SFF-TA-1037

Specification for

Connectors For Pluggable Multi-Purpose Module (PMM)

Rev 1.0 November 15, 2024

SECRETARIAT: SFF TA TWG

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The description of the connector in this specification does not assure that the specific component is available from connector suppliers. If such a connector is supplied, it should comply with this specification to achieve interoperability between suppliers.

ABSTRACT: This specification defines the connect systems for Pluggable Multipurpose Module (PMM) applications. It includes PMM 4C+ EP connector, PMM x16 108p connector and PMM power connector. Each connector has four PCB mounting orientations.

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Foreword

The development work on this specification was done by the SNIA SFF TWG, an industry group. Since its formation as the SFF Committee in August 1990, the membership has included a mix of companies which are leaders across the industry.

For those who wish to participate in the activities of the SFF TWG, the signup for membership can be found at https://www.snia.org/join.

Revision History

Rev 1.0 *November 15, 2024*:
-Initial release

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1. Scope

This specification defines the connector mechanical specification, performance requirements, and the electrical interface for this card edge connector system. Additional informative information such as PCB layout is included in an appendix. This connector system is designed to support Pluggable Multi-purpose Module (PMM) with high-speed signals, power, and side bands.

1.1 Application Specific Criteria

This specification defines the connect systems for Pluggable Multipurpose Module (PMM) applications. It includes PMM 4C+ EP connector, PMM x16 108p connector and PMM power connector. Each connector has four PCB mounting orientations.

2. References and Conventions

2.1 Industry Documents

The following documents are relevant to this specification:

- ASME Y14.5 Dimensioning and Tolerancing
- EIA-364-1000 Environmental Test Methodology for Assessing the Performance of Electrical Connectors and Sockets Used in Controlled Environment Applications
- EIA-364-04 Normal Force Test Procedure for Electrical Connectors available at
- EIA-364-13 Mating and Unmating Forces Test Procedure for Electrical Connectors
- EIA-364-20 Withstanding Voltage Test Procedure for Electrical Connectors
- EIA-364-21 Insulation Resistance Test Procedure for Electrical Connectors
- EIA-364-23 Low Level Contact Resistance Test Procedure for Electrical Connectors
- EIA-364-27 Mechanical Shock Test Procedure for Electrical Connectors
- EIA-364-28 Vibration Test Procedure for Electrical Connectors and Sockets
- SFF-TA-1002 Protocol Agnostic Multi-Lane High Speed Connector
- SFF-TA-1034 Pluggable Multipurpose Module (PMM)

2.2 Sources

The complete list of SFF documents which have been published, are currently being worked on, or that have been expired by the SFF Committee can be found at https://www.snia.org/sff/specifications. Suggestions for improvement of this specification are welcome and should be submitted to https://www.snia.org/feedback.

Other standards may be obtained from the organizations listed below:

Standard	Organization	Website
ASME	American Society of Mechanical Engineers (ASME)	https://www.asme.org
Electronic Industries Alliance (EIA)	Electronic Components Industry Association (ECIA)	https://www.ecianow.org

2.3 Conventions

The following conventions are used throughout this document:

DEFINITIONS: Certain words and terms used in this standard have a specific meaning beyond the normal English meaning. These words and terms are defined either in the definitions or in the text where they first appear.

ORDER OF PRECEDENCE: If a conflict arises between text, tables, or figures, the order of precedence to resolve the conflicts is text; then tables; and finally figures. Not all tables or figures are fully described in the text. Tables show data format and values.

LISTS: Lists sequenced by lowercase or uppercase letters show no ordering relationship between the listed items.

EXAMPLE 1 - The following list shows no relationship between the named items:

a. red (i.e., one of the following colors):
    A. crimson; or
    B. pink;
b. blue; or
c. green.

Lists sequenced by numbers show an ordering relationship between the listed items.

EXAMPLE 2 -The following list shows an ordered relationship between the named items:

1. top;
2. middle; and
3. bottom.

Lists are associated with an introductory paragraph or phrase and are numbered relative to that paragraph or phrase (i.e., all lists begin with an a. or 1. entry).

DIMENSIONING CONVENTIONS: The dimensioning conventions are described in ASME-Y14.5, Geometric Dimensioning and Tolerancing. All dimensions are in millimeters, which are the controlling dimensional units (if inches are supplied, they are for guidance only).

NUMBERING CONVENTIONS: The ISO convention of numbering is used (i.e., the thousands and higher multiples are separated by a space and a period is used as the decimal point). This is equivalent to the English/American convention of a comma and a period.

American	**French**	**ISO**
0.6	0,6	0.6
1,000	1 000	1 000
1,323,462.9	1 323 462,9	1 323 462.9

3. Keywords, Acronyms, and Definitions

For the purposes of this document, the following keywords, acronyms, and definitions apply.

3.1 Keywords

May or may not: Indicates flexibility of choice with no implied preference.

Obsolete: Indicates that an item was defined in prior specifications but has been removed from this specification.

Optional: Describes features which are not required by the SFF specification. However, if any feature defined by the SFF specification is implemented, it shall be done in the same way as defined by the specification. Describing a feature as optional in the text is done to assist the reader.

Prohibited: Describes a feature, function, or coded value that is defined in a referenced specification to which this SFF specification makes a reference, where the use of said feature, function, or coded value is not allowed for implementations of this specification.

Reserved: Defines the signal on a connector contact when its actual function is set aside for future standardization. It is not available for vendor specific use. Where this term is used for bits, bytes, fields, and code values; the bits, bytes, fields, and code values are set aside for future standardization. The default value shall be zero. The originator is required to define a Reserved field or bit as zero, but the receiver should not check Reserved fields or bits for zero.

Restricted: Refers to features, bits, bytes, words, and fields that are set aside for other standardization purposes. If the context of the specification applies the restricted designation, then the restricted bit, byte, word, or field shall be treated as a reserved bit, byte, word, or field (e.g., a restricted byte uses the same value as defined for a reserved byte).

Shall: Indicates a mandatory requirement. Designers are required to implement all such mandatory requirements to ensure interoperability with other products that conform to this specification.

Should: Indicates flexibility of choice with a strongly preferred alternative.

Vendor specific: Indicates something (e.g., a bit, field, code value) that is not defined by this specification. Specification of the referenced item is determined by the manufacturer and may be used differently in various implementations.

3.2 Acronyms and Abbreviations

EMLB: Early Mate Late Break
PCB: Printed Circuit Board
PF: Press Fit
PTH: Plated Through Hole
RA: Right Angle
SMT: Surface Mount Technology
PMM: Pluggable Multipurpose Module

3.3 Definitions

Alignment guides: A term used to describe features that pre-align the two halves of a connector interface before electrical contact is established. Other common terms include: guide pins, guide posts, blind mating features, mating features, alignment features, and mating guides.

Connector: Each half of an interface that, when joined together, establish electrical contact and mechanical retention between two components. In this specification, the term connector does not apply to any specific gender; it is used to describe the receptacle, the plug or the card edge, or the union of receptacle to plug or card edge. Other common terms include: connector interface, mating interface, and separable interface.

Contact mating sequence: A term used to describe the order of electrical contact established/ terminated during mating/un-mating. Other terms include: contact sequencing, contact positioning, mate first/break last, EMLB (early mate late break) staggered contacts, and long pin/short pin.

Contacts: A term used to describe connector terminals that make electrical connections across a separable interface.

Frontshell / Backshell: A term used to describe the metallic part of a module that provides mechanical and shielding continuity between the plug and receptacle. Other terms commonly used are: housing, snout, and metal shroud.

Module: In this specification, module may refer to a plug assembly at the end of a copper (electrical) cable (passive or active), an active optical cable (AOC), an optical transceiver, or a loopback.

Plug: A term used to describe the connector that contains the penetrating contacts of the connector interface as shown in Figure 3-1. Plugs typically contain stationary contacts. Other common terms include male, pin connector, and card edge.

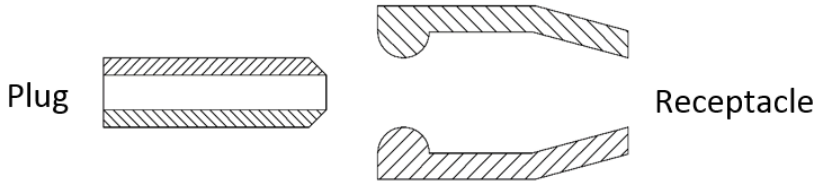


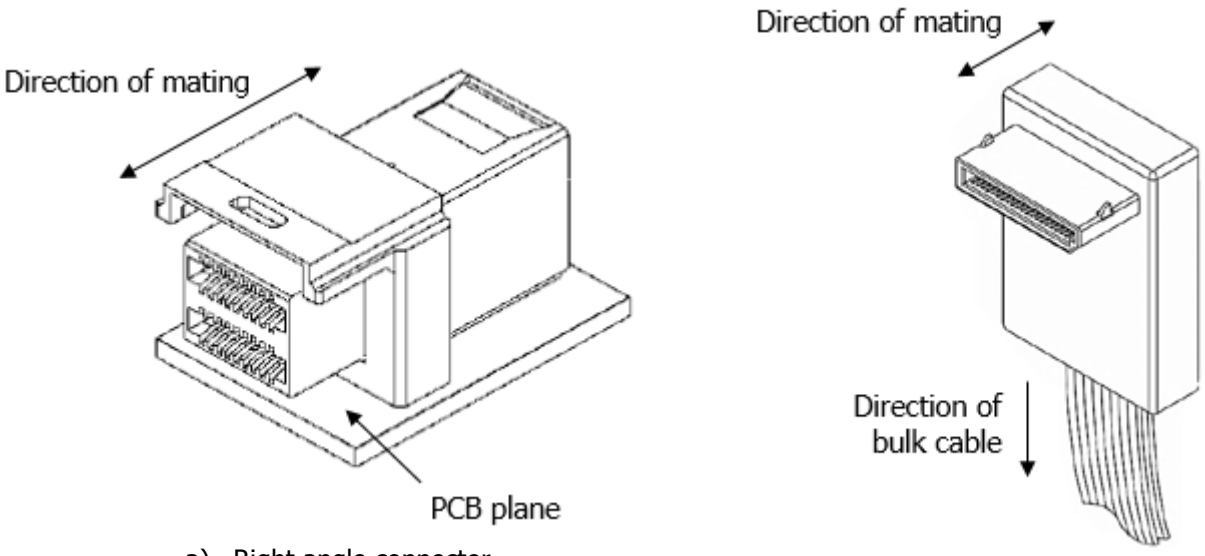
Figure 3-1 Plug and Receptacle Definition

Plated through hole termination: A term used to describe a termination style in which rigid pins extend into or through the PCB. Pins are soldered to keep the connector or cage in place. Other common terms are through hole or PTH.

Press fit: A term used to describe a termination style in which collapsible pins penetrate the surface of a PCB. Upon insertion, the pins collapse to fit inside the PCB's plated through holes. The connector or cage is held in place by the interference fit between the collapsed pins and the PCB.

Receptacle: A term used to describe the connector that contains the contacts that accept the plug contacts as shown in Figure 3-1. Receptacles typically contain spring contacts. Other common terms include female and socket connector.

Right Angle: A term used to describe either a connector design where the mating direction is parallel to the plane of the printed circuit board upon which the connector is mounted or a cable assembly design where the mating direction is perpendicular to the bulk cable.



a) Right angle connector

b) Right angle cable assembly

Figure 3-2 Right Angle Connector and Cable Assembly

Straddle mount: A term used to describe a termination style that uses surface mount termination points on both sides of a PCB.

Straight: A term used to describe a connector design where the mating direction is parallel to the bulk cable.

Surface mount: A term used to describe a termination style in which solder tails sit on pads on the surface of a PCB and are then soldered to keep the connector or cage in place. Other common terms are surface mount technology or SMT.

Termination: A term used to describe a connector's non-separable attachment point such as a connector contact a cage to a PCB or flex circuit. Common PCB terminations include surface mount (SMT), plated through hole termination (PTH), and press fit (PF). Common cable terminations include insulation displacement contact (IDC), insulation displacement termination (IDT), wire slots, solder, welds, crimps, and brazes.

Vertical: A term used to describe a connector design where the mating direction is perpendicular to the printed circuit board upon which the connector is mounted.

Wipe: The distance a contact travels on the surface of its mating contact during the mating cycle as shown in Figure 3-3.

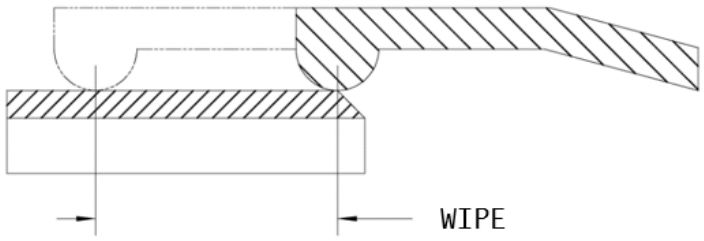


Figure 3-3 Wipe for a Continuous Contact

4. General Description

4.1 Configuration Overview/Descriptions

This specification defines a card edge connector system and add in card interface for a PMM device as defined in the SFF-TA-1034 Pluggable Multipurpose Module (PMM) specification. The connector system includes a PMM 4C+ EP (based on the SFF-TA-1002 4C+ compatible interface with enhanced power delivery), a PMM x16 108p connector and a PMM power connector. Each connector has four different mounting orientations.

