

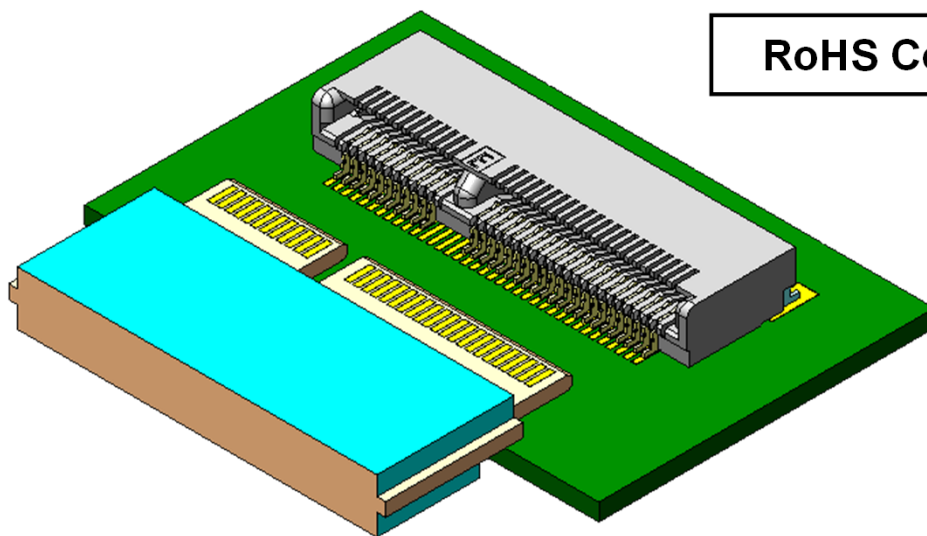


PCI-SIG M.2 Specification Compatible Card Edge Connector CONNECTOR

MB-0261-5

September 2016

SM3 Series

RoHS Compliant

The “SM3 Series” is a PCI-SIG PCI Express[®] M.2 Specification compatible, card edge connector into which multiple modules equipped on notebook PC and tablet PC such as Wi-Fi[®], Bluetooth[®], SSD, and others can be inserted.

PCI Express[®] is a registered trademark of PCI-SIG.

Wi-Fi[®] is a registered trademark of Wi-Fi Alliance.

Bluetooth[®] is a registered trademark of Bluetooth SIG.

Features

- Compliant with PCI Express M.2 Specification and enables transmission of PCIe Gen3, USB3.0, DisplayPort, SATA standard, and others. (Note 1)
- 0.5mm pitch (2 row), 67 positions, compact card edge connector.
- Available in five types: three on-board types and two mid-mount types. Products with 4.1mm product height can mount 1mm height parts on the bottom side of the module.
- Board fixing method for mid-mount products is SMT type and through-hole type and either can be selected according to the board layout.
- Card edge connector into which multiple modules can be inserted and available in 4 types of polarizing keys by changing the mold.

(Note 1) Polarizing keys are assigned according to application. For more information, please refer to PCI Express M.2 Specification.

Applicable Markets

Notebook PC, tablet PC, portable game devices, STB, and others (SSD, wireless module use)

General Specifications

- No. of Contacts: 67 positions
- Contact Resistance: 55m Ω max.
- Dielectric Withstanding Voltage:
AC300Vr.m.s for 1 minute
- Operating Temperature:
-40 Deg. C ~ +80 Deg. C
- Rated Current: 0.5A per pin
- Insulation Resistance: 500M Ω min. (initial)
- Mating Cycles: 60 times

Materials and Finishes

- Card Edge Connector

Component	Material / Finish
Hold-down	Copper alloy / Sn plating over Ni
Upper Contact	Contact area: Copper alloy / Au plating over Ni Terminal area: Copper alloy / Au flash plating over Ni
Lower Contact	Contact area: Copper alloy / Au plating over Ni Terminal area: Copper alloy / Au flash plating over Ni
Insulator	Heat resistant plastic

Ordering Information

- Card Edge Connector

SM3 Z S 067 U 310 * * * R****

Series

Reeled Quantity

Z: Low Insertion
Force Type

Modification Code

S: Standard Mounting Type

Polarizing Key: A / B / E / M

No. of Contacts

Contact Area Finish
A: Au 0.13 μ m min.
B: Au 0.25 μ m min.
T: Au 0.025 μ m min.

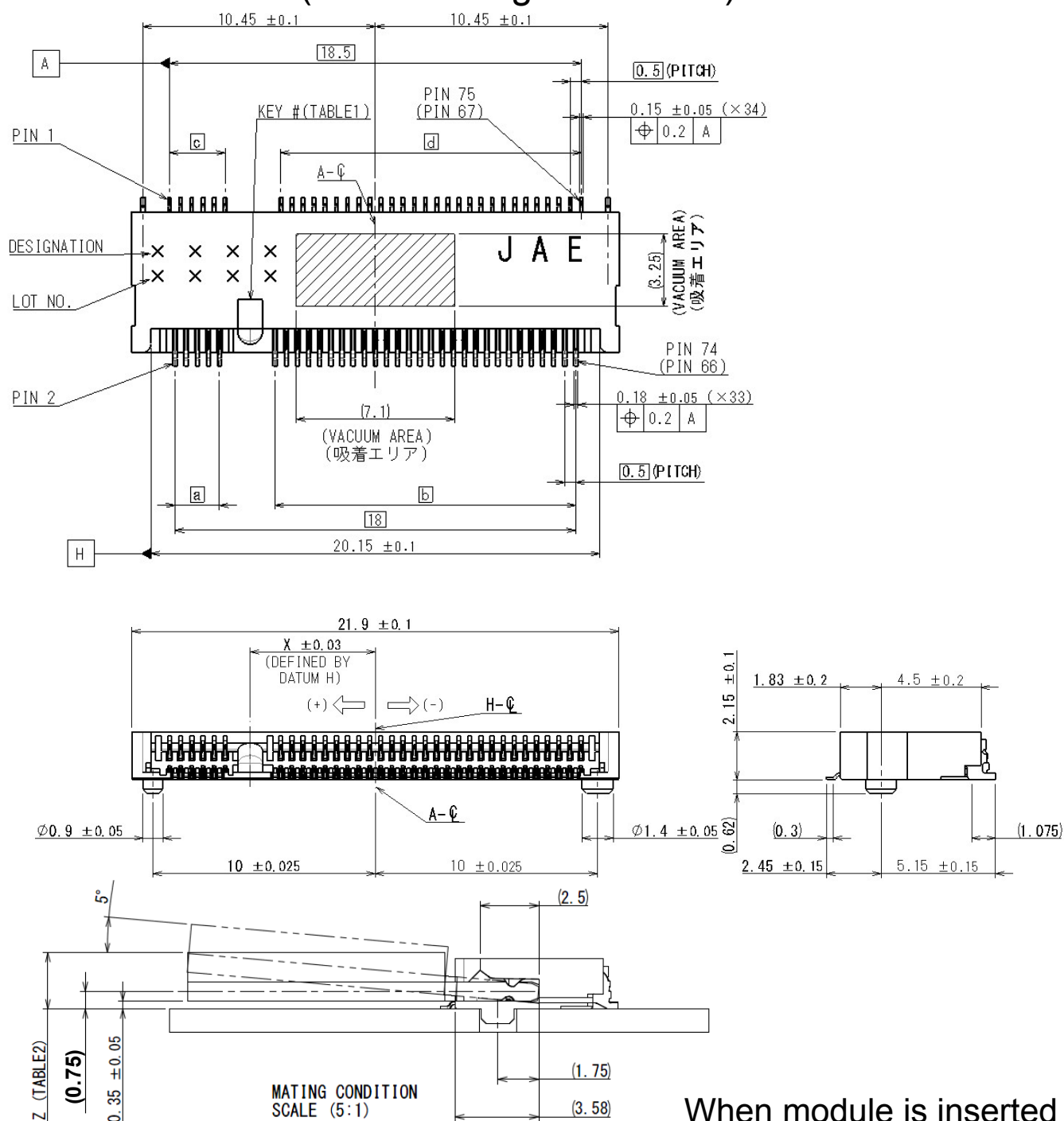
U: On-board Mounting Type
B: Mid-mount Type

