



# 喬山健身器材(上海)有限公司

## 樣品承認書

SAMPLE SPECIFICATION FOR APPROVAL

品名: 连接器 JST:B12B-PASK-1 料号: 093683

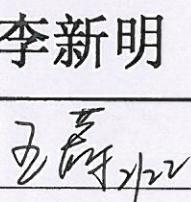
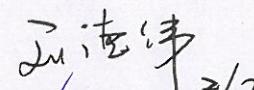
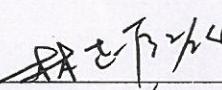
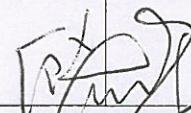
圖号: \_\_\_\_\_ 機種: T60M 接腳板

新產品

模具確認

設計變更

其它

廠 商 	承認章	核準	校對	主辦
	APPRAVED	APPROVAL BY	CHECKED BY	PREPARED BY
喬 山 公 司	資材核準		資材主辦	
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	是否安規認證	<input type="checkbox"/> 是 <input type="checkbox"/> 否	認證主辦	
	承認章	核準	主辦	
	APPRAVED	APPROVAL BY	PREPARED BY	
	業務			
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	品保	 2/28		
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	研發	 2/28	 2/28	顧靜其 文金元 2/28
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廠商名稱 上海謹明電子有限公司

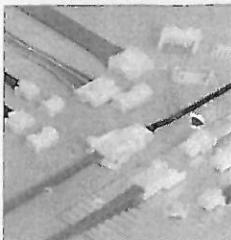
電話 TEL 021-69152633

地址 嘉定区马陆镇宝安公路 2772 号

傳真 FAX 021-69152916

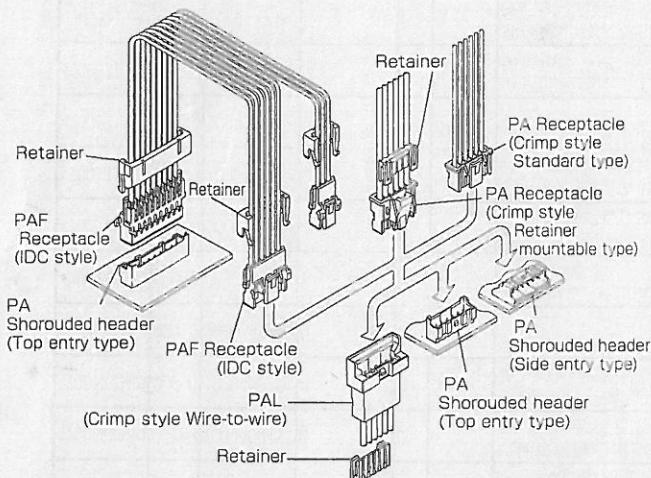
廠商資歷:  ISO9001  ISO14001  其他

送樣履歷:  首次送樣  二次送樣  三次送樣



# PA FAMILY SERIES/PA•PAF•PAL CONNECTOR

**2.0mm pitch/Wire-to-board (Crimp style/IDC) / Wire-to-wire (Crimp style/IDC)**



**Based upon wire-to-board crimp style PA connectors, the PA series family of connector have been expanded to meet the requirement of complex wire harness of 2.0 mm pitch connectors with secure locking mechanism thanks to the additional line up of wire-to-board IDC style PAF connectors and wire-to-wire crimp style PAL connectors.**

- Secure locking device
- Interchangeable between crimp and IDC socket
- Secondary retainers
- Harness variation

#### **PA connector (Standard type, Retainer mountable type)**

- Highly reliable contact
- Insertion guide mechanism
- Flanged press pin

#### **PAF connector**

- The industry's first secure lock ID connectors
- Metallic strain relief
- Retainer with four locking points

#### **PAL connector**

- The industry's first wire to wire 2.0 mm pitch retainer mountable type connector.
- Either with or without panel lock can be selected according to application.

