

Note prior to placing order

Products or specifications on the catalog are subject to be changed without notice. Please inquire our sales agents for our latest specifications. We require an acknowledgment of specification documents for product use beyond our specifications, and conditions needing high reliability, such as nuclear reactor control, railroads, aviation, automobile, combustion, medical, amusement, Disaster prevention equipment and etc. Furthermore, we ask you to perform a swift incoming inspection for delivered products and we would also appreciate if full attention is given to the storage conditions of the product.

〈Warranty Period〉

The Warranty period is one year from the date of delivery. The warranty is only applicable to the product itself, not applicable to consumable products such as batteries and etc.

〈Warranty Coverage〉

If any malfunctions should occur due to our fault, NIDEC COPAL ELECTRONICS warrants any part of our product within one year from the date of delivery by repair or replacement at free of charge. However, warranty is not applicable if the causes of defect should result from the following conditions:

- Failure or damages caused by inappropriate use, inappropriate conditions, and inappropriate handling.
- Failure or damages caused by inappropriate modifications, adjustment, or repair.
- Failure or damage caused by technically and scientifically unpredictable factors.
- Failure or damage caused by natural disaster, fire or unavoidable factors.

OUTLINE

DIP SWITCHES

The DIP switch is generally defined as "Dual In-line Package Switch".

Since we marketed our first Dip Rotary Code Switch S-1000 in 1978, we have been expanding the range of DIP switch series.

Mounted on the printed circuit board incorporated in information processing equipment, data communications equipment and control equipment, etc., DIP switches are mainly used as a means of setting such as for programs and circuits as well as circuit switching. Based on our special expertise in contact technology and sealing technology, we are manufacturing reliable switches that can satisfy the needs for digitalizing, upgrading and down-sizing of equipment.

Our DIP switches are classified as follows:

- DIP Slide Switch

CHS series is a half-pitched thin type SMD slide switch conforming to EIAJ SOP Configuration Standard.

Full-pitched slide switch CFS series has been newly added, moreover, 1 mm-pitched CVS series, piano switch CHP series and CFP series have also added, meeting various needs.

- DIP Rotary Code Switch

This switch is designed to rotate the rotor so that a code signal is output by making a binary connection between common terminal and each of terminals 1, 2, 4, 8, directly.

A decimal or hexadecimal step of real code and complementary code are provided as circuit configurations.

Three switch types are available according to configurations; knobbed type, top setting type and side setting type.

In addition, this switch is classified into a board insertion type and an SMD type according to the mounting method.

GLOSSARY

DIP SWITCHES

● Stopper strength mN-m

This shows the mechanical strength of the stops employed to limit the rotation of the rotor. A designated torque is applied to the switch axis, etc., and the strength is measured.

● Rotational torque mN-m

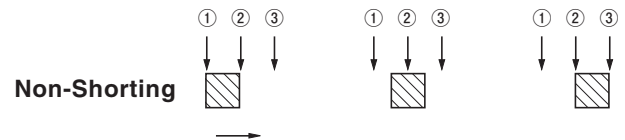
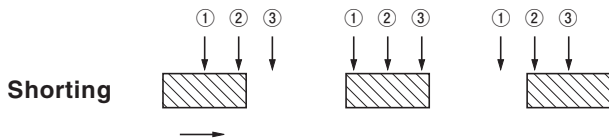
This shows the operating force required to turn the rotor of a rotary switch.

● Switching timing

Timing is either shorting or non-shorting.

Shorting: In this case, when switching contacts on the same circuit, the second connection is made before the previously connected terminal is electrically disconnected, after which the circuit completely switches over to the correct position.

Non-shorting: This case differs from shorting in that during the switch over, ② is completely electrically disconnected from ① and ③, after which ② and ③ are connected at the new connection location.



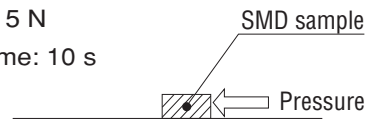
● Click (detent)

The method whereby the set position is checked in a sensory manner.

● Shear (Adhesion)

This test is to evaluate if any damages like electrode stripping, breaks, or cracks occur on SMD component soldered to the printed circuit board due to stress from the flank.

Pressure: 5 N
Holding time: 10 s



● Contact

① A contact occurs when two insulated conductors touch each other.

② A contact is the small touching area between two conductors. In a switch, this is the conductive metal connection that controls the opening and closing of the electric circuit.

● Contact resistance [mΩ]

This is the electrical resistance that occurs between contact points when a switch is closed.

● Substrate bending

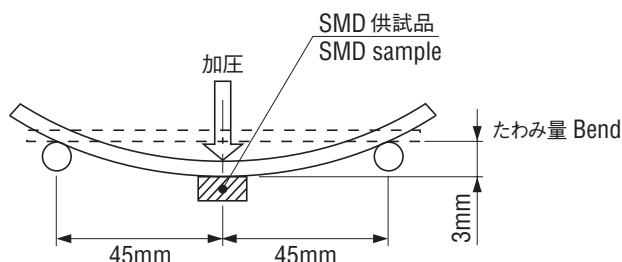
This test is to evaluate durability against stress due to distortion on the printed circuit at time or after SMD is mounted.

● Operating force N

This is the maximum force when sliding a knob.

● Insulation resistance [MΩ]

The insulation resistance value given by taking measurements at a given voltage between two terminals or between a terminal and ground.



● Dielectric strength [V]

This shows the specified voltage that can be applied between two terminals or between a terminal and ground without causing a short.

● Rating [VA]

This shows the maximum voltage and current capacity of a switch. Use in excess of the rated capacity will result in failure.

