

comments

Cl 33 SC 2.8 P40 L35 # 81
Johnson, Peter Sifos Technologies

Comment Type T Comment Status D Vport adhoc

Iport_max is shown with the value Icabl as a MINIMUM required maximum port current. However, Icabl is defined as 720 mA in 33.1.4, and 720 mA is the very top of the allowed current range in Figure 33-9a (formerly SOA curve). So it doesn't seem logical that Icabl can be a MINIMUM value for anything including Iport_max for Type 2 PSE's.

SuggestedRemedy

Icabl needs to be clearly defined as EITHER the maximum continuous current (Iport) that can ever exist on a single pair OR if it is to be equated with 803.3af value of Iport_max (MIN) (=350 mA), then it cannot be considered the maximum continuous current allowed on a pair as implied by Figure 33-9a.

Proposed Response Response Status O

Cl 33 SC 2.8 P41 L7 # 9
LANDRY, MATTHEW SILICON LABS

Comment Type T Comment Status D Vport adhoc

ICUT is optional. ICUT min should be the maximum current the PD can draw at a given port voltage (PClass/VPort). It is.

To maintain the use of the TCUT timer, the maximum ICUT should be less than or equal to the current limit. This is almost true for Type 1. We have a TBD for Type 2.

We need to specify an ICUT max that meets the criteria above.

SuggestedRemedy

Change ICUT max to ILIM.

This will open up the ICUT space a little wider for Type 1 PSEs (e.g. if ILIM is 425mA, then ICUT could be 424mA), but will also properly let the SOA curve guide ICUT for all future PSEs.

Note that it does not break compliance of current PSEs, and still supports both current limited and energy limited PSEs.

Proposed Response Response Status O

Cl 33 SC 2.8.1 P41 L52 # 246
Stanford, Clay Linear Technology

Comment Type T Comment Status D Vport adhoc

The statement:

"A PSE in the POWER_ON state may remove power from the PI when the PI voltage no longer meets the VPort specification"

is very broad and doesn't reflect the intent. Add text to clarify.

SuggestedRemedy

IS:

A PSE in the POWER_ON state may remove power from the PI when the PI voltage no longer meets the VPort specification.

SHOULD BE: (CAPS INDICATE ADDITION)

A PSE in the POWER_ON state may remove power from the PI IF THE PI voltage no longer meets the VPort specification DUE TO EXCESSIVE PORT LOADING FROM A NON-COMPLIANT PD OR PORT FAULT CONDITION.

Proposed Response Response Status O

what is allowed by the present text that we want to prevent? Lacking specific examples, I'm inclined to reject.

Cl 33 SC 2.8.2a P42 L12 # 132
Schindler, Fred Cisco Systems

Comment Type TR Comment Status D Vport adhoc

The PD is restricted to a current slew rate of 15 mA/us maximum. A single PSE port can provide a 35 mA/us demand rate but multiple ports transitioning at this rate may be unrealistic.

SuggestedRemedy

Change PSE requirements in this section of "35 mA/us max." to "at least 15 mA/us."

Proposed Response Response Status O

defer to vport

comments

Cl 33 SC 2.8.2B P42 L17 # 247
Stanford, Clay Linear Technology

Comment Type T Comment Status D Vport adhoc

Paragraph could be written more clearly to better express intent.

SuggestedRemedy

IS:

A Type 2 PSE shall maintain an output voltage no less than VTran_lo below VPort min for transient conditions lasting more than 30us and less than 250us.

Transients less than 30us in duration may cause the voltage at the PI to fall more than VTran_lo . The minimum PD input capacitance ensures the PD will operate for any input voltage transient lasting less than 30us. Transients lasting more than 250us shall meet the static VPort specification.

SHOULD BE:

Brief decaying voltage transients less than 30us in duration should not effect PD operation due to storage capacity present in the PD and as such are not limited.

For decaying voltage transients lasting 30 to 250us, a Type 2 PSE shall maintain an output voltage no less that VTran_low bleow Vport_min.

