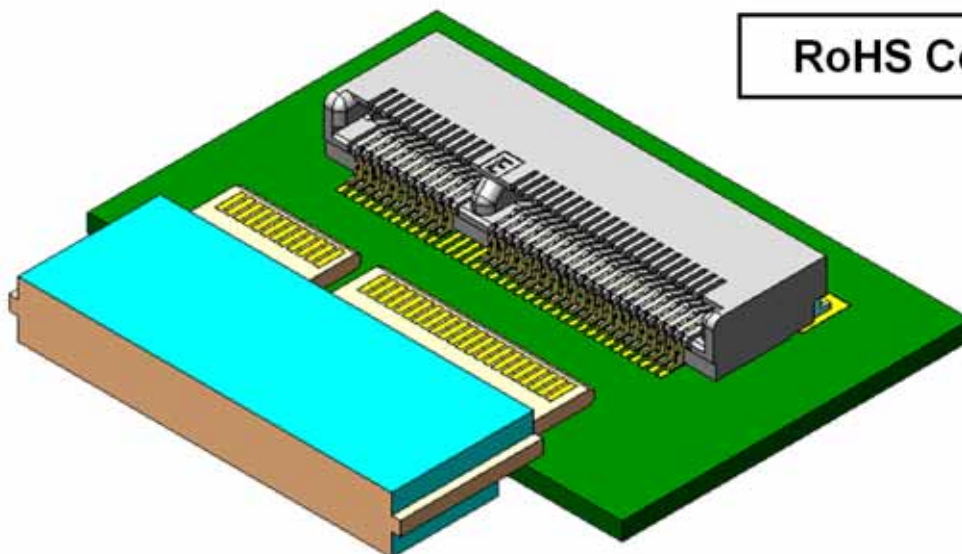


**NEW** PCI-SIG M.2 Specification Compatible Card Edge Connector CONNECTOR

# SM3 Series

MB-0261-5

September 2016

**RoHS Compliant**

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

PCI Express<sup>®</sup> is a registered trademark of PCI-SIG.

Wi-Fi<sup>®</sup> is a registered trademark of Wi-Fi Alliance.

Bluetooth<sup>®</sup> 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: 500MΩ min. (initial)  
 Mating Cycles: 60 times