● Terminal strength N

This shows the strength of the tip of the terminal to withstand a static load for a fixed period of time without breaking.

● Soldering heat

This is to evaluate heat resistance in soldering SMD component.

GLOSSARY

DIP SWITCHES

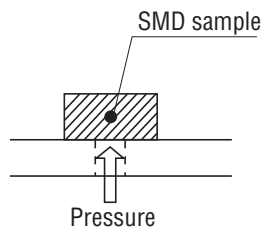
● Solderability

This is a wetting evaluation test to find out how much new solder covers the terminals when immersed in the soldering bath, and to confirm the proper fillet formation in soldering process.

● Pull-off strength

This test is to evaluate adherence strength of SMD component soldered to the printed circuit board against peel off strength.

Pressure: 5 N
Holding time: 10 s



● Low voltage & current rating

This is operatable margin in the load range of low voltage & low current.

● Binary coded decimal notation (BCD)

This is a numbering system where each digit of a base 10 (decimal) number is expressed in binary notation.

● BCH

Binary Coded Hexa-decimal. Each row in hexa decimal is represented by binary coded system.

● BCO

Binary Coded Octal. Each row in octal is represented by binary coded system.

● SCSI

This is a mirco computer control system and abbreviated from Small Computer System Interface, which controls 8 units.

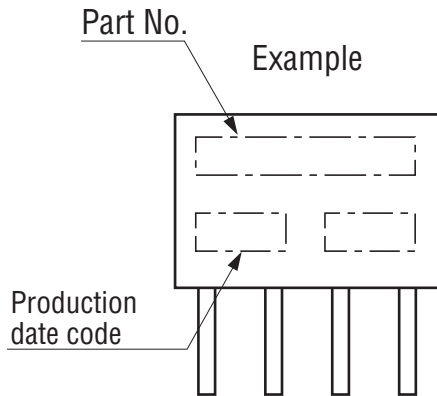
● Hexadecimal

This is a number system that uses 16 as a base. A ~ F are used to express the base 10 numbers from 10 ~ 15.

MARKING DIP SWITCHES

1. Production date code (No. 1)

Production date code is exhibited on each product as shown in below.



Note

- Date code marking position is per outline drawing of each model.
- Marking of Part No. is made for the following models.

S-1000A/2000A	RD
SA-5000	SS-10 (Rotary switches)
S-8000	RS/RG (Rotary switches)

Production date code

year	code	Month	code
1999	9	1	A
2000	0	2	B
2001	1	3	C
2002	2	4	D
2003	3	5	E
2004	4	6	F
2005	5	7	G
2006	6	8	H
2007	7	9	J
2008	8	10	Y
2009	9	11	L
2010	0	12	M
...	...	—	—

Date code, in principle, consists of one digit and one capital letter. Per above table the last digit of year represents, a year while a capital letter a month.

Example) 8J Manufactured in Sep. of 2008.

Models of date code application

DIP switches

CVS
CHS
CHP
CFS
CES
CFP
CYP
RD
S-1000A/2000A
SC-1000/2000
SD-1000/2000
S-4000
SA-5000
SA-7000
S-7000
SH-7000
S-8000

Slide switches

CJS
CAS
CL-SA
CL-SB
CRFS
CMS
CUS
CSS

Rotary switches

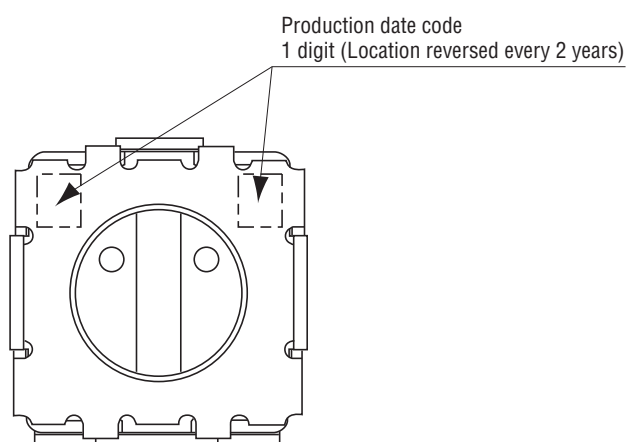
CS-4
CS-7
SS-10
RS/RG

Pushbutton (Detect) switches

CL-DA
CL-DB

1. Production date code (No. 2)

Production date code is exhibited on each product as shown in below.



The model that this marking method is applicable : Rotary switch CS-32

Production date code

Stamping position	Year			
	Upper right	Upper left		Upper right
Month	1999 2003 2007	2000 2004 2008	2001 2005 2009	2002 2006 2010
1	A	N	A	N
2	B	P	B	P
3	C	Q	C	Q
4	D	R	D	R
5	E	S	E	S
6	F	T	F	T
7	G	U	G	U
8	H	V	H	V
9	J	W	J	W
10	K	X	K	X
11	L	Y	L	Y
12	M	Z	M	Z

In principle, capitals per the table are used, commencing with January of 2001 as A in order. The same arrangement will be repeated after 48 months or 4 years.

2. Coating and potting

If the switch is coated or potted, the movable parts may lock, making readjustment difficult.

Further, if coating or potting is made, make sure that the hardening temperature does not exceed 70°C .

In actual coating and potting, please make sure before use that the using conditions differ respectively.

Please note that the CVS, CHS, CHP, CFP, CYP, CES & Slide switches CJS, CAS, CL-SA, CL-SB, CRFS, CMS, CUS, CSS are not of sealed construction and therefore cannot be coated or potted.

For details, please refer to page 153.

PACKAGING DIP SWITCHES

※ In addition to the DIP switches in this chapter, the following notes on the page 156 contain common notes applied to some of the pushbutton switches (detect switches), slide switches, and rotary switches described later.