4.1.1 Right Angle Connector Configuration

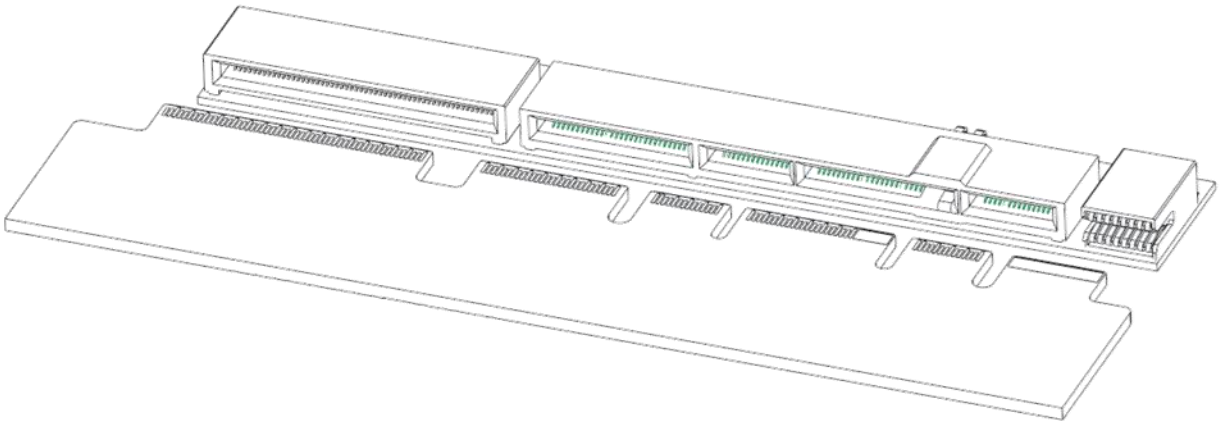


Figure 4-1 Right Angle Connector Configuration

4.1.2 Vertical Connector Configuration

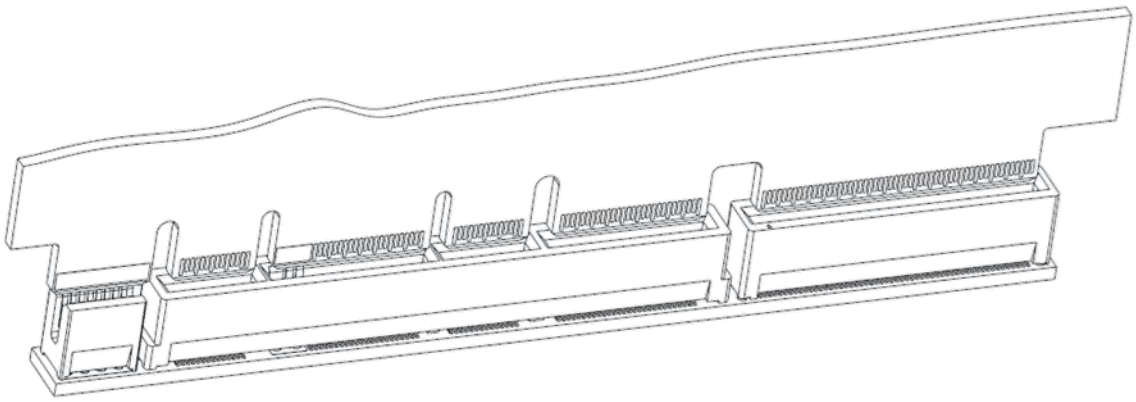


Figure 4-2 Vertical Connector Configuration

4.1.3 Straddle Mount Connector Configuration

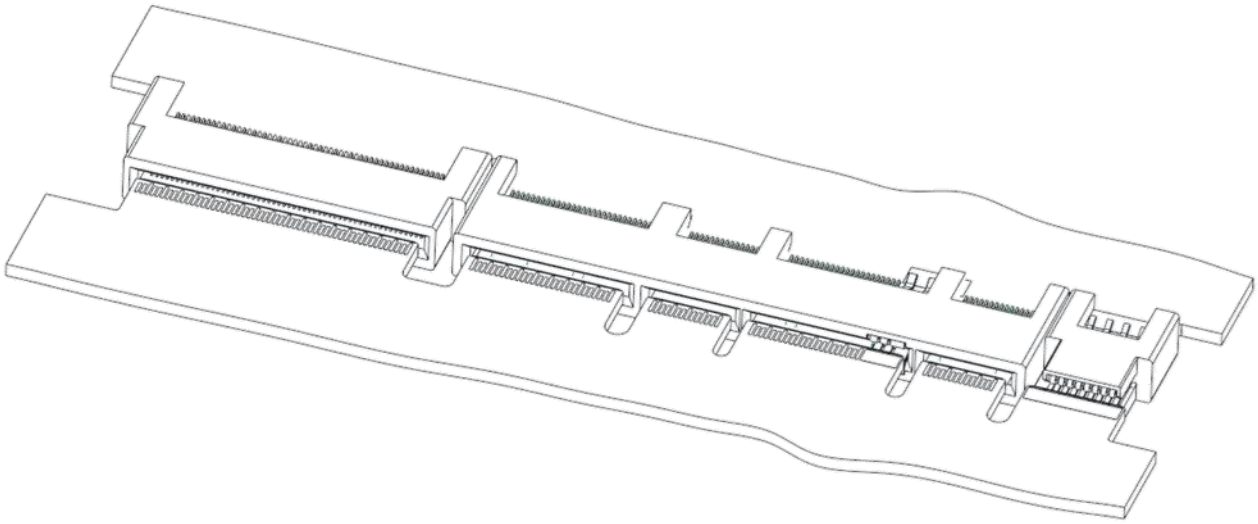


Figure 4-3 Straddle Mount Connector Configuration

4.1.4 Panel Mount Connector Configuration

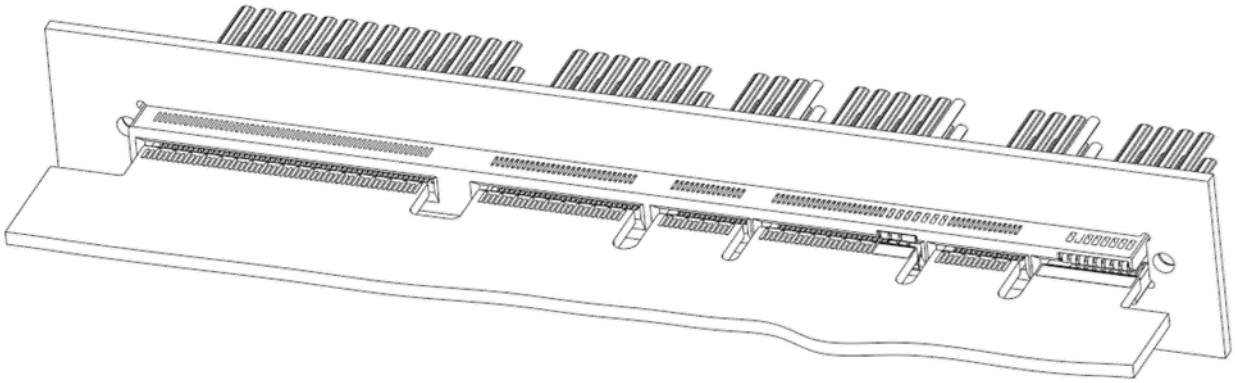


Figure 4-4 Pannel Mount Connector Configuration

4.2 Contact Numbering

The pins or electrical contacts in this connector are numbered as shown in Figure 4-5. Power pin may have multiple contact leaves as shown. The body of the leaves are connected as one electrical pin.

The 4C+ EP connector drawings in this spec shows 3 contact leaves for power pin PA1 and PB1. A designer may choose different number of leaves. The design must be backward compatible with SNIA-SFF TA-1002 defined 4C+ connector interface.

The 4C+ EP connector drawings in this spec shows 2 solder tails for power pin PA1 and PB1. A designer may choose different number of solder tails. The design must be compatible with the footprint defined in this spec.

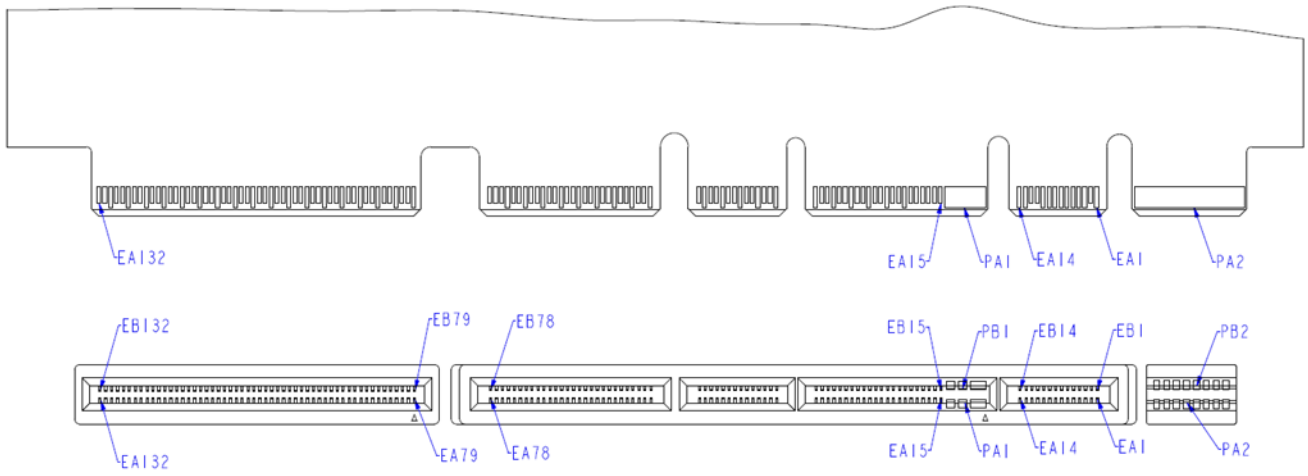


Figure 4-5 Contact Numbering

5. Connector Mechanical Specification

5.1 Overview

This section defines mechanical specifications of vertical connector, right angle connector, straddle mount connector and panel mount connector.

5.2 Mechanical Description: Right Angle Connector

5.2.1 Right Angle PMM 4C+ EP Connector

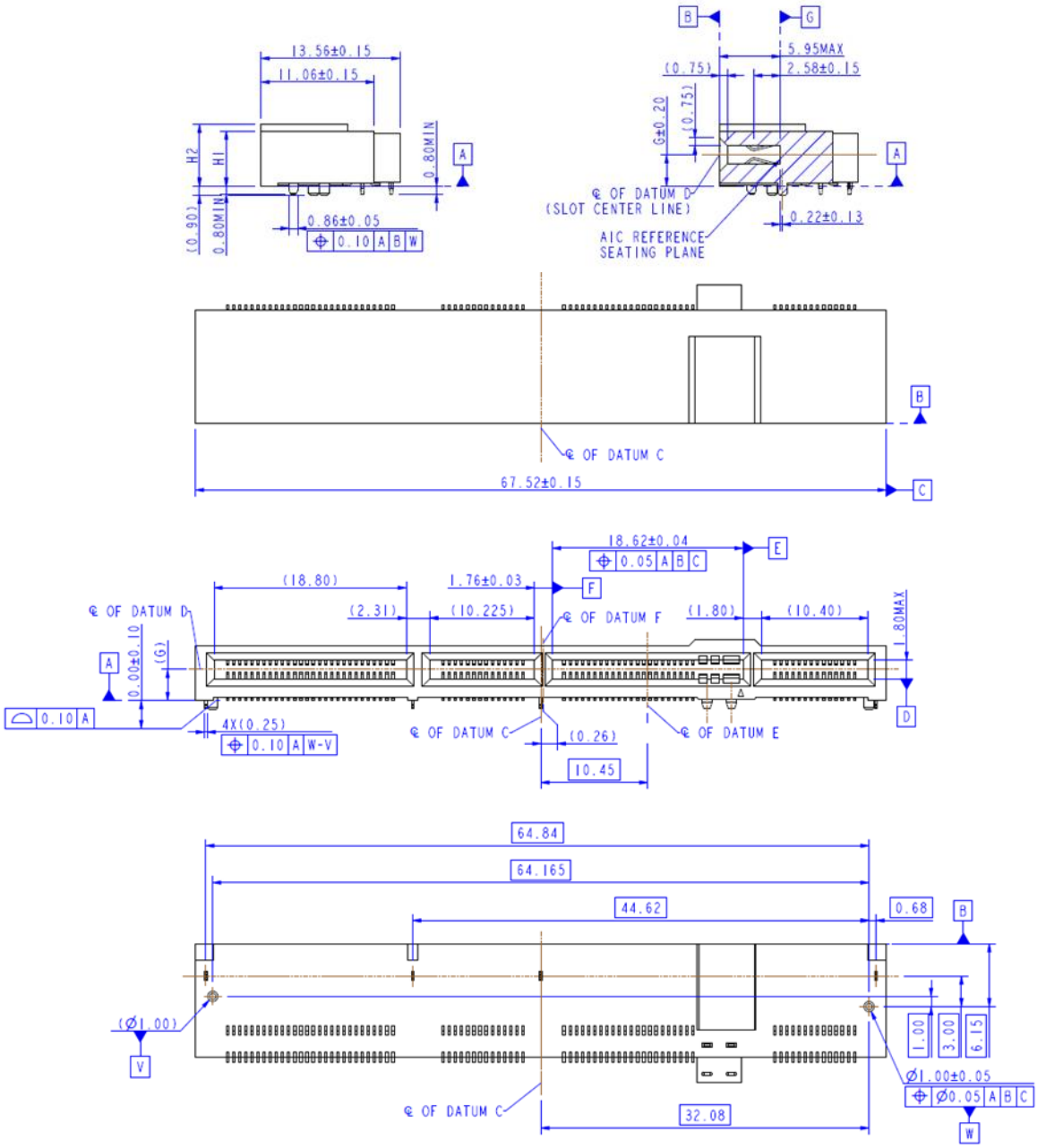


Figure 5-1 Right Angle PMM 4C+ EP Connector Dimensions

Table 5-1 Right Angle PMM 4C+ EP Connector Offset Variants (mm)

