



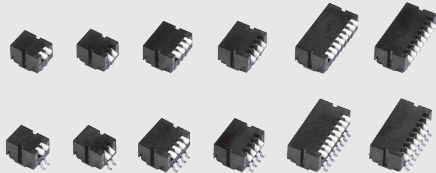
THE DATASHEET OF CHP-040TB



PIANO SWITCHES (HALF PITCH)

CHP

RoHS compliant



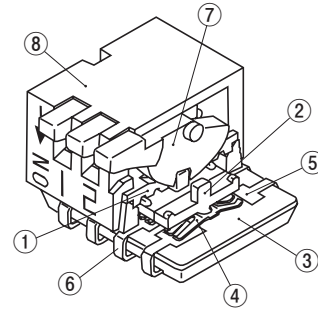
FEATURES

- RoHS compliant
- High-reliability

APPLICATIONS

- Communication devices, AV • OA equipment and computer peripherals

INTERNAL STRUCTURE



Part name	Material	Flammability
① Cover	Polyphenylenesulphide	UL94V-0
② Slider	Polyamide	
③ Housing	Polyphenylenesulphide	
④ Slider contact	Copper alloy, Gold-plated	-
⑤ Fixed contact		
⑥ Terminal pin		
⑦ Piano lever	Polyamide	UL94V-0
⑧ Piano cover	Polyphenylenesulphide	

PART NUMBER DESIGNATION

C H P - 0 4 0 T B

Series name

No. of bits

02 : 2 bits
04 : 4 bits
08 : 8 bits

ON direction

0 : Upper
1 : Lower

Shape of terminal

A : J-hook
B : Gull wing

Form of packaging

T : Taping (Reel)
Blank : Bulk in plastic bag

※ Please refer to the LIST OF PART NUMBERS when placing orders.

CHP

PIANO SWITCHES (HALF PITCH)

LIST OF PART NUMBERS

No. of bits	ON direction	Form of packaging	Shape of terminals		Pieces in package
			A (J-hook)	B (Gull wing)	
2	Upper	Taping	CHP-020TA	CHP-020TB	500 pcs./reel
		Plastic bag	CHP-020A	CHP-020B	50 pcs./pack
	Lower	Taping	CHP-021TA	CHP-021TB	500 pcs./reel
		Plastic bag	CHP-021A	CHP-021B	50 pcs./pack
4	Upper	Taping	CHP-040TA	CHP-040TB	500 pcs./reel
		Plastic bag	CHP-040A	CHP-040B	50 pcs./pack
	Lower	Taping	CHP-041TA	CHP-041TB	500 pcs./reel
		Plastic bag	CHP-041A	CHP-041B	50 pcs./pack
8	Upper	Taping	CHP-080TA	CHP-080TB	500 pcs./reel
		Plastic bag	CHP-080A	CHP-080B	50 pcs./pack
	Lower	Taping	CHP-081TA	CHP-081TB	500 pcs./reel
		Plastic bag	CHP-081A	CHP-081B	50 pcs./pack

※ Verify the above part numbers when placing orders.
Taping version can be supplied only in reel units.

STANDARD SPECIFICATIONS

Operating temp. range	- 40 ~ 85 °C
Storage temp. range	
Sealing	Non-washable
Net weight	Approx. 0.16 g (CHP-02), Approx. 0.25 g (CHP-04), Approx. 0.43 g (CHP-08)

MECHANICAL CHARACTERISTICS

Operation angle	22 °
Operation force	5 N {0.51 kgf} maximum
Stop strength	10 N {1.02 kgf} 60 s
Solderability	245 ± 3 °C, 2 ~ 3 s
Soldering heat	Reflow : 255 °C (Peak temperature) (Please refer to the profile below)
	Manual soldering : 350 ± 10 °C, 3 ~ 4 s
Shear (Adhesion)	5 N {0.51 kgf} 10 s
Substrate bending	Width 90 mm, bend 3 mm, 5 s, 1 time
Pull-off strength	5 N {0.51 kgf} 10 s