## **Standards**

■ Recognized E60389

■ Certified LR20812

## **Specifications**

### **PA Connector (Standard type)**

- Current rating: 3 A AC, DC (AWG #22)
- Voltage rating: 250 V AC, DC
- Temperature range: -25°C to +85°C  
(including temperature rise in applying electrical current)
- Contact resistance: Initial value/ 10 mΩ max.  
After environmental tests/ 20 mΩ max.
- Insulation resistance: Initial/ 1,000 MΩ min.
- Withstanding voltage: 800 VAC/minute
- Applicable wire: Conductor size/ AWG #28 to #22  
Insulation O.D./ 0.76 to 1.5 mm
- Applicable PC board thickness: 1.6 mm

### **PA Connector (Retainer mountable type)**

- Current rating: 3 A AC, DC (AWG #22)
- Voltage rating: 100 V AC, DC
- Temperature range: -25°C to +85°C  
(including temperature rise in applying electrical current)
- Contact resistance: Initial value/ 15 mΩ max.  
After environmental tests/ 25 mΩ max.
- Insulation resistance: Initial/ 1,000 MΩ min.
- Withstanding voltage: 800 V AC/minute
- Applicable wire: AWG #26 to #22

### **PAF Connector**

- Current rating: 1.0 A AC, DC (AWG #26)
- Voltage rating: 100 V AC, DC
- Temperature range: -25°C to +85°C  
(including temperature rise in applying electrical current)
- Contact resistance: Initial value/ 15 mΩ max.  
After environmental tests/ 25 mΩ max.
- Insulation resistance: Initial/ 1,000 MΩ min.
- Withstanding voltage: 800 VAC/minute
- Applicable wire: UL1061(Contact JST for details regarding other UL wires.)  
AWG #26  
Conductor/ 7 strands, tin-coated annealed copper  
Insulation O.D./ 0.9 to 1.0 mm

### **PAL Connector**

- Current rating: 3 A AC, DC (AWG #22)
- Voltage rating: 100 V AC, DC
- Temperature range: -25°C to +85°C  
(including temperature rise in applying electrical current)
- Contact resistance: Initial value/ 15 mΩ max.  
After environmental tests/ 25 mΩ max.
- Insulation resistance: Initial/ 1,000 MΩ min.
- Withstanding voltage: 800 VAC/minute
- Applicable wire: AWG #28 to #22
- Applicable panel thickness : 0.5 to 2.0 mm

\* Refer to "General Instruction and Notice when using Terminals and Connectors" at the end of this catalog.

\* Contact JST for details.

\* Compliant with RoHS.

# PA FAMILY SERIES /PA•PAF•PAL CONNECTOR

## List of combinations

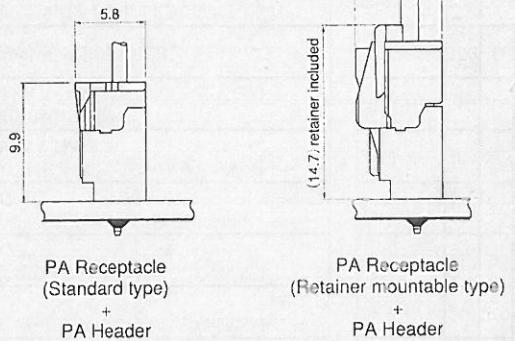
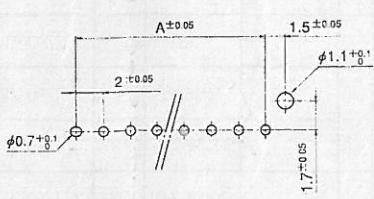
<b>Crimp style</b> <b>Standard type</b>  	<u>Contact</u> SPHD-001T-P0.5 SPHD-002T-P0.5  <u>Housing</u> PAP-( )V-S		<u>Shrouded header</u> B( )B-PASK B( )B-PASK-1 B( )B-PASK-N B( )B-PASK-1N S( )B-PASK-2	<b>Top entry type</b> 	<b>Side entry type</b> 
	<u>Contact</u> SPA-001T-P0.5  <u>Housing</u> PARP-( )V  <u>Retainer</u> PMS-( )V-S		<u>Shrouded header</u> BH( )B-PASK BH( )B-PASK-1	<b>Bottom type</b> 	
<b>Crimp style</b> <b>Retainer mountable type</b>  	<u>Contact</u> SPA-001T-P0.5  <u>Housing</u> PARP-( )V  <u>Retainer</u> PMS-( )V-S		<u>Shrouded header</u> BM( )B-PASS BM( )B-PASS-1 SM( )B-PASS SM( )B-PASS-1	<b>High box type</b> 	
				<b>SMT type</b> 	Top entry type  Side entry type 
<b>Insulation displacement type</b>  	<u>Receptacle</u> ( )PAF-6S  <u>Retainer</u> PAFS-( )V-S		<u>Contact</u> SPAL-001T-P0.5 SPAL-002T-P0.5  <u>Receptacle housing</u> PALR-( )V(F)  <u>Retainer</u> PMS-( )V-S	<b>Wire to wire Connectors</b>  	

