Revision of Figure 33-14 v110

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Introduction

Figure 33-14 together with Equations 33-6 and 33-7 tie together many parameters from Table 33-11. This Figure has been mostly untouched, except for the '-2p' addition. Some issues need to be addressed.

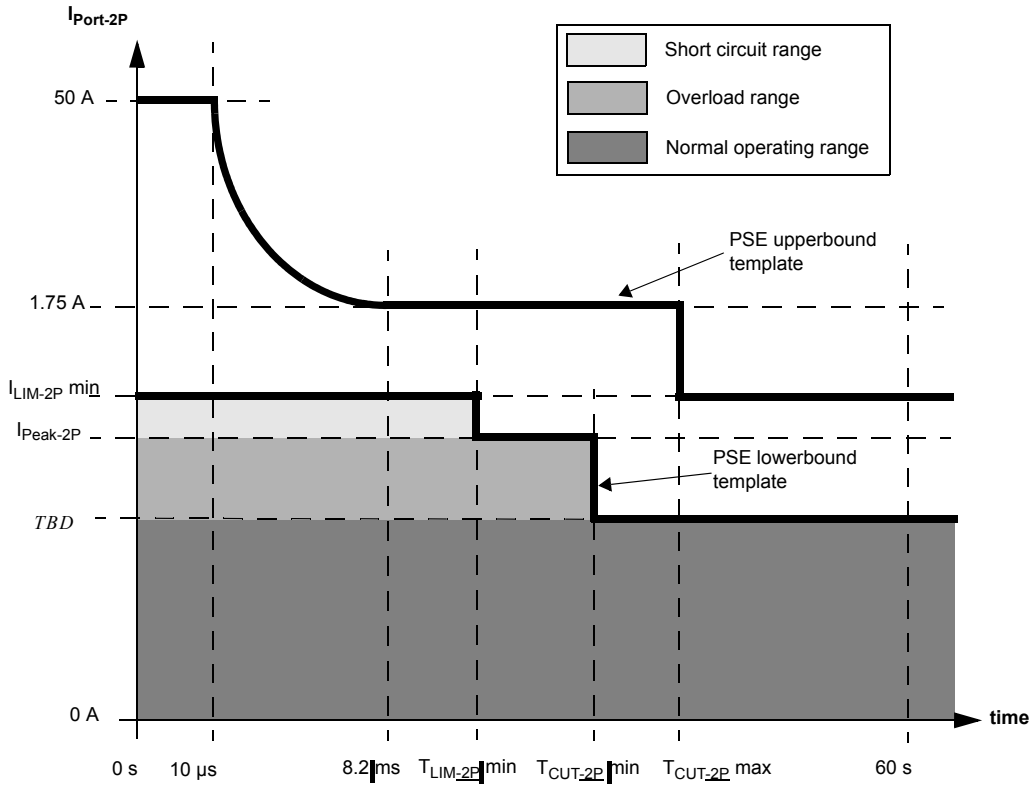

Figure 33–14—POWER_ON state, per pairset operating current templates

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Issues

1. There is a TBD in the lowerbound template. We need a way to express unbalance effects in a clear way.
2. $T_{LIM\text{-}2P}$min has a value of less than 8.2ms for Type 4
3. Type 4 is limited to sourcing no more than 99.9W, this cannot be expressed by constant current
4. Single and Dual Signature PDs will have a different lowerbound template
5. $I_{LIM\text{-}2P}$(min) is used twice in the Figure, for both the lower and upper template. By making $I_{LIM\text{-}2P}$(min) class-based, the optional $I_{CUT\text{-}2P}$ limit is no longer optional.

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Variables

The following set of variables allows expressing unbalance in an elegant way:

I_{Port}

Total output current (see 33.2.7.6)

$I_{Port\text{-}2P}$

Output current on a pairset (see 33.2.7.6)

$I_{Port\text{-}2P\text{-}other}$

Output current on the other pairset.

$I_{Port\text{-}2P\text{-}other} = I_{Port} - I_{Port\text{-}2P}$

Note: $I_{Port\text{-}2P}$ and $I_{Port\text{-}2P\text{-}other}$ are relative references to each other.

