



Overload on 4-Pair PSE

Ver.1.1

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- “If $I_{Port-2P}$ (...) exceeds I_{CUT-2P} for longer than T_{CUT-2P} , the PSE may remove power from that pair set”
- “A PSE may remove power from the PI if the PI current meets or exceeds the “PSE lowerbound template” in Figure 33–14. Power shall be removed from a pair set of a PSE before the pair set current exceeds the “PSE upperbound template” in Figure 33–14”

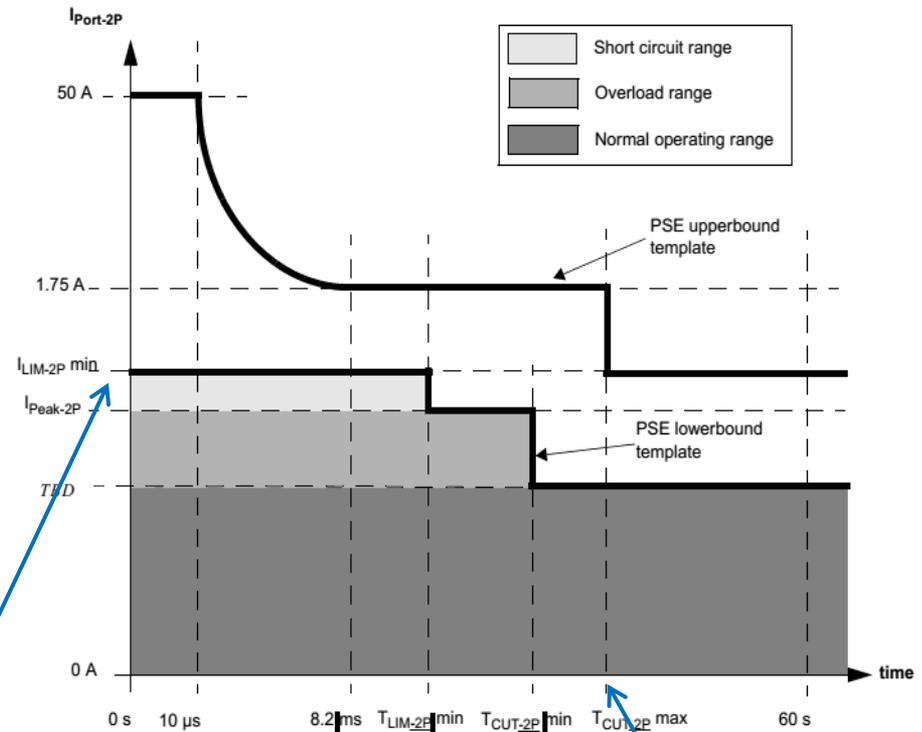


Figure 33–14—POWER_ON state, per pair set operating current templates

Class8: 1.162A

75ms

Use case: overloaded Class6 PD

- Every time a PD faces an overcurrent condition may hit the I_{LIM_2P} threshold with one pair-set before hitting the threshold of the other pair set
- This threshold may be between $I_{LIM_2P\ min}$ and 1.75A , and may be applied after 75ms.
- This example shows an overloaded Class6 PD with 0.85A on Alt-A and 0.8A on Alt-B