DIM H1	DIM H2	DIM G
5.55 MAX	6.20 MAX	3.05
6.55 MAX	7.20 MAX	4.05

5.2.2 Right Angle PMM x16 108pin Connector

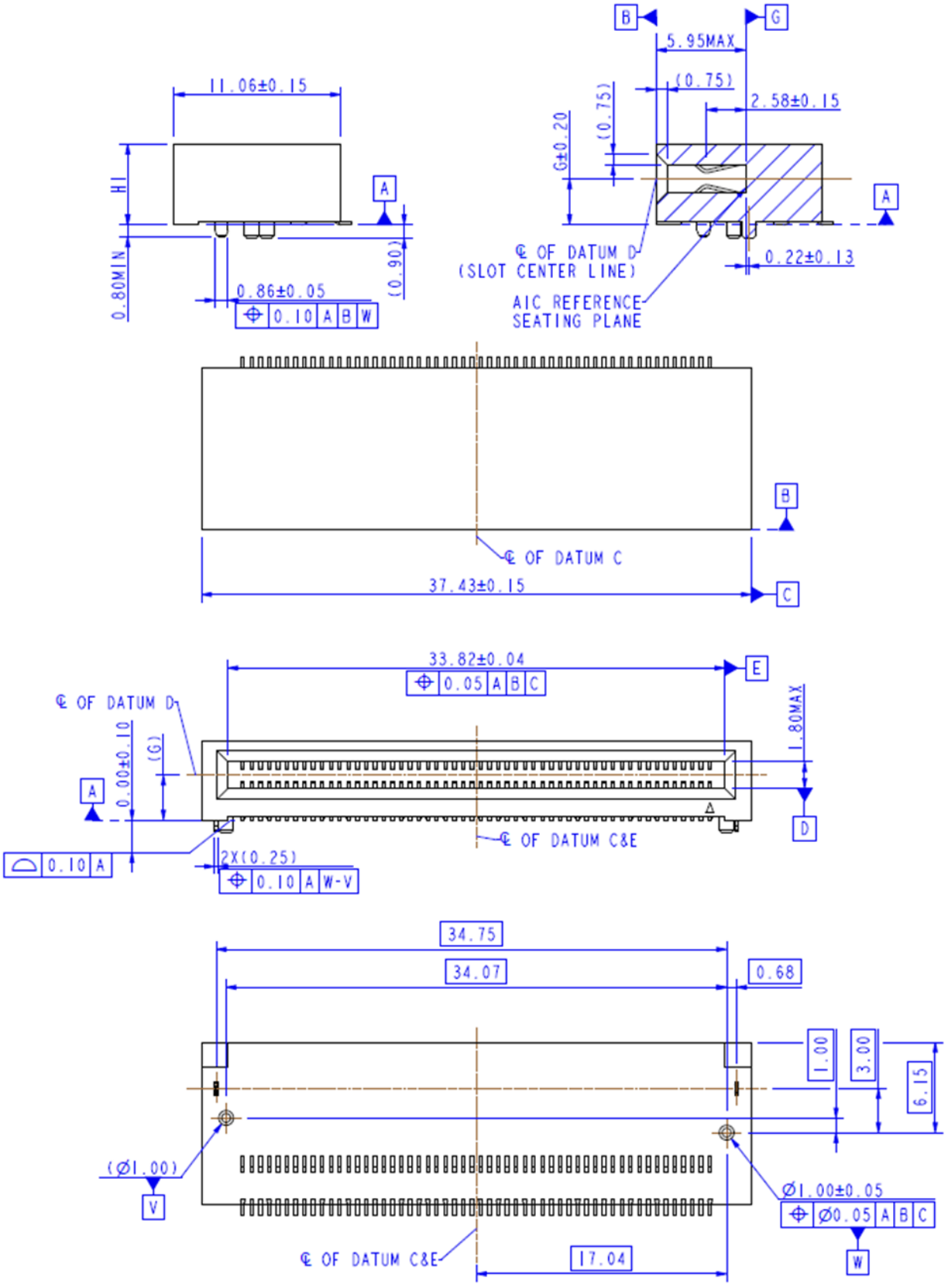


Figure 5-2 Right Angle PMM x16 108pin Connector Dimensions

5.2.3 Right Angle PMM Power Connector

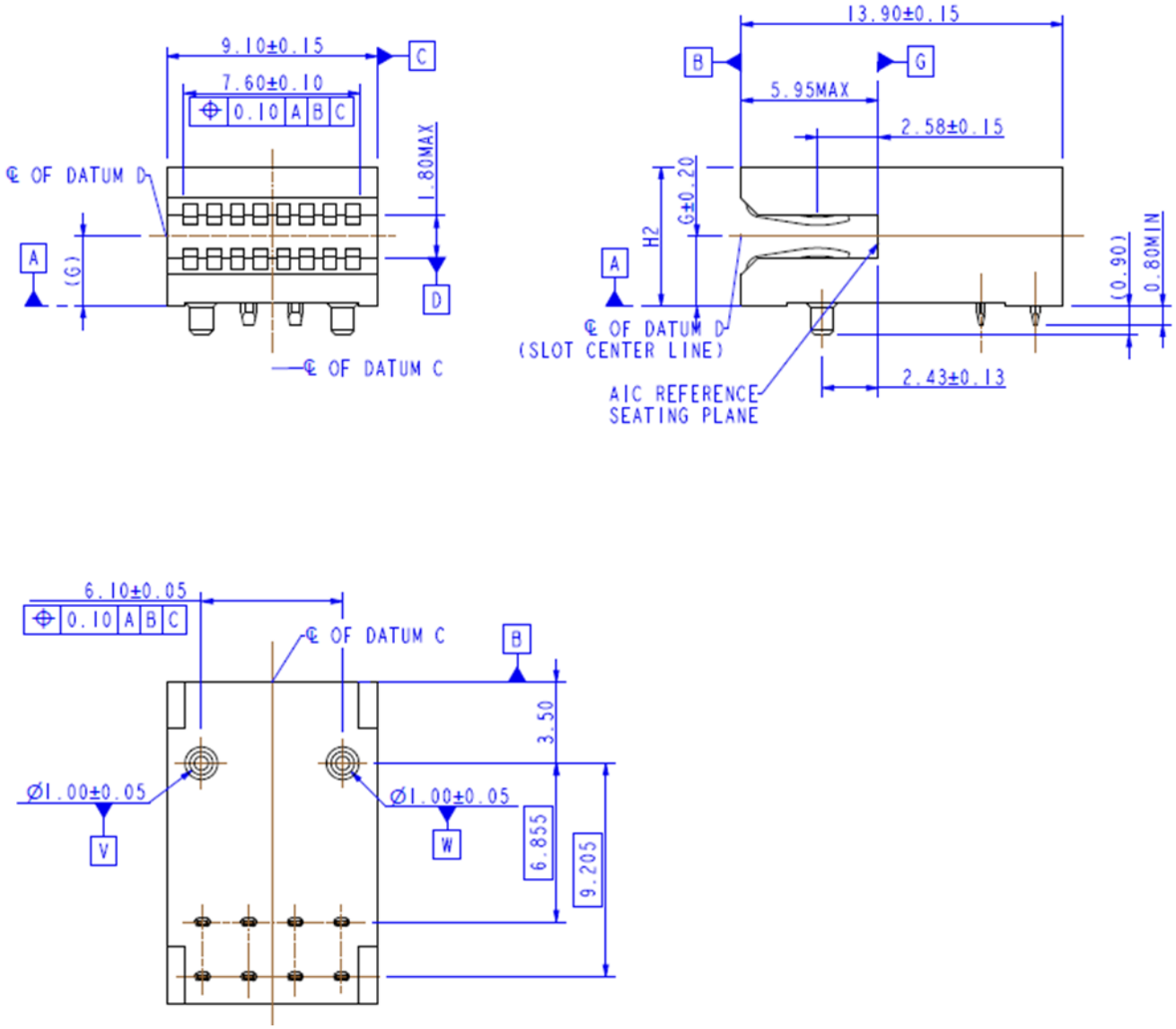


Figure 5-3 Right Angle PMM Power Connector Dimensions

5.3 Mechanical Description: Vertical Connector

5.3.1 Vertical PMM 4C+ EP Connector

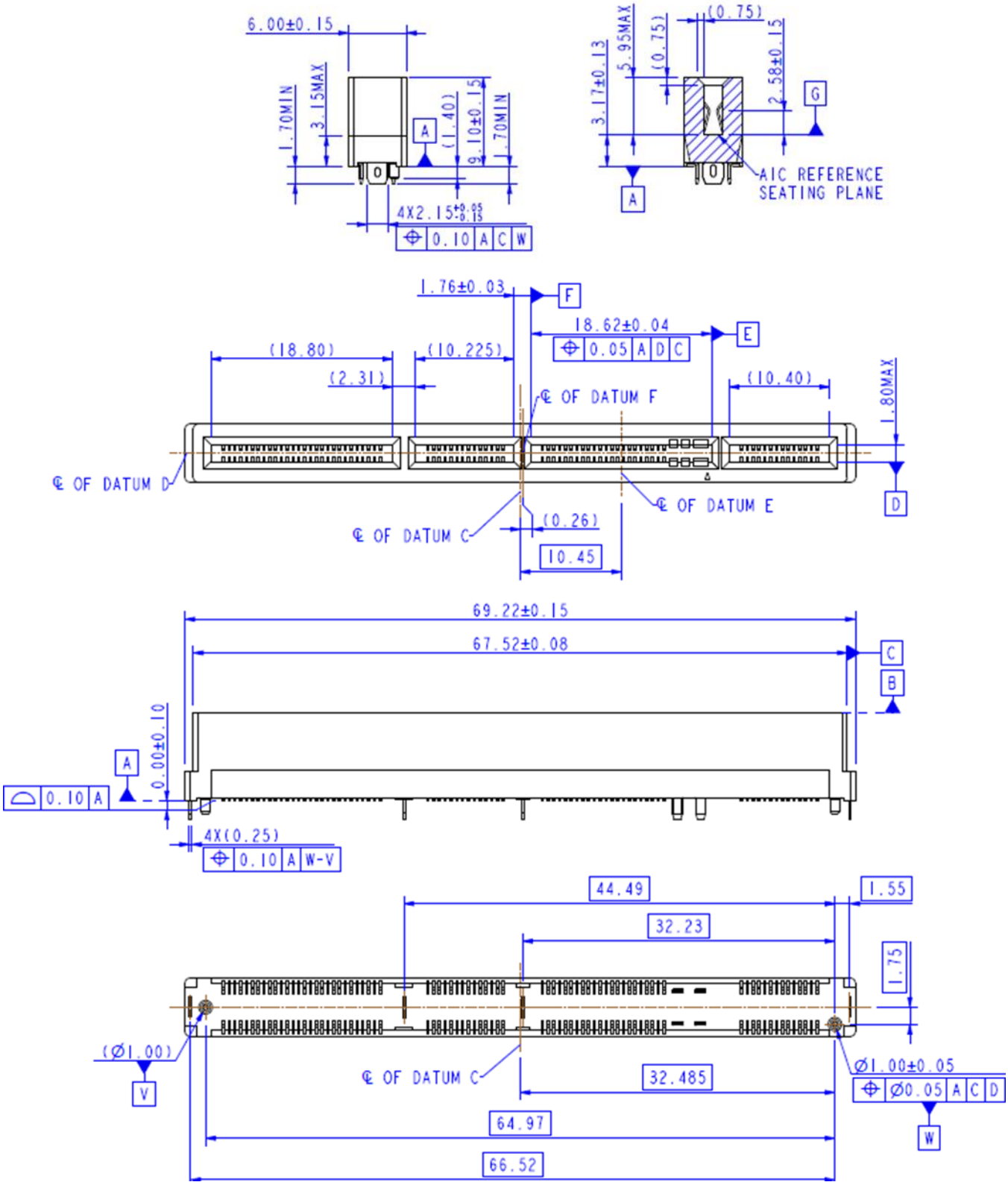


Figure 5-4 PMM 4C+ EP Vertical Connector Dimensions

5.3.2 Vertical PMM x16 108pin Connector

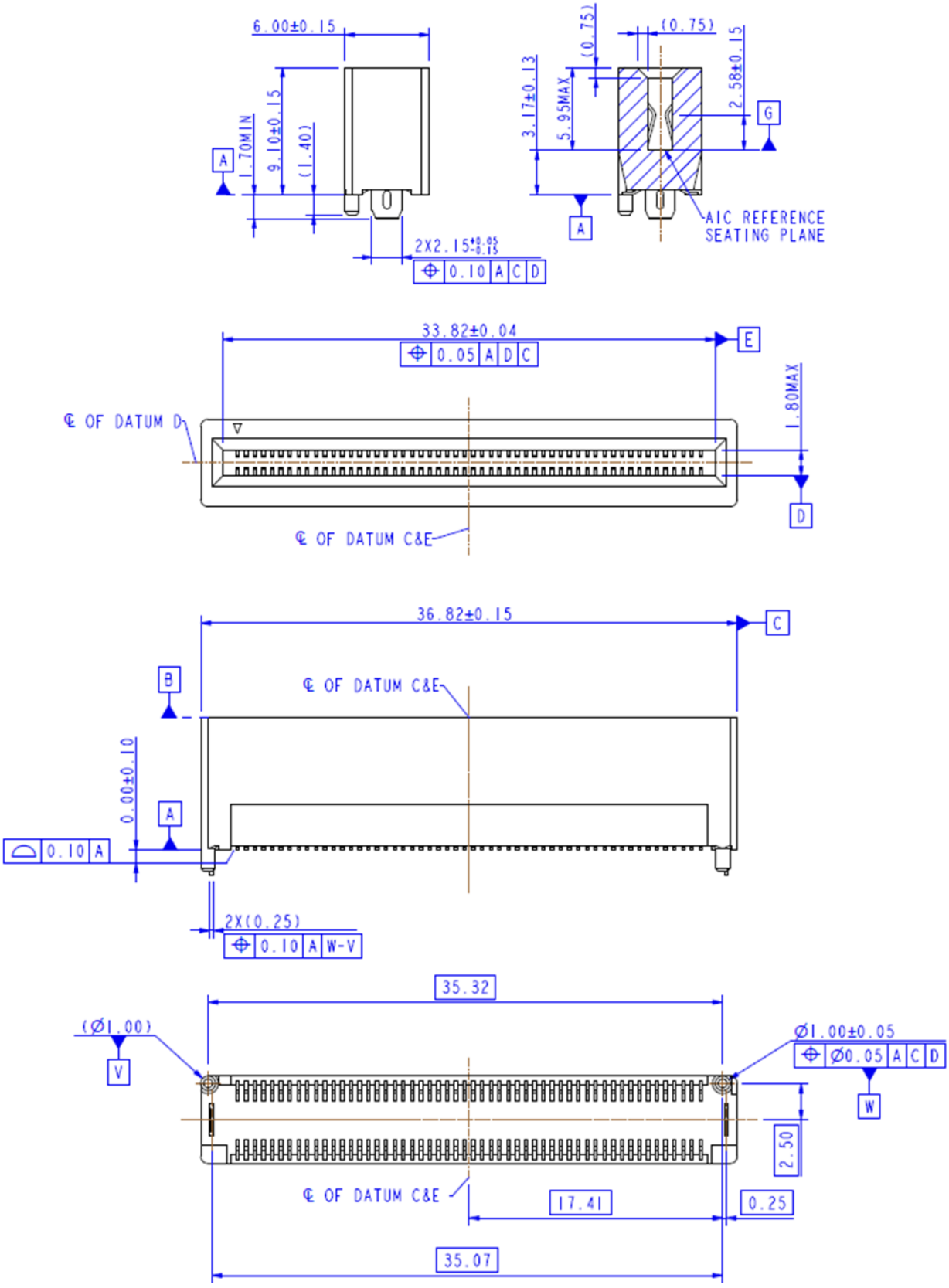


Figure 5-5 Vertical PMM x16 108pin Connector Dimensions

5.3.3 Vertical PMM Power Connector

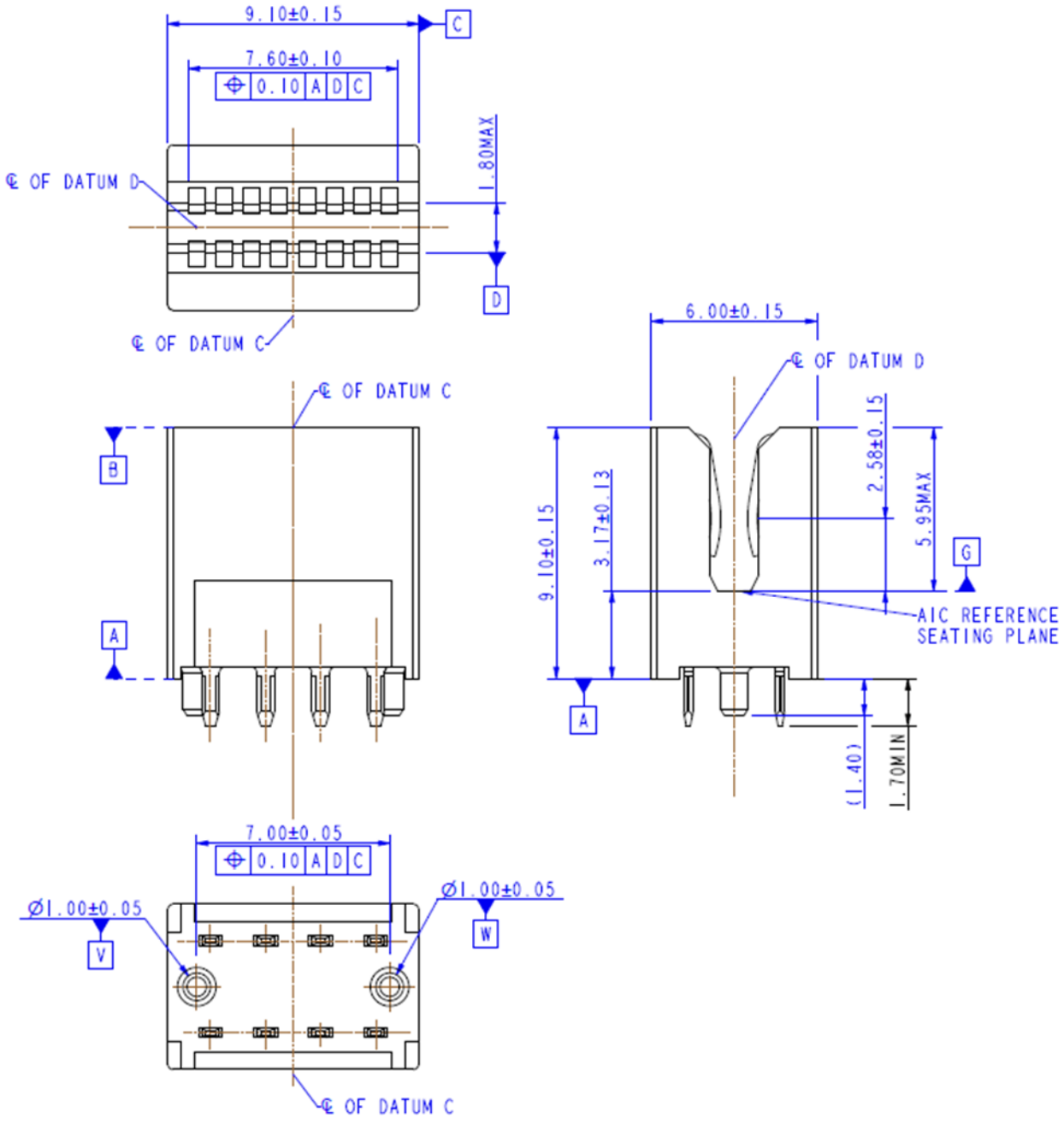


Figure 5-6 Vertical PMM Power Connector Dimensions

5.4 Mechanical Description: Straddle Mount Connector

5.4.1 Straddle Mount PMM 4C+ EP Connector

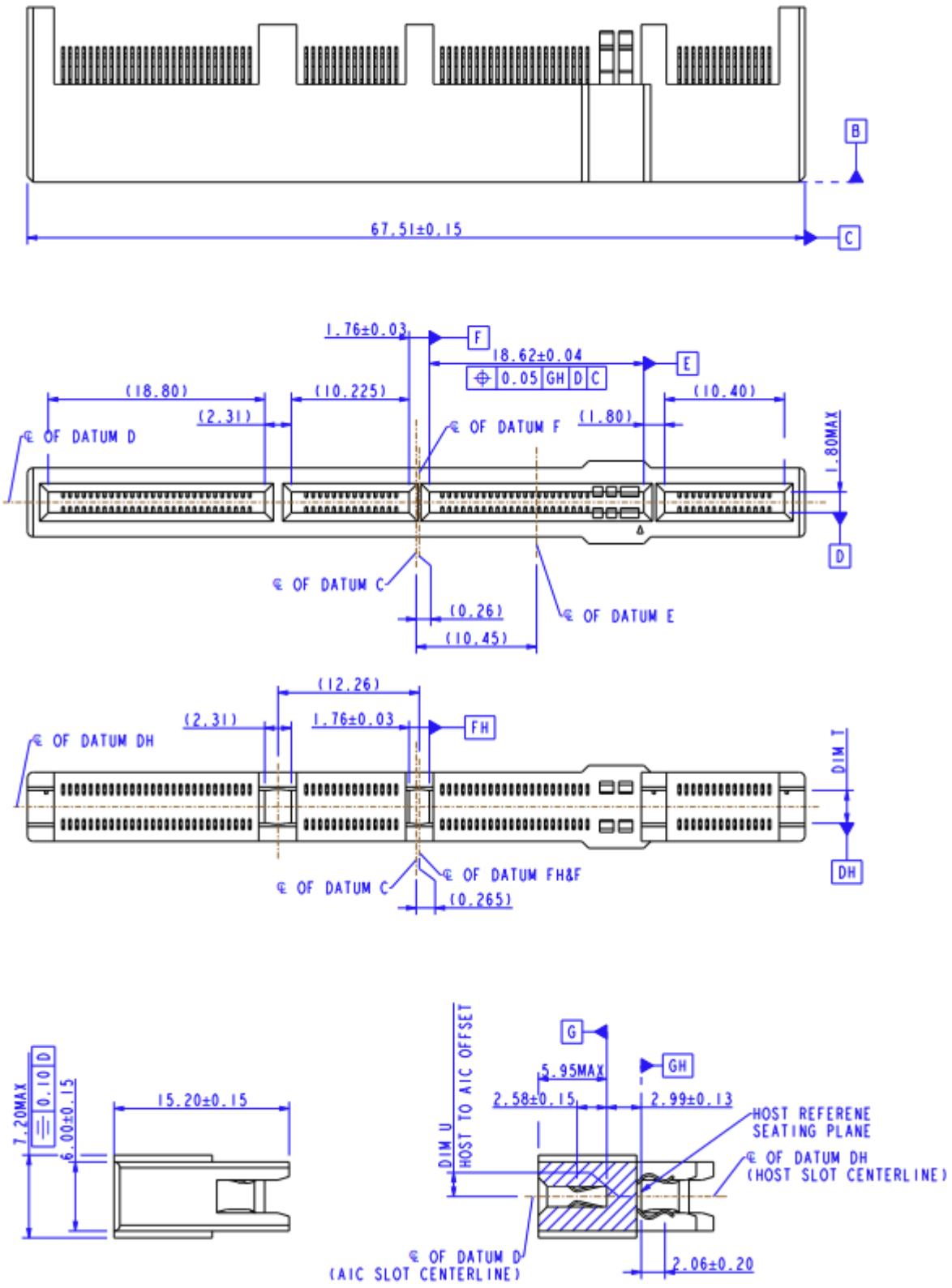


Figure 5-7 Straddle Mount PMM 4C+ EP Connector Dimensions