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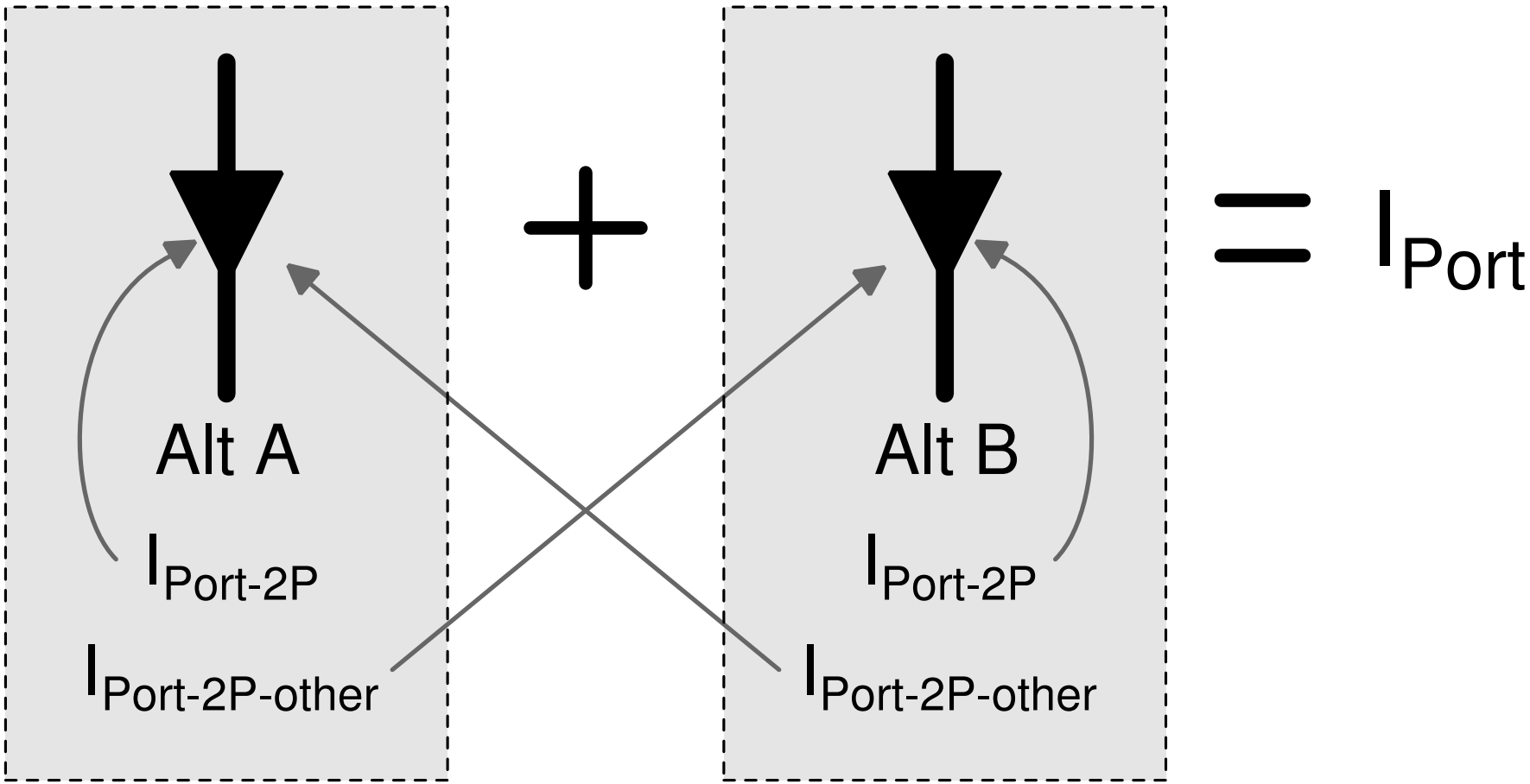
Port currents



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I_{Con} definition

~~PSEs shall meet I_{Con} as specified in Table 33–11. Type 3 and Type 4 PSEs when connected to a single- signature PD shall meet I_{Con-2P} as specified in Table 33-11 item 4a.~~ (Draft 1.2)

PSEs connected to a single-signature PD shall meet I_{Con} and I_{Con-2P_unb} as specified in Table 33-11. PSEs connected to a dual-signature PD shall meet I_{Con} on each pairset as specified in Table 33-11.