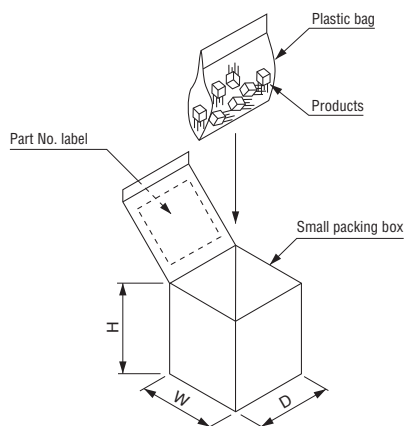
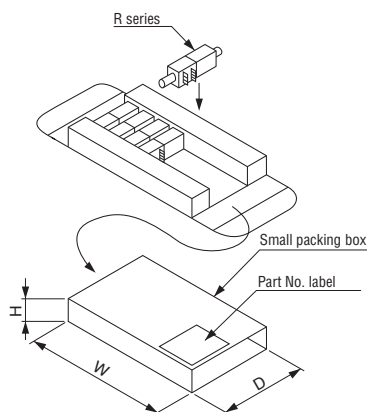
BULK PACKAGING SPECIFICATIONS IN PLASTIC BAGS & BOXES

Part number	Maximum Q'ty/pack	Small packing box		
		Maximum Q'ty/small Packing box	※ 1 Dimensions W × H × D (mm)	Gross weight (g)
CJS-1200A, B	100	500	60 × 70 × 60	41
CJS-1201A, B				46
CAS-120A, B	100	500	60 × 70 × 60	41
CAS-220A, B				60
CAS-D20A, B				50
CVS-04B				80
CVS-08B	100	500	60 × 70 × 60	30
CVS-01B,C				25
CVS-02B,C				30
CVS-03B,C				39
CHS-01A, B	50	200	60 × 70 × 60	49
CHS-02A, B				60
CHS-04A, B				70
CHS-06A, B				34
CHS-08A, B				46
CHS-10A, B				58
CES-0202C				70
CES-0402C				70
CES-0602C	10	20	60 × 70 × 60	47
CES-0802C				51
CMS-2202A, B, C				57
CMS-2302A, B, C				49
CMS-2402A, B, C				55
CMS-2212A, B, C				61
CMS-2312A, B, C				49
CMS-2412A, B, C				55
CMS-2214A, B, C				61
CMS-2314A, B, C				47
CMS-2414A, B, C	49			
CMS-4202A, B, C	25	50	60 × 70 × 60	47
CMS-4216A, B, C				49
CRFS-2202	25	50	60 × 70 × 60	72
CRFS-2302				96
S-4000A, B	50	200	60 × 70 × 60	39
SA-70 □ 0A, B, C				83
SA-71 □ 0A, B, C				87
SA-72 □ 0A, B, C				83
SA-70 □ 1A, B, C				84
SA-71 □ 1A, B, C				86
SA-72 □ 1A, B, C				84
S-70 □ 0EA, EB, EC	50	200	60 × 70 × 60	71
S-70 □ 1EA, EB, EC		100		145
CS-32-12EZA, EZB	100	500	60 × 70 × 60	40
CS-32-12EZG, EZH				40
CS-4-12YA, YB, YC	50	500	60 × 70 × 60	65
CS-4-12XA, XB, XC				65
CS-4-13NA, NB				65
CS-4-14NA, NB				65
CS-4-22YA, YB				65
CL-SB-12 □ -0 □	50	100	60 × 70 × 60	45
CL-SB-12 □ -1 □				46
CL-SB-13 □ -0 □				51
CL-SB-13 □ -1 □				52
CL-SB-22 □ -0 □				46
CL-SB-22 □ -1 □				47
CL-SB-23 □ -0 □				52
CL-SB-23 □ -1 □				53
CL-SA-12 □ □ - □ □	50	100	60 × 70 × 60	39

Part number	Maximum Q'ty/pack	Small packing box					
		Maximum Q'ty/small Packing box	※ 1 Dimensions W × H × D (mm)	Gross weight (g)			
S-10 □ 0A, S-20 □ 0A	25	50	60 × 70 × 60	57			
S-11 □ 0A, S-21 □ 0A				62			
S-12 □ 0A, 22 □ 0B				66			
S-10 □ 1A, S-20 □ 1A				70			
S-11 □ 1A, S-21 □ 1A				75			
S-12 □ 1A, 22 □ 1B				79			
SC-10 □ 0, SC-20 □ 0	25	50	60 × 70 × 60	47			
SC-11 □ 0, SC-21 □ 0				52			
SC-12 □ 0, SC-22 □ 0				47			
SC-10 □ 1, SC-20 □ 1				53			
SC-11 □ 1, SC-21 □ 1				58			
SC-12 □ 1, SC-22 □ 1				53			
SC-10 □ 0B, SC-20 □ 0B				47			
SC-12 □ 0B, SC-22 □ 0B				47			
SD-10 □ 0, SD-20 □ 0	25	50	60 × 70 × 60	48			
SD-11 □ 0, SD-21 □ 0				53			
SD-12 □ 0, SD-22 □ 0				48			
SD-10 □ 1, SD-20 □ 1				63			
SD-11 □ 1, SD-21 □ 1				68			
SD-12 □ 1, SD-22 □ 1				63			
SD-10 □ 0B, SD-20 □ 0B				48			
SD-12 □ 0B, SD-22 □ 0B				48			
CHP-02 □ A, 02 □ B				50	100	60 × 70 × 60	31
CHP-04 □ A, 04 □ B							41
CHP-08 □ A, 08 □ B	58						
SA-50 □ 0E	25	50	60 × 70 × 60	89			
SA-51 □ 0E				94			
SA-50 □ 1E		25		64			
SA-51 □ 1E				66			
S-80 □ 0	50	100	60 × 70 × 60	44			
S-81 □ 0				51			
S-80 □ 1				48			
S-81 □ 1				56			
SS-10-15SPE, 16NPE	25	50	60 × 70 × 60	57			
SS-10-16SP-AE, 23NPE				57			
SS-10-15SP-LE, 16NP-LE				62			
SS-10-16SP-L-AE, 23NP-LE							
RS1, RG1, RD1	—	20	166 × 20 × 78	190			
RS2, RG2				170			
RS3, RG3				10	220		

