

# V<sub>On\_PD</sub> & V<sub>Off\_PD</sub> v100

## Info (not part of baseline)

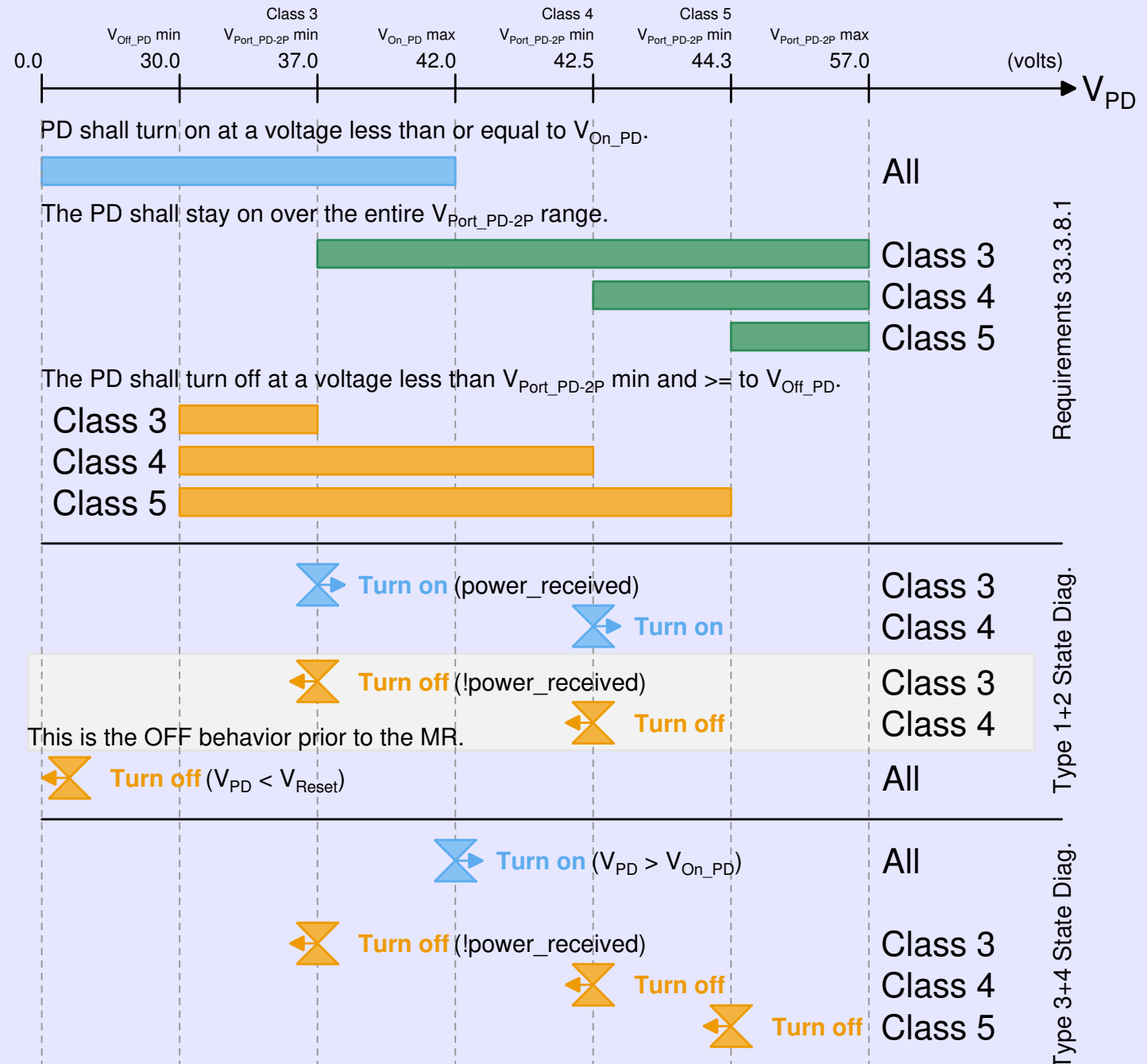
V<sub>On\_PD</sub> is currently defined as “PD Power supply turn on voltage”, it only has a maximum value: V<sub>On\_PD</sub> max = 42V  
 V<sub>Off\_PD</sub> is currently defined as “PD power supply turn off voltage”, it only has a minimum value: V<sub>Off\_PD</sub> min = 30V  
 There are three requirements in the text:

- The PD shall turn on at a voltage less than or equal to V<sub>On\_PD</sub>.
- After the PD turns on, the PD shall stay on over the entire V<sub>Port\_PD-2P</sub> range.
- The PD shall turn off at a voltage less than V<sub>Port\_PD-2P</sub> min and greater than or equal to V<sub>Off\_PD</sub>.

## Problem statement:

- The text requirements do not match with the Type 1/2 PD state diagram.
- The text requirements do not match with the Type 3/4 PD state diagram.
- The text allows the PD to turn on at any voltage lower than 42.0V, which cannot work!

