

UPDATING THE TABLES

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Reading Notes:

1. Changes shown are from Current limits phase I (Sep 2014) and Phase II (Nov 2014) presentations. Few additional changes which were straight forward are included as well.

2. Changes already approved are shown in "Green". Unapproved, suggested changes are shown in "Blue"

Table 33–11—PSE output PI electrical requirements for all PD classes, unless otherwise specified

Item	Parameter	Symbol	Unit	Min	Max	PSE Type	Additional information
1	Output voltage per pair-set in the POWER_ON state	$V_{\text{Port_PSE-2P}}$	V	44.0	57.0	1	See 33.2.7.1.
				50.0	57.0	2,3	
				TBD	TBD	4	
2	Voltage transient below $V_{\text{Port_PSE-2P min}}$	$K_{\text{Tran_lo}}$	%		7.6	2,3,4	See 33.2.7.2.
3	Power feeding ripple and noise:						
	$f < 500$ Hz		V_{pp}		0.500	1, 2,3,4	See 33.2.7.3.
	500 Hz to 150 kHz				0.200		
	150 kHz to 500 kHz				0.150		
	500 kHz to 1 MHz				0.100		
4	Continuous output current capability in POWER_ON state per pair-set	$I_{\text{con-2P}}$	A	$P_{\text{Class}} / V_{\text{Port_PSE-2P}}$		1, 2	See 33.2.7.4.
				TBD		3,4	
5	Output current per pair-set in POWER_UP state	$I_{\text{Inrush-2P}}$	A	0.400	See info	1, 2,3,4	See 33.2.7.5. Max value defined by Figure 33–13.
6	Inrush time per pair-set	$T_{\text{Inrush-2P}}$	s	0.050	0.075	1, 2,3,4	See 33.2.7.5
7	Overload current per pair-set detection range	$I_{\text{CUT-2P}}$	A	$P_{\text{Class}} / V_{\text{Port_PSE-2P}}$	I_{LIM}	1,2	Optional limit; see 33.2.7.6, Table 33–7.
				TBD		3,4	

8	Overload time limit per pair-set	T_{CUT-2P}	s	0.050	0.075	1, 2,3,4	See 33.2.7.7
9	Output current per pair-set at short circuit condition	I_{LIM-2P}	A	0.400	See info	1	See 33.2.7.7. Max value defined by Figure 33–14.
				$1.14 \times I_{Cable}$		2,3	
				TBD	TBD	4	
10	Short circuit time limit per pair-set	T_{LIM-2P}	s	0.050	See info	1	See 33.2.7.7.
				0.010		2,3	
				TBD		4	
11	Continuous output power capability in POWER_ON state	P_{Con}	W	P_{Class}		1, 2	See 33.2.7.10, Table 33–7.
12	PSE Type power minimum	P_{Type}	W	$I_{Cable} \times (V_{Port_PSE\ min})$		1, 2	See 33.1.4.
13	Power turn on time	T_{pon}	s		0.400	1, 2	See 33.2.7.12.

Table 33–11—PSE output PI electrical requirements for all PD classes, unless otherwise specified (continued)

Item	Parameter	Symbol	Unit	Min	Max	PSE Type	Additional information
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14	Turn on rise time	T_{Rise}	μs	15.0		1, 2	From 10 % to 90 % of the voltage difference at the PI in POWER_ON state from the beginning of POWER_UP.
15	Turn off time	T_{Off}	s		0.500	1, 2	See 33.2.7.8.
16	Turn off voltage	V_{Off}	V		2.80	1, 2	See 33.2.7.9.
17	DC MPS current	I_{Hold}	A	0.005	0.010	1, 2	See 33.2.9.1.2.
18	PD Maintain Power Signature dropout time limit	T_{MPDO}	s	0.300	0.400	1, 2	See 33.2.9.
19	PD Maintain Power Signature time for validity	T_{MPS}	s	0.060		1, 2	See 33.2.9.
20	Current unbalance	I_{unb}	A		$3 \% \times I_{Cable}$	1	See 33.2.7.11, 33.4.8. NOTE—For practical implementations, it is recommended that Type 1 PSEs support Type 2 I_{unb} requirements.
					$3 \% \times I_{Peak}$	2	
21	Alternative B detection backoff time	T_{dbo}	s	2.00		1, 2	
22	Output capacitance during detection state	C_{out}	μF		0.520	1, 2	
23	Detection timing	T_{det}	s		0.500	1, 2	Time to complete detection of a PD.
24	Error delay timing	T_{ed}	s	0.750		1, 2	Delay before PSE may attempt subsequent powering after power removal because of error condition.

Table 33–18—PD power supply limits

Item	Parameter	Symbol	Unit	Min	Max	PD Type	Additional information
1	Input voltage per pair-set	V_{Port_PD-2P}	V	37.0	57.0	1	See 33.3.7.1, Table 33–1
				42.5	57.0	2,3	
				TBD	TBD	4	
2	Transient operating input voltage per pair-set	V_{Tran_lo-2P}	V	36.0		2,3,4	For time duration defined in 33.2.7.2
3	Input voltage range per pair-set during overload	$V_{Overload-2P}$	V	36.0	57.0	1	See 33.3.7.4, Table 33–1
				41.4	57.0	2,3	
				TBD	TBD	4	
4	Input average power, Class 0 and Class 3	P_{Class_PD}	W		13.0	1	See 33.3.7.2, Table 33–1
	Input average power, Class 1				3.84	1	
	Input average power, Class 2				6.49	1	
	Input average power, Class 4				25.5	2	
5	Input inrush current per pair-set	I_{Inrush_PD-2P}	A		0.400	1, 2,3,4	Peak value—See 33.3.7.3
6	Inrush to operating state delay per pair-set	$T_{delay-2P}$	s	0.080		2,3,4	See 33.3.7.3
7	Peak operating power per pair-set, Class 0 and Class 3	P_{Peak_PD-2P}	W		14.4	1	See 33.3.7.4
	Peak operating power per pair-set, Class 1				5.00	1	
	Peak operating power per pair-set, Class 2				8.36	1	
	Peak operating power per pair-set, Class 4				$1.11 \times P_{Class_PD}$	2	
	Peak operating Power per pair-set, Class 5				TBD	3	
	Peak Operating Power per pair-set, Class 6				TBD	3	
	Peak Operating Power per pair-set, Class 7				TBD	4	
8	Input current transient (absolute value)		mA/ μ s		4.70	1, 2	See 33.3.7.5

9	PI capacitance during MDI_POWER states	C_{Port}	μF	5.00		1, 2	See 33.3.7.6, 33.3.7.3
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Item	Parameter	Symbol	Unit	Min	Max	PD Type	Additional information
10	Ripple and Noise:						
	$f < 500$ Hz		V_{PP}		0.500	1, 2,3,4	See 33.3.7.7. Balanced source impedance: R_{Ch}
	500 Hz to 150 kHz				0.200		
	150 kHz to 500 kHz				0.150		
	500 kHz to 1 MHz				0.100		
11	a) PD Power supply turn on voltage	V_{On}	V		42.0	1, 2	See 33.3.7.1
	b) PD power supply turn off voltage	V_{Off}	V	30.0		1, 2	
12	PD classification stability time	T_{class}	s		0.005		See 33.3.7.8
13	Backfeed voltage	V_{bfd}	V		2.80		See 33.3.7.9