Product Height
120: 1.20mm
215: 2.15mm
310: 3.10mm
410: 4.10mm

Product Drawing

Part Number: SM3ZS067U215**

(Product Height: 2.15mm)



When module is inserted

(TABLE 1)

KEY#	X	a	b	c	d
A	+6.625	1	14.5	1.5	14.5
B	+5.625	2	13.5	2.5	13.5
E	+2.625	5	10.5	5.5	10.5
M	-6.125	14	1.5	14	2

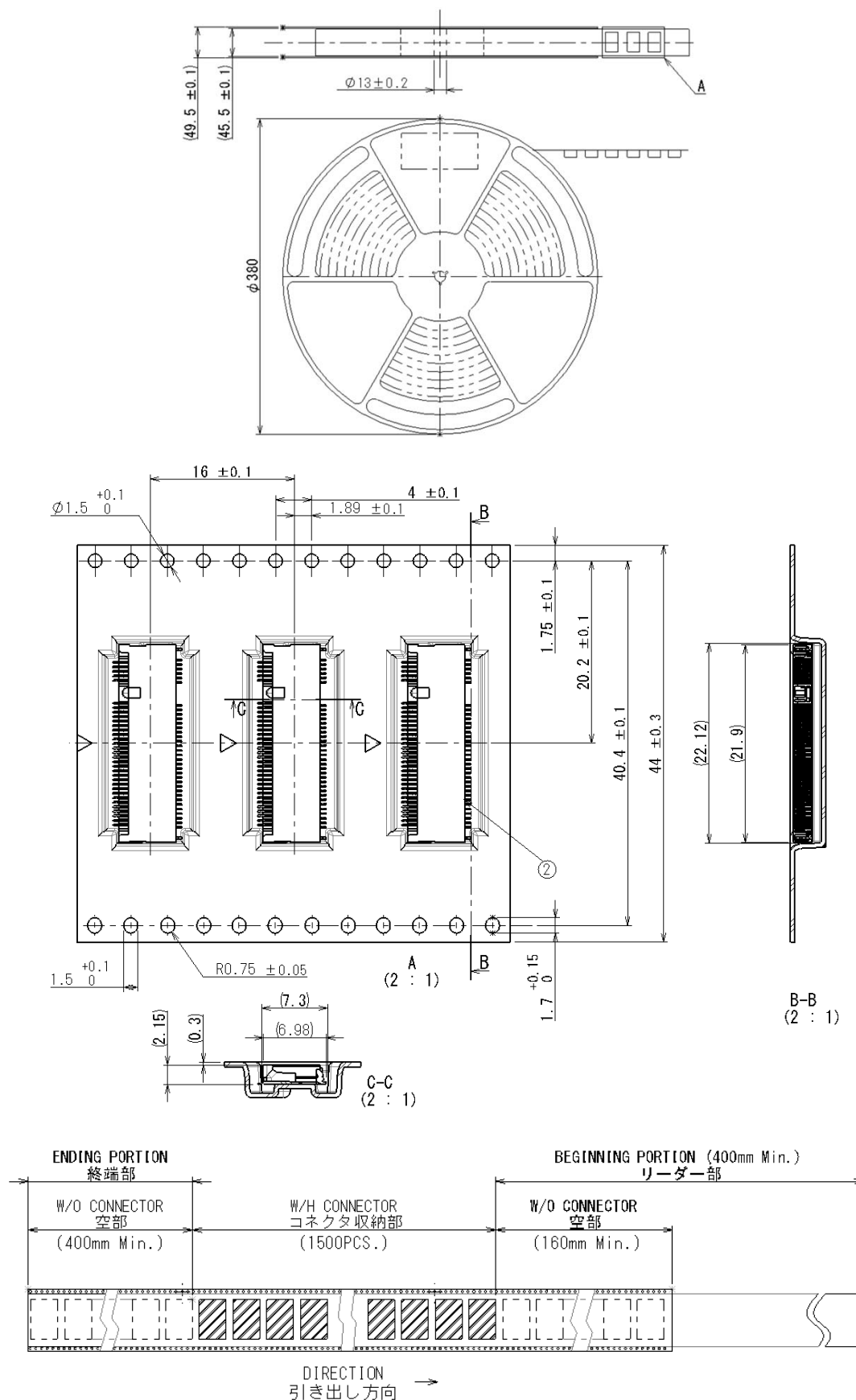
(TABLE 2)

Module Height	Z
MAX 1.2mm	MAX 2.45mm
MAX 1.35mm	MAX 2.60mm
MAX 1.5mm	MAX 2.75mm

* Please refer to product drawing when considering the use of this product.