Table 5-2 Straddle Mount Host Board Thickness and Offset Variants (mm)

DIM T (Host Board Thickness)	DIM U (Offset)
2.36±0.23 (.093″)	0.00 (0.000″)
2.55±0.23 (.100″)	0.00 (0.000″)
3.05±0.23 (.120″)	0.00 (0.000″)

5.4.2 Straddle Mount PMM x16 108pin Connector

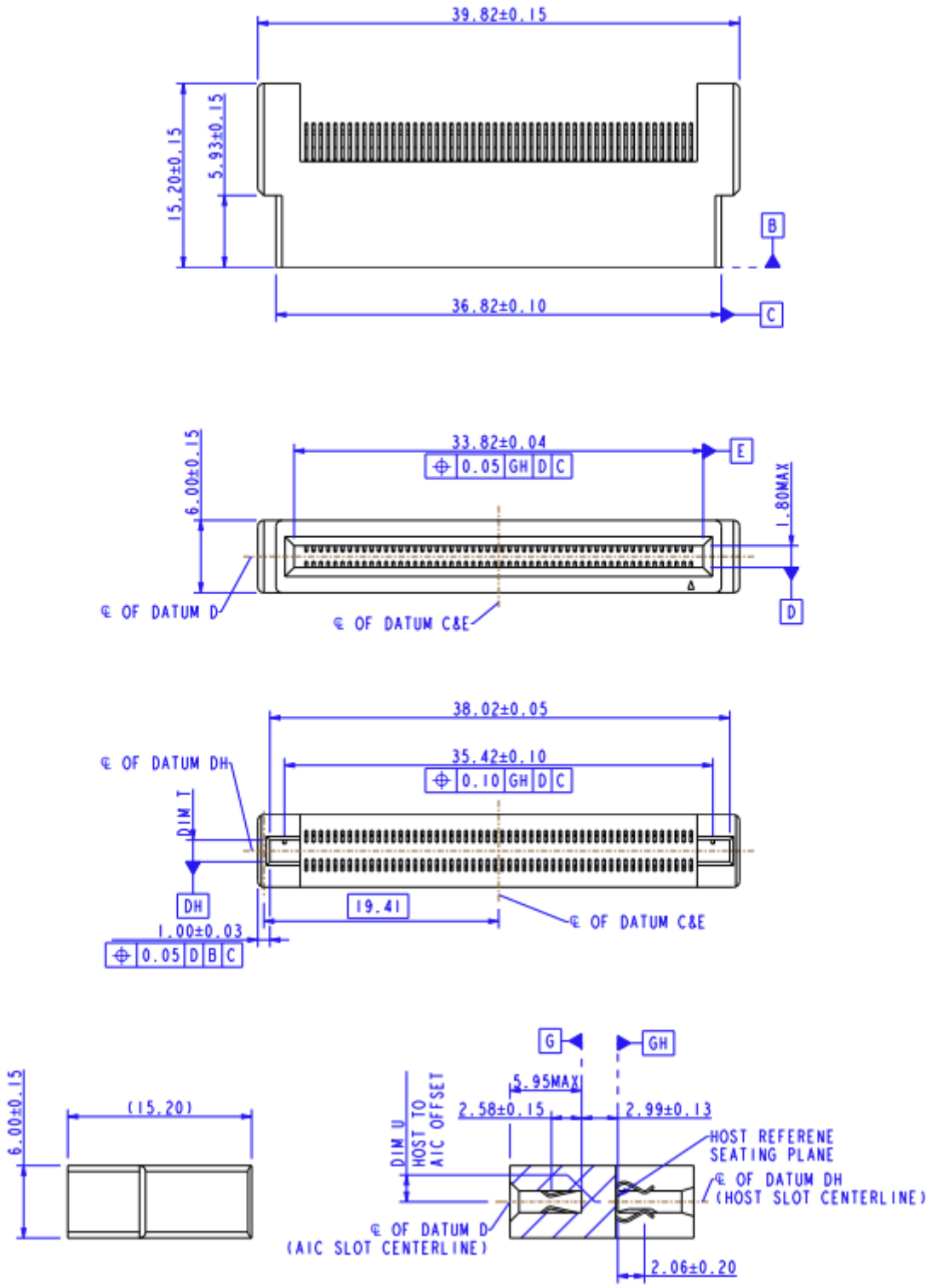


Figure 5-8 Straddle Mount PMM x16 108pin Connector Dimensions

5.4.3 Straddle Mount PMM Power Connector

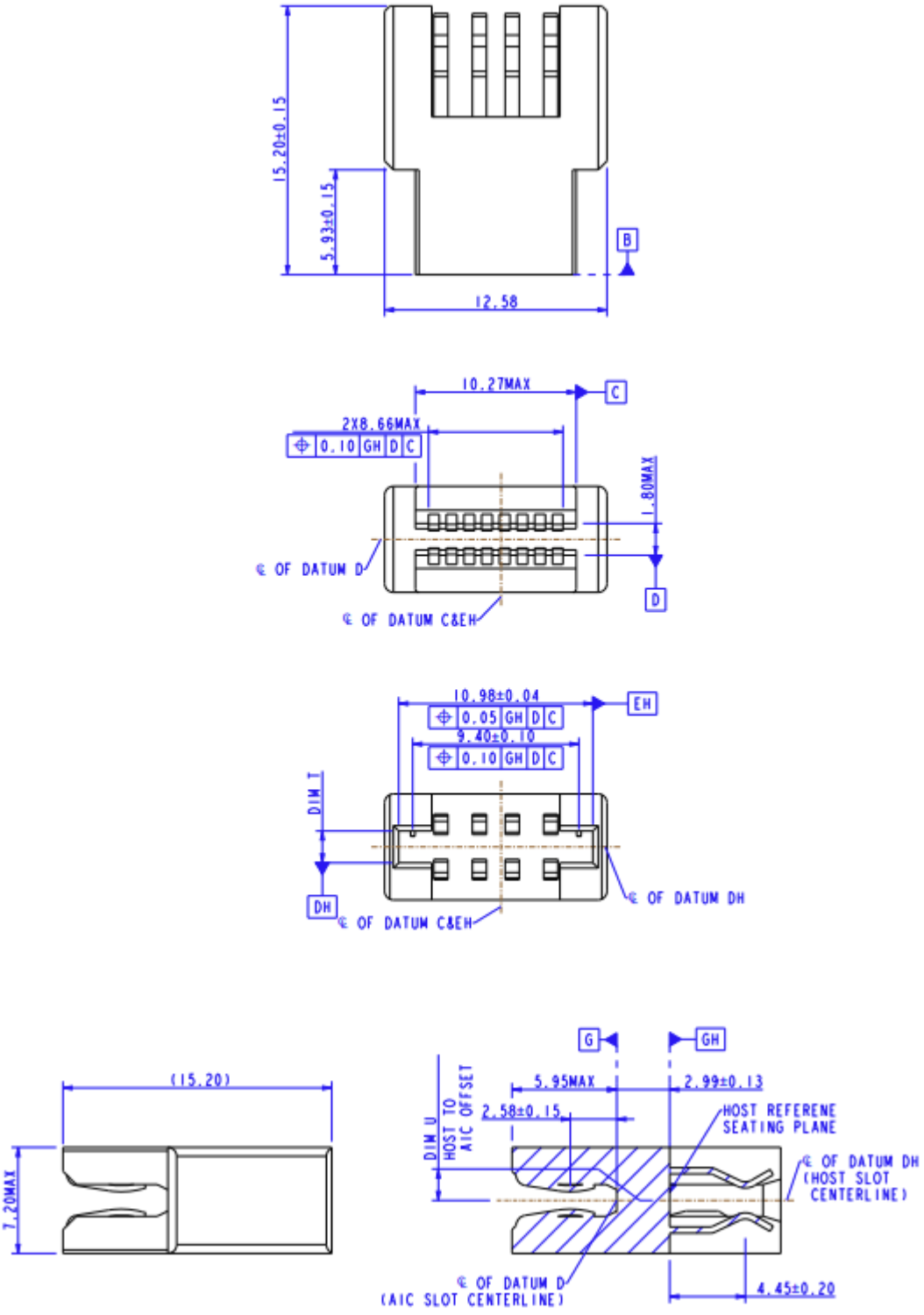


Figure 5-9 Straddle Mount PMM x16 108pin Connector Dimensions

5.5 Mechanical Description: Panel Mount Connector

Panel mount connector is attached to a chassis or a frame in use condition. The mounting feature varies case by case. This section specifies the connector mating interface. It leaves designers to implement the best mounting feature for their applications.

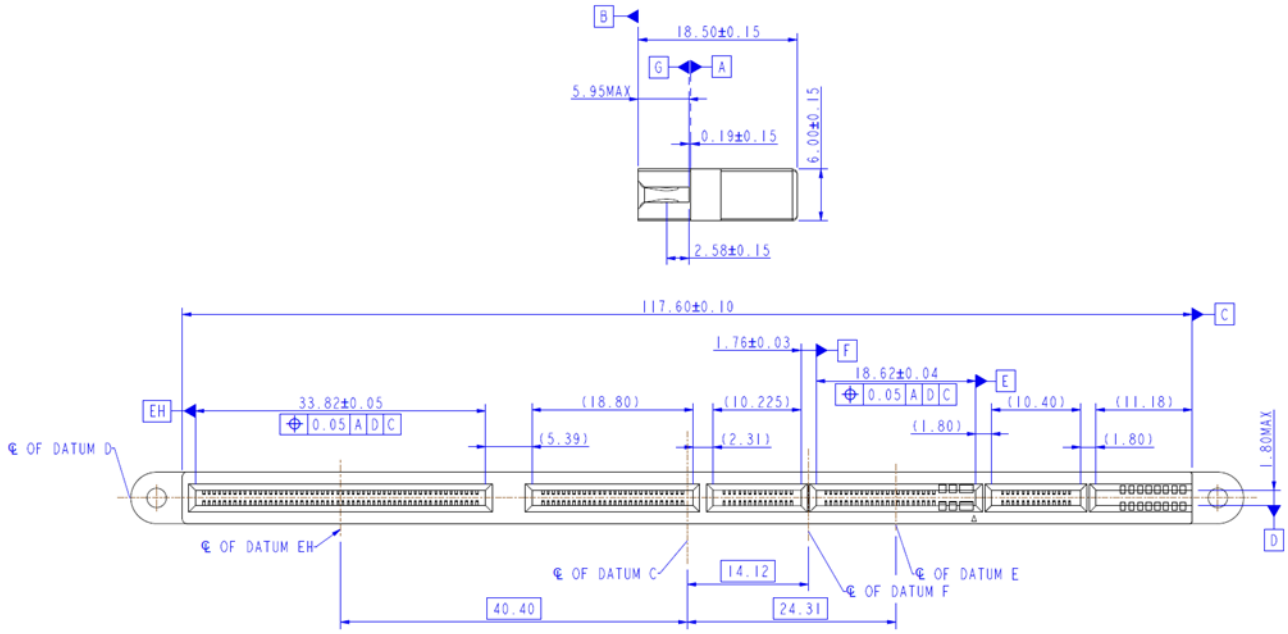


Figure 5-10 Panel Mount PMM Connector Dimensions

5.6 Connector Mating Contacts Outer Locus

The drawings in this section show the outer locus of the connector contacts at the mating interface