**Materials and Finishes**

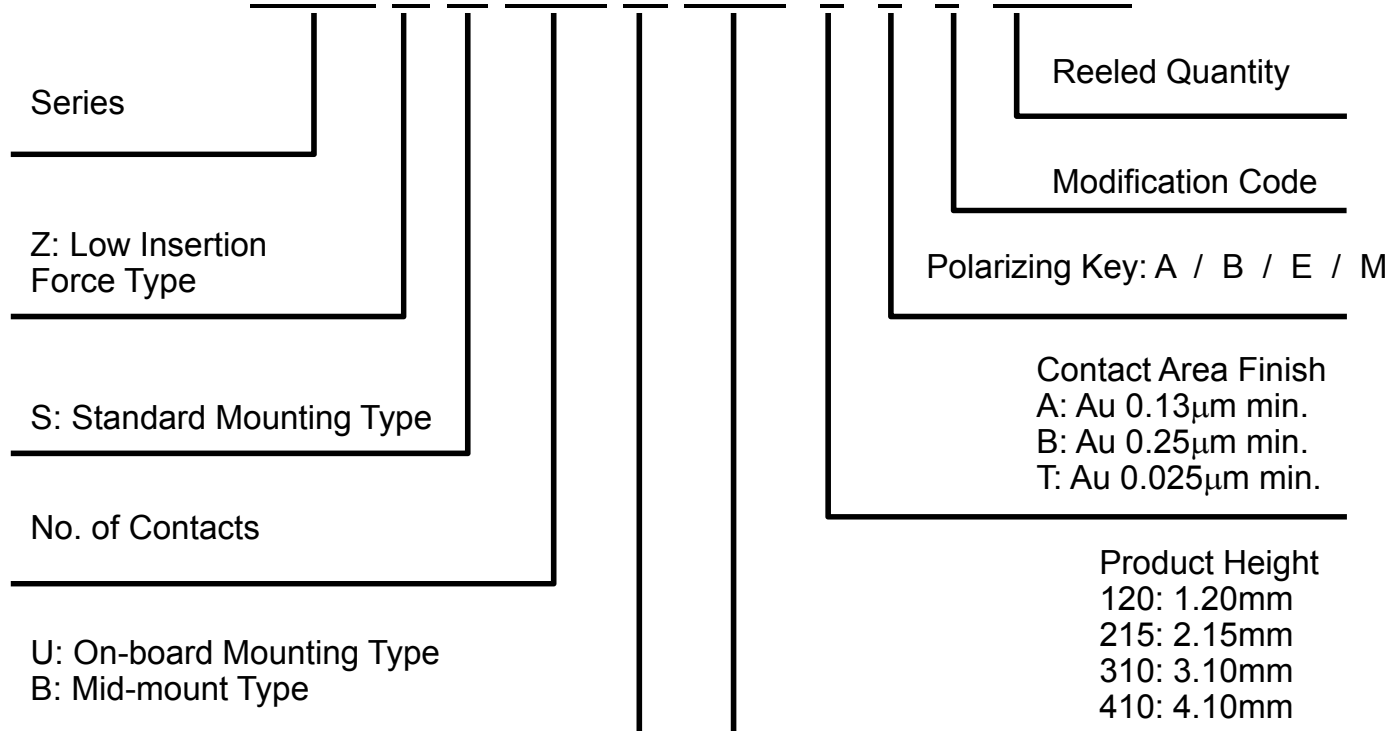
Card Edge Connector

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**

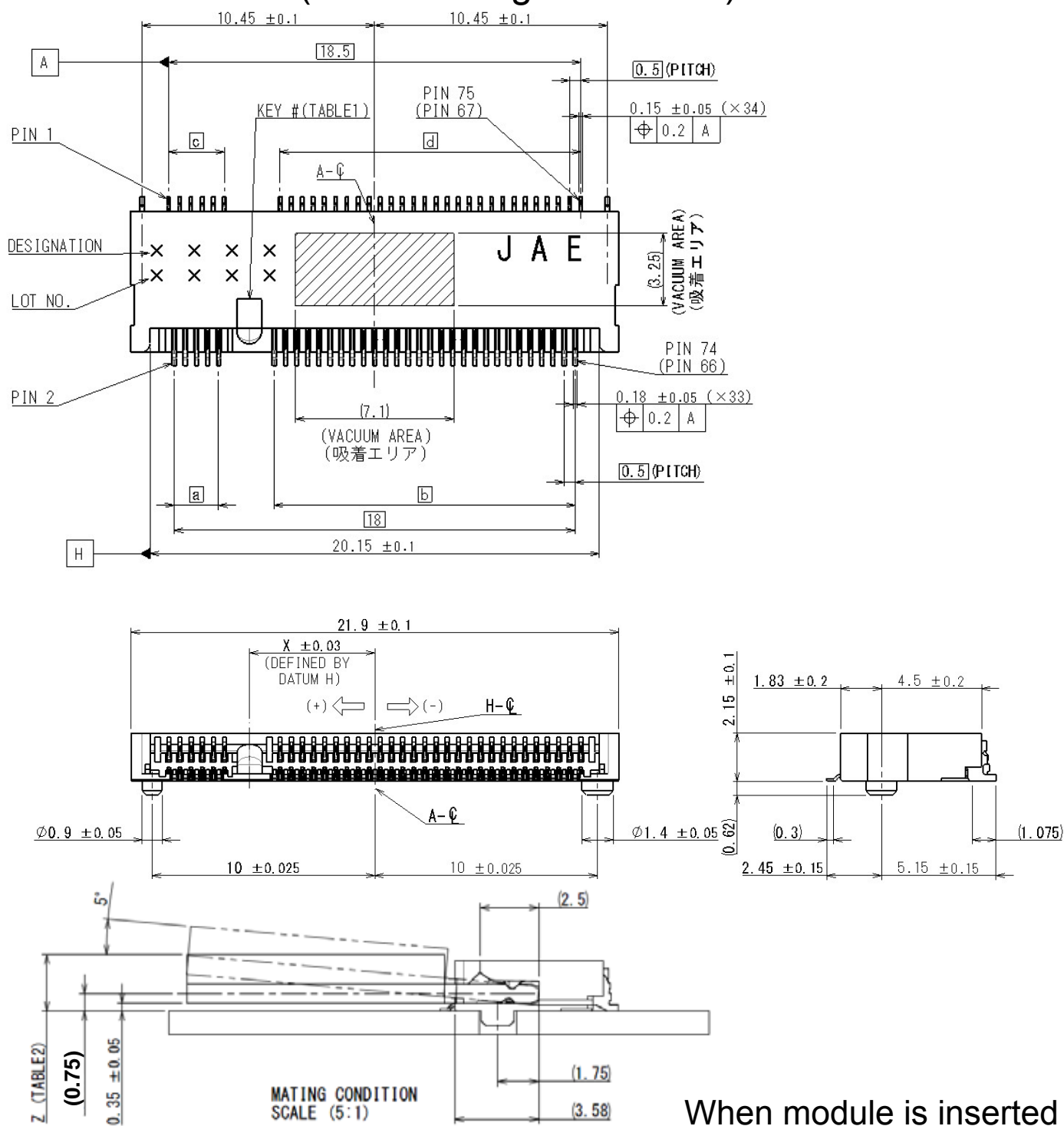
Card Edge Connector

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



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

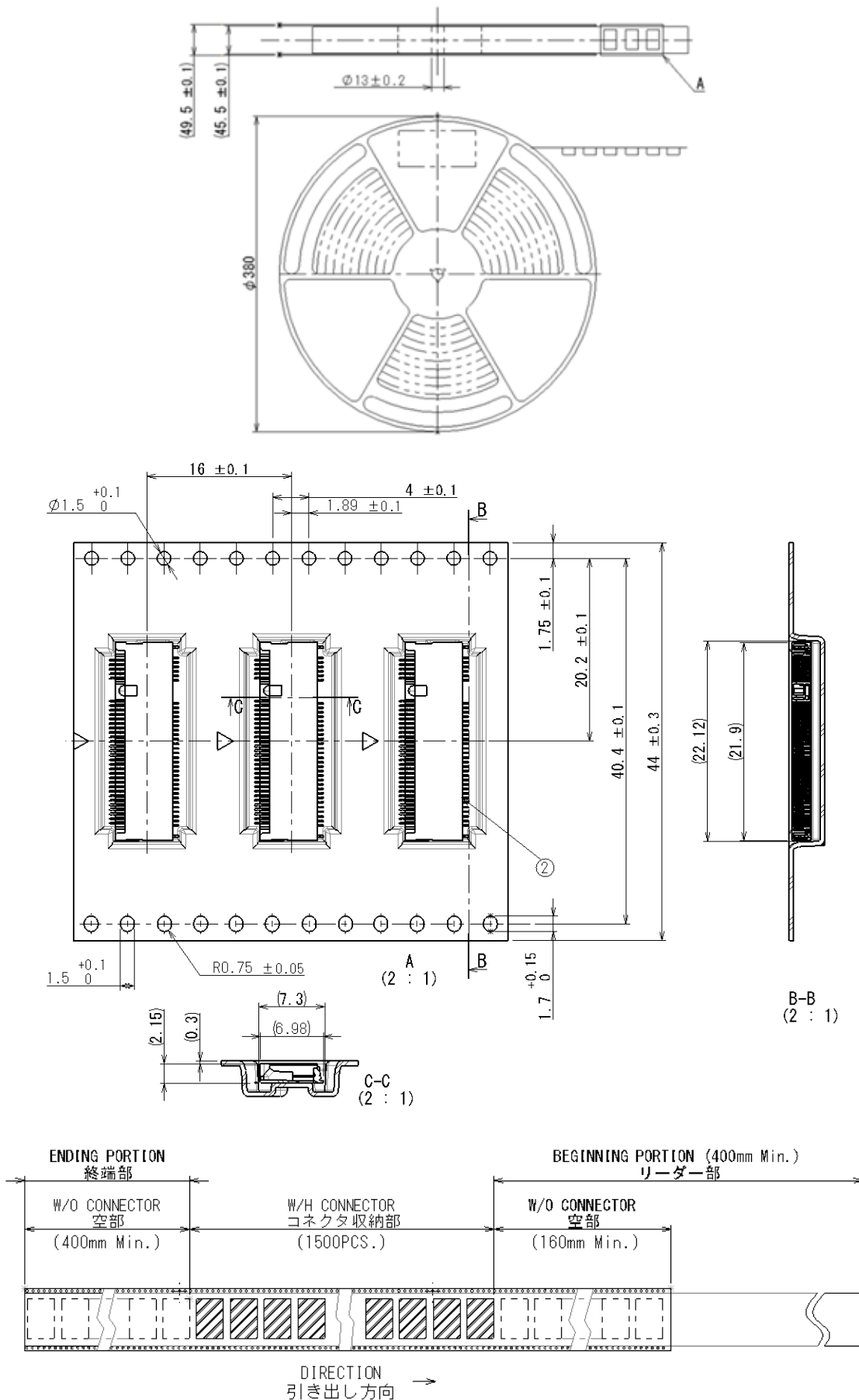
(TABLE 2)

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

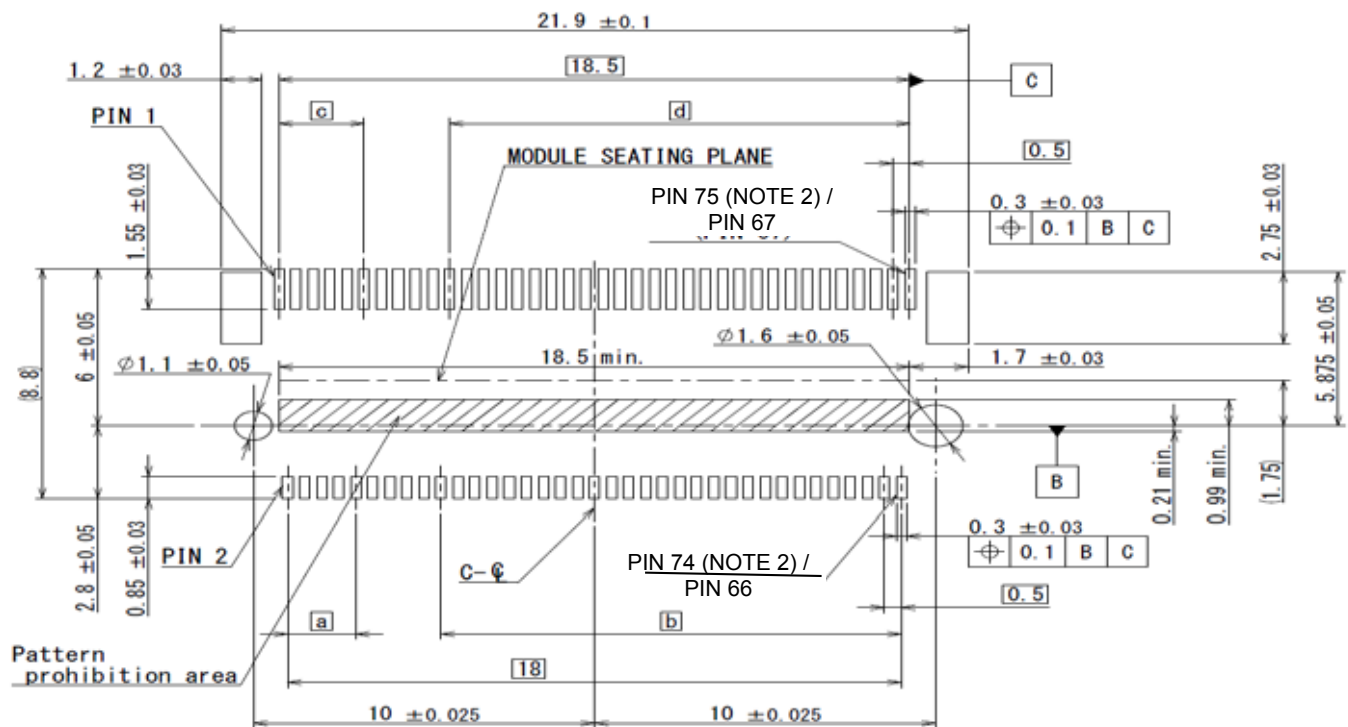
Part Number: SM3ZS067U215\*\*R1500  
(Product Height: 2.15mm)