※ 1 Tolerance : ± 2

PACKAGING DIP SWITCHES



Part No. label

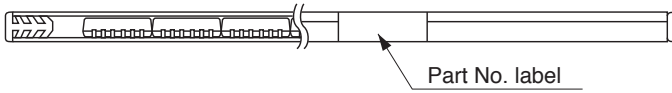
Type	
Spec	
Quantity	
LOT No	
Date code	
MADE IN XXX	2D barcode
□□□□ (RoHS)	
COPAL ELECTRONICS	

PACKAGING SPECIFICATIONS FOR MAGAZINE TYPE

Part number	Q'ty/stick	Magazine box		
		※ 2 Dimensions	Maximum Q'ty/Box	(g) Gross weight
CHS-04MA, MB	70	504 × 3.9 × 10.4		17
CHS-06MA, MB	50			
CHS-08MA, MB	40			
CHS-10MA, MB	30			
CFS-010 □ MA, MB, MC	118	504 × 11 × 13	4720	1440
CFS-020 □ MA, MB, MC	72		2880	1440
CFS-030 □ MA, MB, MC	52		2080	1400
CFS-040 □ MA, MB, MC	40		1600	1400
CFS-050 □ MA, MB, MC	32		1280	1400
CFS-060 □ MA, MB, MC	28		1120	1440
CFS-070 □ MA, MB, MC	24		960	1400
CFS-080 □ MA, MB, MC	20		800	1400
CFS-090 □ MA, MB, MC	18		720	1400
CFS-100 □ MA, MB, MC	16		640	1360
CFP-02 □□ MB, MC	62		504 × 13.5 × 14.8	1674
CFP-03 □□ MB, MC	46	1242		1539
CFP-04 □□ MB, MC	36	972		1512
CFP-05 □□ MB, MC	30	810		1512
CFP-06 □□ MB, MC	26	702		1512
CFP-08 □□ MB, MC	20	540		1512
CFP-10 □□ MB, MC	16	432		1512
CES-0202MC	60	504 × 17.2 × 12		1920
CES-0402MC	36		1152	2496
CES-0602MC	26		832	2496
CES-0802MC	20		640	2496
CSS-121 □ MC	53	504 × 6.6 × 5.8	4240	1040
CSS-131 □ MC	38		3040	1120
CSS-130 □ MC	38	504 × 9.7 × 3.7	3800	1600
CYP-02 □□ MB	70	500 × 7.5 × 13	4200	1920
CYP-02 □□ MC		500 × 11.5 × 13	2800	1520
CYP-04 □□ MB	40	500 × 7.5 × 13	2400	1980
CYP-04 □□ MC		500 × 11.5 × 13	1600	1560
CYP-06 □□ MB	28	500 × 7.5 × 13	1680	1980
CYP-06 □□ MC		500 × 11.5 × 13	1120	1500
CYP-08 □□ MB	20	500 × 7.5 × 13	1200	1920
CYP-08 □□ MC		500 × 11.5 × 13	800	1520
CYP-10 □□ MB	16	500 × 7.5 × 13	960	1860
CYP-10 □□ MC		500 × 11.5 × 13	640	1480
SH-70 □ OMA, MB, MC	50	390 × 17.2 × 13.4	1200	1088
CS-7-14MB				