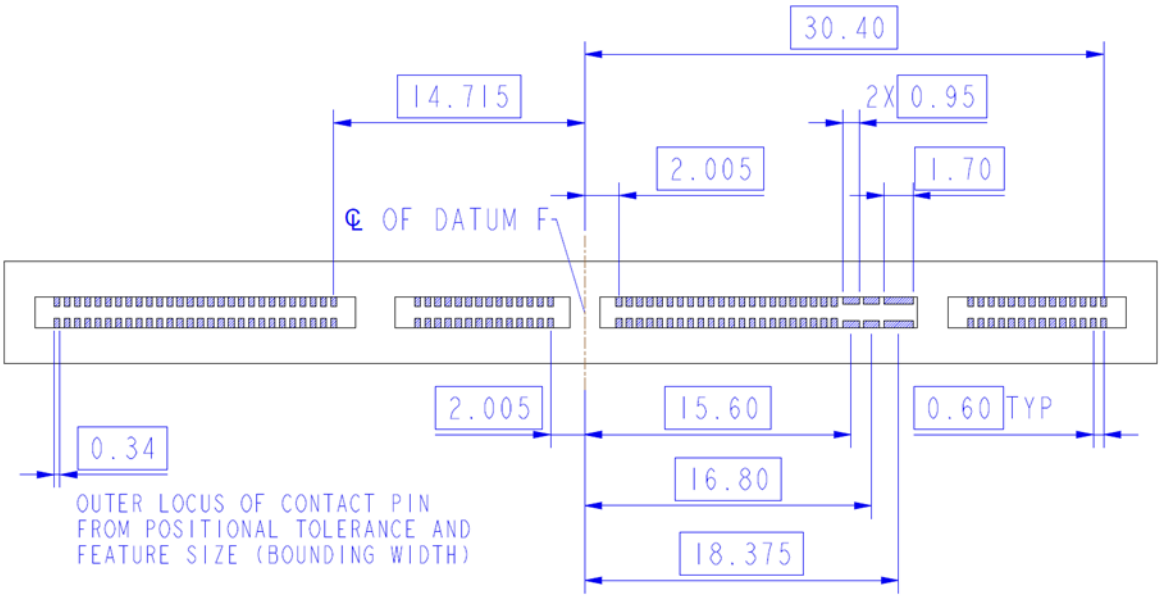


Figure 5-11 Outer Locus of PMM 4C+ EP Connector Mating Contacts

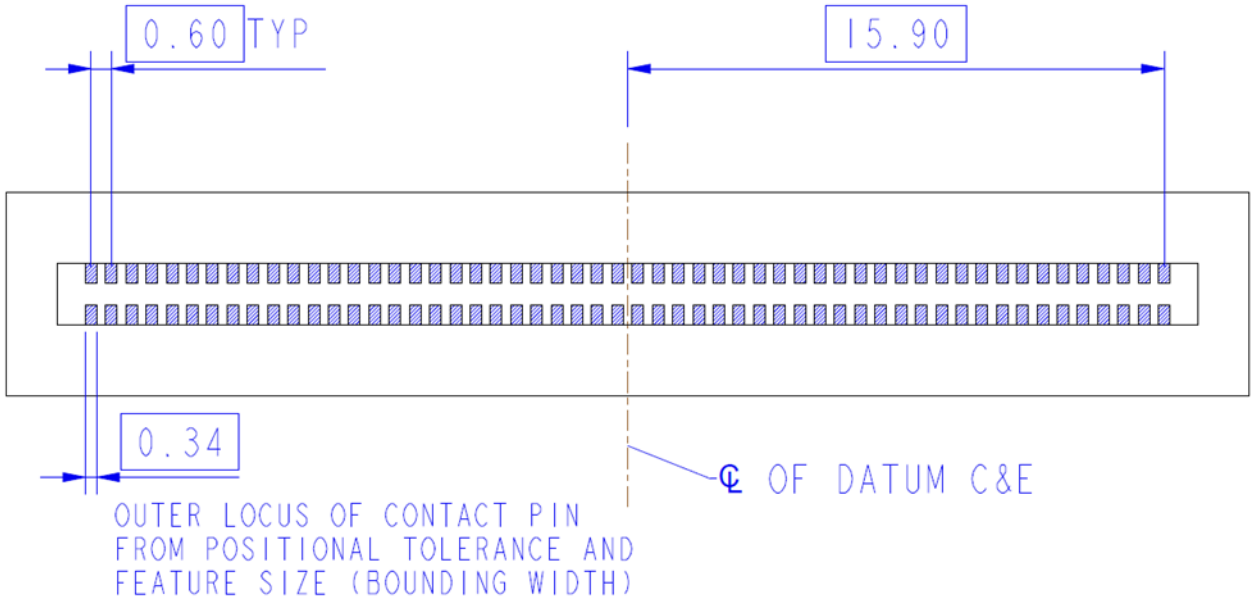


Figure 5-12 Outer Locus of PMM x16 108pin Connector Mating Contacts

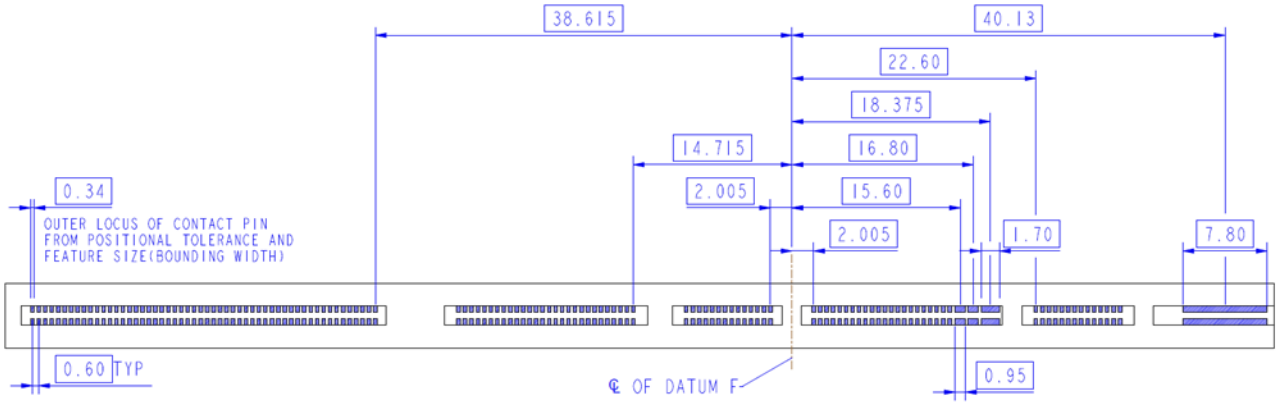


Figure 5-13 Outer Locus of Panel Mount PMM Connector Mating Contacts

5.7 Outer Locus of Connector Solder Leads

The drawings in this section show the outer locus of the connector solder leads that are intended to mate with the applicable PCB footprint pads and plated through holes for receptacle each connector type.