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

Applicable Board  
Dimensions

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

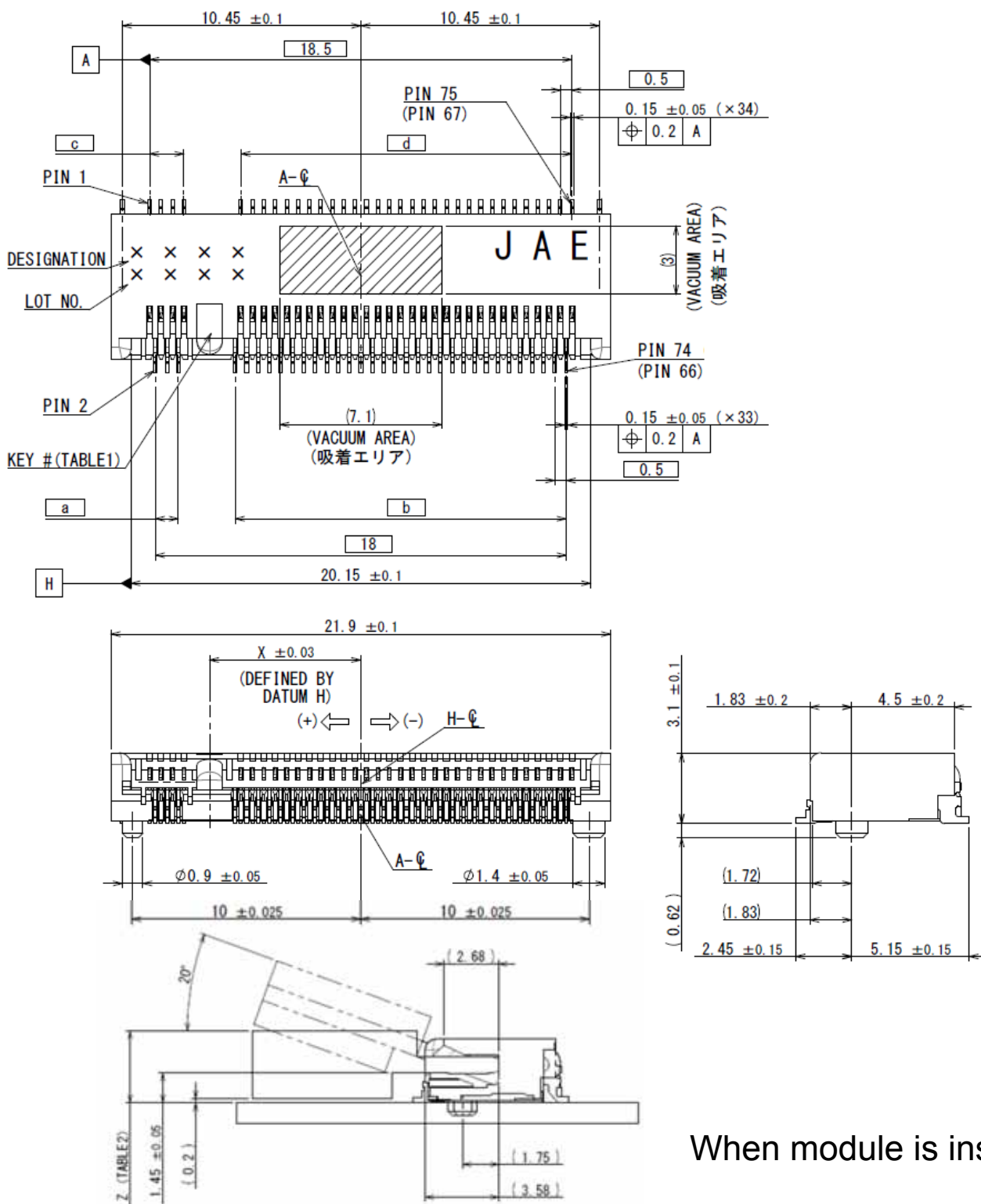


**NOTE 2: PIN NUMBER AS DEFINED BY NGFF SPECIFICATION**

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

Product Drawing

Part Number: 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

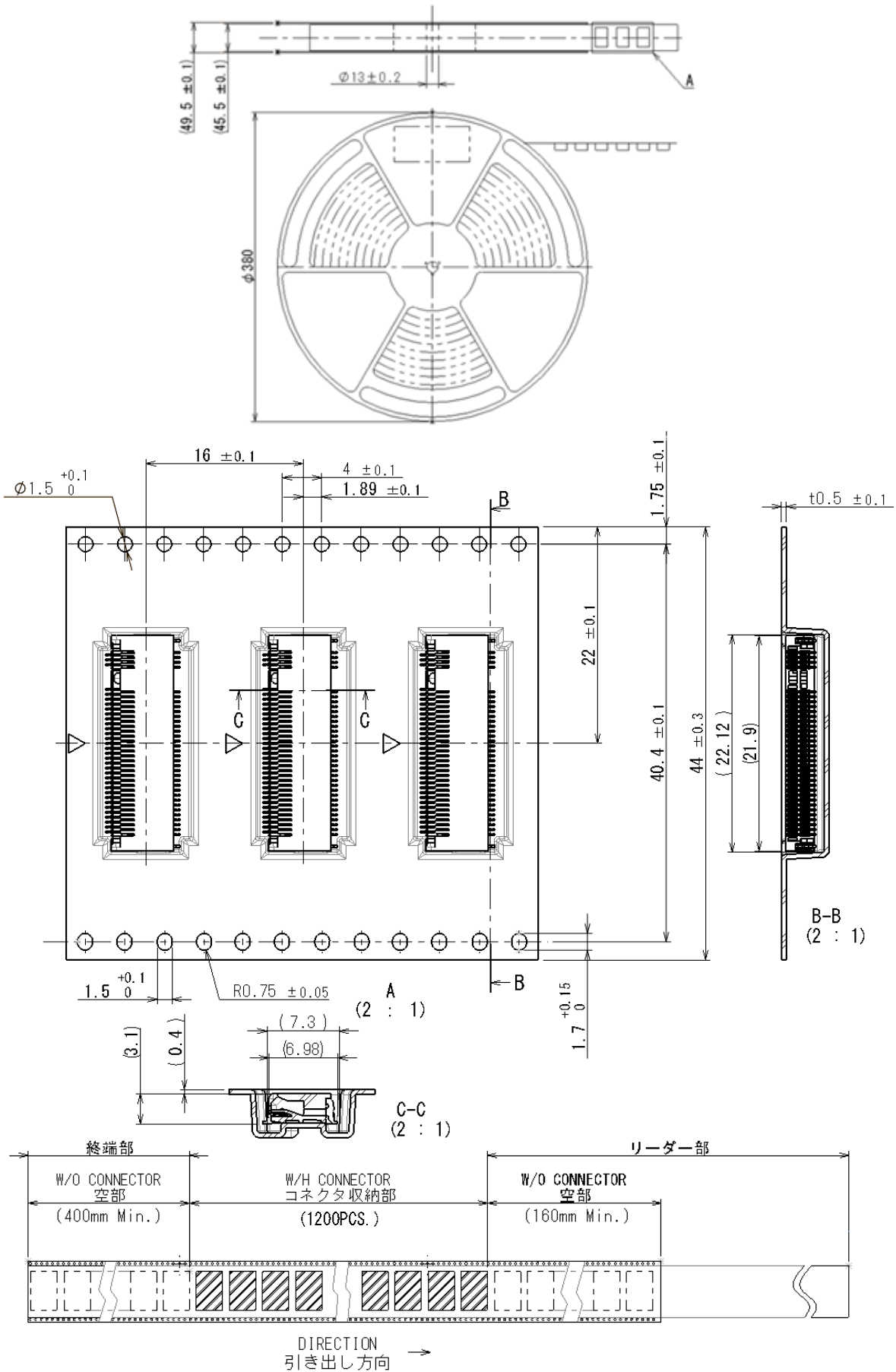
(TABLE 2)

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.

Product Drawing

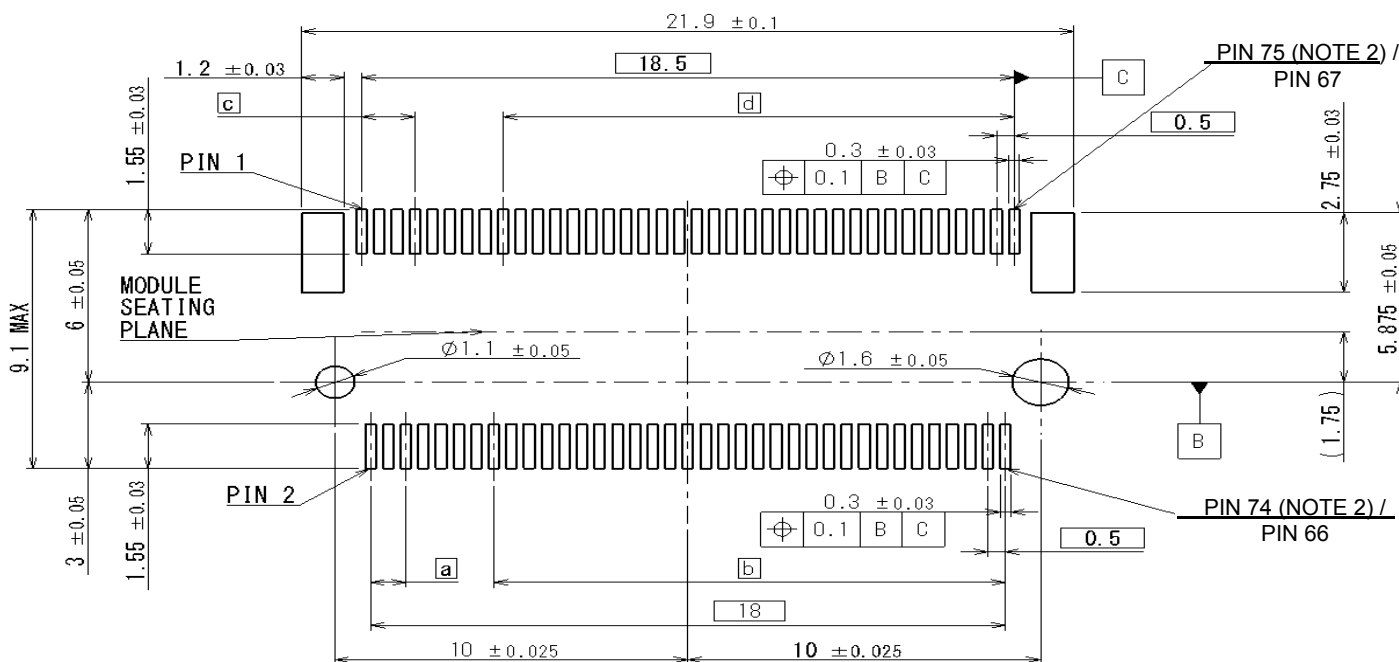
Part Number: SM3ZS067U310\*\*R1200  
 (Product Height: 3.1mm)