{ } : Reference only

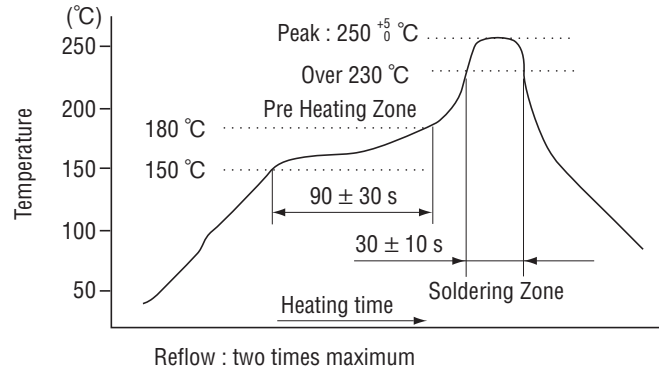
ELECTRICAL CHARACTERISTICS

Contact rating Non-switching Switching Minimum	DC50 V 100 mA DC6 V, 100 mA DC24 V, 25 mA DC20 mV 1 µA
Contact resistance	50 m Ω maximum
Insulation resistance	1000 M Ω (DC100 V) minimum
Dielectric strength	AC500 V, 60 s

ENVIRONMENTAL CHARACTERISTICS

Vibration	(Amplitude) 1.5 mm or (Acceleration) 98 m/s ² , 10-500 Hz, 3 directions for 10 cycles each
Shock	490 m/s ² , 11 ms 6 directions for 3 times each
Load life	Continuous load 1000 cycles, DC6 ± 0.5 V, 100 ± 10 mA
Humidity	-10 ~ 65 °C, Relative humidity 0 ~ 96 %, 24 h for 10 cycles
High temp. exposure	85 °C, 96 h
Low temp. exposure	-40 °C, 96 h
Thermal shock	-40 (0.5 h) ~ 85 °C (0.5 h), 5 cycles

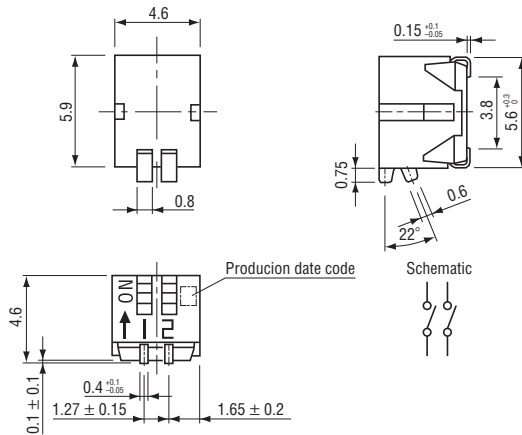
<Reflow profile for soldering heat evaluation>



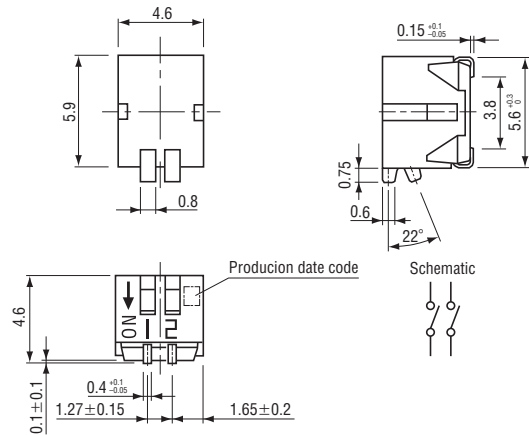
OUTLINE DIMENSIONS

Unless otherwise specified, tolerance : ± 0.3 (Unit : mm)