# PA FAMILY SERIES /PA•PAF•PAL CONNECTOR

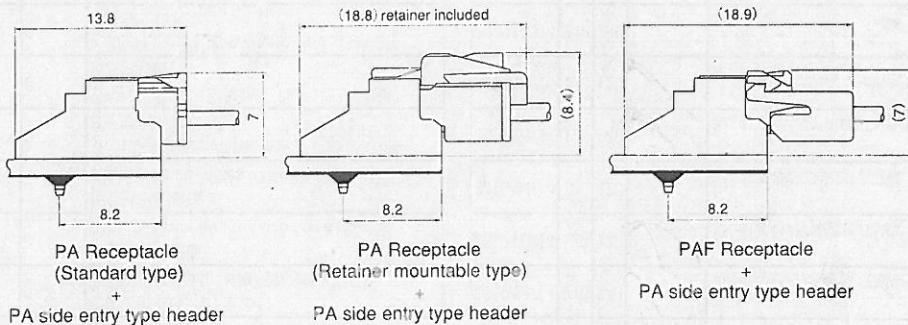
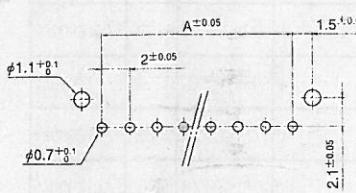
## PC board layout and Assembly layout