※ 2 Tolerance ± 5

PACKAGING DIP SWITCHES

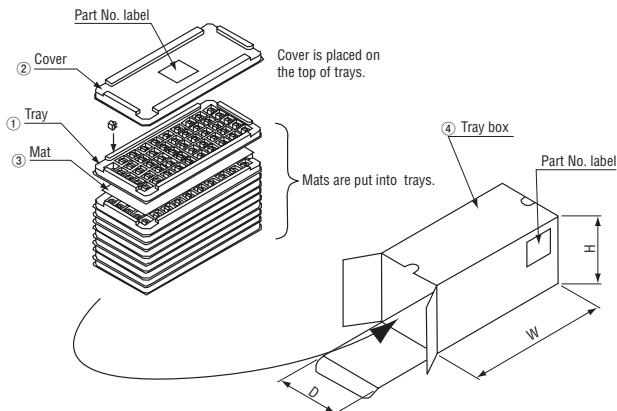


PACKAGING SPECIFICATIONS FOR TRAY TYPE

Part number	Q'ty/tray	Tray box					
		Maximum Q'ty/tray box	※ 1 Dimensions W × H × D (mm)	Gross weight (g)			
CMS-2202WC	50	500	305 × 148 × 140	528			
CMS-2302WC				553			
CMS-2402WC				578			
CMS-2212WC				538			
CMS-2312WC				568			
CMS-2412WC				598			
CMS-2214WC				538			
CMS-2314WC				568			
CMS-2414WC				598			
CMS-4202WC				728			
CMS-4216WC				748			
S-70 □ 0EWC				50	500	305 × 148 × 140	468
S-70 □ 1EWC							638
S-10 □ 0W, S-20 □ 0W				50	500	305 × 148 × 140	763
S-11 □ 0W, S-21 □ 0W	813						
S-12 □ 0W, S-22 □ 0W	893						
S-10 □ 1AW, S-20 □ 1AW	943						
S-11 □ 1AW, S-21 □ 1AW	838						
S-12 □ 1AW, S-22 □ 1AW	968						
SC-10 □ 0W, SC-20 □ 0W	50	500	305 × 148 × 140	643			
SC-11 □ 0W, SC-21 □ 0W				693			
SC-12 □ 0W, SC-22 □ 0W				643			
SC-10 □ 1W, SC-20 □ 1W				708			
SC-11 □ 1W, SC-21 □ 1W				758			
SC-12 □ 1W, SC-22 □ 1W				708			
SC-10 □ 0WB, SC-20 □ 0WB				643			
SC-12 □ 0WB, SC-22 □ 0WB				643			
CRFS-2202W				50	500	305 × 148 × 140	1028
CRFS-2302W							1278
CRFS-2204W	1078						
CRFS-2304W	1328						

Part number	Q'ty/tray	Tray box					
		Maximum Q'ty/tray box	※ 1 Dimensions W × H × D (mm)	Gross weight (g)			
SD-10 □ 0W, SD-20 □ 0W	50	500	305 × 148 × 140	653			
SD-11 □ 0W, SD-21 □ 0W				703			
SD-12 □ 0W, SD-22 □ 0W				653			
SD-10 □ 1W, SD-20 □ 1W				718			
SD-11 □ 1W, SD-21 □ 1W				768			
SD-12 □ 1W, SD-22 □ 1W				718			
SD-10 □ 0WB, SD-20 □ 0WB				653			
SD-12 □ 0WB, SD-22 □ 0WB				653			
SA-50 □ 0 □ □ EW				50	500	305 × 148 × 140	1078
SA-51 □ 0 □ □ EW							1128
SA-50 □ 1 □ □ EW							1328
SA-51 □ 1 □ □ EW				50	500	305 × 148 × 140	1368
S-80 □ 0W	463						
S-81 □ 0W	498						
S-80 □ 1W	493						
S-81 □ 1W	528						
SS-10-15SPEW, 16NPEW	50	500	305 × 148 × 140	748			
SS-10-16SP-AEW, 23NPEW				748			
SS-10-15SP-LEW, 16NP-LEW				798			
SS-10-16SP-L-AEW, 23NP-LEW				798			

※ 1 Tolerance ± 3



- Note) Material
- ① Tray :PS (Polystyrene)
 - ② Cover :PS (Polystyrene)
 - ③ Mat :PE (Polyethylene foam)
 - ④ Tray box :Cardboard

Part No. label

Type	
Spec	
Quantity	
LOT No	
Date code	
MADE IN XXX	
□□□□ (RoHS)	
COPAL ELECTRONICS	

2D barcode

PACKAGING SPECIFICATIONS FOR TAPING TYPE (PLASTIC REEL)

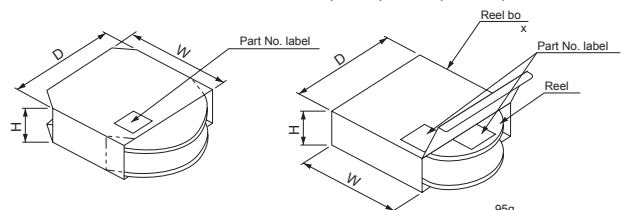
Part number	Q'ty/reel	Reel box		
		Maximum Q'ty/reel box	※ 1 Dimensions W × H × D (mm)	Gross weight (g)
CJS-1200A, B (522)/2リール	1000	2000	260 × 48 × 260	617
CJS-1201A, B (542)/2リール				637
CAS-120TA, TB	1000	2000	260 × 48 × 260	617
CAS-220TA, TB				669
CAS-D20TA, TB				669
CVS-01TB	2000	4000	260 × 48 × 260	708
CVS-02TB				719
CVS-03TB	1000	4000	260 × 48 × 260	809
CVS-04TB				808
CVS-08TB	2000	4000	260 × 48 × 260	1035
CVS-01TB-1	500	1000	185 × 46 × 188	224
CVS-02TB-1				237
CVS-03TB-1				251
CVS-04TB-1				264
CVS-08TB-1				334
CHS-01TA, TB	1000	2000	260 × 48 × 260	617
CHS-02TA, TB				585
CHS-04TA, TB				633
CHS-06TA, TB				681
CHS-08TA, TB				843
CHS-10TA, TB	888			
CHP-02□TA, TB	500	1000	260 × 48 × 260	647
CHP-04□TA, TB				735
CHP-08□TA, TB				979
CMS-2202TA, TB	900	900	335 × 33 × 335	866
CMS-2302TA, TB				911
CMS-2402TA, TB				956
CMS-2212TA, TB				932
CMS-2312TA, TB				986
CMS-2412TA, TB				1040
CMS-2214TA, TB				932
CMS-2314TA, TB				986
CMS-2414TA, TB				1040
CMS-4202TA, TB				500
CMS-4216TA, TB	1005			
CUS-12TB	2500	2500	335 × 24 × 335	780
CUS-13TB			335 × 33 × 335	880
CUS-14TB			1010	
CUS-22TB	1400	1400	335 × 24 × 335	660
CSS-1210TB	1900	1900	335 × 24 × 335	760
CSS-1310TB			335 × 33 × 335	900
S-4010TA, TB	500	500	260 × 24 × 260	331
SA-70□0TA, TB	500	500	260 × 24 × 260	519
SA-71□0TA, TB			335 × 24 × 335	610
SA-72□0TA, TB			260 × 24 × 260	519
SA-70□1TA, TB			335 × 24 × 335	785
SA-71□1TA, TB				815
SA-71□1TA, TB				785
SA-70□2TB			683	
SA-71□2TB				695
SA-72□2TB				683
SA-70□3TB			335 × 33 × 335	683
SA-71□3TB				695
SA-72□3TB				683
CL-DA-1CB4-A2				490
CL-DA-1BB4-A2	1000	1000	260 × 24 × 260	500
CL-DB	1000	1000	260 × 24 × 260	454
CL-SB-12A-0□T, 12B	500	500	335 × 33 × 335	648
CL-SB-12A-1□T, 12B				648
CL-SB-13A-0□T, 13B				672
CL-SB-13A-1□T, 13B				677
CL-SB-22A-0□T, 22B				651
CL-SB-22A-1□T, 22B				655
CL-SB-23A-0□T, 23B				680
CL-SB-23A-1□T, 23B				686