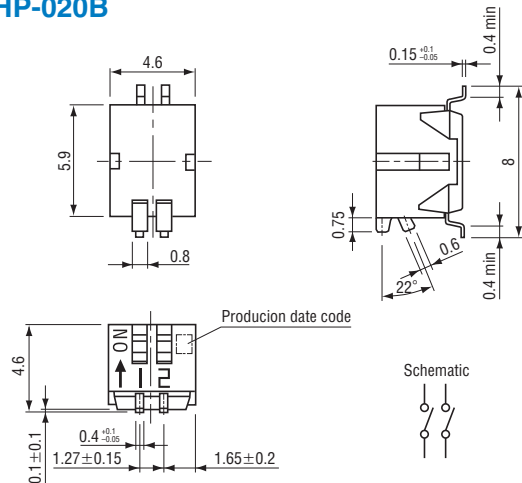
● CHP-020A



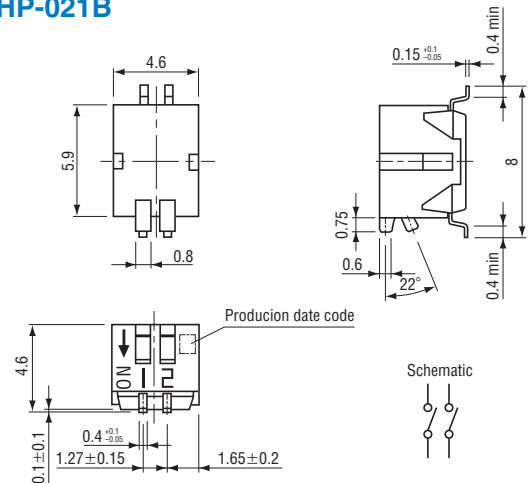
● CHP-021A



● CHP-020B



● CHP-021B



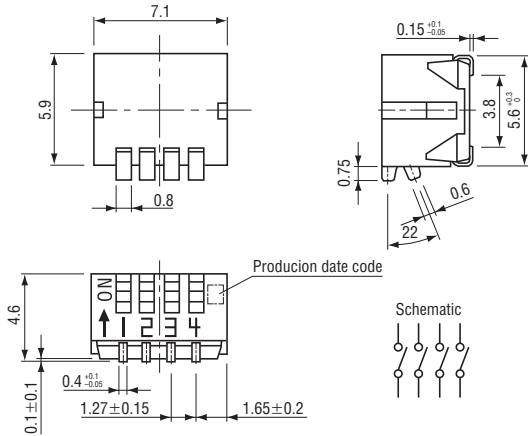
CHP

PIANO SWITCHES (HALF PITCH)

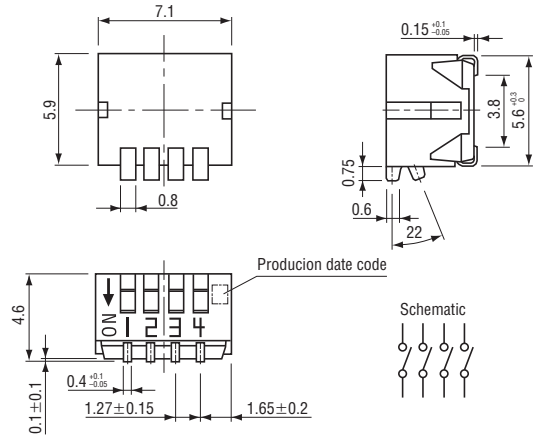
OUTLINE DIMENSIONS

Unless otherwise specified, tolerance : ± 0.3 (Unit : mm)