Transients lasting more than 250us shall meet the static VPort specification.

Proposed Response Response Status O

see 135

Cl 33 SC 2.8.4 P42 L35 # 137
Schindler, Fred Cisco Systems

Comment Type TR Comment Status D Vport adhoc

The value for Ipeak is incorrect.

SuggestedRemedy

The correct value for Ipeak = (Vpse - SQRT(Vpse^2 - 4RchPpd_port_peak))/(2Rch).
More details can be found in a presentation that will be provided during the Atlanta Plenary meeting.

Proposed Response Response Status W

defer to Vport adhoc
see 114

Cl 33 SC 2.8.4 P42 L38 # 114
Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D Vport adhoc

1. The editor was not authorized to make the changes in this clause due to the fact that the remedy suggested by the ad-hoc was not concluded and adopted.

2. In addition, the new text makes legacy PSE non compliant due to the fact that the peak power for type PSE is not function of (Pport/Vport)*(0.4/0.35) for class 1 and 2. It is correct only for class 0,3.

3. The peak current is already defined in Table 33-12 item 12 (Ed note: Item 4) and we don't need to define it again for the PSE due to the simple physical fact the PSE output current is equal to the PD input current..

SuggestedRemedy

Option 1: (Not recommended)

Restore the old text.

Option 2: (Recommended)

Replace the text in line 38 from:

"The PSE shall support the following AC current waveform parameters:
Ipeak = (400 / 350) ^a (PPort / VPort) minimum for 50 ms minimum and 5 % duty cycle minimum."

To:

"The PSE shall support the following the maximum peak current as defined by Table 33-12 item 4 for 50 ms minimum and 5 % duty cycle minimum."

Note to the group:

1. The peak current already defined in table 33-12 item 4. No need to repeat it again.
2. The peak current numbers should be defined in one place i.e. in the PD side due to the fact that it is defined by the load and the PSE has only to support it.
3. The peak current with option b remedy is function of (0.4/0.35)*Port/Vport only for Type 2 PD due to the fact that we don't have to take in account previous legacy definitions. For type 1 class 1 and 2 PDs, the constant power model contains some margin from reasons that was explained in my presentation (that was not presented yet) which is located at the web site of the October 2007 meeting).
3. For class 0,3 the peak current is a constant and not a function of Vport.
(The average current was described as a function of Pport/Vport.)
Taking all this data in account, leads to the suggested remedy of option b.

Proposed Response Response Status W

defer to Vport Adhoc
see 137

comments

Cl 33 SC 2.8.4 P42 L 38 # 227
 Law, David 3Com

Comment Type TR Comment Status D Vport adhoc

Please provide definitions for the variables used in this equation.

SuggestedRemedy

Suggest that this text be changed to read:

The PSE shall support an AC current of Ipeak minimum for 50 ms minimum and 5 % duty cycle minimum.

$$I_{peak} = (400 / 350) \times (P_{Port} / V_{Port})$$

Where:

I_{Peak} is the peak output current.
 P_{Port} is the minimum continuous output power (see Table 33-5, item 14).
 V_{Port} is the minimum static output voltage (see Table 33-5, item 1).

Proposed Response Response Status W

PROPOSED ACCEPT.
 NOTE: Yair has comment that could remove this section.

Defer to Vport adhoc

Cl 33 SC 2.8.4 P42 L 38 # 80
 Johnson, Peter Sifos Technologies

Comment Type T Comment Status D Vport adhoc

It is no longer clear that 33.2.8.4 requires Vport to fall into the valid Vport range during a transient load condition (Ipeak). Without this clarification, 3.2.8.4 could come into conflict with 33.2.8.1 which allows power to be removed when Vport drops below Vport_Min. Additionally, there is nothing in 33.2.8.2 (Vport Regulation) that assures a valid Vport level given Ipeak as defined in 33.2.8.4. Additionally, "transient current waveforms" or "peak current waveforms" may be a better term than "AC current waveforms" in line 38 since "AC" in the spec is generally associated with MPS technique rather than overload currents.