Part number	Q'ty/reel	Reel box			
		Maximum Q'ty/reel box	※ 1 Dimensions W × H × D (mm)	Gross weight (g)	
S-70□0ETA, ETB	500	500	260 × 24 × 260	512	
S-70□1ETA, ETB			335 × 24 × 335	763	
SH-70□0TA, TB	500	500	335 × 24 × 335	655	
CS-32-12ZETA, ZETB	500	2000	185 × 74 × 185	420	
CS-32-12ZETG, ZETH			500	260 × 20 × 260	277
CS-4-12YTA, YTB	500	2000	185 × 69 × 185	527	
CS-4-12XTA, XTB					
CS-4-13NTA, NTB					
CS-4-14NTA, NTB					
CS-4-22YTA, YTB					
CS-7-14TB	500	500	335 × 33 × 335	655	
SC-10□0TB, 20□0TB	500	500	333 × 33 × 333	816	
SC-12□0TB, 22□0TB					
SD-10□0TB, 20□0TB	500	500	333 × 33 × 333	826	
SD-12□0TB, 22□0TB					
CFS-0100TA, TB, 0101TA, TB	1000	1000	335 × 33 × 335	750	
CFS-0200TA, TB, 0201TA, TB				810	
CFS-0300TA, TB, 0301TA, TB				920	
CFS-0400TA, TB, 0401TA, TB				990	
CFS-0500TA, TB, 0501TA, TB				1110	
CFS-0600TA, TB, 0601TA, TB			1180		
CFS-0700TA, TB, 0701TA, TB			335 × 41 × 335	1370	
CFS-0800TA, TB, 0801TA, TB				1440	
CFS-0900TA, TB, 0901TA, TB			335 × 53 × 335	1670	
CFS-1000TA, TB, 1001TA, TB				1730	
CFS-0102TA, TB, 0103TB	800	800	335 × 33 × 335	690	
CFS-0202TA, TB, 0203TB				760	
CFS-0302TA, TB, 0303TB				830	
CFS-0402TA, TB, 0403TB				910	
CFS-0502TA, TB, 0503TB				980	
CFS-0602TA, TB, 0603TB			1060		
CFS-0702TA, TB, 0703TB			335 × 41 × 335	1190	
CFS-0802TA, TB, 0803TB				1350	
CFS-0902TA, TB, 0903TB			335 × 53 × 335	1430	
CFS-1002TA, TB, 1003TB				1480	
CFP-02□□TB	500	500	335 × 33 × 335	810	
CFP-03□□TB				890	
CFP-04□□TB				970	
CFP-05□□TB			335 × 41 × 335	1060	
CFP-06□□TB				1190	
CFP-08□□TB			335 × 53 × 335	1440	
CFP-10□□TB				1677	
CYP-0200B, 0201B, 0202B			700	700	335 × 33 × 335
CYP-0210B, 0211B, 0212B	800				
CYP-0400B, 0401B, 0402B		800			
CYP-0410B, 0411B, 0412B		980			
CYP-0600B, 0601B, 0602B	980				
CYP-0610B, 0611B, 0612B	335 × 41 × 335	1124			
CYP-0800B, 0801B, 0802B		1280			
CYP-0810B, 0811B, 0812B					1280
CYP-1000B, 1001B, 1002B					335 × 53 × 335
CYP-1010B, 1011B, 1012B		1280			

Plastic (Polystyrene)
※ 1 Tolerance ±5

CS-4, CS-32 (A-B),
CVS-XX-1 reel box

CS-32 (G-H), CJS, CAS, CVS, CHS, CHP,
CFS, CFP, CMS, S-4000, SA-7000, S-7000,
SC-1000/2000, SD-1000/2000
SH-7000, CS-7, CL-DA, CL-DB, CL-SB reel box



HANDLING NOTES

DIP SWITCHES

1. Caution for storage

When storage of the products, it must consider terminal soldering-ability, packaging function with temperature and humidity may effect the product. Especially, be caution on the below items.

- 1) Under High temperature and High humidity, the package will accelerate aging variation. It is recommended to store the product under room temperature 25°C with relative humidity 75%.
- 2) To avoid store under sulfidizing gas/corrosive gas environment.
- 3) Handle with care to avoid the terminal change of shape.
- 4) To avoid direct daylight and dust.
- 5) Only open the standard package at the last minute before use.

3. Soldering condition

Generally, it is possible to use soldering construction method. However,if use flow soldering,it does require to consider carefully condition of wave soldering.

(The amount of flux applied to the switches has to be minimized. After apply flux,it must carry out pre-heat process.) It may not suitable for condition of high package density or equipment.