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

Applicable Board Dimensions

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



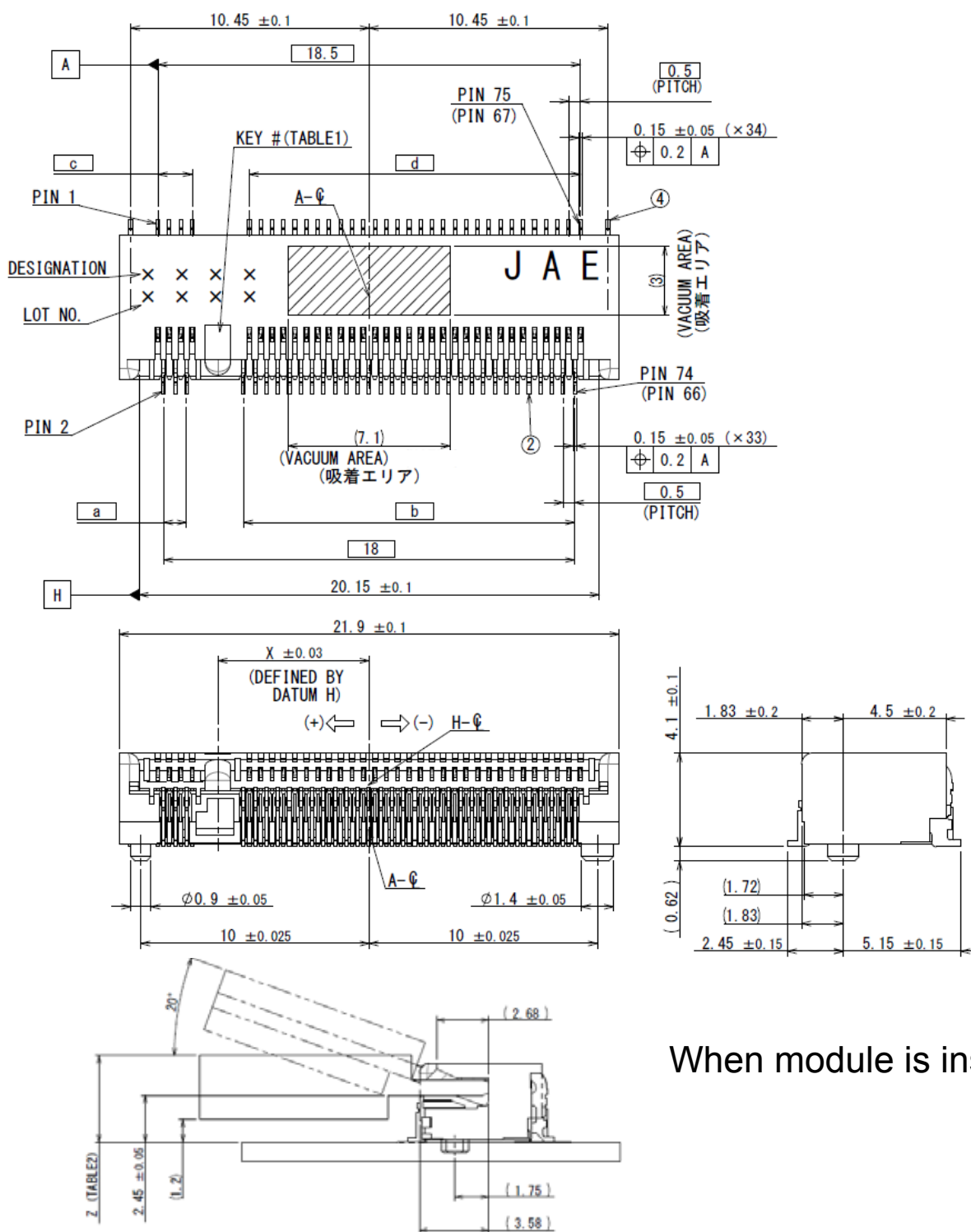
**NOTE 2: PIN NUMBER AS DEFINED BY NGFF SPECIFICATION**

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



Product Drawing

Part Number: 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

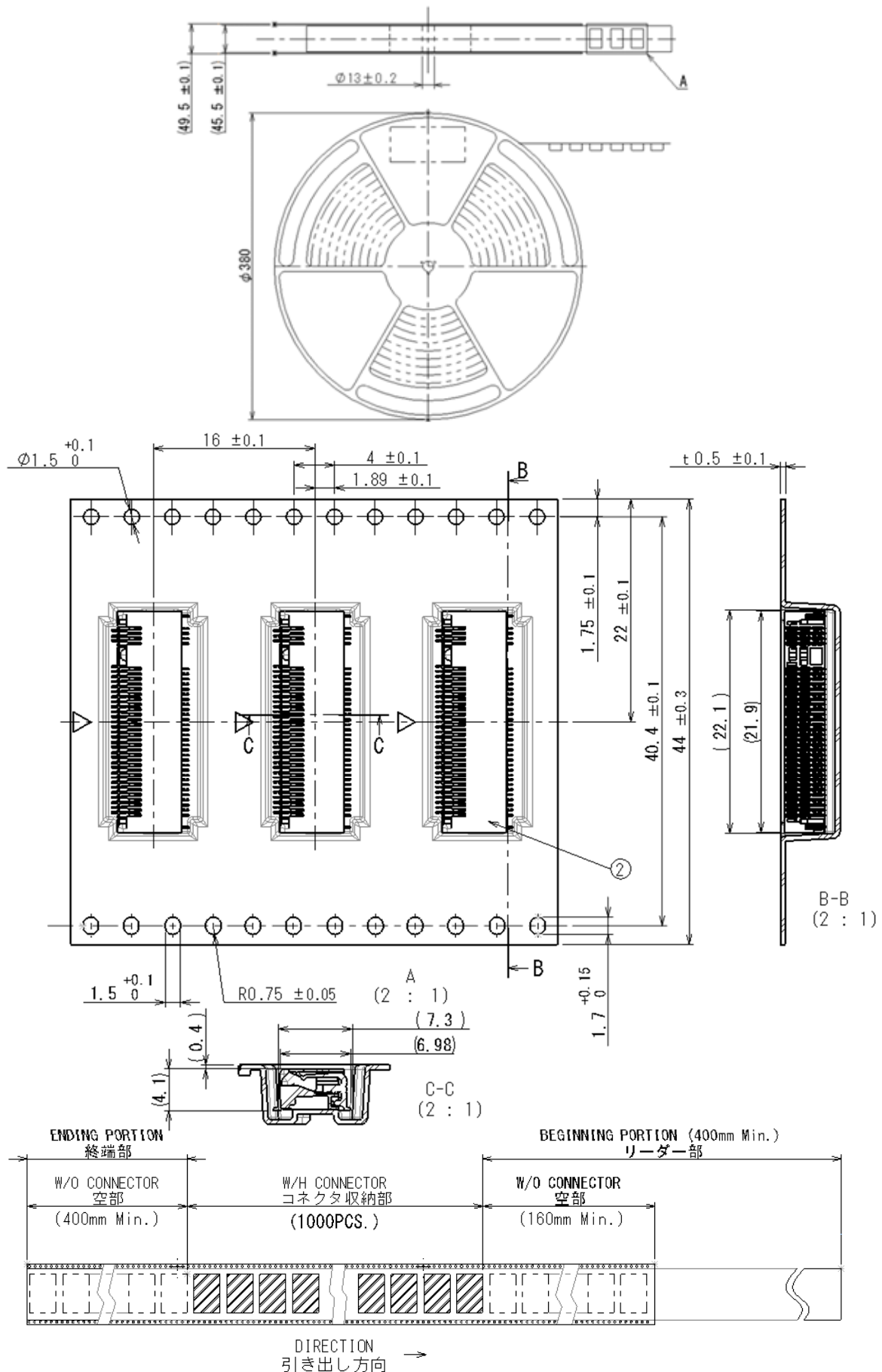
(TABLE 2)

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.

Product Drawing

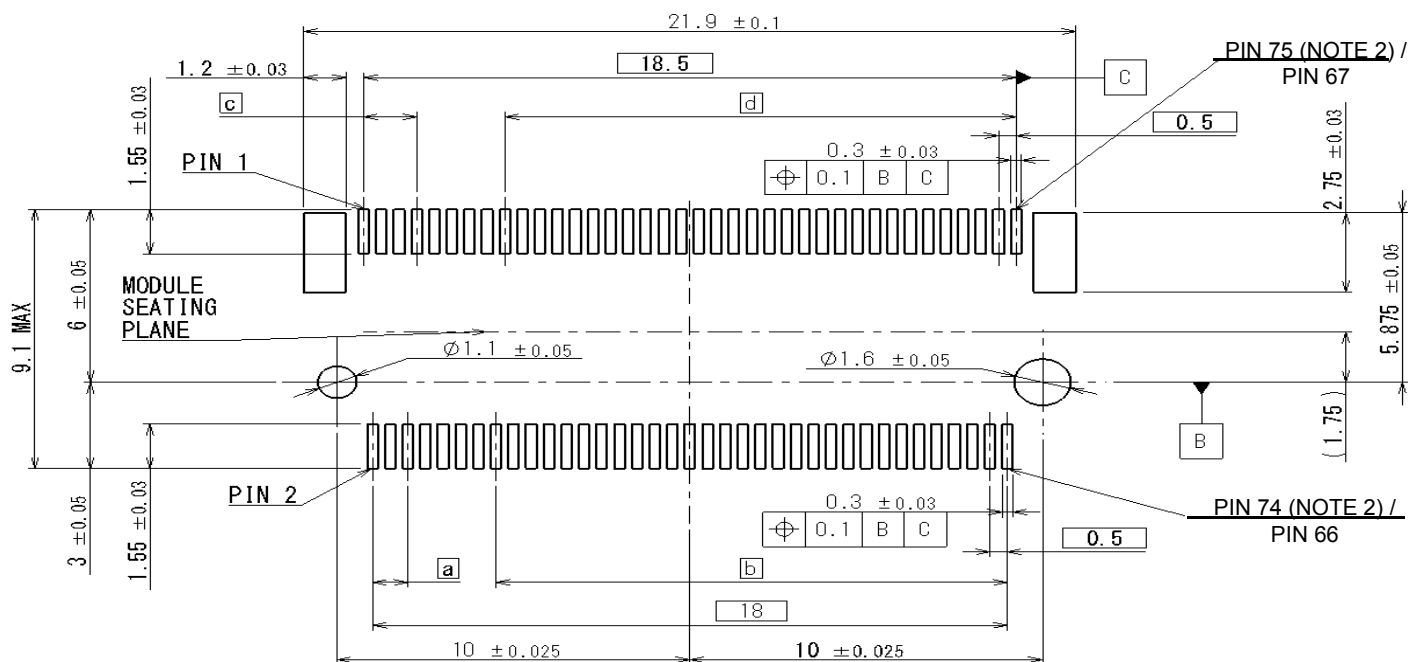
Part Number: SM3ZS067U410\*\*R1000  
(Product Height: 4.1mm)



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

Applicable Board Dimensions

Part Number: SM3ZS067U410\*\*  
(Product Height: 4.1mm)