## Overview:

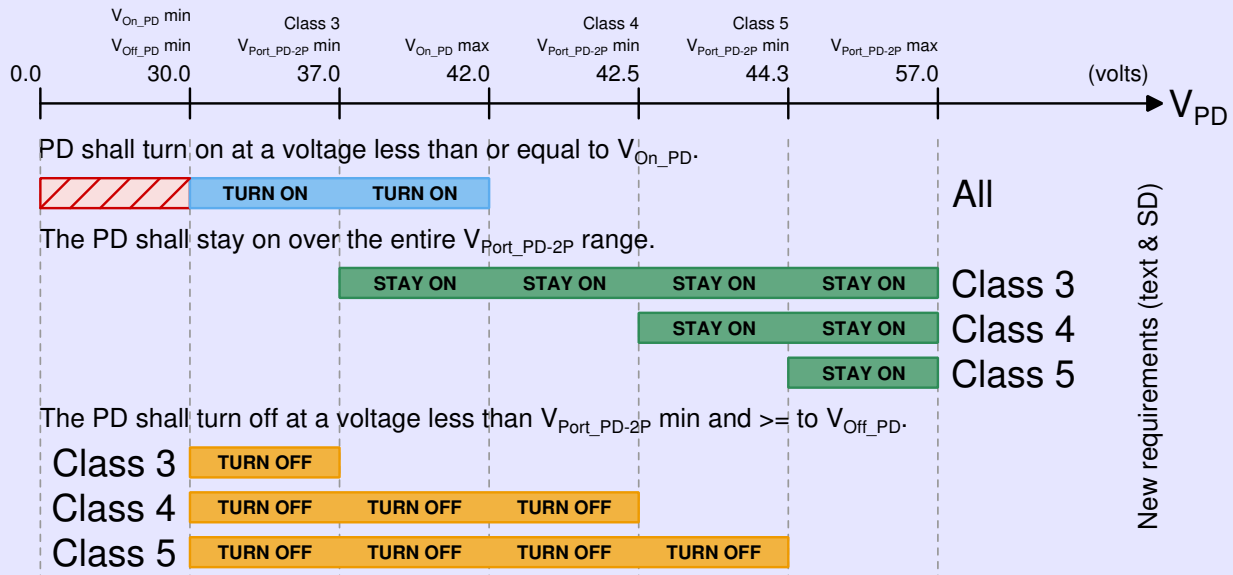


## Info (not part of baseline)

Goal of this baseline is to:

- Fix any mistakes in the  $V_{On\_PD} / V_{Off\_PD}$  requirements
- Make state diagram match with the text
- Don't change legacy requirements

The text is closest to reasonable requirements, with only a modification needed to  $V_{On\_PD}$ : PDs should turn on *above* 30V, not at any voltage lower than 42V. The desired voltage ranges would be:



### 33.3.8 PD power

Change Table 33–31, item 14 as follows:

Item	Parameter	Symbol	Unit	Min	Max	PD Type	Add info.
14	PD power supply turn on voltage	$V_{On\_PD}$	V	30.0	42.0	All	See 33.3.8.1
	PD power supply turn off voltage	$V_{Off\_PD}$		30.0	$V_{Port\_PD-2P\ min}$		

#### 33.3.8.1 Input voltage

Change the text in 33.3.8.1 as follows:

The PD shall turn on at a voltage ~~less than or equal to~~ in the range of  $V_{On\_PD}$ . After the PD turns on, the PD shall stay on over the entire  $V_{Port\_PD-2P}$  range. The PD shall turn off at a voltage ~~less than  $V_{Port\_PD-2P\ min}$  and greater than or equal to~~ in the range of  $V_{Off\_PD}$ . For dual-signature PDs the requirements for  $V_{On\_PD}$  and  $V_{Off\_PD}$  apply to each pairset individually.

#### 33.3.3.7 Type 3 and Type 4 single-signature variables

Remove the variable 'power\_received'.

#### 33.3.3.10 Type 3 and Type 4 single-signature PD state diagrams

Make changes as follows in Figure 33–32:

FROM state	TO state	Change
MDI_POWER1	MDI_NOPOWER	<del>power_received</del> $V_{PD} < V_{Off\_PD}$
MDI_POWER2	MDI_NOPOWER	<del>power_received</del> $V_{PD} < V_{Off\_PD}$

### 33.3.3.12 Type 3 and Type 4 dual-signature variables

*Remove the variable 'power\_received'\_mode(M).*

### 33.3.3.16 Type 3 and Type 4 dual-signature PD state diagrams

*Make changes as follows in Figure 33–33:*

FROM state	TO state	Change
<b>ALL</b>	MDI_POWER1	<del>power_received_mode(M)</del> $V_{PD\_mode(M)} > V_{On\_PD}$
MDI_POWER1	MDI_NOPOWER	<del>power_received_mode(M)</del> $V_{PD\_mode(M)} < V_{Off\_PD}$
MDI_POWER2	MDI_NOPOWER	<del>power_received_mode(M)</del> $V_{PD\_mode(M)} < V_{Off\_PD}$