Product Drawing

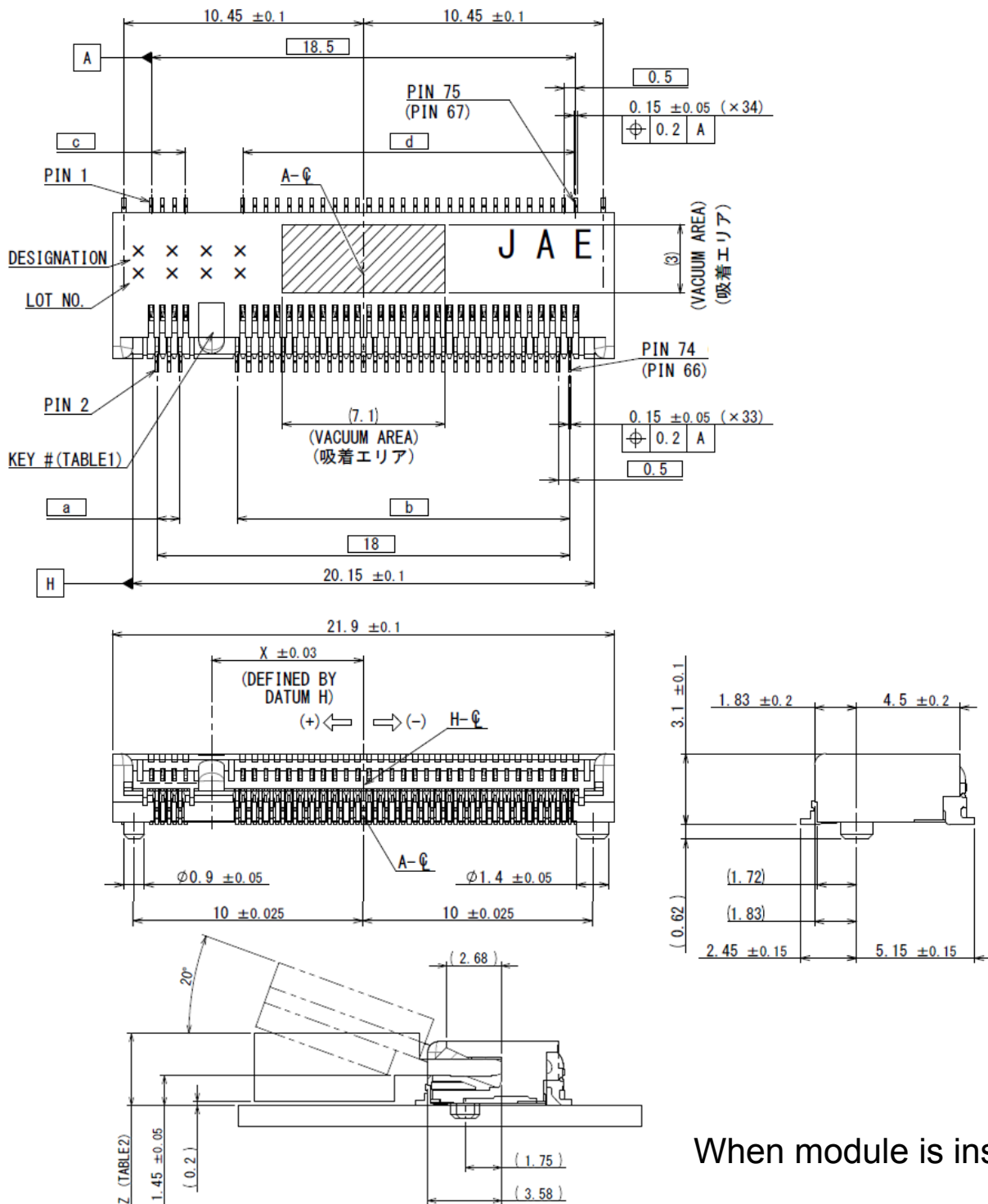
Part Number: SM3ZS067U215**R1500
(Product Height: 2.15mm)



* Please refer to product drawing when considering the use of this product.

Product Drawing

Part Number: SM3ZS067U310**
(Product Height: 3.1mm)



When module is inserted

(TABLE 1)

KEY#	X	a	b	c	d
A	+6.625	1	14.5	1.5	14.5
B	+5.625	2	13.5	2.5	13.5
E	+2.625	5	10.5	5.5	10.5
M	-6.125	14	1.5	14	2

(TABLE 2)

Module Height	Z
MAX 1.2mm	MAX 2.45mm
MAX 1.35mm	MAX 2.60mm
MAX 1.5mm	MAX 2.75mm

* Please refer to product drawing when considering the use of this product.

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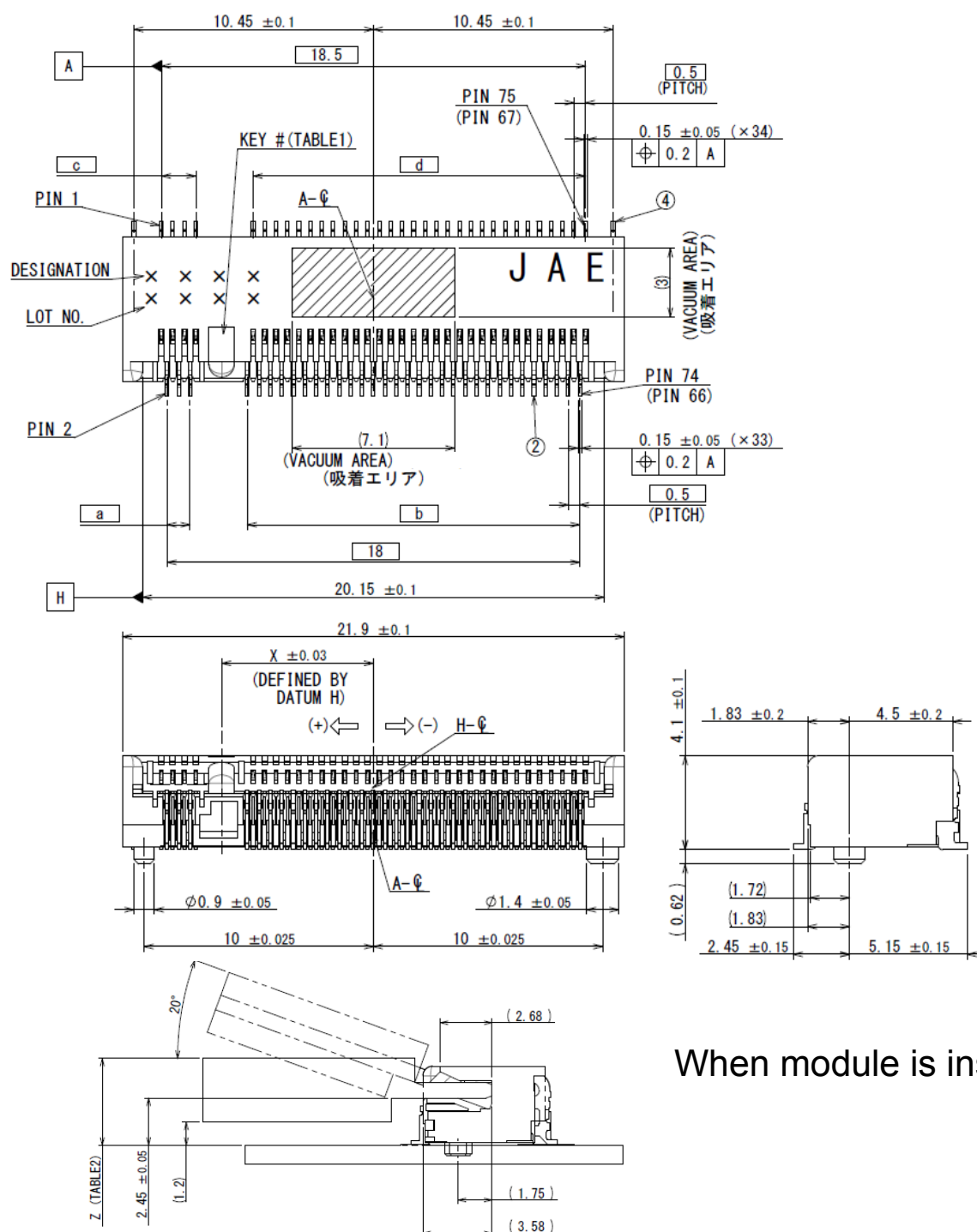


Part Number: SM3ZS067U310**
(Product Height: 3.1mm)

Product Drawing

Part Number: SM3ZS067U410**

(Product Height: 4.1mm)



When module is inserted

(TABLE 1)

KEY#	X	a	b	c	d
A	+6.625	1	14.5	1.5	14.5
B	+5.625	2	13.5	2.5	13.5
E	+2.625	5	10.5	5.5	10.5
M	-6.125	14	1.5	14	2

(TABLE 2)

Module Height	Z
MAX 1.2mm	MAX 2.45mm
MAX 1.35mm	MAX 2.60mm
MAX 1.5mm	MAX 2.75mm

* Please refer to product drawing when considering the use of this product.