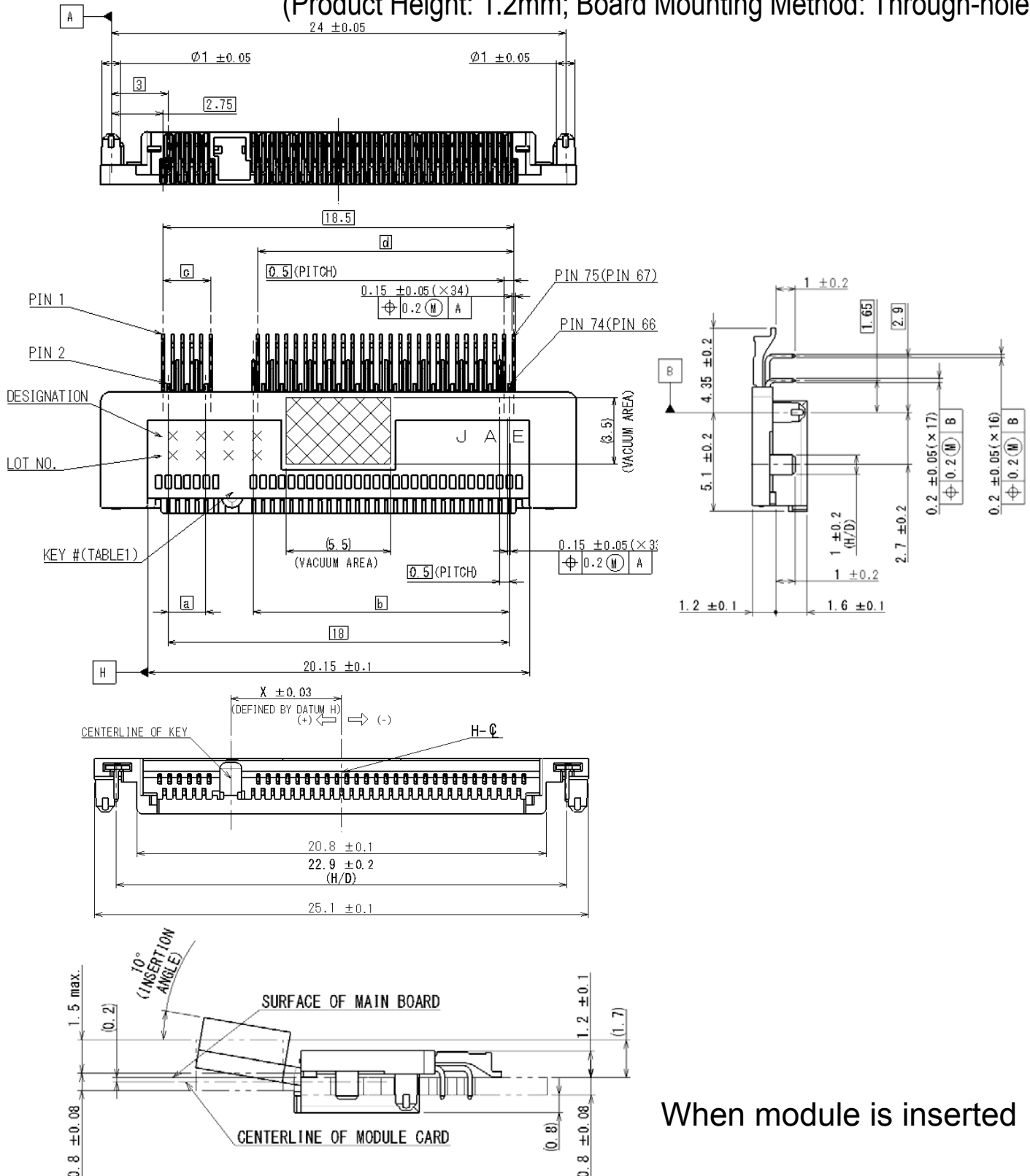
**NOTE 2: PIN NUMBER AS DEFINED BY NGFF SPECIFICATION**

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

Product Drawing

Part Number: SM3ZS067B120\*\*1

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



When module is inserted

(TABLE 1)

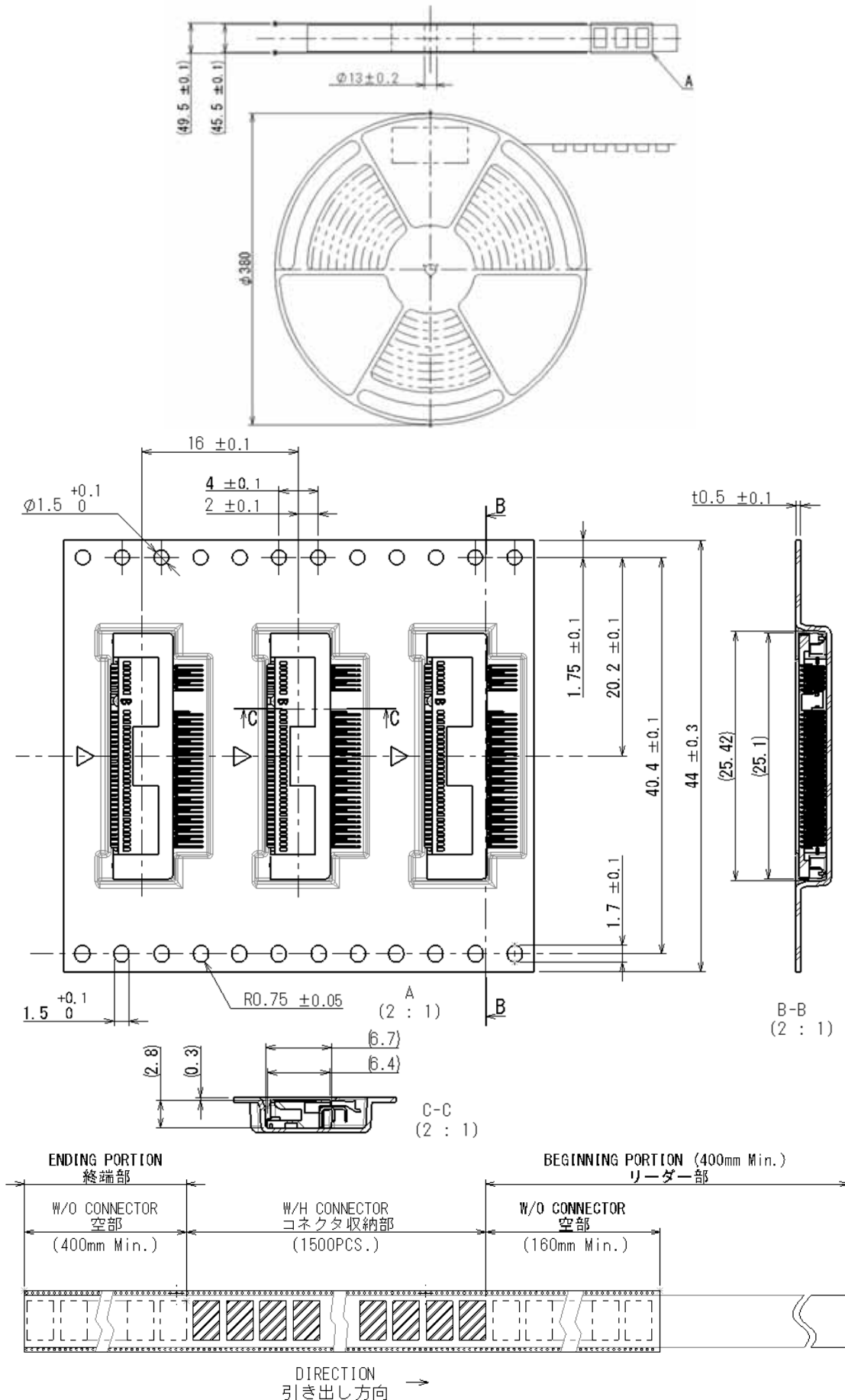
KEY#	X	a	b	c	d
A	+6.625	1	14.5	1.5	14.5
B	+5.625	2	13.5	2.5	13.5
E	+2.625	5	10.5	5.5	10.5
M	-6.125	14	1.5	14	2