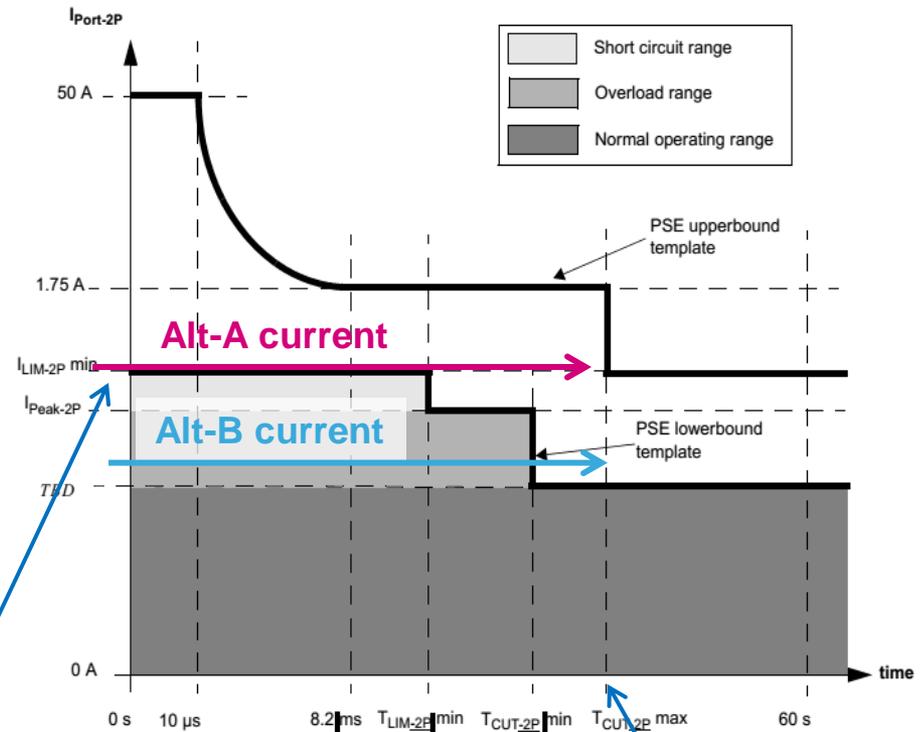


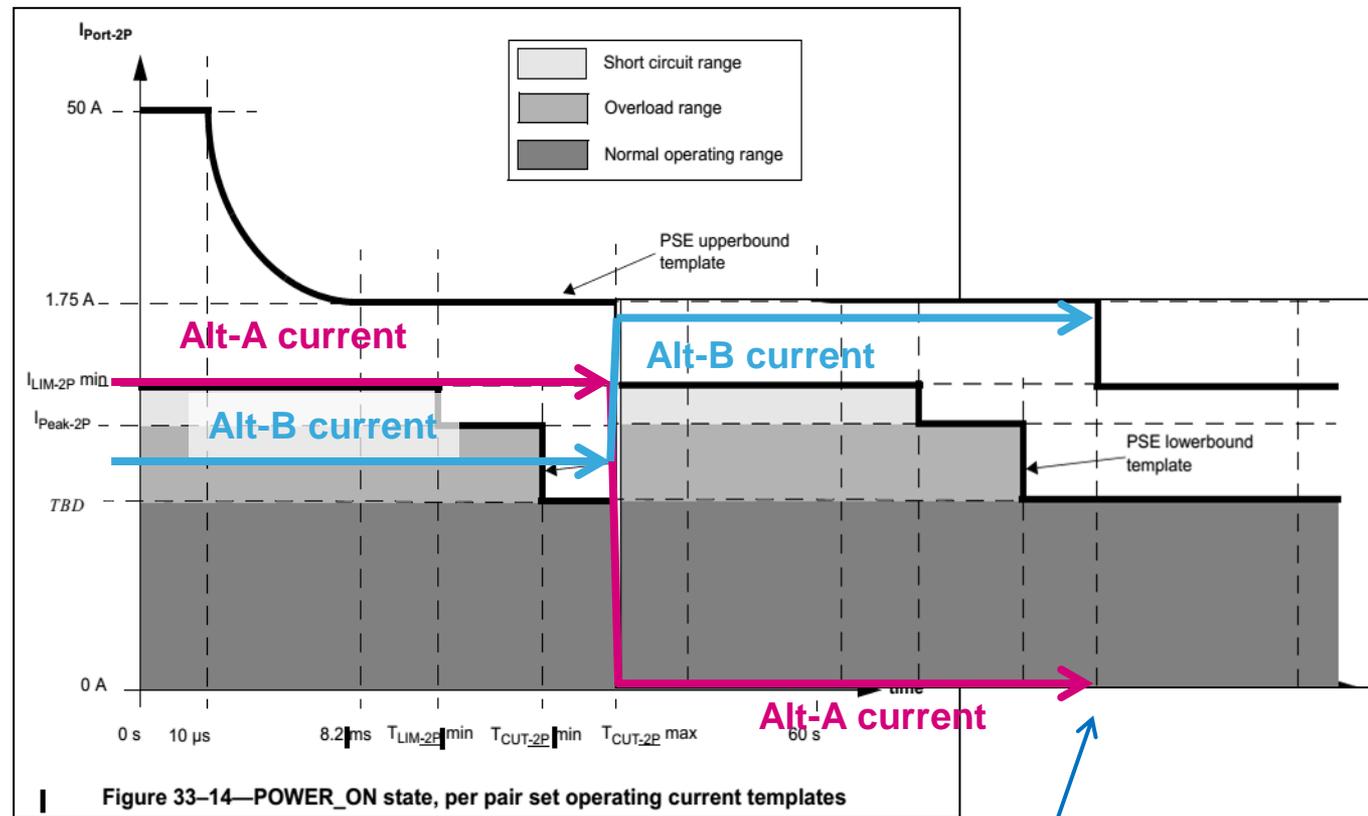
Figure 33-14—POWER_ON state, per pair set operating current templates