Technical drawing of a multi-layer printed circuit board (PCB) for a connector assembly. The drawing includes a top view, a side view (B-B), and a cross-section (C-C).

Top View:

- Overall diameter: $\phi 380$
- Central hole diameter: $\phi 13 \pm 0.2$
- Connector length: 49.5 ± 0.1
- Board length: 16 ± 0.1
- Connector width: 4 ± 0.1
- Connector hole diameter: $\phi 1.5$
- Connector hole spacing: 1.89 ± 0.1

Side View (B-B):

- Board thickness: $t 0.5 \pm 0.1$
- Connector height: 1.75 ± 0.1
- Connector width: 22 ± 0.1
- Connector length: 40.4 ± 0.1
- Connector hole diameter: $\phi 1.5$
- Connector hole spacing: 1.89 ± 0.1

Cross-section (C-C):

- Connector height: 1.75 ± 0.1
- Connector width: 22 ± 0.1
- Connector length: 40.4 ± 0.1
- Connector hole diameter: $\phi 1.5$
- Connector hole spacing: 1.89 ± 0.1

Dimensions and Labels:

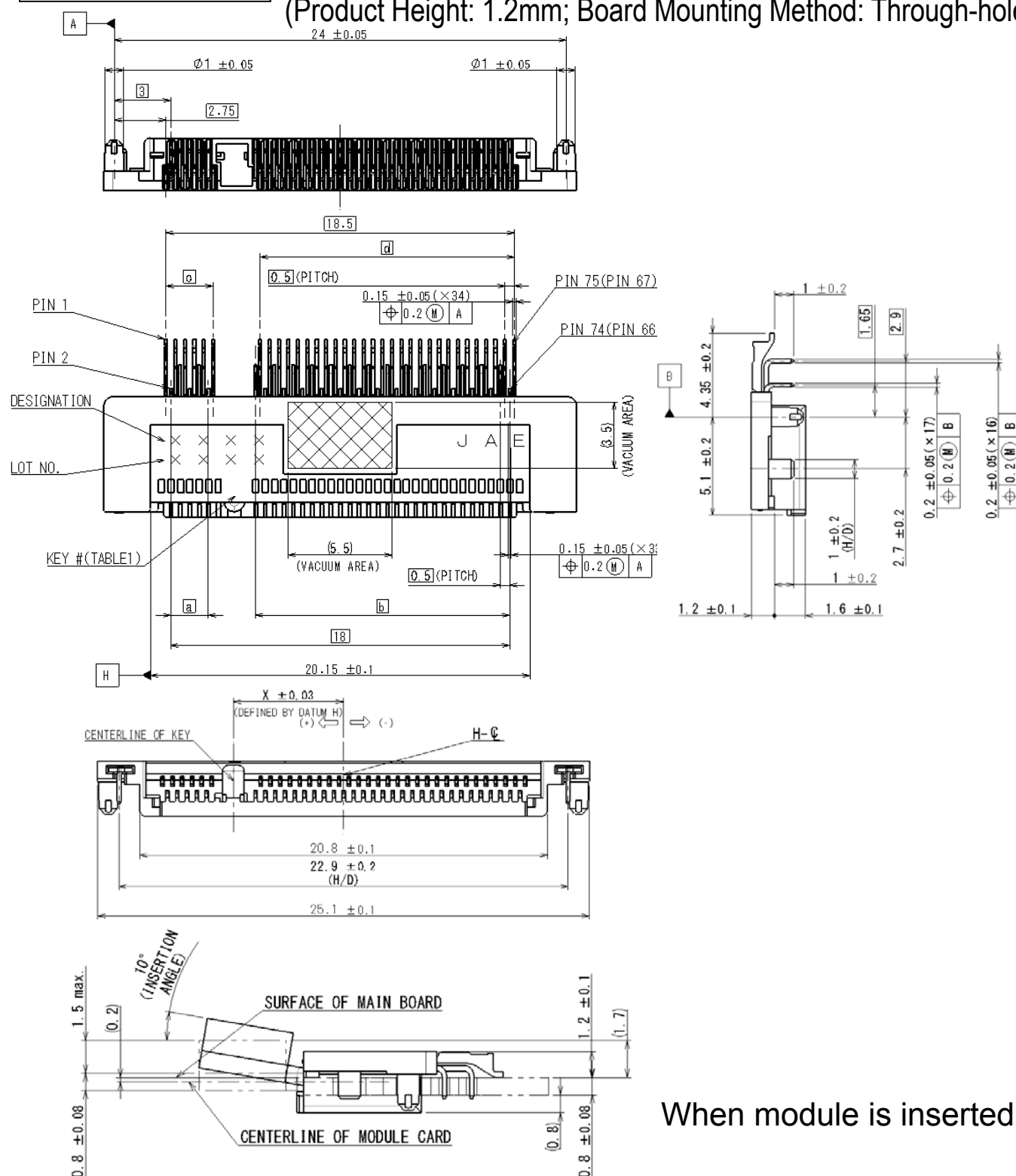
- ENDING PORTION (終端部)
- W/O CONNECTOR (空部) (400mm Min.)
- W/H CONNECTOR (コネクタ収納部) (1000PCS.)
- W/O CONNECTOR (空部) (160mm Min.)
- BEGINNING PORTION (400mm Min.) (リーダー部)
- DIRECTION (引き出し方向) →

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Product Drawing

Part Number: SM3ZS067B120**1

(Product Height: 1.2mm; Board Mounting Method: Through-hole)



When module is inserted

(TABLE 1)