5.7.1 Outer Locus of Vertical Connector Solder Leads

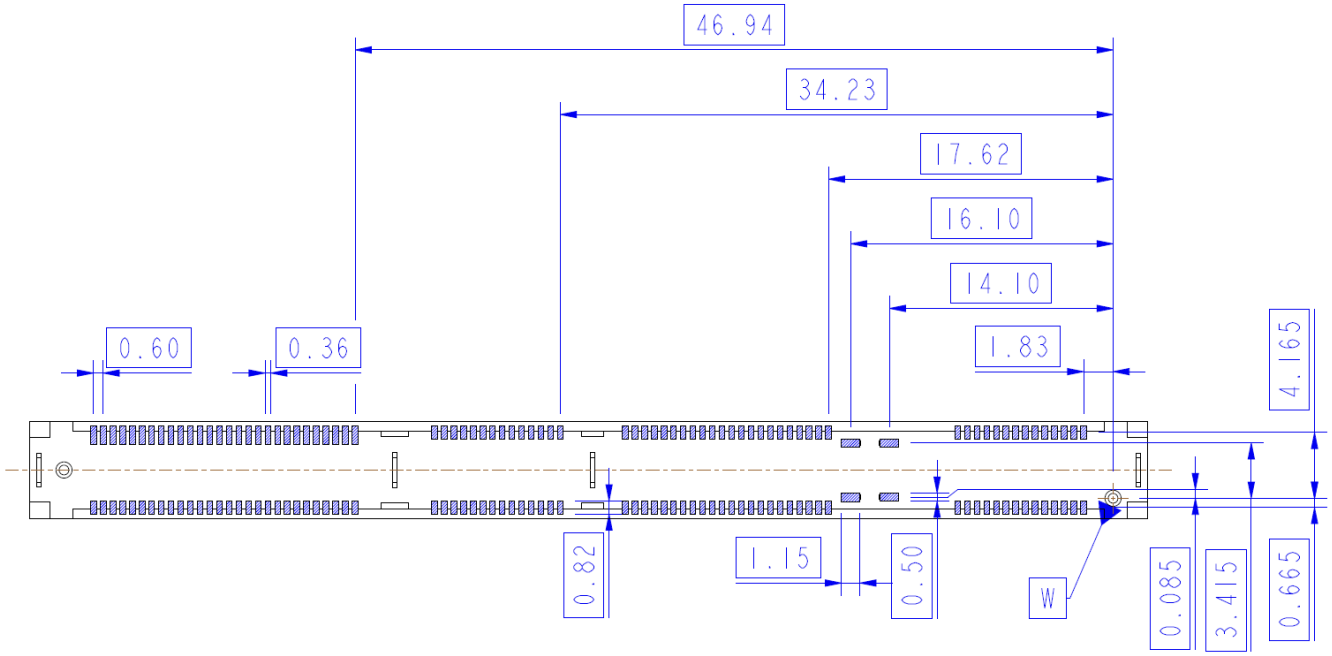


Figure 5-14 Outer Locus of Vertical PMM 4C+ EP Connector SMT leads

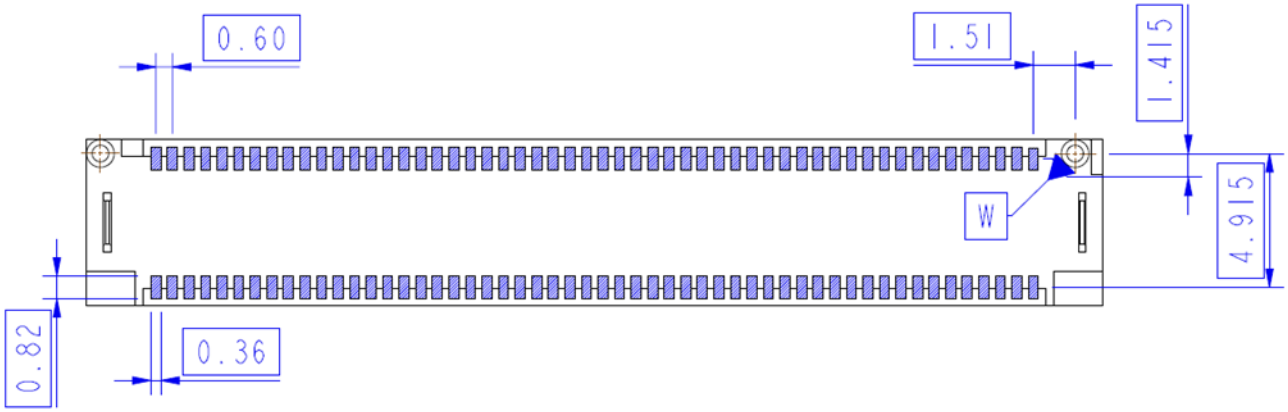


Figure 5-15 Outer Locus of Vertical PMM x16 108pin Connector SMT Leads

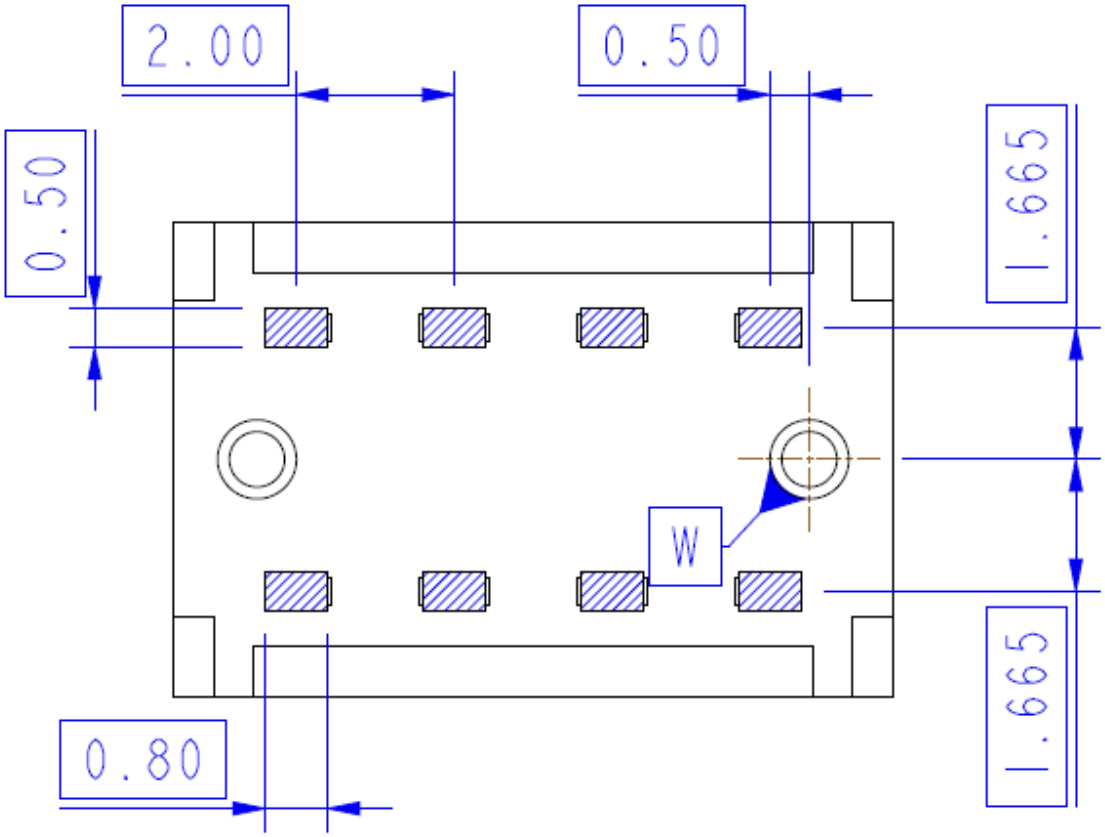


Figure 5-16 Outer Locus of Vertical PMM Power Connector Through Hole Tails

5.7.2 Outer Locus of Right Angle Connector Solder Leads

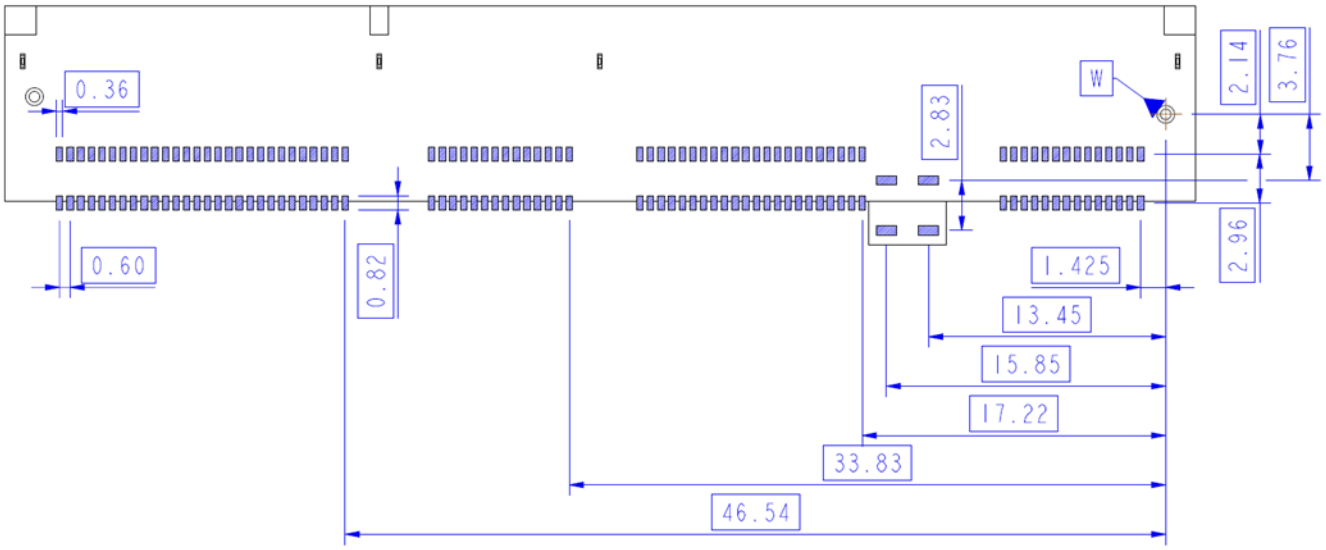


Figure 5-17 Outer Locus of Right Angle PMM 4C+ EP Connector SMT Leads

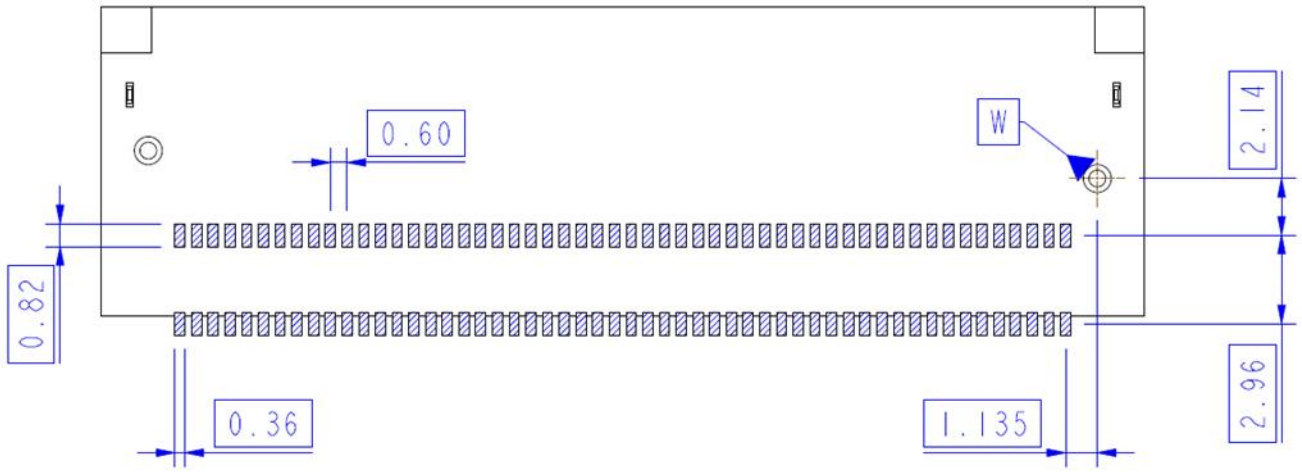


Figure 5-18 Outer Locus of Right Angle PMM x16 108pin Connector SMT Leads

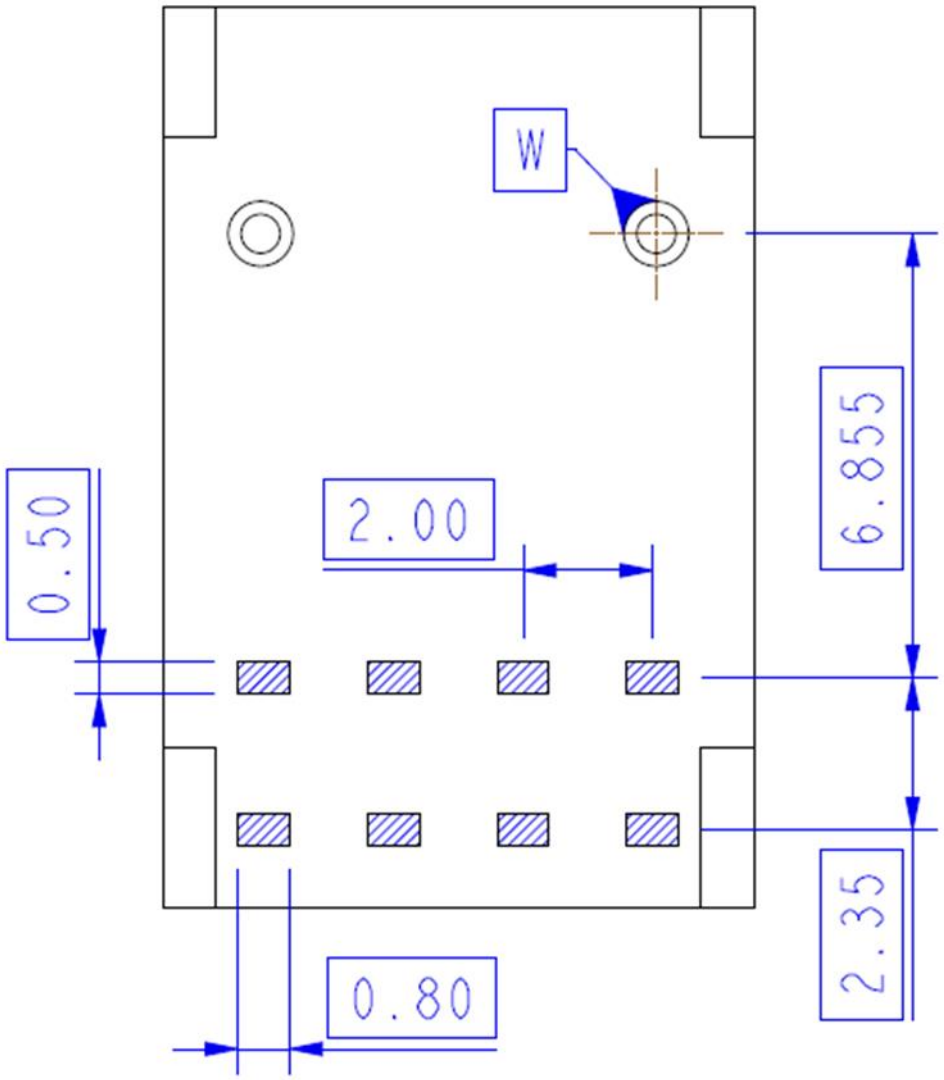


Figure 5-19 Outer Locus of Right Angle PMM Power Connector Through Hole Tails

5.7.3 Outer Locus of Straddle Mount Connector Solder Leads

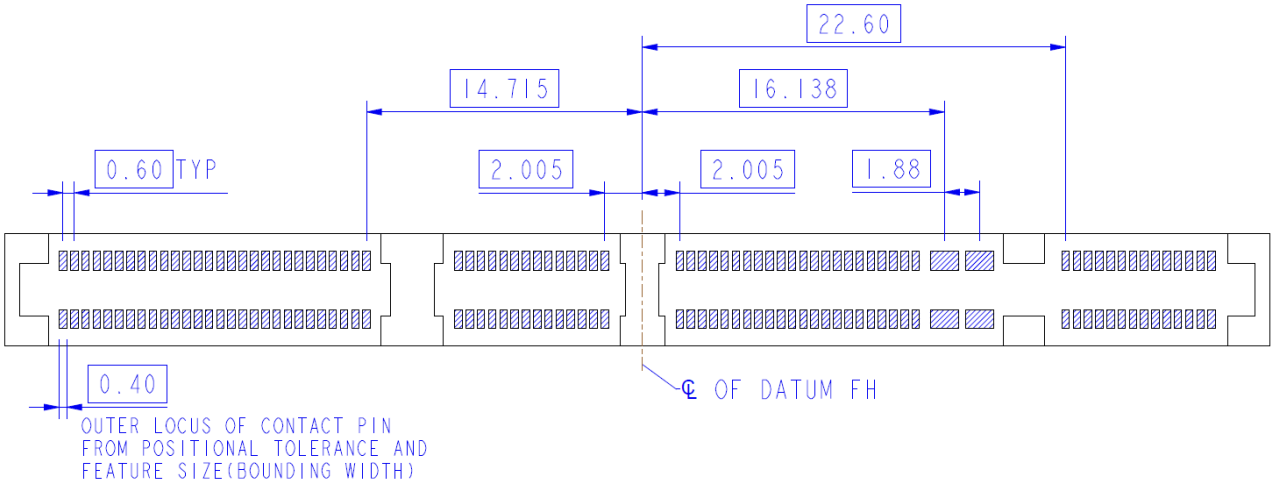


Figure 5-20 Outer Locus of Straddle Mount PMM 4C+ EP Connector SMT Leads

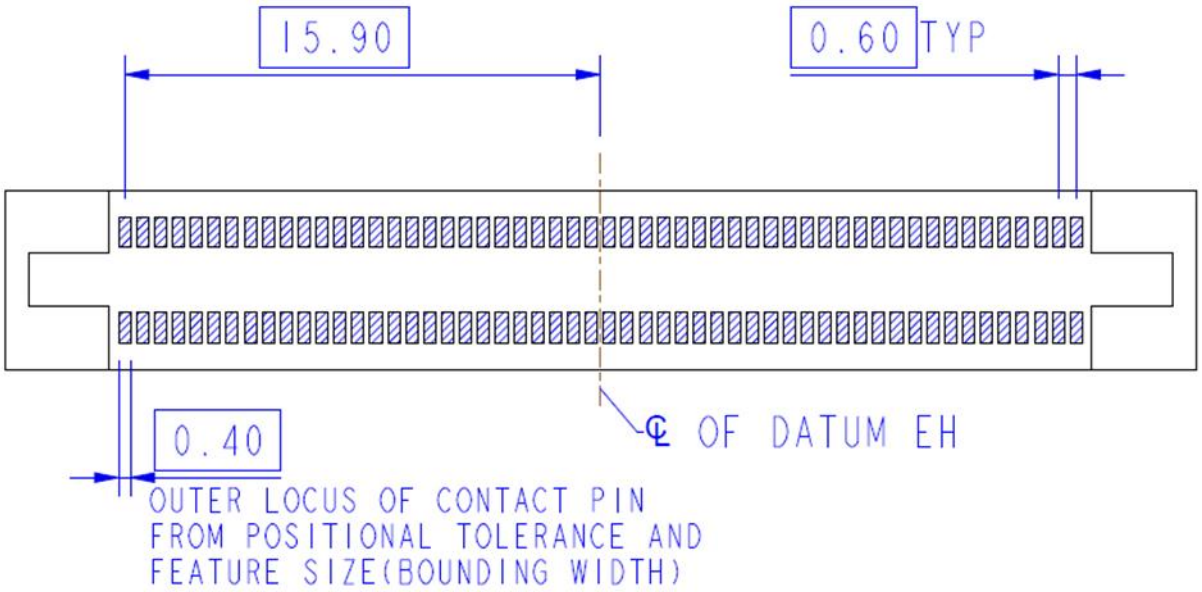


Figure 5-21 Outer Locus of Straddle Mount PMM x16 108pin Connector SMT Leads

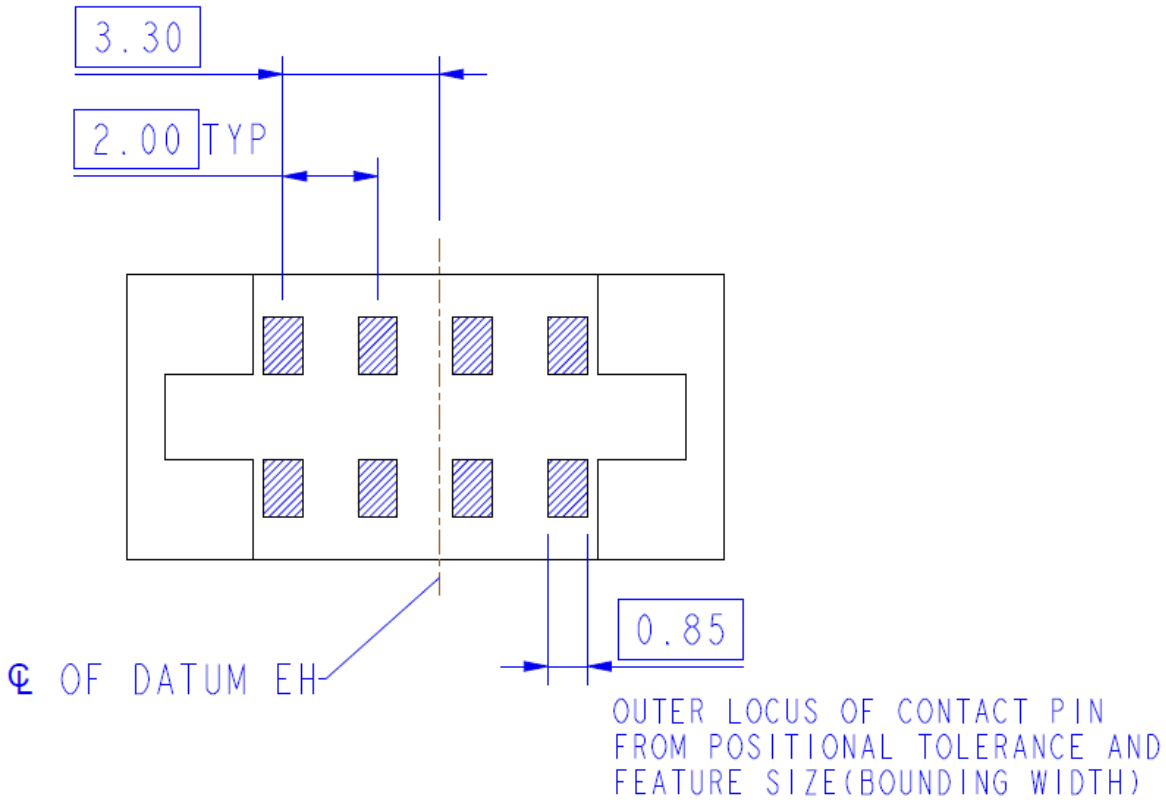


Figure 5-22 Outer Locus of Straddle Mount PMM Power Connector SMT Leads

6. Add-In Card Mechanical Specification

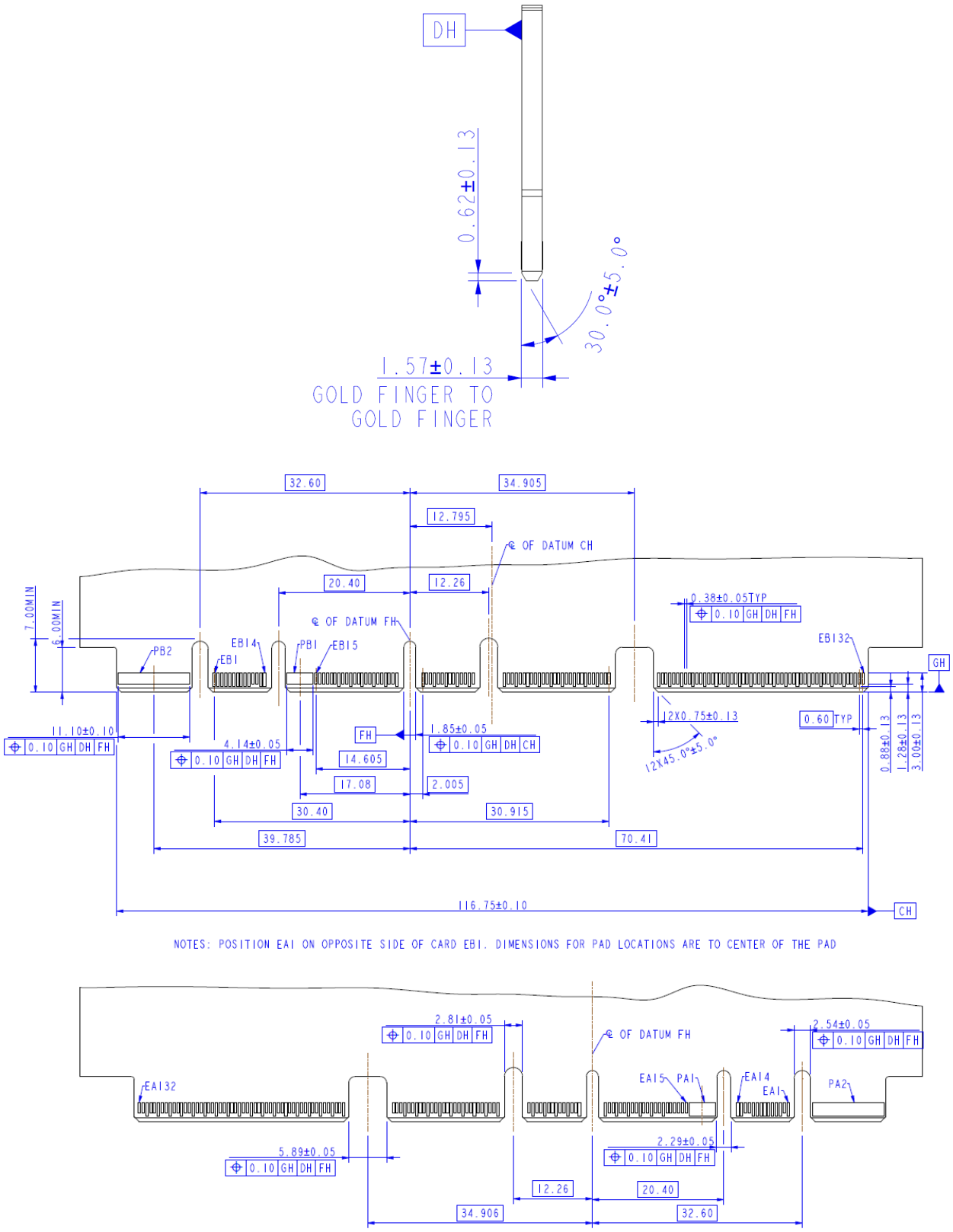


Figure 6-1 Add-In Card Mechanical Dimensions

7. Performance Requirements

7.1 Mechanical Testing and Performance

EIA-364-1000 (TS-1000) shall be used to define the test sequences and procedures for evaluating the connector system described in this document. Where multiple test options are available, the manufacturer shall select the appropriate option where not previously specified. The selected procedure should be noted when reporting data. If there are conflicting requirements or test procedures between EIA-364 procedures and those contained within this document, this document shall be considered the prevailing authority.