SuggestedRemedy

One solution: Title 3.2.8.4

PSE maximum continuous and peak output current in normal powering mode at or above minimum output voltage

Separately modify line 38 to use "...peak current waveform..."

Proposed Response Response Status O

defer to vport

Cl 33 SC 2.8.4 P42 L 39 # 79
 Johnson, Peter Sifos Technologies

Comment Type T Comment Status D Vport adhoc

The formula as written is confusing and should be corrected to avoid breaking 802.3af specification where any PD is allowed to draw 400 mA for 50 msec.

SuggestedRemedy

I_{peak} = (400 / 350) x (Port / Vport_Min) for 50 msec minimum and 5% duty cycle minimum.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Defer to Vport adhoc
 The remedy recommends changing Vport to Vport_min in the formula.

comments

CI 33 SC 2.8.6 P43 L 30 # 56
Vetteth, Anoop Cisco
Comment Type TR Comment Status D Vport adhoc
the denominator of the equation should be Vport and not Vportmin. The minimum value of Icut should be equal to the value of Iport_max as defined in 33.2.8.4
SuggestedRemedy
Change the denominator of the equation to Vport
Proposed Response Response Status O

defer to Vport

CI 33 SC 2.8.6 P43 L 31 # 249
Stanford, Clay Linear Technology
Comment Type T Comment Status D Vport adhoc
Icut is being re-defined to allow current to be limited to PD power rating.
In equation, I think the intent is for the PSE to use the actual port voltage to calculate the allowed current.
Therefore, Vport_min should be Vport-operation, or Vport-actual.
SuggestedRemedy
Proposed Response Response Status O

see 56

CI 33 SC 3.5 P59 L 22 # 260
Stanford, Clay Linear Technology
Comment Type E Comment Status A Vport adhoc
We decided to not reference the actual power levels but use parameters.
Change 29.5W to I cable * Vport_min
Do we do the same for 12.95W????
SuggestedRemedy

Response Response Status C
ACCEPT IN PRINCIPLE.

for item 2 max is I cable*Vport min, applies to type 1 and 2.
see 32

CI 33 SC 3.5 P59 L 22 # 32
LANDRY, MATTHEW SILICON LABS
Comment Type T Comment Status D Vport adhoc
Table 33-12 item 2 describes max static power. This can be expressed in terms of current and Vport.
SuggestedRemedy
Replace Type 1 max PPort with 0.35*VPort min. Replace Type 2 max with ICable*VPort min.
These equations presume that VPort mins are updated to 37V and 41V, respectively.
Proposed Response Response Status O

defer to Vport

comments

CI 33 SC 3.5 P59 L 38 # 36
 LANDRY, MATTHEW SILICON LABS
 Comment Type TR Comment Status D Vport adhoc
 Item 5 is really doing nothing more than telling the reader that IPort should scale with VPort.
 They reader should already know this, as PPort max is a max power. Clearly if VPort moves, IPort has to move.
 That being said, how is item 5 at all helpful?
 SuggestedRemedy
 (1) Strike item 5.
 or
 (2) Remove the multiple lines, and replace item 5 with:
 Item: 5
 Parameter: Input current (DC or RMS)
 Symbol: IPort
 Unit: A
 Min:
 Max: PPort max / VPort
 PD Type: 1,2
 Addl Info: See 33.3.5.4
 Proposed Response Response Status O