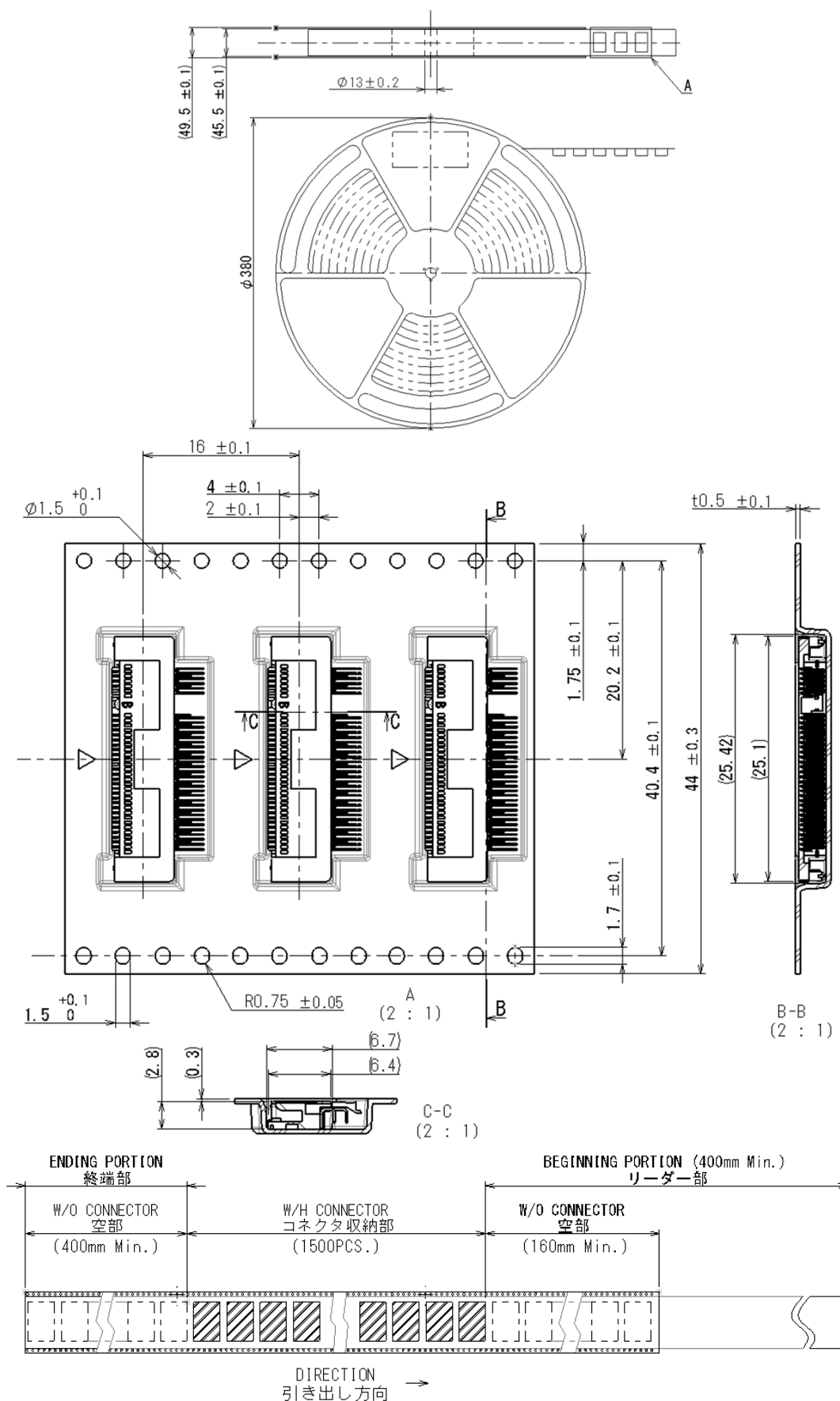
KEY#	X	a	b	c	d
A	+6.625	1	14.5	1.5	14.5
B	+5.625	2	13.5	2.5	13.5
E	+2.625	5	10.5	5.5	10.5
M	-6.125	14	1.5	14	2

* Please refer to product drawing when considering the use of this product.

Product Drawing

Part Number: SM3ZS067B120**1R1500

(Product Height: 1.2mm; Board Mounting Method: Through-hole)



* Please refer to product drawing when considering the use of this product.

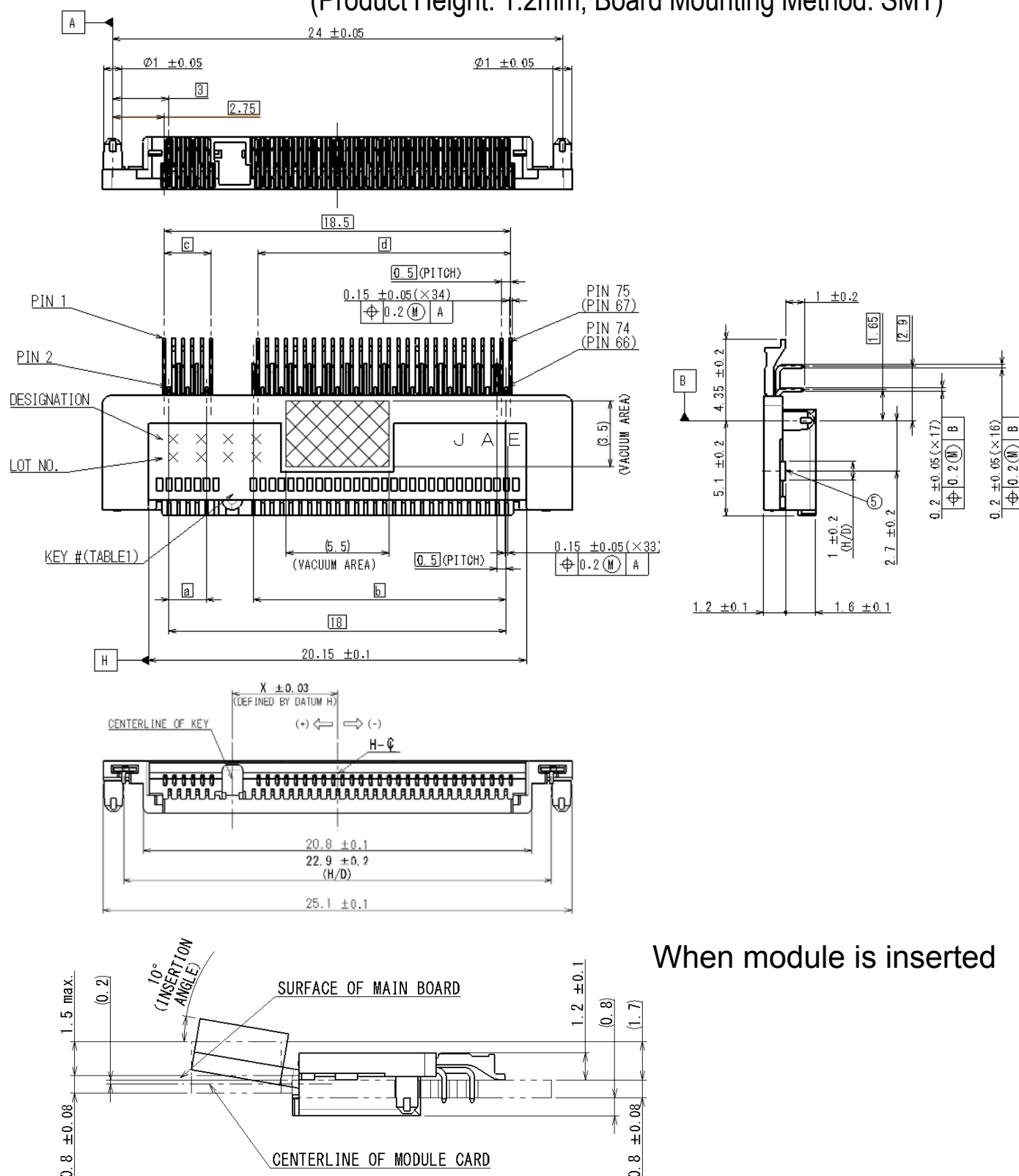


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Product Drawing

Part Number: SM3ZS067B120**2

(Product Height: 1.2mm; Board Mounting Method: SMT)