<Through-hole type>

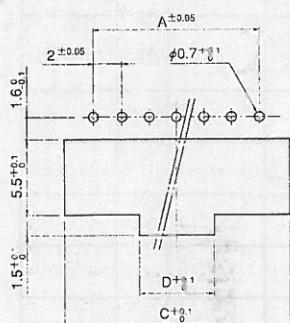
Top entry type



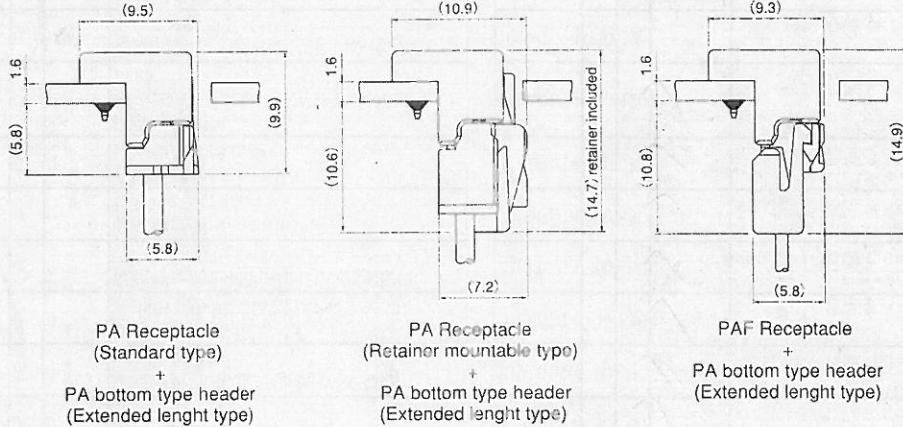
Side entry type



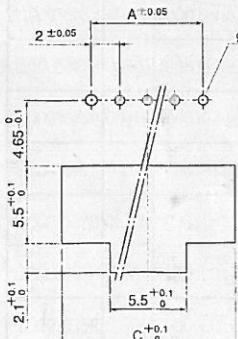
Bottom type



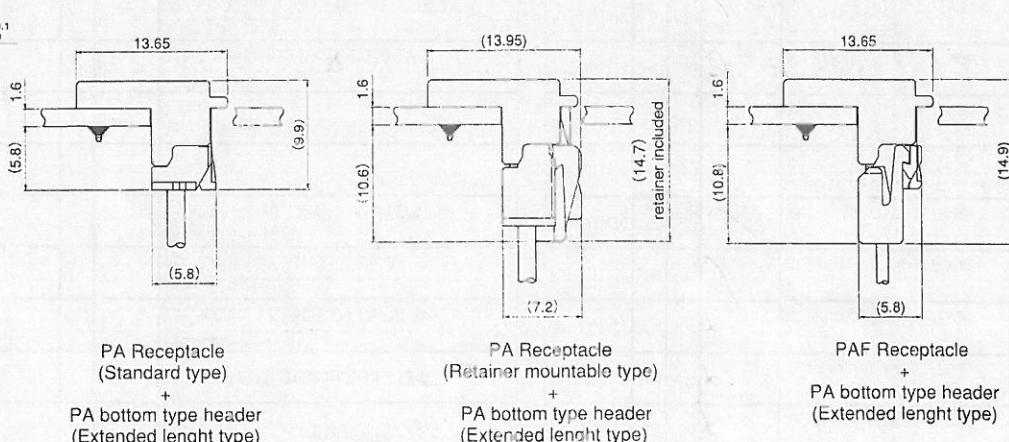
Note: Dimensions C and D: Refer to the header bottom type.



Bottom type with extended length



Note: Dimensions C: Refer to the header bottom type.



Note: 1. The above figure is the figure viewed from the connector mounting side.

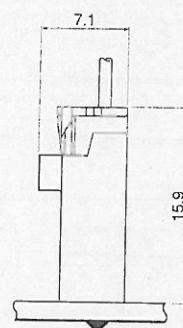
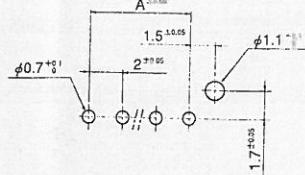
2. Tolerances are non-cumulative: ±0.05 mm for all centers.

3. Hole dimensions differ according to the type of PC board and piercing method. The dimensions above should serve as a guideline. Contact JST for details.

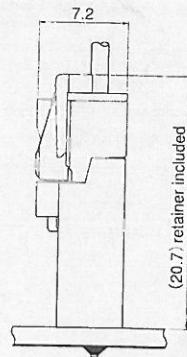
# PA FAMILY SERIES /PA•PAF•PAL CONNECTOR

## PC board layout and Assembly layout

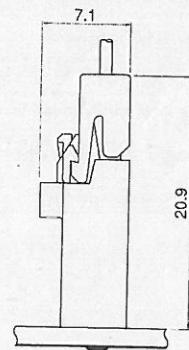
### High box type



PA Receptacle  
(Standard type)  
+  
PA high box type header



PA Receptacle  
(Retainer mountable type)  
+  
PA high box type header



PAF Receptacle  
+  
PA high box type header

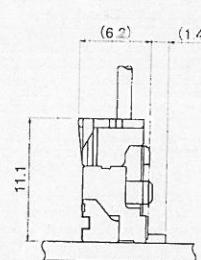
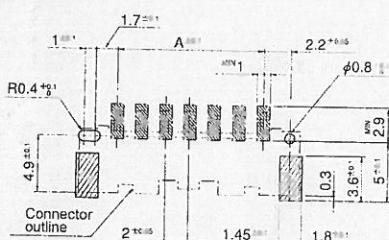
Note: 1. The above figure is the figure viewed from the connector mounting side.

2. Tolerances are non-cumulative:  $\pm 0.05$  mm for all centers.

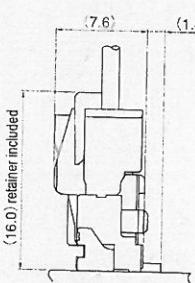
3. Hole dimensions differ according to the type of PC board and piercing method. The dimensions above should serve as a guideline. Contact JST for details.