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

Product Drawing

Part Number: SM3ZS067B120\*\*1R1500

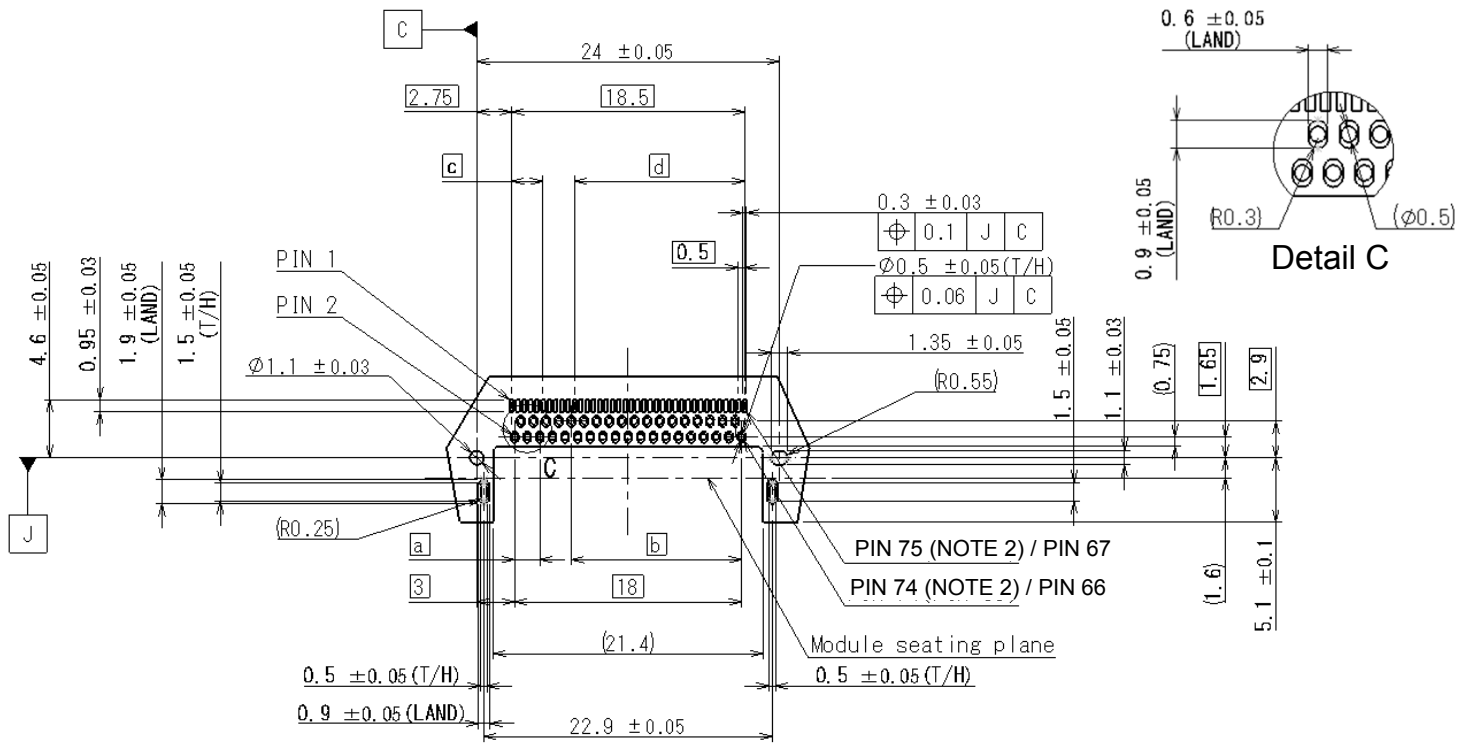
(Product Height: 1.2mm; Board Mounting Method: Through-hole)



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

Applicable Board Dimensions

Part Number: SM3ZS067B120\*\*1  
 (Product Height: 1.2mm; Board Mounting Method: Through-hole)



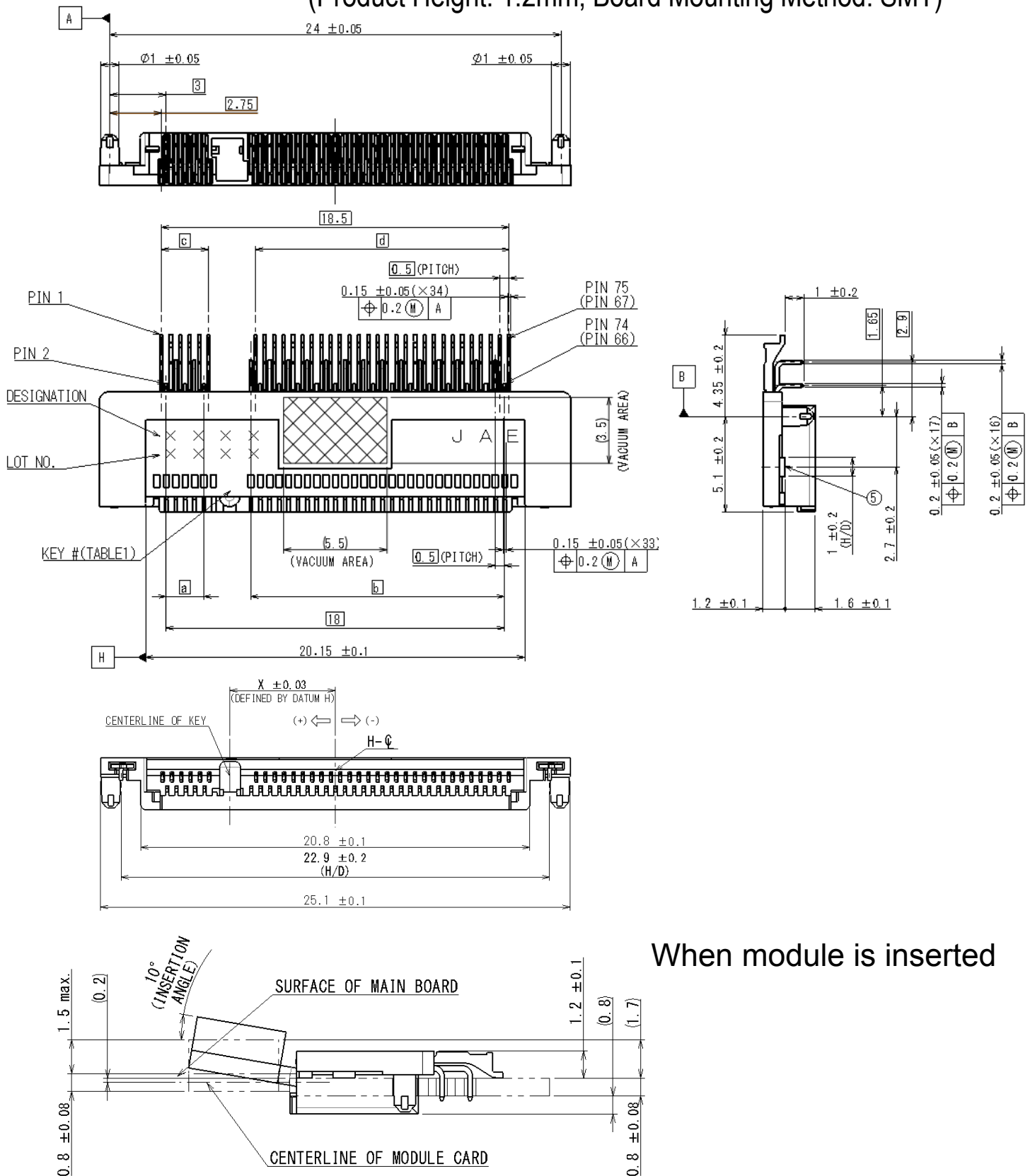
**NOTE 2: PIN NUMBER AS DEFINED BY NGFF SPECIFICATION**

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

Product Drawing

Part Number: SM3ZS067B120\*\*2

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



When module is inserted

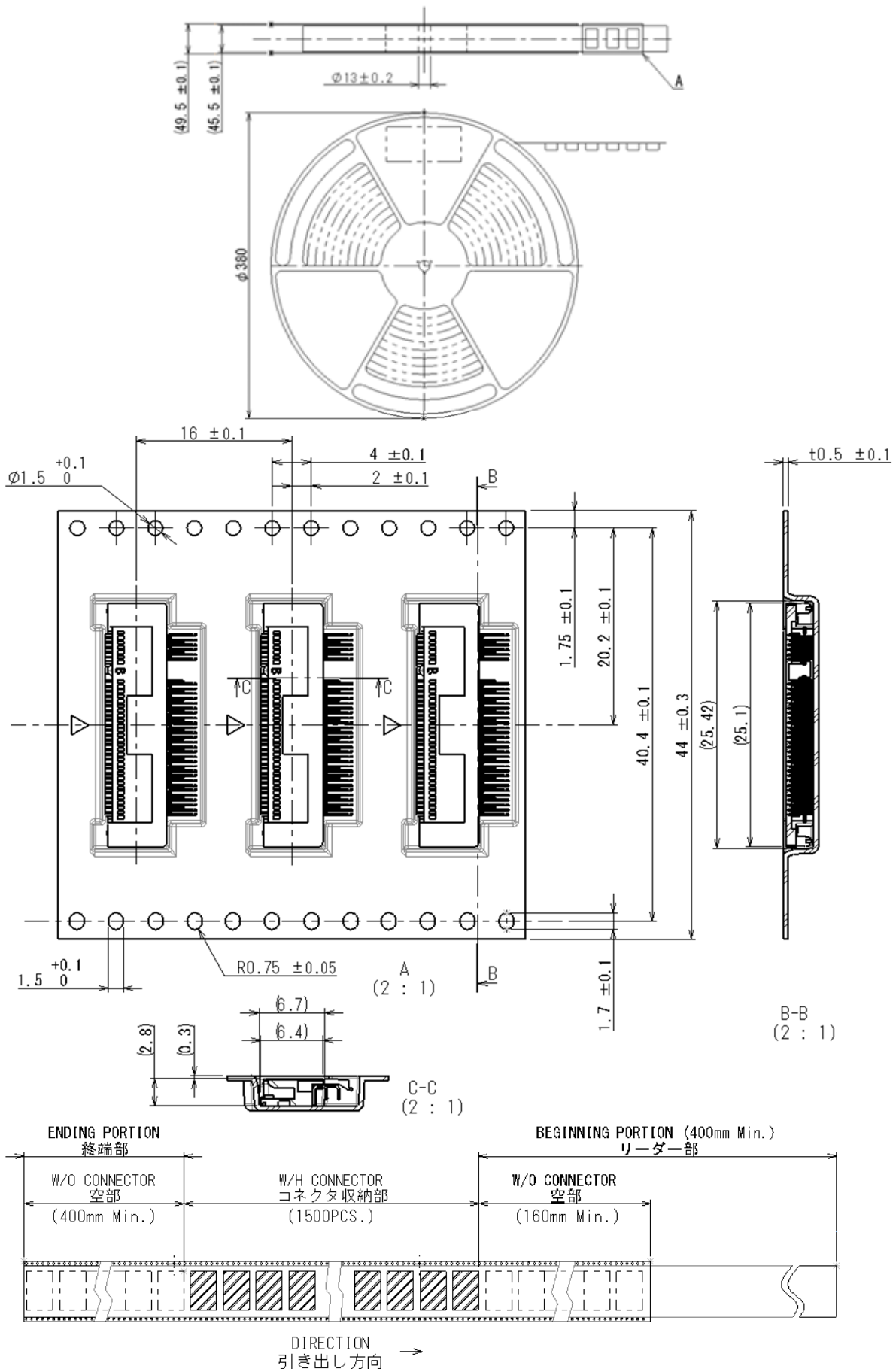
(TABLE 1)