When module is inserted

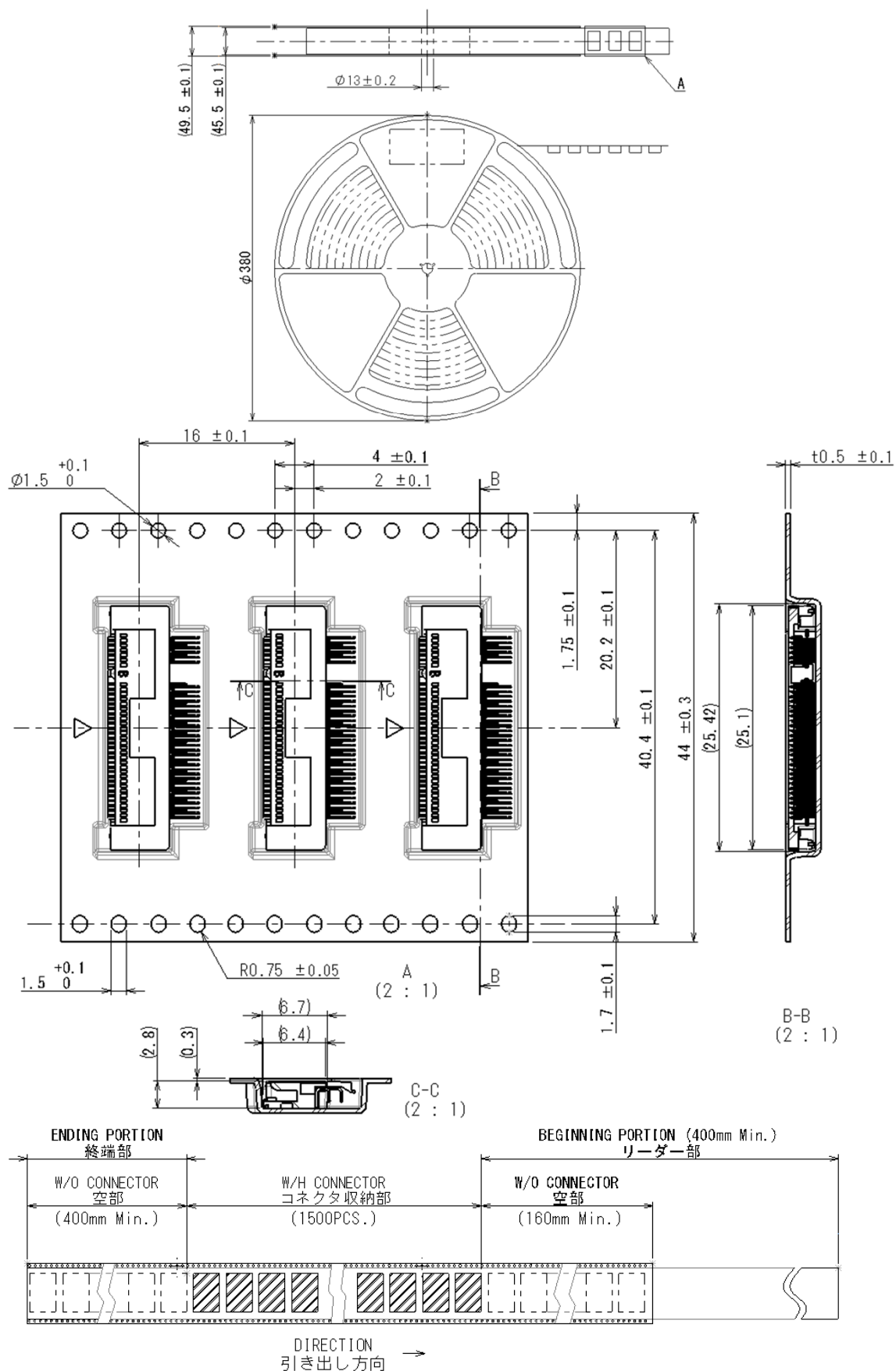
(TABLE 1)

KEY#	X	a	b	c	d
B	+5.625	2	13.5	2.5	13.5
E	+2.625	5	10.5	5.5	10.5
M	-6.125	14	1.5	14	2

* Please refer to product drawing when considering the use of this product.