### <SMT type>

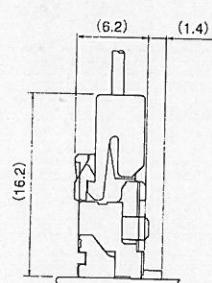
#### Top entry type



PA Receptacle  
(Standard type)  
+  
PA Header

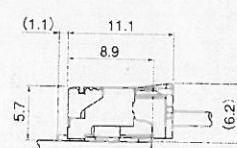
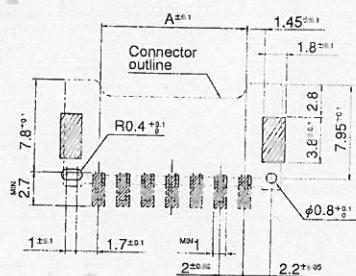


PA Receptacle  
(Retainer mountable type)  
+  
PA Header

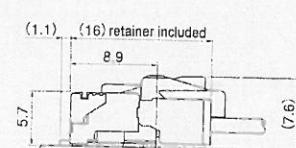


PAF Receptacle  
+  
PA Header

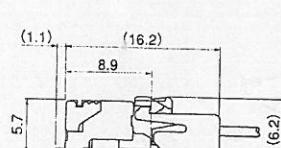
#### Side entry type



PA Receptacle  
(Standard type)  
+  
PA side entry type header



PA Receptacle  
(Retainer mountable type)  
+  
PA side entry type header



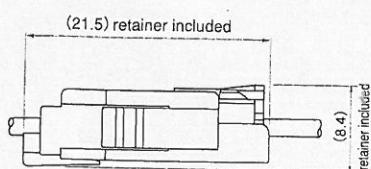
PAF Receptacle  
+  
PA side entry type header

Note: 1. The above figure is the figure viewed from the connector mounting side.

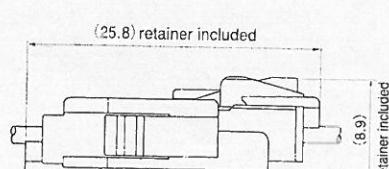
2. Tolerances for the centers of pattern on PCB is  $\pm 0.05$ , and shall be not cumulative more than  $\pm 0.1$ .

3. The dimensions above should serve as a guideline. Contact JST for details.

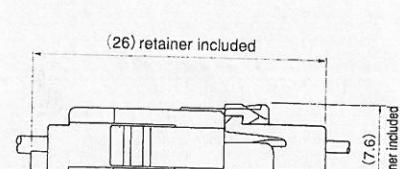
### <Wire-to-wire>



PA Receptacle  
(Standard type)  
+  
PAL Receptacle



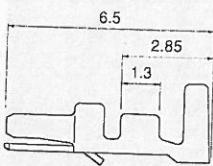
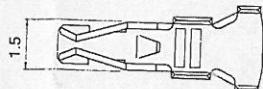
PA Receptacle  
(Retainer mountable type)  
+  
PAL Receptacle



PAF Receptacle  
+  
PAL Receptacle

# PA FAMILY SERIES / PA CONNECTOR (Crimp style Standard type)

## Contact



Model No.	Applicable wire mm <sup>2</sup>	AWG #	Insulation O.D. (mm)	Q'ty/ reel
SPHD-001T-P0.5	0.13~0.33	26~22	1.0~1.5	8,000
SPHD-002T-P0.5	0.08~0.21	28~24	0.76~1.5	8,000

### Material and Finish

Phosphor bronze, tin-plated (reflow treatment)

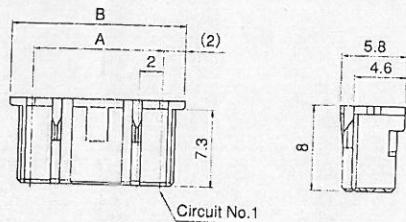
### RoHS compliance

Contact	Crimping machine	Applicator		
		Crimp applicator	Dies	Crimp applicator with dies
SPHD-002T-P0.5	AP-K2N	MKS-L-10	MK/SPHD-002-05	APLMK SPHD002-05
		*MKS-SC-10	SC/SPHD-002-05	APLSC SPHD002-05
SPHD-001T-P0.5	AP-K2N	MKS-L-10	MK/SPHD-001-05	APLMK SPHD001-05
		*MKS-SC-10	SC/SPHD-001-05	APLSC SPHD001-05