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)

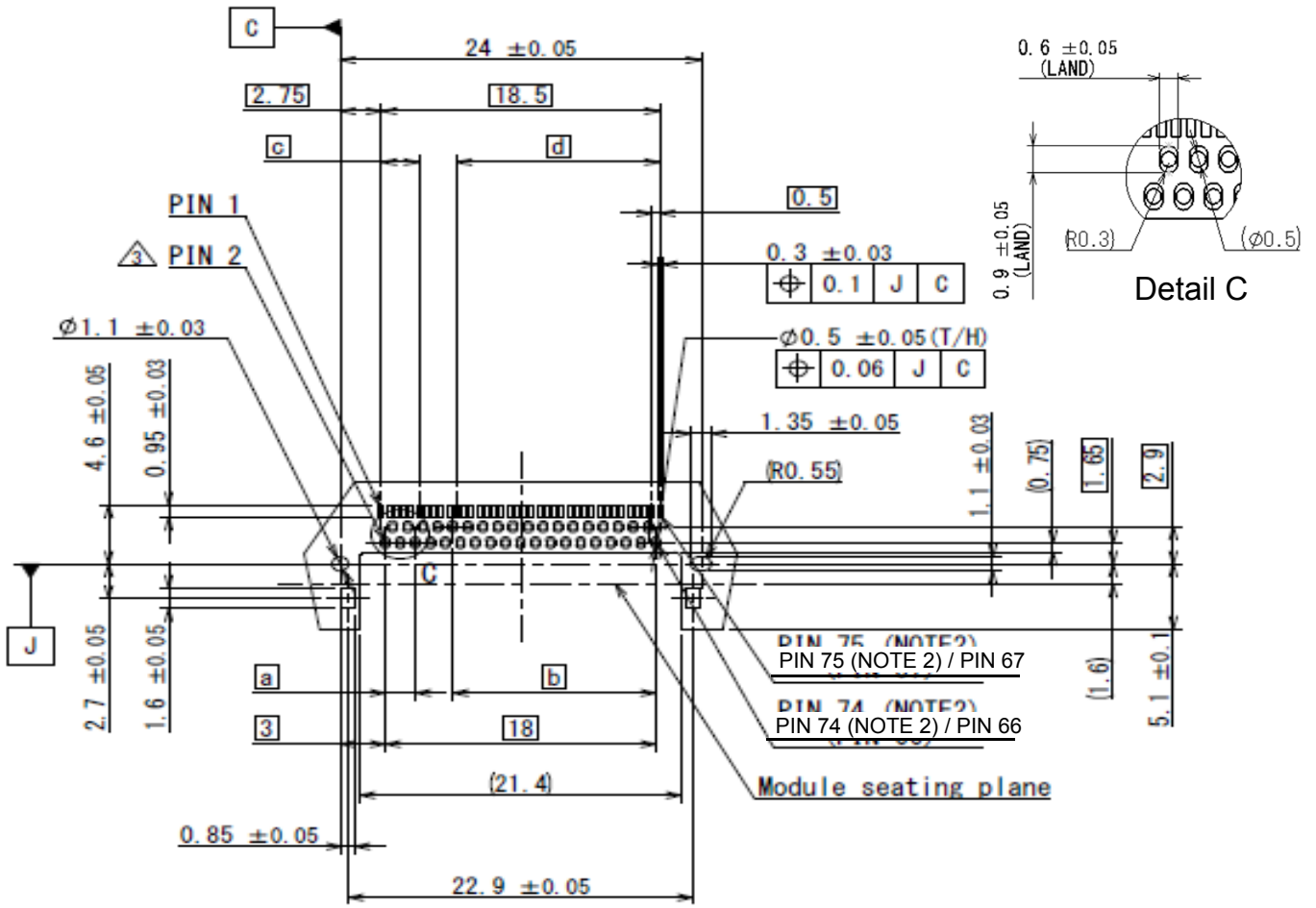


\* Please refer to product drawing when considering the use of this product.