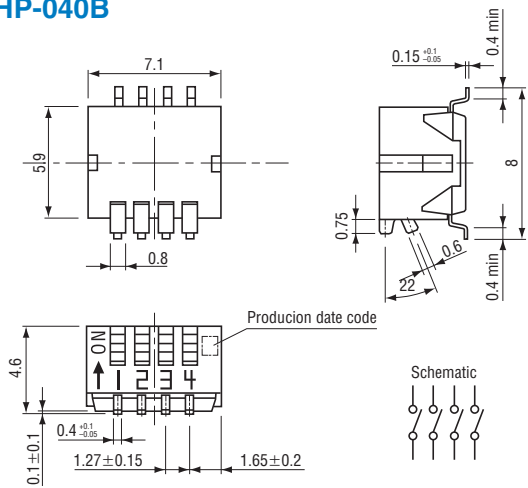
CHP-040A



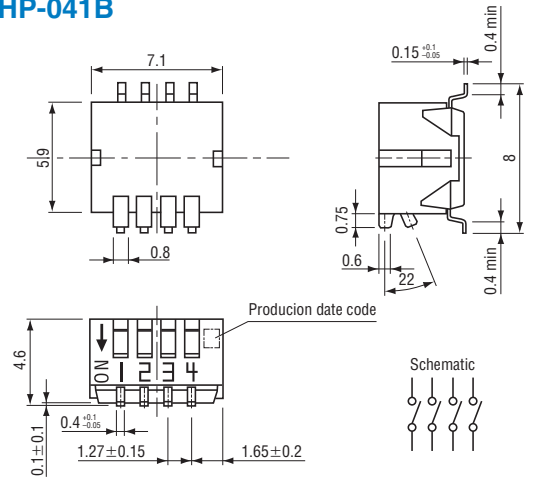
CHP-041A



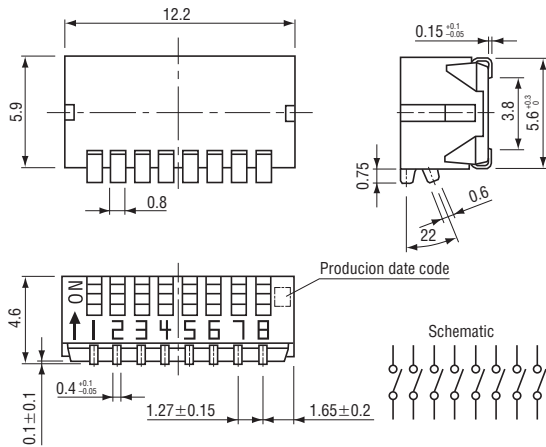
CHP-040B



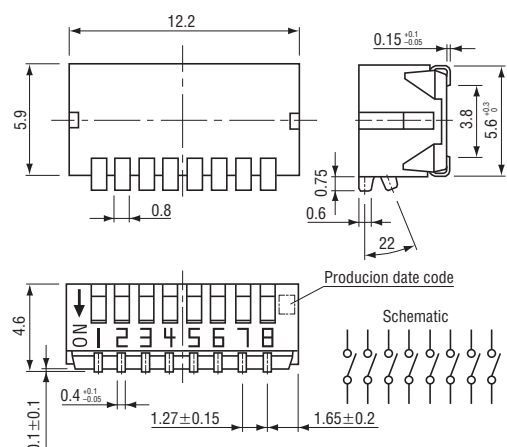
CHP-041B



CHP-080A

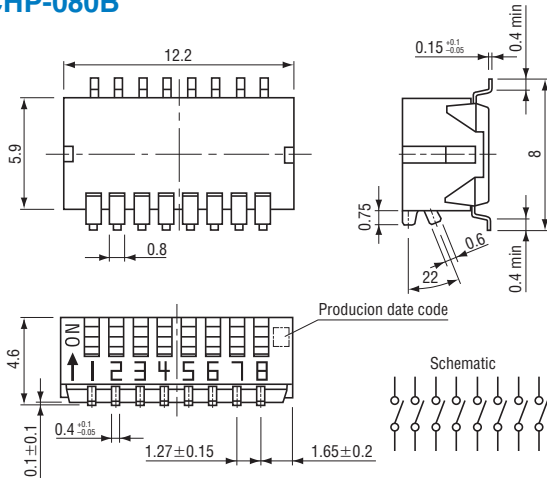


CHP-081A



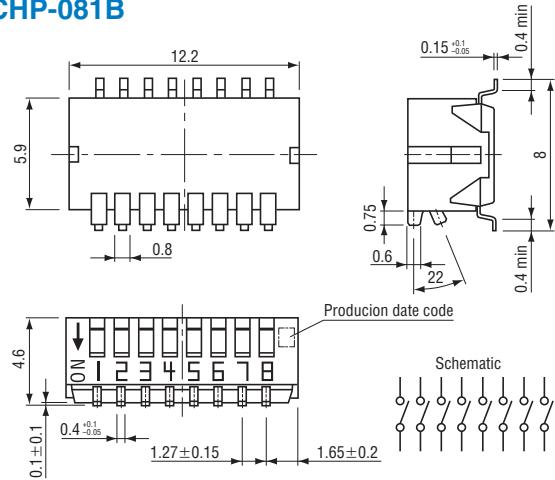
OUTLINE DIMENSIONS

● CHP-080B



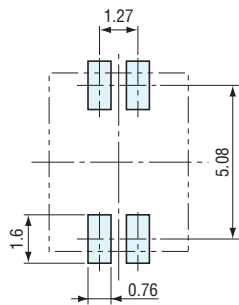
Unless otherwise specified, tolerance : ± 0.3 (Unit : mm)

● CHP-081B

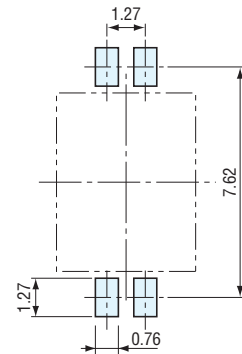


RECOMMENDED P.C.B. PAD DIMENSIONS