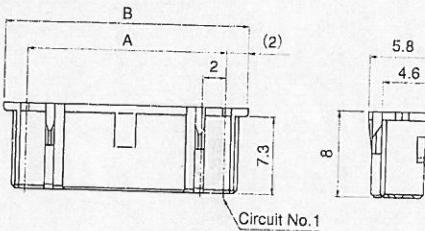
Note: \*Strip-crimp applicator

## Housing

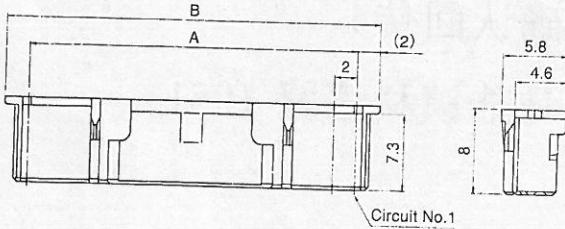
### <2 to 9 circuits>



### <10 to 15 circuits>



### <16 circuits>



Circuits	Model No.	Dimensions (mm)		Q'ty/ bag
		A	B	
2	PAP-02V-S	2.0	6.0	1,000
3	PAP-03V-S	4.0	8.0	1,000
4	PAP-04V-S	6.0	10.0	1,000
5	PAP-05V-S	8.0	12.0	1,000
6	PAP-06V-S	10.0	14.0	1,000
7	PAP-07V-S	12.0	16.0	1,000
8	PAP-08V-S	14.0	18.0	1,000
9	PAP-09V-S	16.0	20.0	1,000
10	PAP-10V-S	18.0	22.0	1,000
11	PAP-11V-S	20.0	24.0	1,000
12	PAP-12V-S	22.0	26.0	1,000
13	PAP-13V-S	24.0	28.0	1,000
14	PAP-14V-S	26.0	30.0	1,000
15	PAP-15V-S	28.0	32.0	1,000
16	PAP-16V-S	30.0	34.0	1,000

### Material

PA 66, UL94V-0, natural (white)

### RoHS compliance

<For reference> As the color identification,  
the following alphabet shall be put in the underlined part.  
For availability, delivery and minimum order quantity, contact JST.

ex. PAP-02V-S

S...natural (white)

K...black R...red E...blue M...green O...orange N...brown

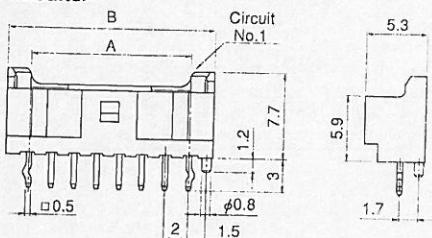
P...purple PK...pink Y...yellow L...lemon yellow FY...vivid yellow