Unless otherwise specified, procedures for sample size, data, and collection to be followed as specified in EIA-364-1000. See EIA-364-1000 Annex B for objectives of tests and test groups.

Table 7-1 summarizes the performance criteria that are to be satisfied by the connector described in this document. Most performance criteria are validated by EIA-364-1000 testing, but this test suite leaves some test details to be determined. To ensure that testing is repeatable, these details are identified in Table 7-2. Finally, testing procedures used to validate any performance criteria not included in EIA-364-1000 are provided in Table 7-3.

Refer to Table 7-2 for connector electrical ratings and Table 7-3 for electrical test requirements and procedures.

Table 7-1 Form Factor Performance Requirements

Mechanical Test Description	Procedure	Requirement
Mechanical Requirements		
Rated Durability Cycles	The expected number of durability cycles a component is expected to encounter over the course of its life.	200cycles
Mating Force	Amount of force needed to mate an add-in card with a Connector.	PMM 4C+ EP connector: 1.1 N/pin pair maximum for signal pin, and 14N max for power segment PMM x16 108p connector: 1.1 N/pin pair maximum PMM power connector: 32 N max
Unmating Force	Amount of forced needed to separate an add-in card from a connector.	PMM 4C+ EP connector: 0 .1 N/pin pair minimum for signal pin, 1N min for power segment PMM x16 108p connector: 0.1 N/pin pair minimum PMM power connector: 2N min
Environmental Requirements		
Field Life	The expected service life for a component	7 years
Field Temperature	The expected service temperature for a component	-40°C to +85°C
Storage Temperature*	The expected storage temperature for a component when not in use	-20°C to +80°C
Storage Humidity*	The expected storage humidity for a component when not in use	80% Relative Humidity
Electrical Requirements		

Mechanical Test Description	Procedure	Requirement
Current*	Maximum current to which a contact is exposed in use	PMM 4C+ EP connector: 17A per power pin; 1.1A per signal pin. PMM x16 108pin connector: 1.1A per pin PMM power connector: 34A per power pin
Operating* Rating Voltage	Maximum voltage to which a contact is exposed in use	29V DC per contact MAX
NOTE: Performance criteria denoted with stars (*) are not validated by EIA-364-1000 testing. Refer to **Table 7-3** for test procedures and pass/fail criteria.		

Table 7-2 describes the details necessary to perform the tests described in the EIA-364-1000 test sequences. Testing shall be done in accordance with EIA-364-1000 and the test procedures it identifies in such a way that the parameters/ requirements defined in Table 7-1 are met. Any information in this table supersedes EIA-364-1000.

Table 7-2 EIA-364-1000 Test Details

Test	Test Descriptions and Details	Pass/ Fail Criteria
Mechanical/ Physical Tests		
Durability (preconditioning)	EIA-364-09 Use appropriate AIC. Perform required cycles for connector grade required per the table below. Plug and unplug cycles at a rate of 25.4 mm/minute, replace mating card after 25 cycles	No evidence of physical damage
Durability (see Note 1)	EIA-364-09 Use appropriate AIC. Perform required cycles for connector grade required per the table below. Plug and unplug cycles at a rate of 25.4 mm/minute, replace mating card after 25 cycles	No evidence of physical damage
Mechanical Shock	EIA-364-27, Test Condition A Alternately, for DIMM applications, Trapezoidal shock 50 G, ± 10% Duration 11 ms Velocity change 170 inch/sec, ± 10% Three drops in each of six directions are applied to each of the samples Shock and Vibration board design should have proper footprint to mate to the connector and test equipment and not produce resonances across the test frequency profile.	Electrical, mechanical and environmental criteria
Vibration	EIA-364-28 Test Condition D Random profile: 5 Hz @ 0.01 g2/Hz to 20 Hz @ 0.02 g2/Hz (slope up) 20 Hz to 500 Hz @ 0.02 g2/Hz (flat) Input acceleration is 3.13 g RMS 10 minutes per axis for all 3 axes on all samples Random control limit tolerance is ± 3 dB Shock and Vibration board design should have proper footprint to mate to the connector and test	No discontinuities of ≥ 1 microsecond electrical, mechanical and environmental criteria

Test	Test Descriptions and Details	Pass/ Fail Criteria
	equipment and not produce resonances across the test frequency profile.	
Reseating	Manually unplug/plug the connector. Perform 3 cycles	No evidence of physical damage
Environmental Tests		
Temperature Life **Temperature Life (Preconditioning)**	EIA-364-17, Method A (without electrical load) Test Temperature and Test Duration per EIA 364-1000 Table 8	Electrical, mechanical and environmental criteria
Cyclic Temperature and Humidity	EIA-364-31B, Method III without conditioning, initial measurements, cold shock and vibration. Ramp times should be 0.5 hour and dwell times should be 1.0 hour. Dwell times start when the temperature and humidity have stabilized within specified levels, perform 24 cycles in mated condition.	Electrical, mechanical and environmental criteria
Thermal Shock	EIA-364-32, Method A, Table 2, Test Condition 1 -55 °C to 85 °C, perform 5 cycles in mated condition	Electrical, mechanical and environmental criteria
Thermal Disturbance	EIA-364-1000 Cycle the connector between 15 ±3 °C and 85 ±3 °C, as measured on the part. Ramps should be a minimum of 2 °C/minute. Dwell times should ensure that the contacts reach the temperature extremes (a minimum of 5 minutes), humidity is not controlled; perform 10 cycles in mated condition.	Electrical, mechanical and environmental criteria
Mixed Flowing Gas (see Note 2)	EIA-364-65 Class IIA, Option 4 Expose all specimens in the mated condition for the total mixed flowing gas exposure duration per EIA-364-1000 Table 4.	Electrical, mechanical and environmental criteria
Electrical Tests		
Low Level Contact Resistance (see Note 3)	EIA-364-23 20 mV DC MAX, 100 mA MAX (termination of connector to board carrier shall be included in the measurements	15 mΩ MAX change from baseline
Dielectric Withstanding Voltage	EIA 364-20 Method B Test between adjacent contacts of unmated connector assemblies. Voltage: 300 VAC, Current leakage: 0.5 mA max. Note: This specification intentionally deviates from EIA 364-20 standard procedure.	1 minute hold with no breakdown or flashover
Insulation Resistance	EIA 364-21 After 100 VDC for 1 minute, measure the insulation resistance between the adjacent contacts of unmated connector assemblies.	1,000 MΩ minimum.

NOTES:

1. If the durability requirement on the connector is greater than that of the module, modules may be replaced after their specified durability rating.
2. Test option, temperature, duration must be reported.
3. The first low level contact resistance reading in each test sequence is used to determine a baseline measurement. Subsequent measurements in each sequence are measured against this baseline.

Table 7-3 describes the testing procedures necessary to validate performance criteria not validated by EIA-364-1000 testing. The tests are to be performed in such a way that the parameters/ requirements defined in Table 7-1 are met.

Table 7-3 Additional Test Procedures

Test	Test Descriptions and Details	Pass/ Fail Criteria
Mechanical/ Physical Tests		
Mating Force	EIA-364-13 Axial Tension/Compression machine such as an Instron Tensile Tester. Rate: 25.4 mm/min. A gauge or AIC manufactured to the maximum thickness shall be used for testing purposes.	Refer to Table 7-1 -AND- No physical damage to any components
Unmating Force	EIA-364-13 Axial Tension/Compression machine such as an Instron Tensile Tester. Rate: 25.4 mm/min. A gauge or AIC manufactured to the maximum thickness shall be used for testing purposes.	
Insertion Force (Connector to Board)	EIA-364-05 Axial Tension/Compression machine such as an Instron Tensile Tester.	
Environmental Tests		
Storage Temperature	EIA-364-32 Method A, Test Condition 1, Duration 4 Use min and max Field Temperatures listed in Table 7-1 for temperature range	Refer to Table 7-1
Storage Humidity	EIA-364-31	Refer to Table 7-1
Electrical Tests		
Current Rating	EIA-364-70 Method 3, 30-degree temperature rise Test fixture design reference is shown in Appendix C	Refer to Table 7-1 for current magnitude

8. Electrical Characteristics

Refer to *SFF-TA-1002 Card Edge multilane protocol agnostic connector specification* for high-speed performance requirements for the connectors.

Appendix A. System Mechanical Specification (Informative)

A.1 Overview

All material within this section, whether defined as normative or informative, is subject to IP disclosure and RAND terms by SNIA SFF TA TWG member companies.