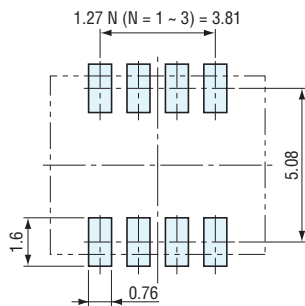
● 2 bits A type



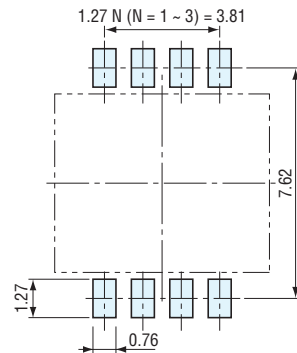
B type



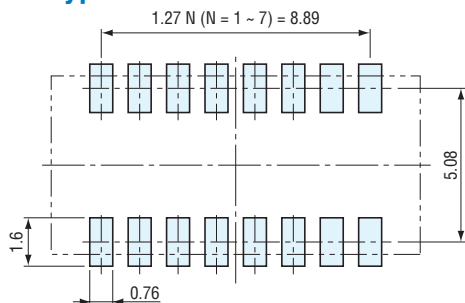
● 4 bits A type



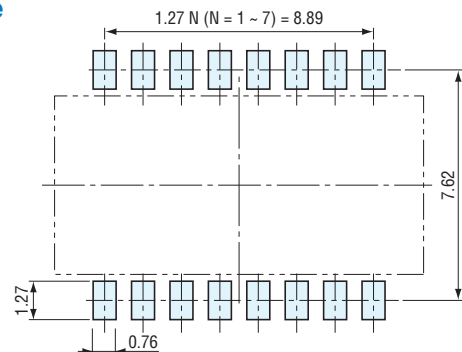
B type



● 8 bits A type



B type



CHP

PIANO SWITCHES (HALF PITCH)

PACKAGING SPECIFICATIONS

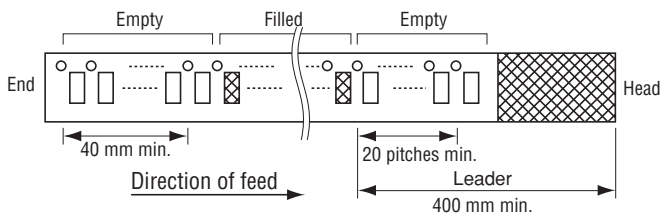
<Taping packaging specifications>

- Taping version is packaged in 500 pcs. per reel. Orders will be accepted for units of 500 pcs., i.e., 500, 1000, 1500 pcs., etc.