P_{Class} applies to the full power at the PI, but is treated on a per pairset basis for dual signature PDs. The same method is appropriate for I_{Con}, it applies to each pairset independently when connected to a dual signature PD.

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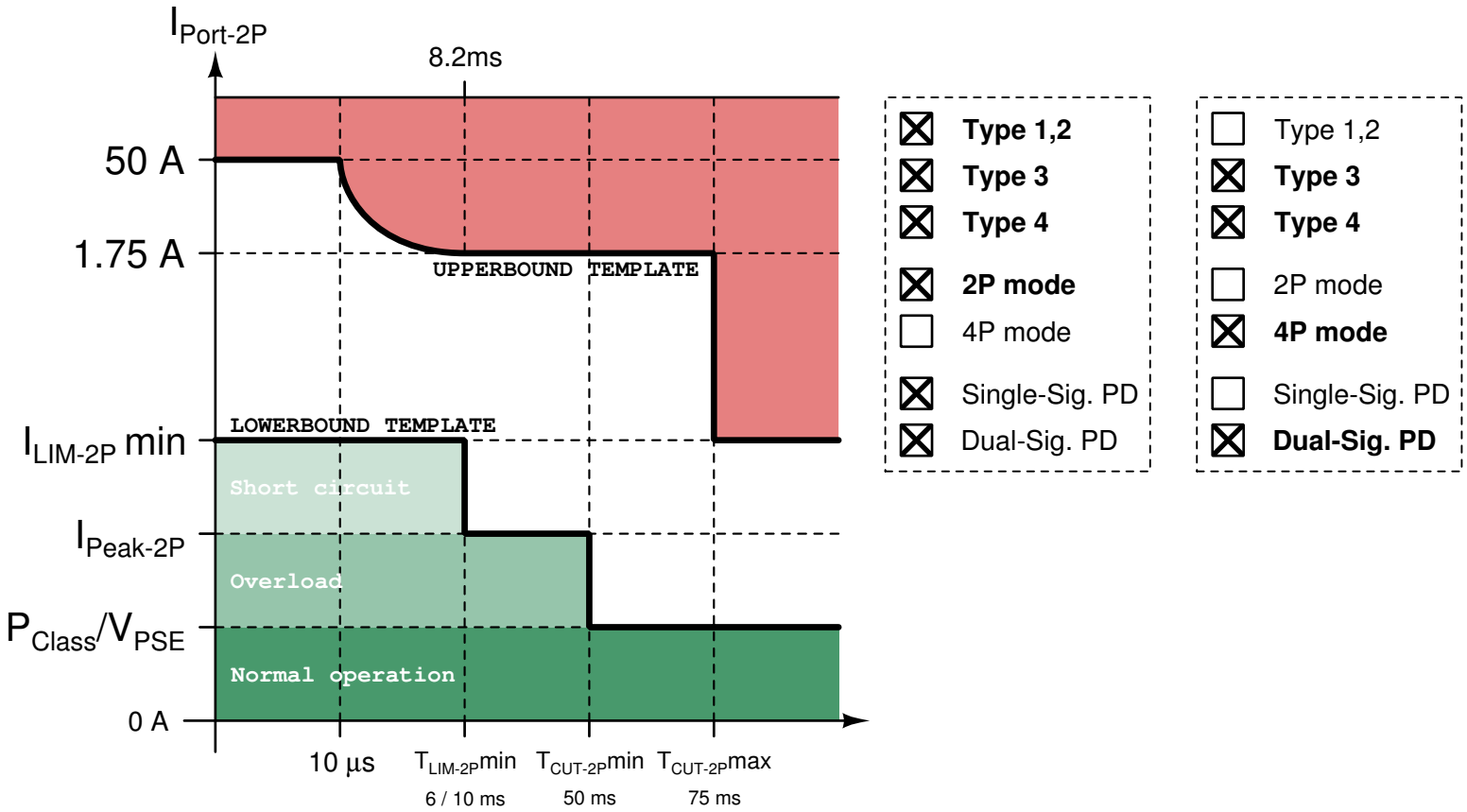
Figure 33-14a (2 pair & dual-signature)



Applies to all PSEs in 2-pair mode, as well as PSEs connected to dual-signature PDs.