A.2 PCB Layout

A.2.1 Recommended PCB Layout for Right Angle Connector Footprints

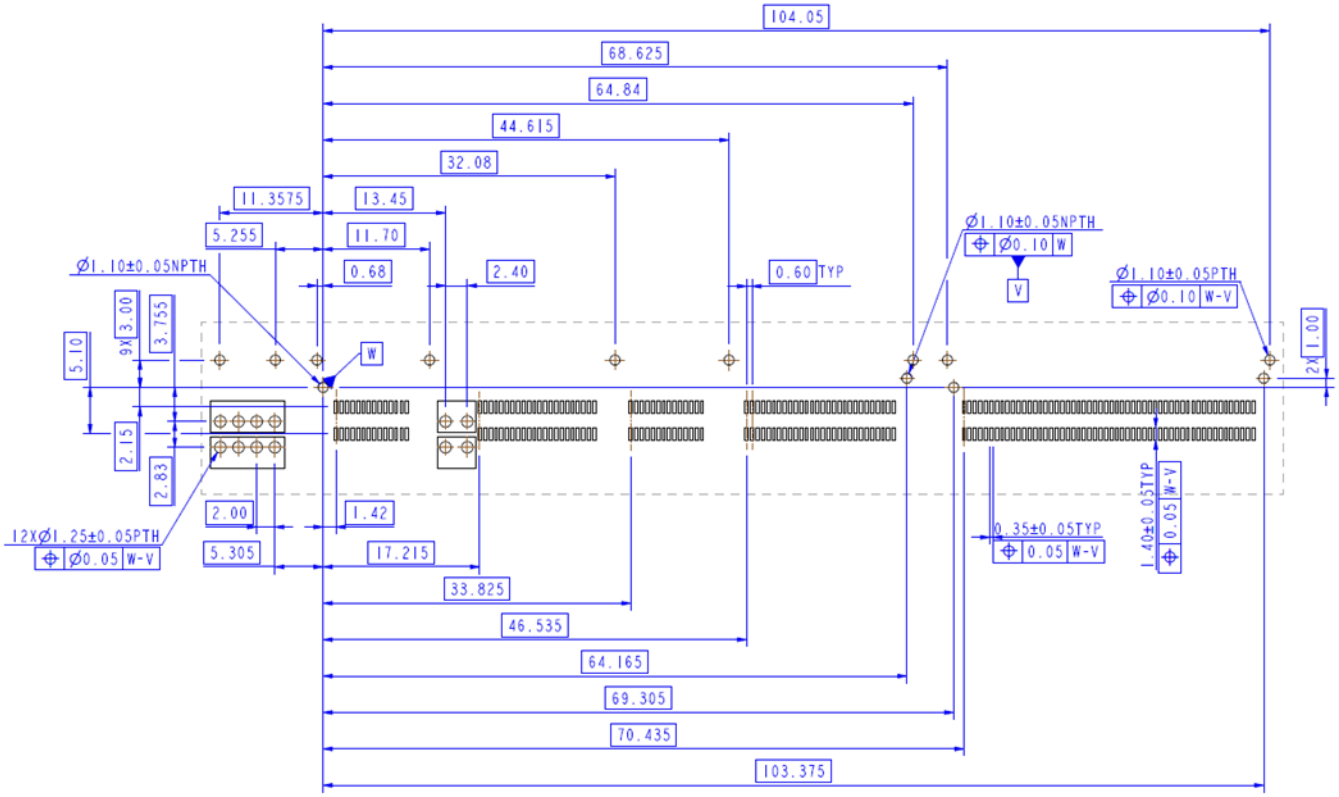


Figure A-1 Recommended Footprints for Right Angle Connector

A.2.2 Recommended PCB Layout for Vertical Connector Footprints

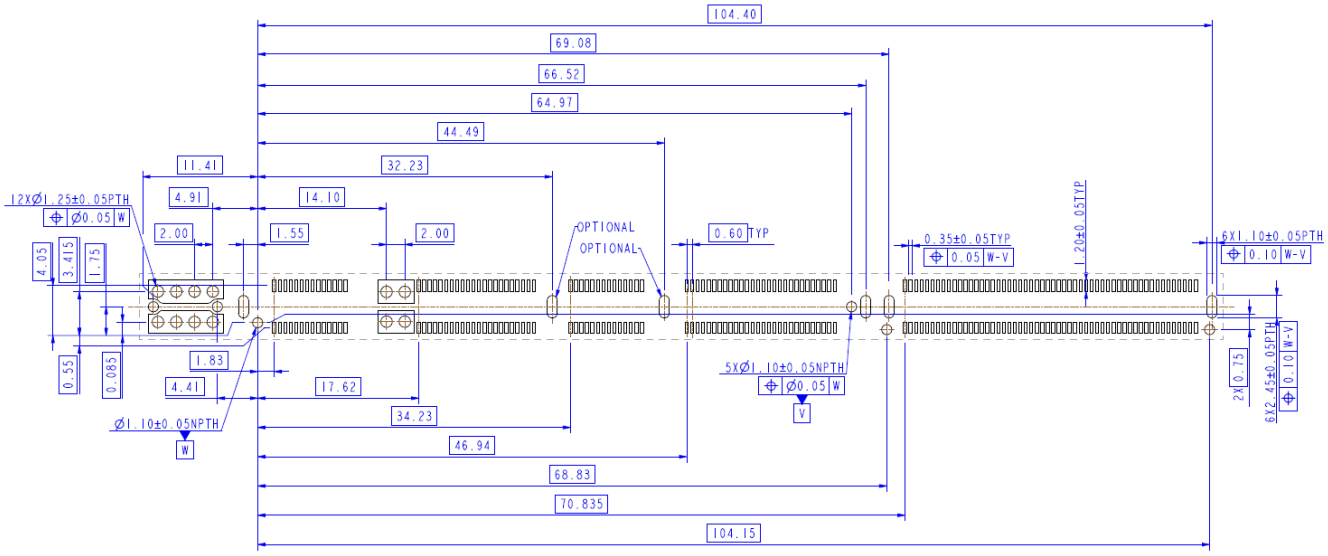


Figure A-2 Recommended Footprint for Vertical Connector

A.2.3 Recommended PCB Layout for Straddle Mount Connector Footprints

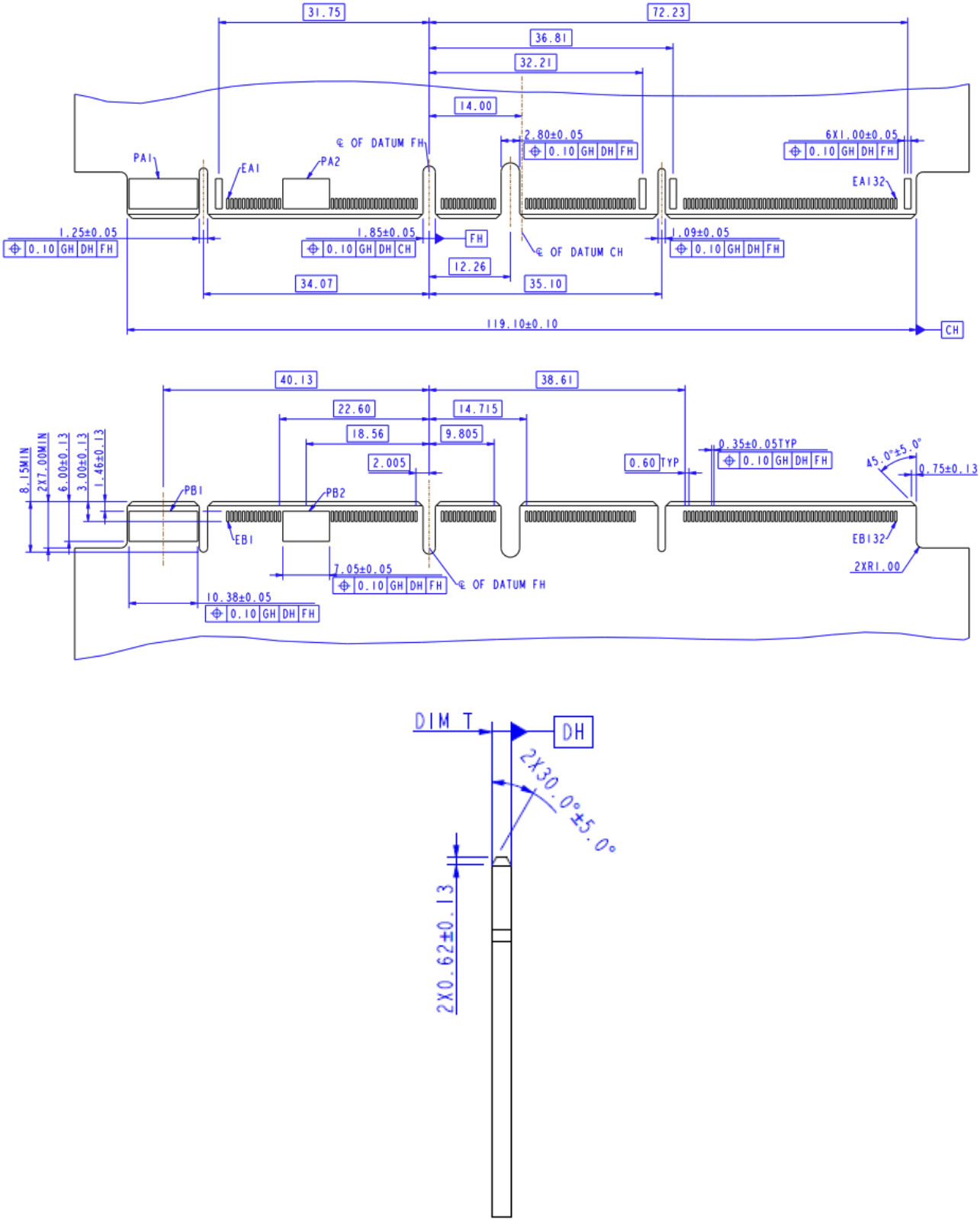


Figure A-3 Recommended Footprint for Straddle Mount Connector

Appendix B. Gatherability (Informative)

The figures in the section show a representation of the linear and angular gatherability of the connectors.

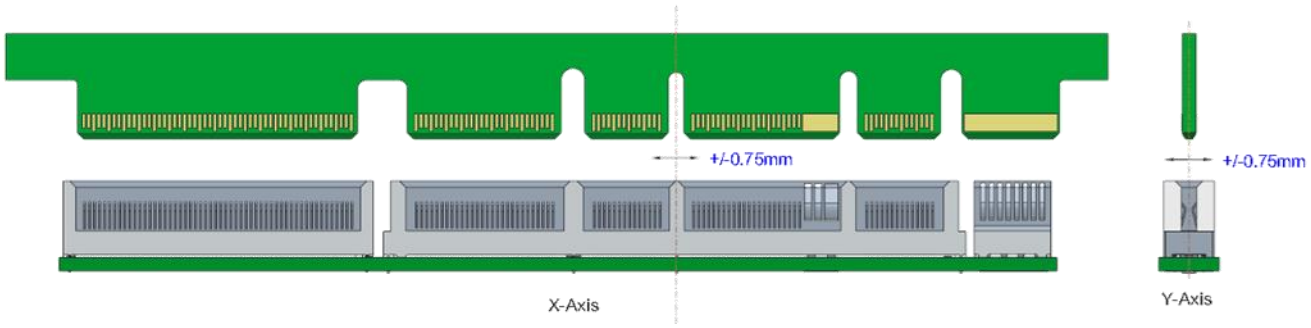


Figure B-1 Linear Gatherability

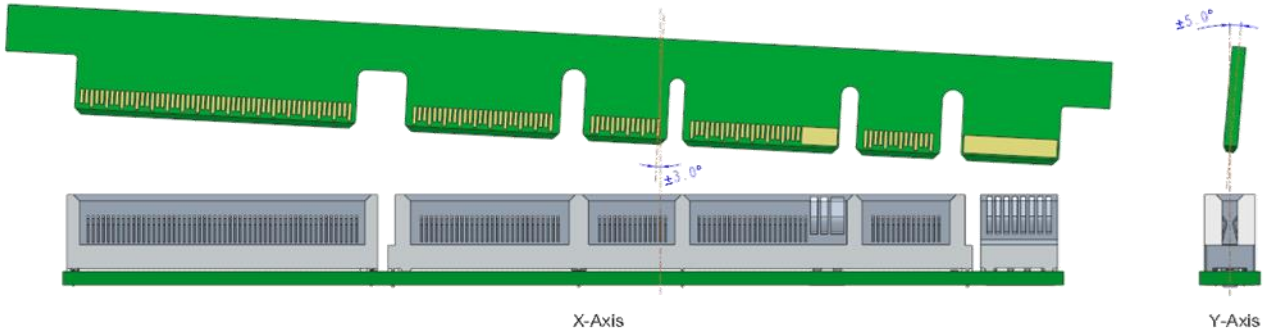


Figure B-2 Angular Gatherability

Appendix C. Current Rating Test Fixture (Informative)

The test board needs to have sufficient copper thickness and area to carry the required current. Figure C-1 and C-2 show an example of current rating test board PCB layer stack and size of power/ground patch for PMM add-in card. Figure C-3 and C-4 show an example of current rating test board PCB layer stack up and size of power/ground patch for PMM host board.

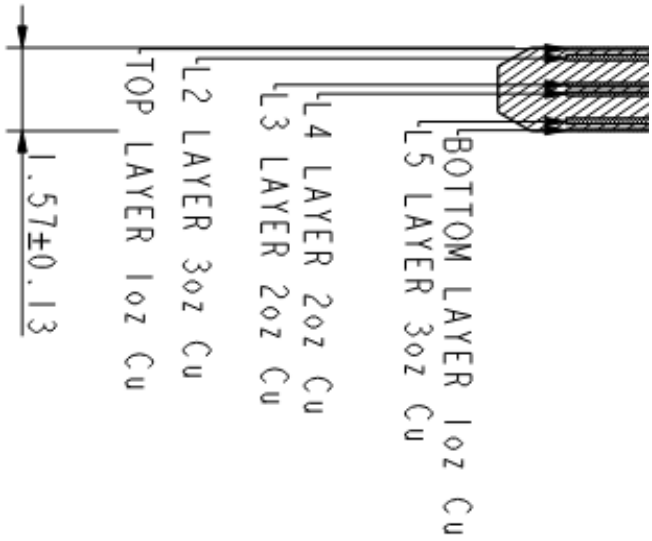


Figure C-1 An Example of PMM Module Current Rating Test Board PCB Layer Stack

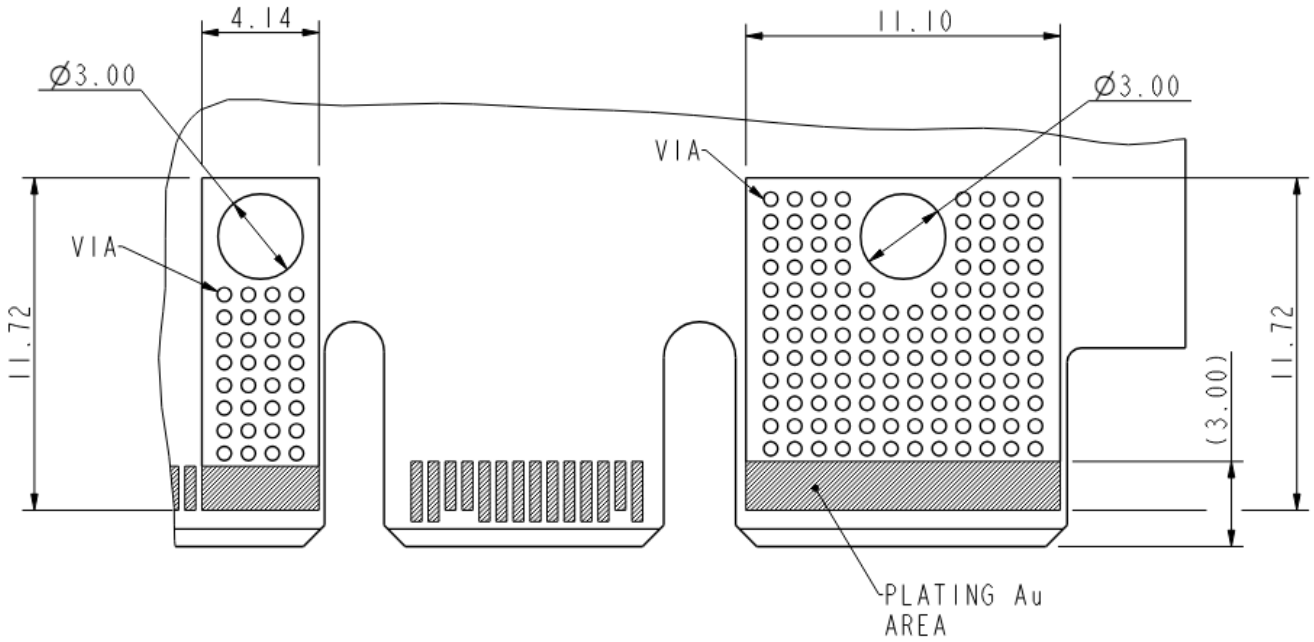


Figure C-2 An Example of PMM Module Current Rating Test Board Copper Patch

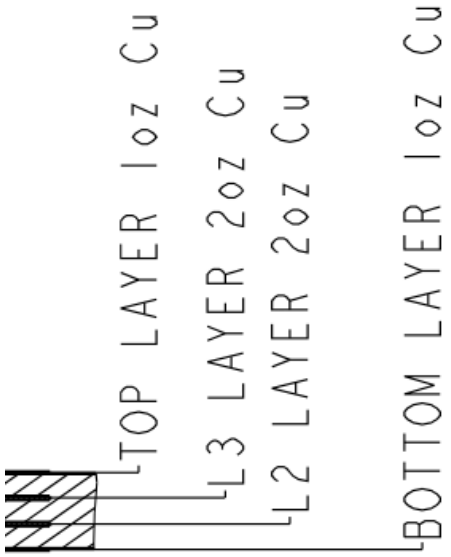


Figure C-3 An Example of PMM Host Current Rating Test Board PCB Layer Stack

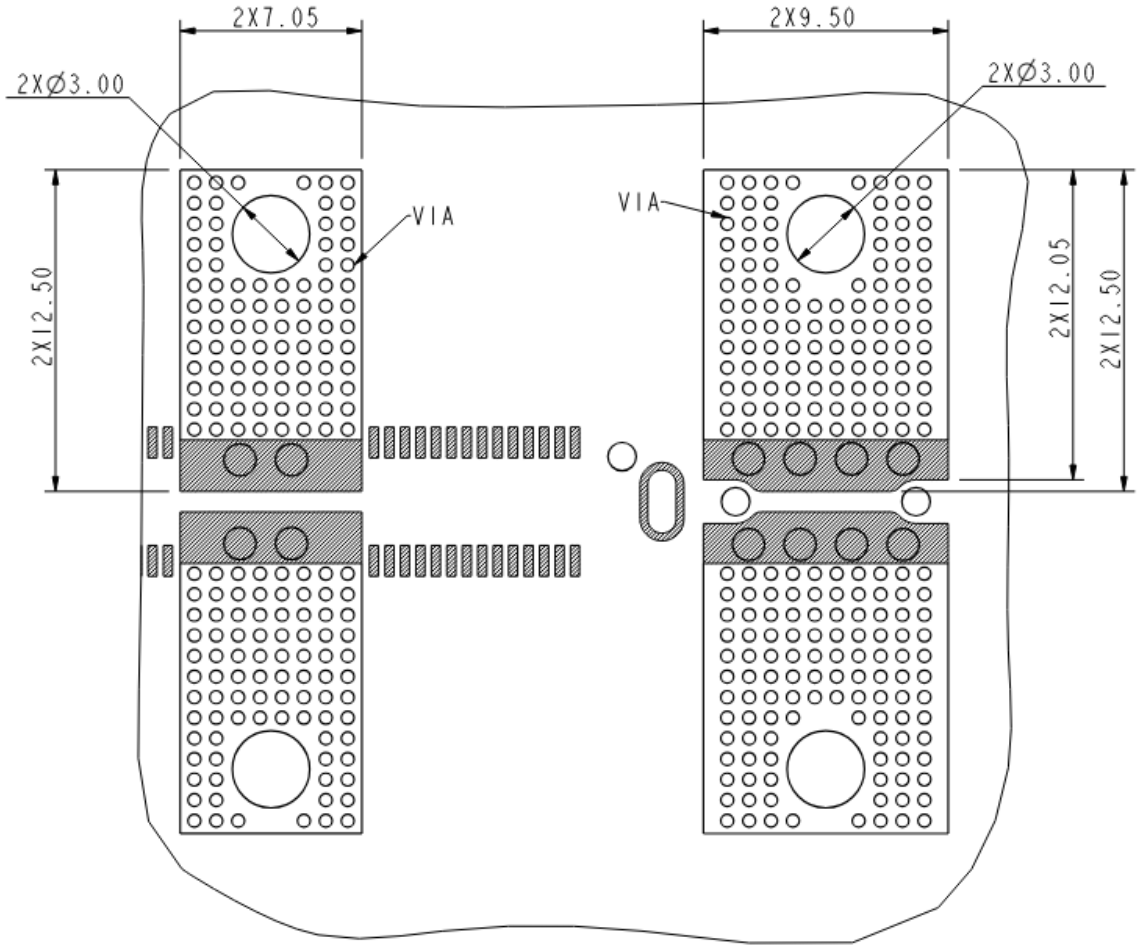


Figure C-4 An Example of PMM Host Current Rating Test Board Copper Patch