2. Using Environment

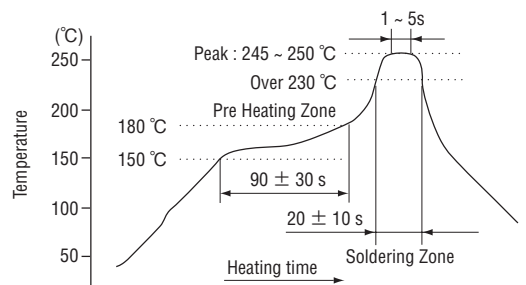
Be caution, it is not suitable for the below conditions.

- Sulfidizing gas, corrosive gas, reducing gas of atmosphere
- Rapid cooling of solvents
- Long time dipping into solvents (specially at high temperature)
- High humid environment

● Infrared reflow soldering < SMD type in common >

For lead free soldering, it is recommended as indicate on the below temperature profile drawing. However, concerning infrared heater style, It depends on physical object's color and material. The infrared absorb fraction varied, heating degree will be changed. If the temperature of product is more than 260°C, it will change the shape of product. Be caution, do not excess temperature 260°C on the surface of the product.

● Infrared reflow soldering



Reflow : two times maximum

Recommended profile for Lead-free soldering

HANDLING NOTES

DIP SWITCHES

● Flow soldering

< Through hole type in common >

Use Rosin series flux with non-corrosive

When apply flux, make sure do not overflow on PCB

After apply flux, it must carry out pre-heat.

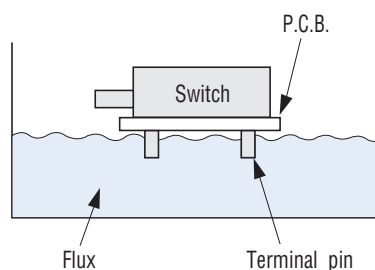
Make sure the product does not touch soldering.

If the product touch soldering, the product shape will be changed. It causes production function degradation.

The temperature of soldering bath should be at 245 ~ 260°C .

The dipping time is 3 ~ 5 second per operation. The total dipping time must not exceed 10 seconds.

For flow soldering, it is recommended as indicate on the below temperature profile drawing.



<S-7000, SH-7000, DRS/DRR, S-1000A/2000A, SC-1000/2000, SA-5000, S-8000, RD, Rotary switches SS-10/S-2050, RS/RG in common > (C type of S-7000, SH-7000, SC-1000/2000)

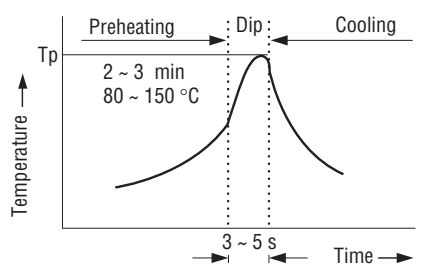
The amount of flux applied to the switches has to be minimized.

The contact section will be sealed by O ring. Although the flux does not get inside the switch. If the flux remain between up rotor and cover, The torque may be heavy. Due to this, it must minimized apply flux. After the soldering, please wash off after soldering.

< SA-7000, SD-1000/2000 (C type) in common >

Due to non seal structure, please apply flux on terminal section only. After soldering, do not wash off.

● Flow soldering



$T_p \leq 260^\circ\text{C}$ (Peak temperature)

Recommended profile for Lead-free soldering

HANDLING NOTES

DIP SWITCHES

<CVS-01C and CFS, CFP, CYP, CES, Slide switches CL-SB, CRFS, CMS (C type) in common>

Due to open structure, please apply flux on terminal section only. After soldering, do not wash off.
(CFS, CYP are washable type, it can be washed.)

● Manual soldering (Through hole type)

For soldering by soldering gun, it is recommended to use a small soldering gun under 380° C within 3 seconds. The soldering gun tip must not touch to the housing resin, but only to the terminal.

● Soldering iron

3 s maximum at 350°C

4. Cleaning

< CHS(all of these items, washable type only with seal tape), S-7000, S-1000A/2000A, SA-5000, S-8000, Slide switches CJS, CAS, Rotary switches CS-32, CS-4, SS-10/S-2050 in common >

It can be cleaned in general. Be caution on the following points.

- After the soldering, make sure the product temperature well cool off below room temperature 30 °C , then proceed for clearing. If we dip the product with hot temperature into cleaning liquid, the inner section of the product will be shrinking. The absorption phenomenon will be incurred. The cleaning liquid will go into inner section. Moreover, the products can not apply for special cleaning such as vacuum (decompression) cleaning. Do not use special clearing.
- The washable of wash liquid stated as below, it depends on the wash liquid. It may affect the product material and outlook. Be Caution.

CLEANTHROUGH 750HS [Kao Corporation]

PINE ALPHA ST-100S [ARAKAWA CHEMICAL INDUSTRIES LTD.]

AK225AES [ASAHI GLASS COMPANY]

Water cleaning

Alcohol

※ It is not suitable for hydrocarbon series clear liquid.

※ Flon and trichloroethane are ozone-depleting substance.

From protect earth environment point view, please do not use them.

< S-4000, SA-7000, SD-1000/2000 in common >

- Due to non sealed structure, it can not be washed. Be caution.

< CVS, CHP, CFP, CES, Slide switches CL-SA, CL-SB, CRFS, CMS, CUS, CSS , Detect switches CL-DA, CL-DB in common >

- Due to open structure, it can not be washed. Be caution.