defer to Vport

CI 33 SC 3.5.1 P60 L 31 # 105
 Darshan, Yair Microsemi Corporation
 Comment Type T Comment Status D Vport adhoc
 Draft D1.0:
 Table 33-12 item 1 (Vport) may lead to confusion in the future regarding to how it was derived.
 The facts are:
 a) Vport minimum for type 1 was derived at peak input power (0.4A) and not at steady state current (0.35A).
 (44v-20 ohms * 0.4A=36V.)
 (44v-20 ohms * 0.35A=37V.)
 The same concept is relevant to Type 2 PSE.
 We need to clarify it in the text of 33.3.5.1
 SuggestedRemedy
 Change line 31 from:
 "The specification for VPort in Table 33-12 is for the input voltage range after startup, and it includes loss in the cabling plant."
 to:
 "The specification for VPort in Table 33-12 is for the input voltage range after startup, and it includes loss in the cabling plant at PD maximum peak load current, as defined by table 33-12 item 4.
 PD input voltage at maximum average current is given in Table 33-12 item 5."
 Proposed Response Response Status O

see 31, 259 which suggest changing item in table to 37V.

CI 33 SC 3.5.2 P60 L 41 # 118
 Vetteth, Anoop Cisco
 Comment Type TR Comment Status D Vport adhoc
 This section does not referecnce the power negotiated by the PD over Physical Layer Classification or DLL Classification
 SuggestedRemedy
 Start the section with a paragraph that references the classified power
 Suggestion:
 Pport_max is the maximum permissible power negotiated over physical layer classification (per table 33-10) or data link layer classification (as defined in section 33.6a.2.2). Data link layer classification takes precedence over physical layer classification
 Proposed Response Response Status O

comments

Cl 33 SC 3.5.2 P60 L47 # 34
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status D Vport adhoc

The equation and instructions for measuring PPort seem unnecessary. The power limit applies regardless of the PSE voltage and cable impedance.

The sudden appearance of a resistive approximation of the cable plant really adds nothing for the reader. Stating that the power limit applies over the specified input voltage range is simply redundant. Telling the reader that power equals voltage times current is a bit patronizing.

SuggestedRemedy

Replace 33.3.5.2 with the following:

33.3.5.2 Input average power

The specification for PPort in Table 33-12 (item 2) shall apply for the input power averaged using any sliding window with a 1s width.

Proposed Response Response Status O

Cl 33 SC 3.5.4 P61 L17 # 143
 Schindler, Fred Cisco Systems

Comment Type TR Comment Status D Vport adhoc

The value of Iport_max created by the formula-using PD Pport_max-does not match the value provided in table 33-12. For example, class 0 PD power is 12.95 W maximum and $12.95W/36V = 360$ mA, not the 400 mA shown in table 33-12, item 4.

SuggestedRemedy

The PD formula provides the correct answers when the PSE Pport_max values are scaled by 400/350 for the system classified power. A presentation will be provided at the Atlanta Plenary to cover the details.

Proposed Response Response Status O

Cl 33 SC 3.5.4 P61 L36 # 33
 LANDRY, MATTHEW SILICON LABS

Comment Type T Comment Status D Vport adhoc

The equations use absolute numbers for the port power. They should be variables, which has the added benefit of needing only one equation.

SuggestedRemedy

Replace equation with:
 $I_{Port_max} = P_{Port_max} / V_{Port}$
 where
 IPort_max is the max DC and RMS input current
 PPort_max is the maximum power as defined in Table 33-12 item 2
 VPort is the static input voltage

Remove reference to Type 1 PDs, and remove second equation entirely.

Proposed Response Response Status W

PROPOSED ACCEPT.

Defer to Vport adhoc

Cl 33 SC 3.5.4a P62 L # 59
 Vetteth, Anoop Cisco

Comment Type TR Comment Status D Vport adhoc

Figure 3-12b and 3-12c
 This is PD section and hence the SOA curve for the PSE is irrelevant.

PD_Toverload was defined in the presentation. The maximum value of PD_Toverload is PSE_Tcutmin. Hence PD_Toverload is not relevant anymore.

SuggestedRemedy

Remove the SOA curve for the PSE from both the figures.
 Remove PD_Toverload and make the overload max duration to PSE_Tcutmin
 Explain the mask in text using inequalities.

Proposed Response Response Status O

defer to Vport