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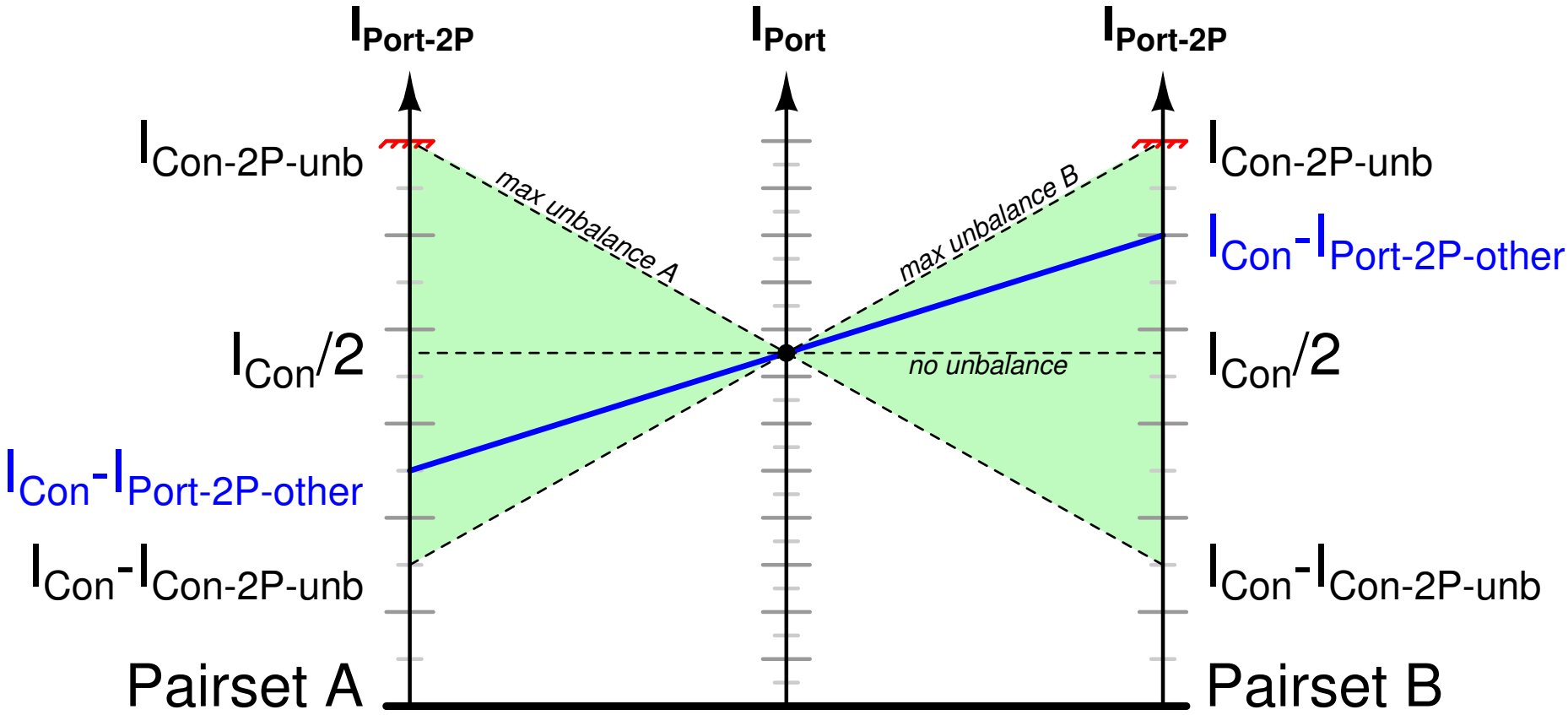
Unbalance swing