LE...light blue H...gray TR...tomato red

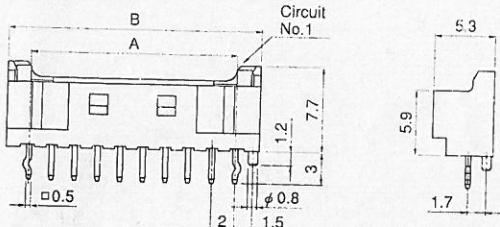
**Through-hole type shrouded header**

**Top entry type**

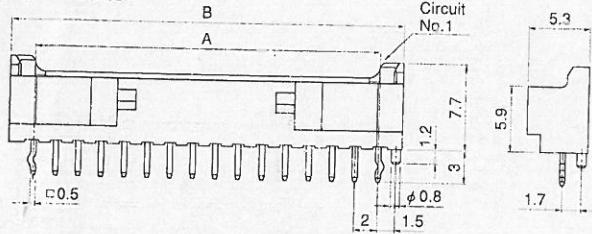
<2 to 9 circuits>



<10 to 15 circuits>

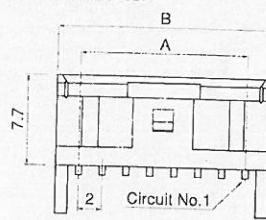


<16 circuits>

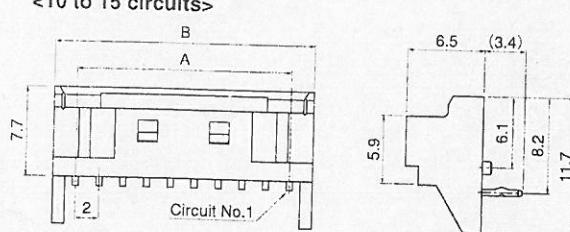


**Side entry type**

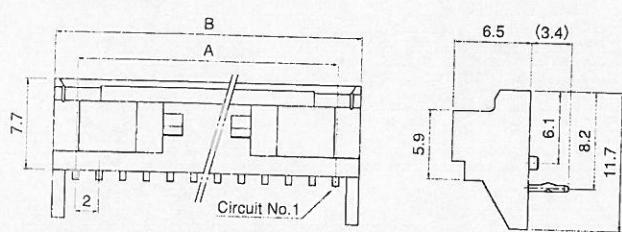
<2 to 9 circuits>



<10 to 15 circuits>



<16 circuits>



**Top entry type**

Circuits	Model No.		Dimensions (mm)		Q'ty/box
	Without boss	With a boss	A	B	
2 (Note1)	B02B-PAFYK-A	B02B-PAFYK-1A	2.0	6.0	1,000
2	B02B-PASK	B02B-PASK-1	2.0	6.0	1,000
3	B03B-PASK	B03B-PASK-1	4.0	8.0	1,000
4	B04B-PASK	B04B-PASK-1	6.0	10.0	1,000
5	B05B-PASK	B05B-PASK-1	8.0	12.0	500
6	B06B-PASK	B06B-PASK-1	10.0	14.0	500
7	B07B-PASK	B07B-PASK-1	12.0	16.0	500
8	B08B-PASK	B08B-PASK-1	14.0	18.0	500
9	B09B-PASK	B09B-PASK-1	16.0	20.0	500
10	B10B-PASK	B10B-PASK-1	18.0	22.0	500
11	B11B-PASK	B11B-PASK-1	20.0	24.0	250
12	B12B-PASK	B12B-PASK-1	22.0	26.0	250
13	B13B-PASK	B13B-PASK-1	24.0	28.0	250
14	B14B-PASK	B14B-PASK-1	26.0	30.0	250
15	B15B-PASK	B15B-PASK-1	28.0	32.0	250
16	B16B-PASK	B16B-PASK-1	30.0	34.0	250

**Material and Finish**

Post: Copper alloy, copper-undercoated, tin-plated (reflow treatment)  
Wafer: Glass-filled PBT, UL94V-0, natural (white)  
(Note1) PA 66, UL94V-0, vivid yellow

**RoHS compliance** This product displays (LF)(SN) on a label.

<For reference> As the color identification,  
the following alphabet shall be put in the underlined part.  
For availability, delivery and minimum order quantity, contact JST.

ex. **B02B-PASK**

S...natural (white)

K...black R...red E...blue M...green O...orange N...brown

P...purple PK...pink Y...yellow L...lemon yellow FY...vivid yellow  
LE...light blue H...gray TR...tomato red

**Side entry type**

Circuits	Model No.	Dimensions (mm)		Q'ty/box
		A	B	
2	S02B-PASK-2	2.0	6.0	1,000
3	S03B-PASK-2	4.0	8.0	1,000
4	S04B-PASK-2	6.0	10.0	500
5	S05B-PASK-2	8.0	12.0	500
6	S06B-PASK-2	10.0	14.0	500
7	S07B-PASK-2	12.0	16.0	250
8	S08B-PASK-2	14.0	18.0	250
9	S09B-PASK-2	16.0	20.0	250
10	S10B-PASK-2	18.0	22.0	250
11	S11B-PASK-2	20.0	24.0	250
12	S12B-PASK-2	22.0	26.0	250
13	S13B-PASK-2	24.0	28.0	200
14	S14B-PASK-2	26.0	30.0	200
15	S15B-PASK-2	28.0	32.0	200
16	S16B-PASK-2	30.0	34.0	200

**Material and Finish**

Post: Copper alloy, copper-undercoated, tin-plated (reflow treatment)  
Wafer: Glass-filled PBT, UL94V-0, natural (white)

**RoHS compliance** This product displays (LF)(SN) on a label.

<For reference> As the color identification,  
the following alphabet shall be put in the underlined part.

For availability, delivery and minimum order quantity, contact JST.

ex. **S03B-PASK-2**

S...natural (white)

K...black R...red E...blue M...green O...orange N...brown

P...purple PK...pink Y...yellow L...lemon yellow LE...light blue

H...gray TR...tomato red