< CFS, CYP, CS-7, SH-7000, DRS/DRR, SMR/SMRR, SC-1000/2000, Rotary switches CS-7 in common >

- Water cleaning
- Alcohol

HANDLING NOTES

DIP SWITCHES

< RD, Rotary switches RS/RG in common >

- Regarding bolt of clean liquid, it must control of the flux density under(volume) 5%. If the flux blot density above 5%, the torque will be big. It will destroy click structure in the worse case.

5. Clean method

The method of apply cleaning stated as below.
Please minimized cleaning time.

Cleaning method

○ : Possible × : Not possible

Method	Applicability	Time	Note
Dipping	○	Approx. 2 min	_____
Ultrasonic	○		_____
Vapor	○		_____
Showering	○		_____
Brushing	×	_____	Marking ink will be removed

※ Series of CYP(washable type), CS-7, SH-7000 and SC-1000/2000 are applicable only dipping.

- After the cleaning, make sure it well dry. If it is not well dry, the varied of torque may incur electrical damage.
- For CHS, CFS, CYP and Slide switches CJS, CAS, it is washable type.
when cleaning, do not peeling off the seal tape on the surface.
- For vacuum (decompression) cleaning, be caution do not mix 2 different liquids.
- After cleaning, when peel off washable sealing tape, it might have some glue left over.

6. Combination of cleaning methods

The cleaning combination examples stated as below.
In this case, the cleaning time should be approximately 1 minute respectively.

- 1) Dipping (1 min) + Vapor (1 min)
- 2) Ultrasonic (1 min) + Dipping (1 min)
- 3) Showering (1 min) + Vapor (1 min)

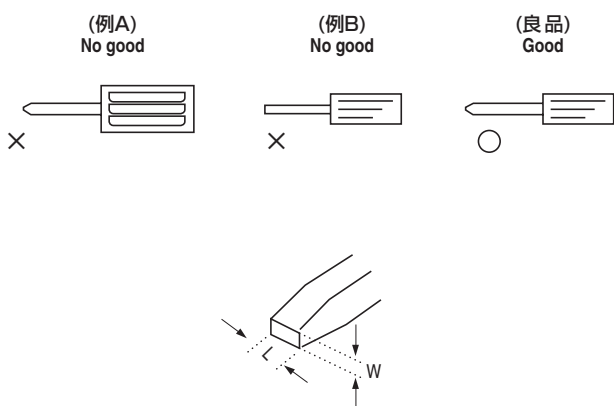
※ Be caution of the condition can be changed. Please check before actual cleaning.

HANDLING NOTES

DIP SWITCHES

7. Screwdriver to use

Be sure to use a small screwdriver with the correct size bit. If the handle is too large or the bit is too small, the switch end stops or setting slot may be damaged.



The driver bit size for a setup (reference value)

Sereis	(W) Tip thickness	(L) Tip width
CS-32(Rotary switches)	0.2 ~ 0.4	1.5 ~ 1.7
CS-4(Rotary switches)	0.4 ~ 0.5	1.8 ~ 2.0
S-4000		
SA-7000	0.5 ~ 0.6	2.0 ~ 2.4
S-7000		
SH-7000	0.5 ~ 0.6	2.0 ~ 2.2
CS-7(Rotary switches)		
SS-10/S-2050(Rotary switches)	0.5 ~ 0.6	2.0 ~ 2.5
S-1000A/2000A		
SC-1000/2000		
SD-1000/2000		
SA-5000		
S-8000		
RS/RG(Rotary switches), RD	0.5 ~ 0.6	2.4 ~ 3.0

< CVS, CHS, CHP, CFS, CFP, CYP , Slide switches CJS,CAS in common >

Be sure to use an edge of tweezers with tip width of about 0.8mm to set up the switch.

8. Be caution of setting

< S-1000A/2000A, SC-1000/2000, SD-1000/2000, SA-5000, S-8000 , Rotary switches SS-10/SA-2050 in common >

When set up the switch, rotate the shaft, it does feel clicking.

The switch does not have a stop structure in mid flow.

To avoid over click and stop in mid flow.

Moreover, for code switch case, code ambiguity may occur during transition from one code position to another. (Except SS-10 series)

HANDLING NOTES

DIP SWITCHES

< Pushbutton (Detect) switches CL-DA, CL-DB in common >

- When operate the switch, do not apply force over than rated load. sufficient
- Be caution to use On (begin) position with sufficient allowance from travel distance
- For NC : ON → (OFF) type, make sure knob must return to the free position of operation setting.

- The switch-restoring force cannot be used as the mechanism driving force of any set.
- The switch body and the knob of termination cannot be used as the operating body termination.
- Make sure the operating body move in a direction where the knob moves, and the operating body is applied a force to the knob vertically.(See drawing below)

9. Strength of terminals

Do not bend or twist the terminals, as this will weaken or break the terminals.

10. Automatic mounting (SMD type in common)

The switches are compatible with automatic mounting machines. However, confirm the type of mounting machine before use, since some machines are not applicable.

11. Coating (potting)

< S-7000, S-1000A/2000A, SA-5000, S-8000, RD, Rotary switches CS-32, CS-4, SS-10/SA-2050, RS/RG in common >

If the switch is coated or potted, the movable parts may lock, making readjustment difficult.

Further more, if coating or potting is made, make sure that the hardening temperature does not exceed 70° C.

Do not use coating and potting material containing the following substance.

- Methylene chloride
- Thinner
- Acetone
- Xylene

<S-4000, SA-7000, SH-7000, SD-1000/2000, Slide Switches CAS, CVS, CHS, CHP, CFS, CFP, CYP, CJS, CL-SA, CL-SB, CRFS, CMS, CUS, CSS, Detect switches CL-DA, CL-DB, Rotary switches SC-1000/2000, CS-7 in common >

Due to open structure, be caution do not coating or potting.