Minimum pairset current = $\min(I_{Con} - I_{Port-2P-other}, I_{Con-2P-unb})$

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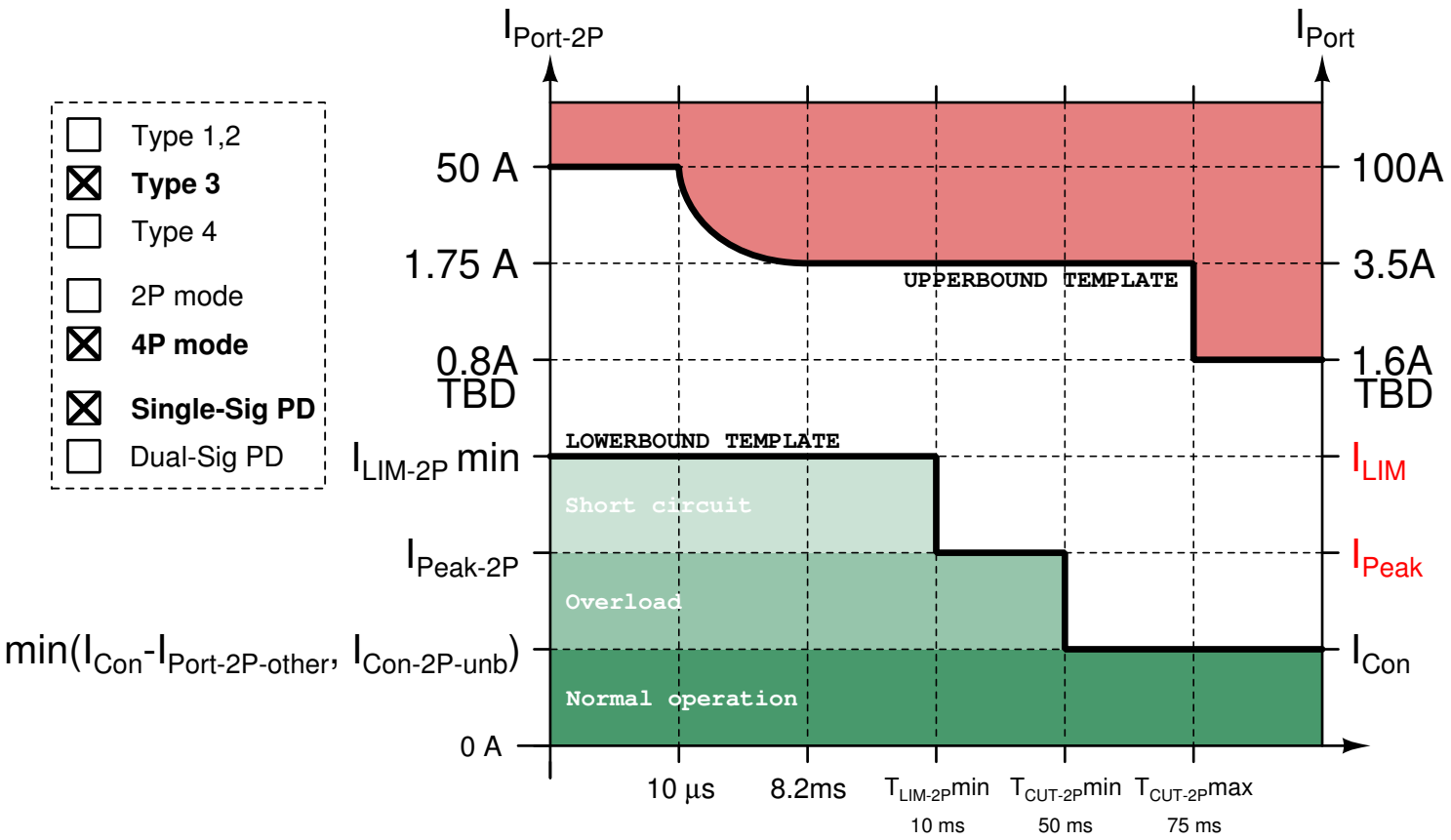
Figure 33-14b (Type 3, 4-pair, single-signature)



Applies to Type 3 PSEs, operating 4-pair mode, connected to single-signature PDs.