- Taping version is boxed with two reels.

Maximum number of consecutive missing pieces=2
 Leader length and reel dimension are shown in the diagrams below:

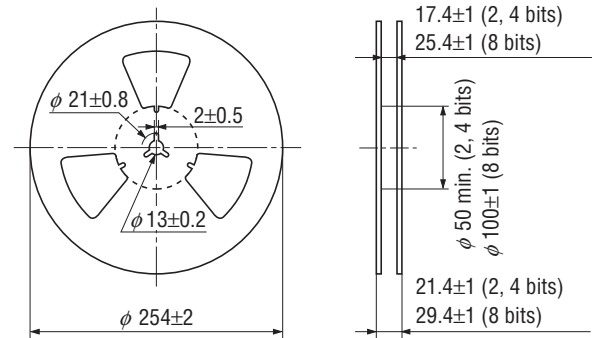
● Embossed tape dimensions



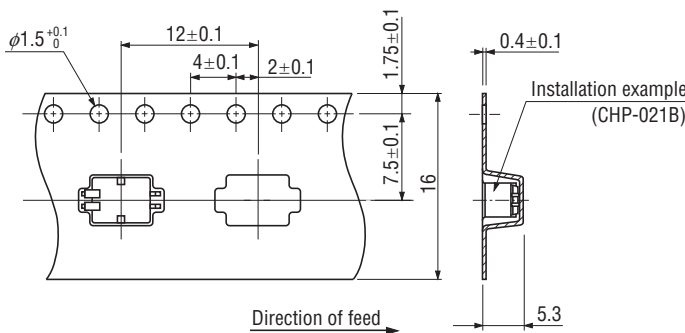
● Reel dimensions

(Unit: mm)

(Conforms to JIS C 0806-3)
 (In accordance with EIAJ ET-7200A)

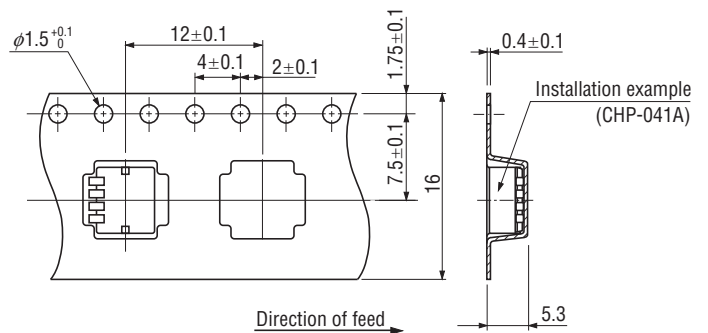


● 2 bits

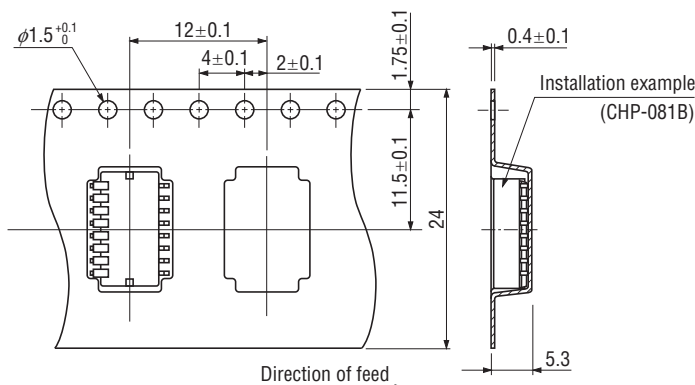


● 4 bits

(Unit : mm)



● 8 bits





<Bulk pack specifications>

- The smallest unit of bulk pack in a plastic bag is 10 pcs. per pack. Orders will be accepted for unit of minimum 10 pcs., i.e., 10, 20, 30 pcs., etc.
- Boxing of bulk in a plastic bag is performed with 50 pcs. (Standard 100 pcs.) per box.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

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-  [Copal Electronics Inc. Information](#)

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-  Cost Control Management
-  Shortage Management
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