Applicable Board Dimensions

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

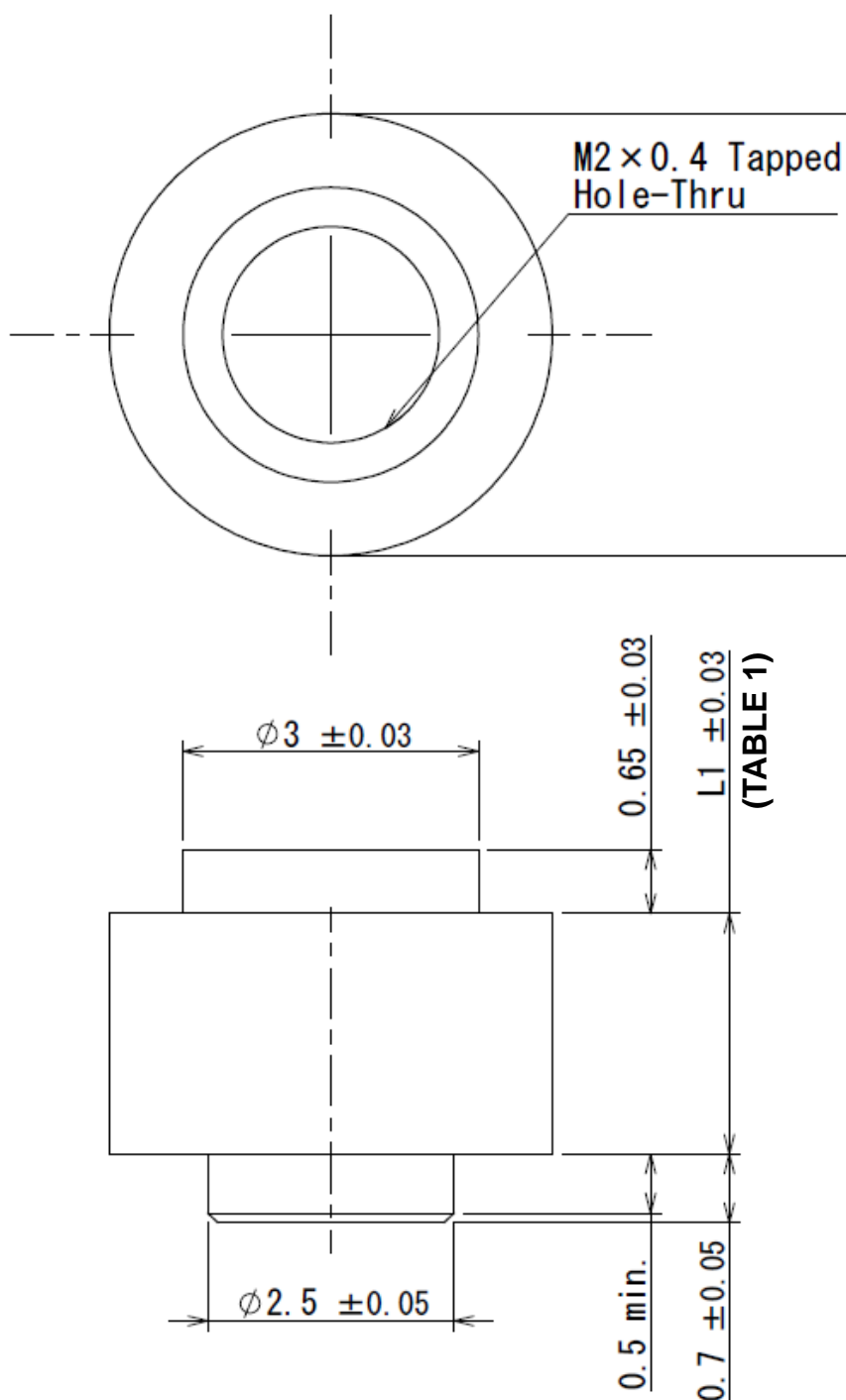


**NOTE 2: PIN NUMBER AS DEFINED BY NGFF SPECIFICATION**

\* 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

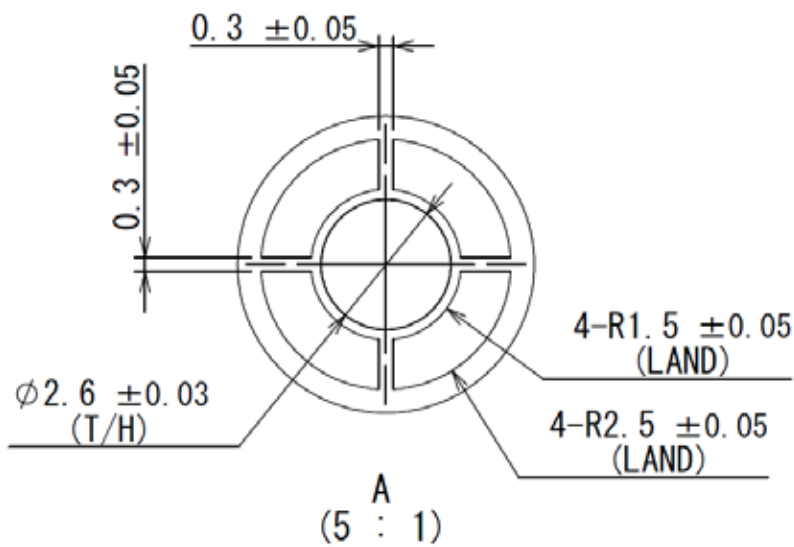
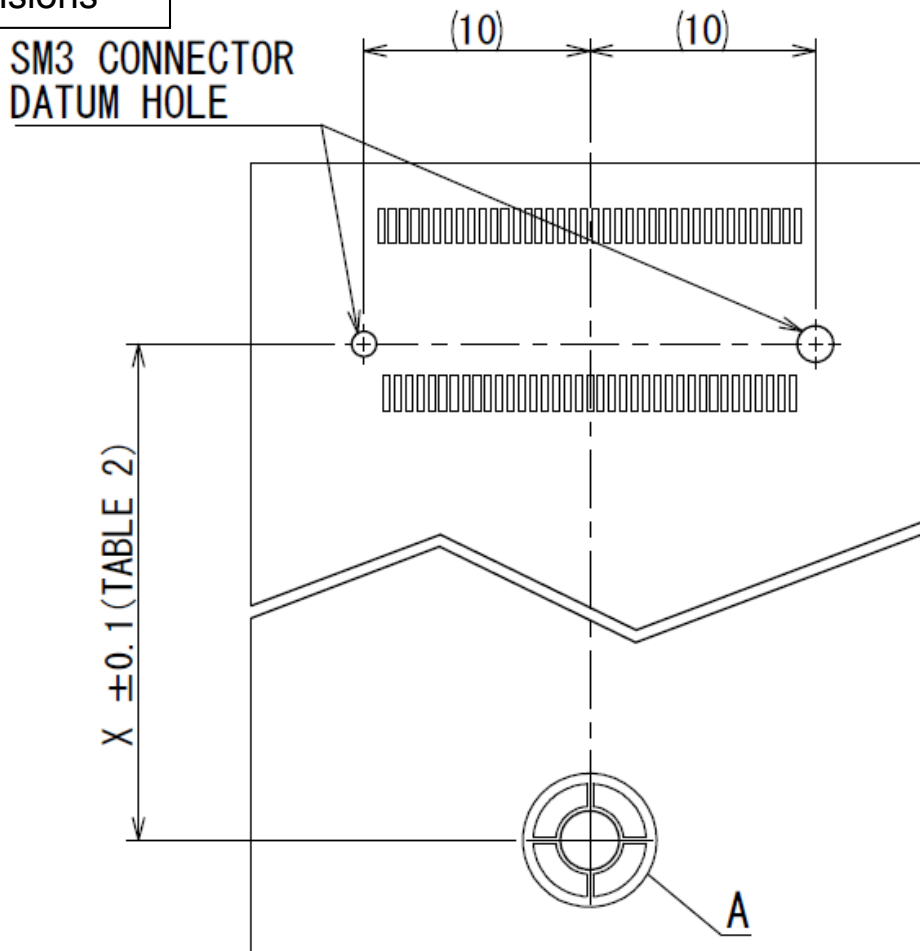
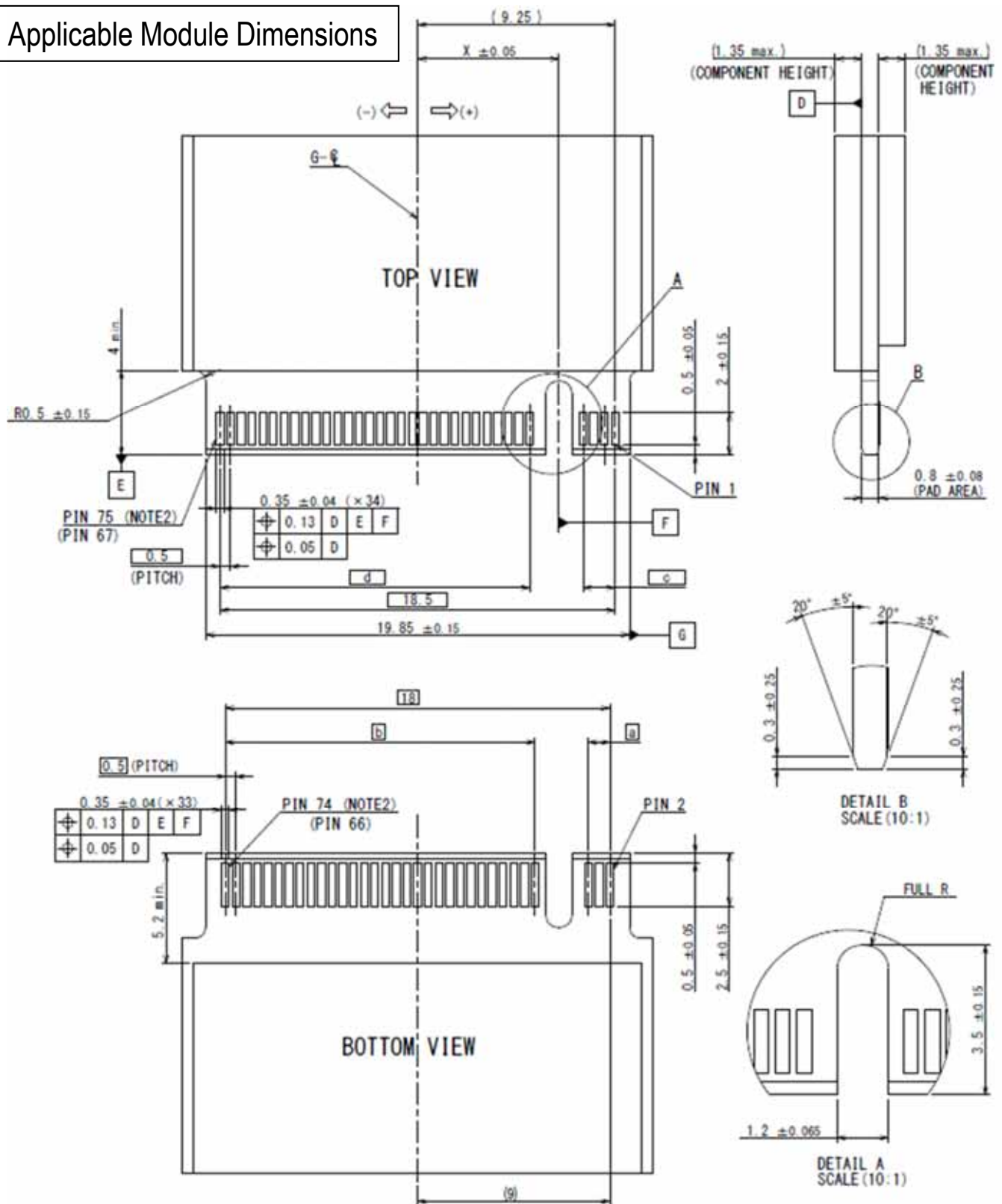


TABLE 2

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.

Applicable Module Dimensions



(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.

<b>Product Drawing and Specification Numbers</b>
--

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 <small>(0.13μm, 0.25μm Product)</small>	SR-C-1225 <small>(0.13μm, 0.25μm Product)</small>	SR-C-1249 <small>(0.13μm, 0.25μm Product)</small>	SR-C-1322		/	
		SR-C-1555 <small>(0.025μm Product)</small>	SR-C-1556 <small>(0.025μm Product)</small>	SR-C-1557 <small>(0.025μm Product)</small>			/	
Specifications		JACS-10937	JACS-10941 <small>(0.13μm, 0.25μm Product)</small>	JACS-10941 <small>(0.13μm, 0.25μm Product)</small>	JACS-11000		JACS-11098	
			JACS-11171 <small>(0.025μm Product)</small>	JACS-11171 <small>(0.025μm Product)</small>				
Drawing No.	Individual Product	SJ113567 <small>(0.13μm, 0.25μm Product)</small>	SJ113505 <small>(0.13μm, 0.25μm Product)</small>	SJ113503 <small>(0.13μm, 0.25μm Product)</small>	SJ114364	SJ114362	SJ116266	
		SJ117622 <small>(0.025μm Product)</small>	SJ117624 <small>(0.025μm Product)</small>	SJ117626 <small>(0.025μm Product)</small>				
	Packaged Product	SJ113568 <small>(0.13μm, 0.25μm Product)</small>	SJ113506 <small>(0.13μm, 0.25μm Product)</small>	SJ113504 <small>(0.13μm, 0.25μm Product)</small>	SJ114365	SJ114363	SJ116261	SJ116260
		SJ117623 <small>(0.025μm Product)</small>	SJ117625 <small>(0.025μm Product)</small>	SJ117627 <small>(0.025μm Product)</small>				

**Notice:**

1. The values specified in this brochure are only for reference. The products and their specifications are subject to change without notice. Contact our sales staff for further information before considering or ordering any of our products. For purchase, a product specification must be agreed upon.

2. 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.

3. The products presented in this brochure are designed for the uses recommended below.

We strongly suggest you contact our sales staff when considering use of any of the products in any other way than the recommended applications or for a specific use that requires an extremely high reliability.

(1) Applications that require consultation:

(i) Please contact us if you are considering use involving a quality assurance program that you specify or that is peculiar to the industry, such as:

Automotive electrical components, train control, telecommunications devices (mainline), traffic light control, electric power, combustion control, fire prevention or security systems, disaster prevention equipment, etc.

(ii) 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.

(2) Recommended applications include:

Computers, office appliances, telecommunications devices (terminals, mobile units), measuring equipment, audiovisual equipment, home electric appliances, factory automation equipment, etc.

**Japan Aviation Electronics Industry, Limited**

\* The specifications in this brochure are subject to change without notice. Please contact JAE for information.