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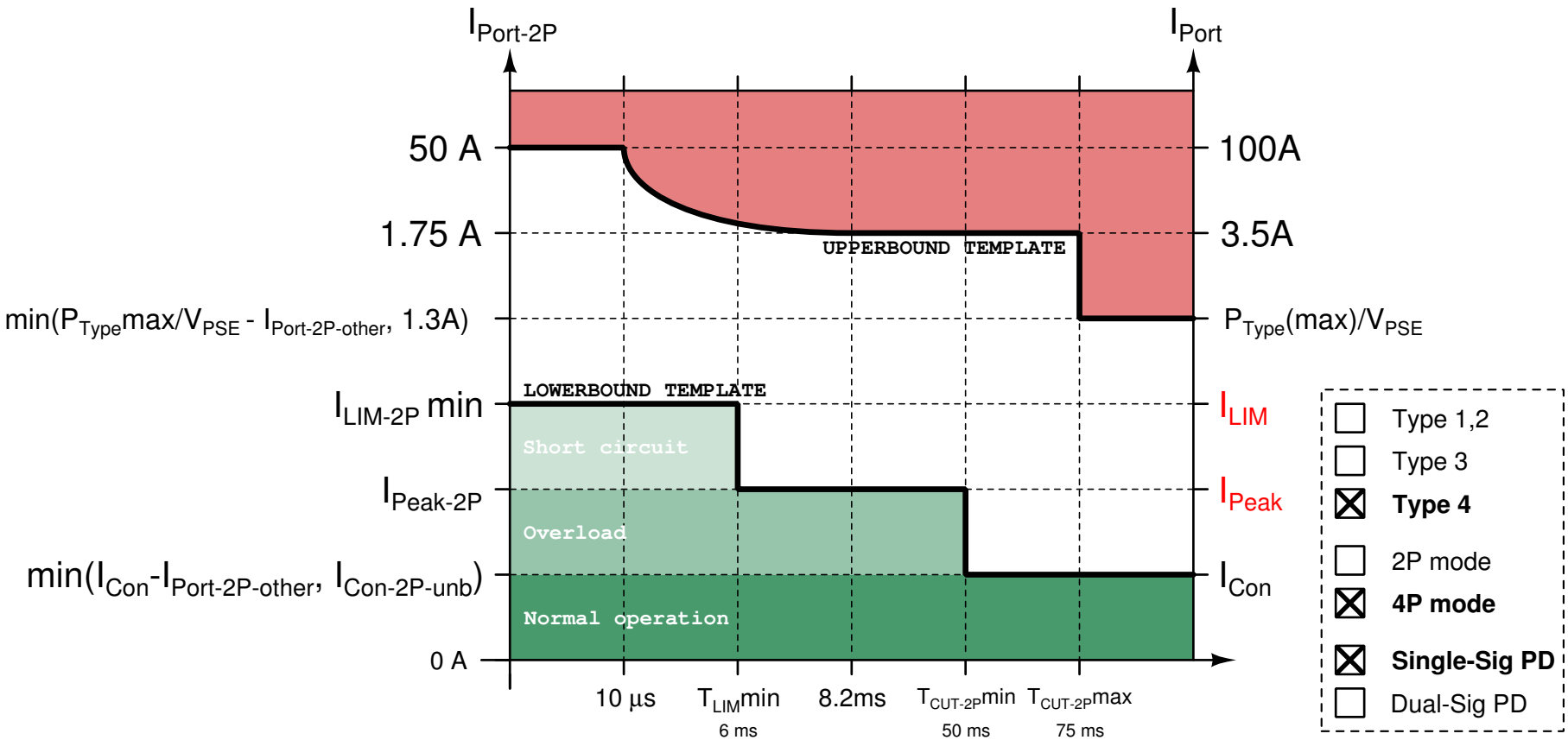
Figure 33-14c (Type 4, 4-pair, single-signature)



Applies to Type 4 PSEs, operating 4-pair mode, connected to single-signature PDs.

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Overview

- Three new Figures presented to replace Figure 33-14
- Covers all cases (4 Types, 2 Signatures, 2/4 pair mode)
- Unbalance is shown in a simple intuitive way
- All issues on slide 3 are addressed

- This is a starting point for further refinement in task force review
- See baseline ➠yseboodt_2_0915_baseline_v101.pdf

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