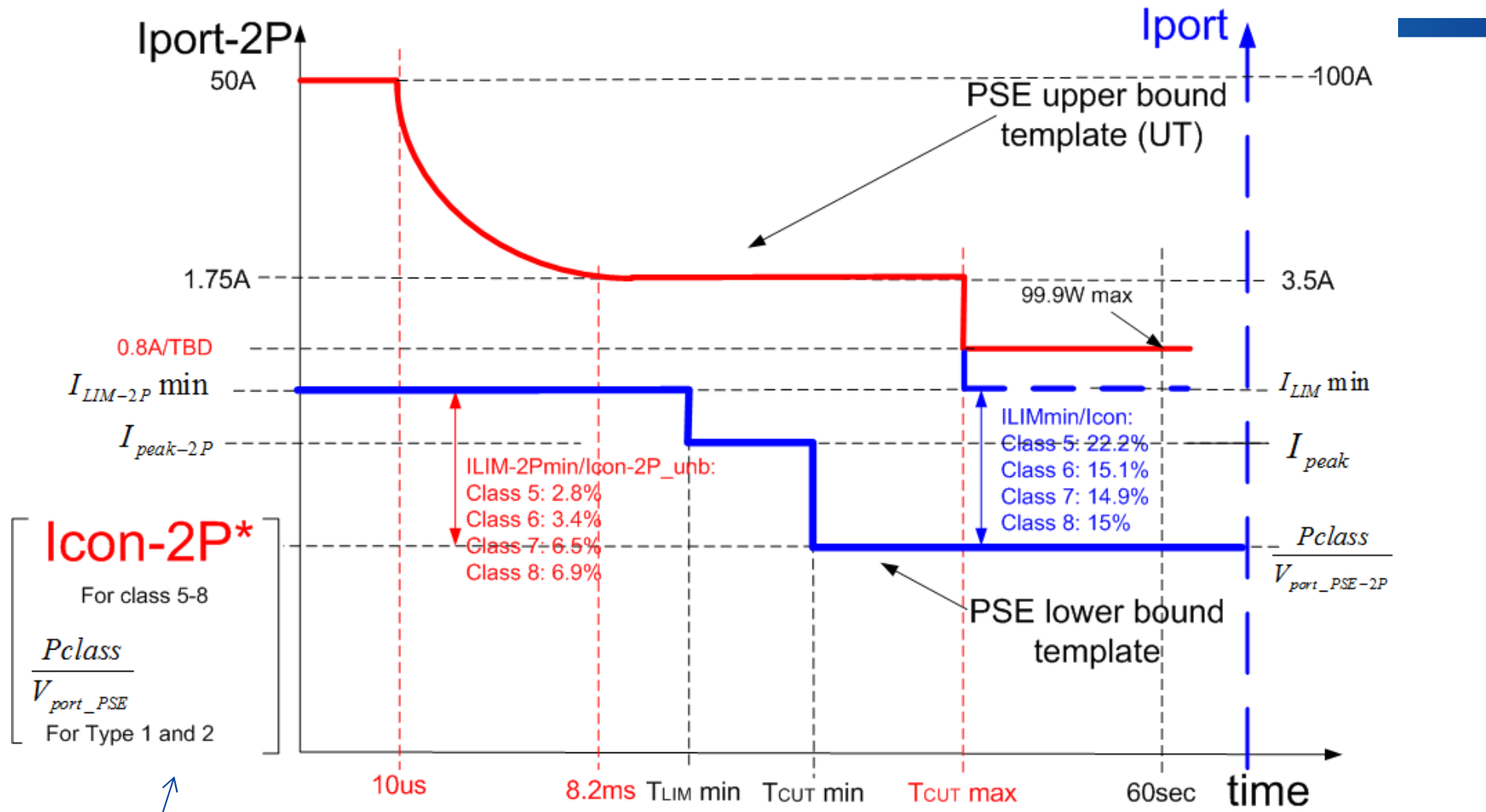
$$I_{con-2P} = \min(I_{con} - I_1, I_{con-2P_unb}).$$

Figure 33-14 for Type 3 (Type 4 is almost similar)



(*) Icon-2P can vary between Icon – I1 to Icon-2P_unb were I1 it the other pair current. Icon-2P is equal to Icon-2P_unb at the worst case. The total current that PSE has to support is Icon and not 2xIcon-2P_unb. The actual current on the pair set may be lower according to the following equation: $Icon-2P = \min (Icon - I1, Icon-2P_unb)$.

Optional combined Figure 33-14 for Type 1,2,3



The TBD

Issues left to resolve

- To verify that Type 4 can use the same drawing as Type 3 or different drawings are required.

Discussion



Thank You