$I_{LIM_2P\ min}$ @ Class6= 0.817A

$T_{cut\ max}$ =75ms

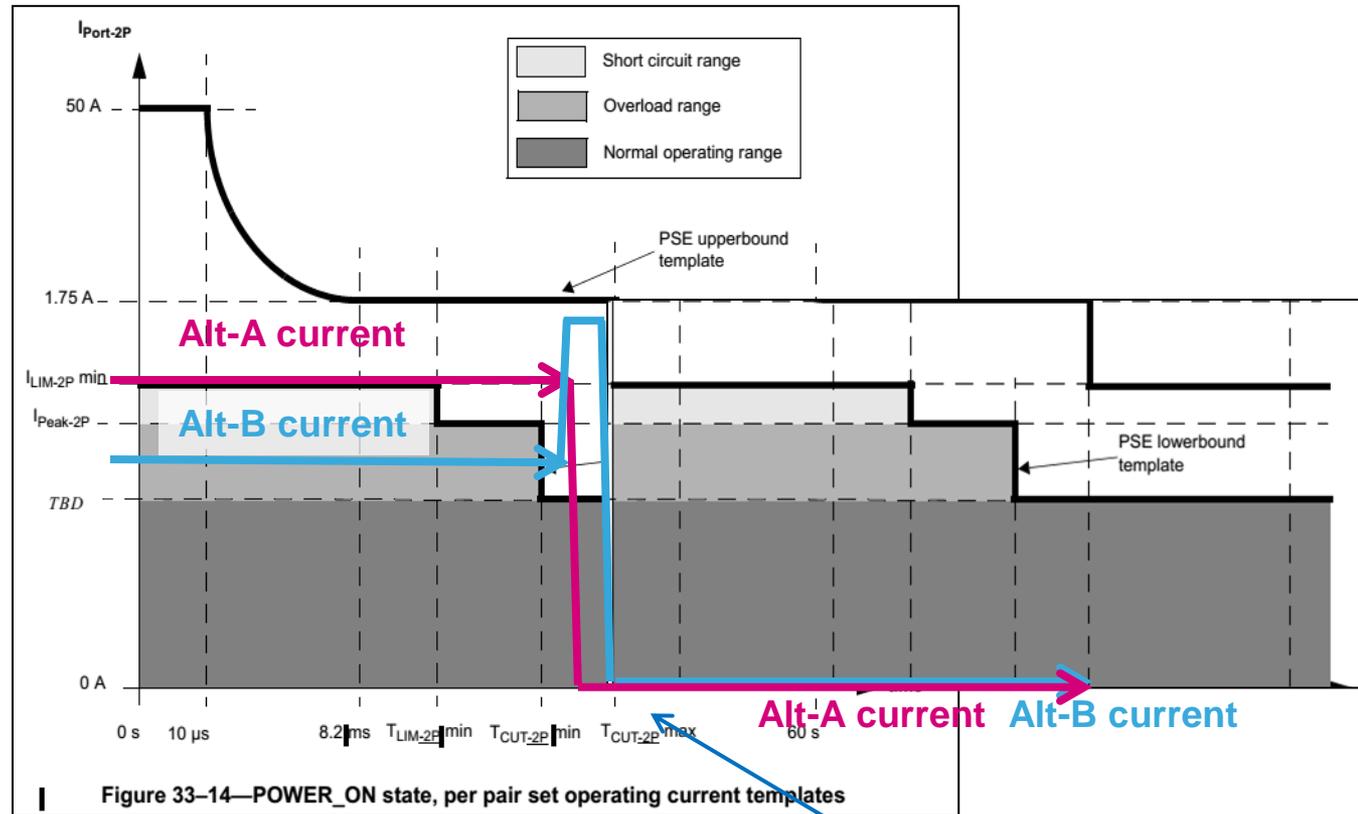
What happens when Alt-A is turned off

- When Alt-A is turned off the sum of the current, 1.65A, flows into Alt-B and may be turned off after another 75ms
- So the duration of the overload condition may be 150ms, double the time as a 2-pairs system.
- The thermal stress on the PD is higher



150ms

- When connected to a single signature PD, a Type 3,4 PSE shall remove power from both pair sets before the current exceeds the "PSE upperbound template" on either pair set.
- So the duration of the overload condition is 75ms max, as in a 2-pairs system



75ms