Product Drawing

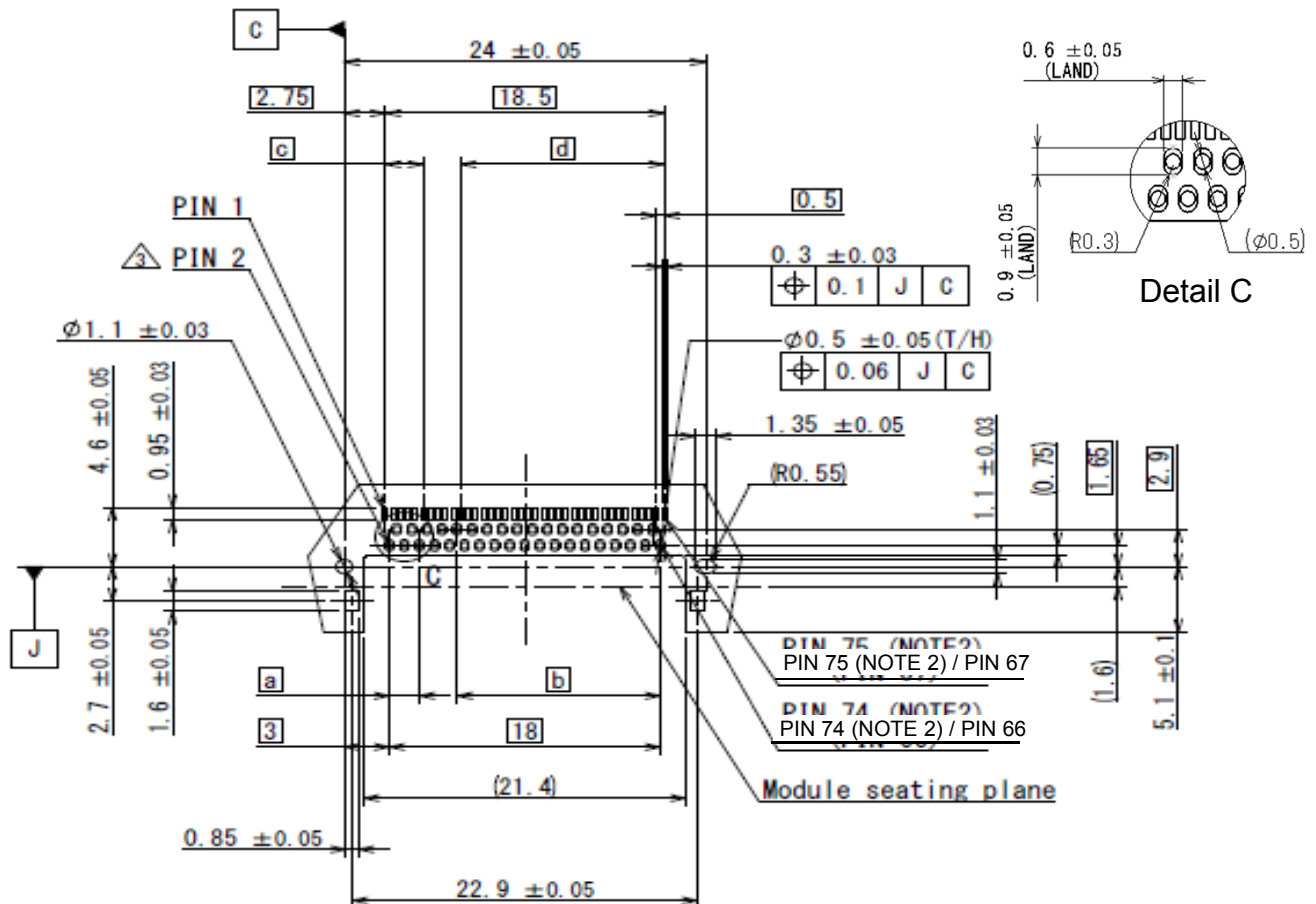
Part Number: SM3ZS067B120**2R1500
(Product Height: 1.2mm; Board Mounting Method: SMT)



* Please refer to product drawing when considering the use of this product.

Applicable Board Dimensions

Part Number: SM3ZS067B1202**
(Product Height: 1.2mm; Board Mounting Method: SMT)

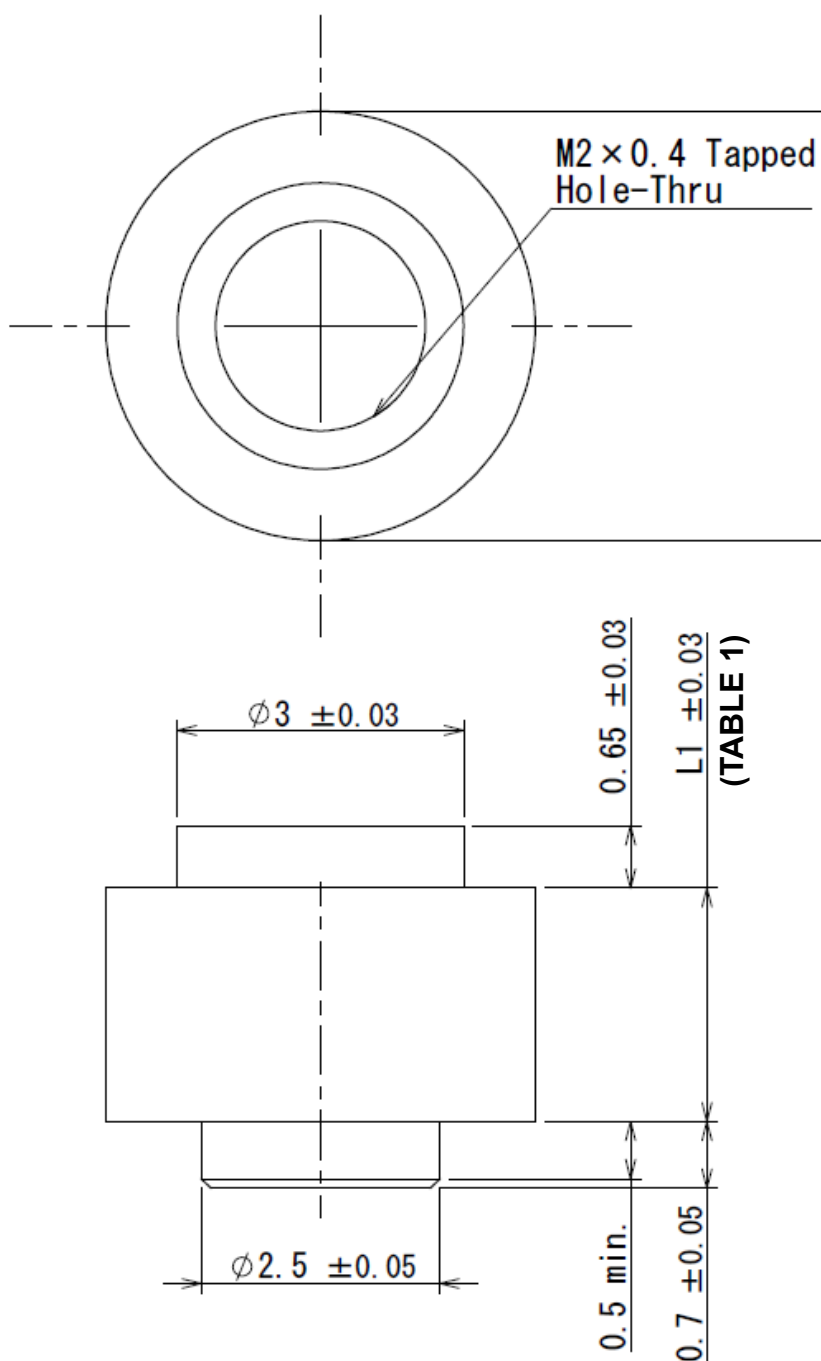


NOTE 2: PIN NUMBER AS DEFINED BY NGFF SPECIFICATION

* Please refer to product drawing when considering the use of this product.

Product Drawing

Part Number: SM3ZS067B*10-NUT1



(TABLE 1)

Part Number	L1	Drawing Number	Embossed Package Product	Drawing Number	Compatible Connector
SM3ZS067U310-NUT1	1.45	SJ116266	SM3ZS067U310-NUT1-R1800	SJ116261	SM3ZS067U310** (DWG.NO.SJ113505)
SM3ZS067U410-NUT1	2.45		SM3ZS067U410-NUT1-R1200	SJ116260	SM3ZS067U410** (DWG.NO.SJ113503)

* Please refer to product drawing when considering the use of this product.

Applicable Board
Dimensions

Part Number: SM3ZS067B*10-NUT1

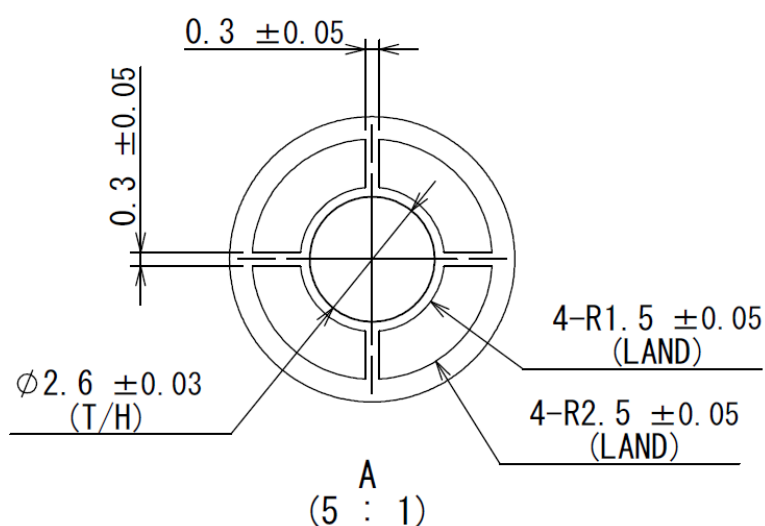
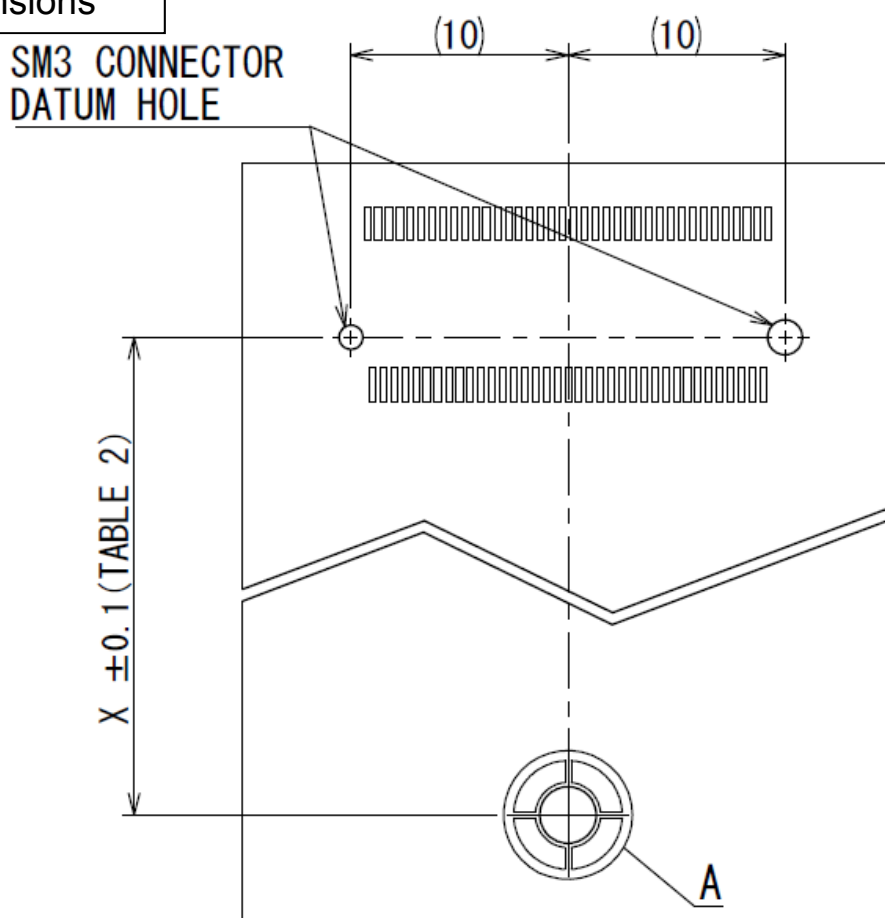


TABLE 2

Module Card Length	X
16	14.25
26	24.25
30	28.25
42	40.25
60	58.25
80	78.25
110	108.25

* Please refer to product drawing when considering the use of this product.

Product Drawing and Specification Numbers

Part Number		SM3ZS067 U215** (R1500)	SM3ZS067 U310** (R1200)	SM3ZS067 U410** (R1000)	SM3ZS067 B120**2 (R1500)	SM3ZS067 B120**1 (R1500)	SM3ZS067 U310-NUT1 (R1800)	SM3ZS067 U410-NUT1 (R1200)
Mounting Type		On-board			Mid-mount			
Depth [mm]		(7.6)	(7.6)	(7.6)	(9.45)		-	-
Height [mm]		2.15+/-0.1	3.1+/-0.1	4.1+/-0.1	1.2+/-0.1 (Product height when mounted)		1.45+/-0.03	2.45+/-0.03
Width [mm]		21.9	21.9	21.9	25.1		Φ4.5	
Polarizing Key	Developed	A/B/E/M	A/B/E/M	A/B/E/M	B/E/M	A/B/E/M		
	Development under consideration				A			
Contact Area Au Plating thickness	0.13μm	✓	✓	✓	✓			
	0.25μm		✓	✓				
	0.025μm	✓	✓	✓				
Board Fixing Method		SMT				Through-hole	SMT	
Evaluation Test		SR-C-1317 (0.13μm, 0.25μm Product)	SR-C-1225 (0.13μm, 0.25μm Product)	SR-C-1249 (0.13μm, 0.25μm Product)	SR-C-1322			
		SR-C-1555 (0.025μm Product)	SR-C-1556 (0.025μm Product)	SR-C-1557 (0.025μm Product)				
Specifications		JACS-10937	JACS-10941 (0.13μm, 0.25μm Product)	JACS-10941 (0.13μm, 0.25μm Product)	JACS-11000		JACS-11098	
			JACS-11171 (0.025μm Product)	JACS-11171 (0.025μm Product)				
Drawing No.	Individual Product	SJ113567 (0.13μm, 0.25μm Product)	SJ113505 (0.13μm, 0.25μm Product)	SJ113503 (0.13μm, 0.25μm Product)	SJ114364	SJ114362	SJ116266	
		SJ117622 (0.025μm Product)	SJ117624 (0.025μm Product)	SJ117626 (0.025μm Product)				
	Packaged Product	SJ113568 (0.13μm, 0.25μm Product)	SJ113506 (0.13μm, 0.25μm Product)	SJ113504 (0.13μm, 0.25μm Product)	SJ114365	SJ114363	SJ116261	SJ116260
		SJ117623 (0.025μm Product)	SJ117625 (0.025μm Product)	SJ117627 (0.025μm Product)				

Notice:

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- Users are requested to provide protection circuits and redundancy circuits to ensure safety of the equipment, and sufficiently review the suitability of JAE's products to the equipment.
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 - We may separately give you our support with a quality assurance program that you specify, when you think of a use such as:
Aviation or space equipment, submarine repeaters, nuclear power control systems, medical equipment for life support, etc.
 - Recommended applications include:
Computers, office appliances, telecommunications devices (terminals, mobile units), measuring equipment, audiovisual equipment, home electric appliances, factory automation equipment, etc.

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