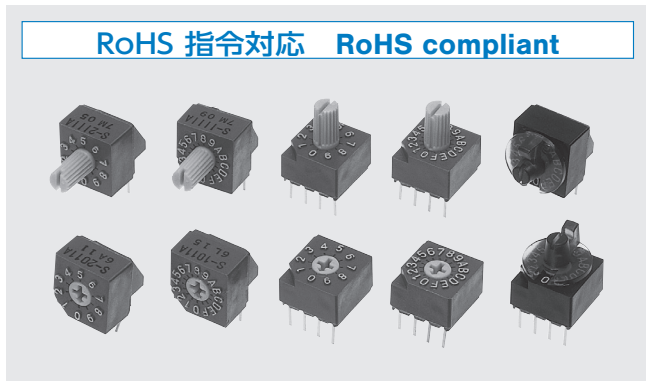


# 10 mmでDIPピンコンパチブル。半透明平ノブ付きも登場！

## DIP型ロータリコードスイッチ S-1000A/2000A

### ROTARY CODED SWITCHES

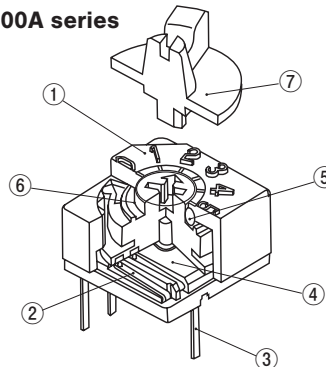
RoHS 指令対応 RoHS compliant



### 特長 FEATURES

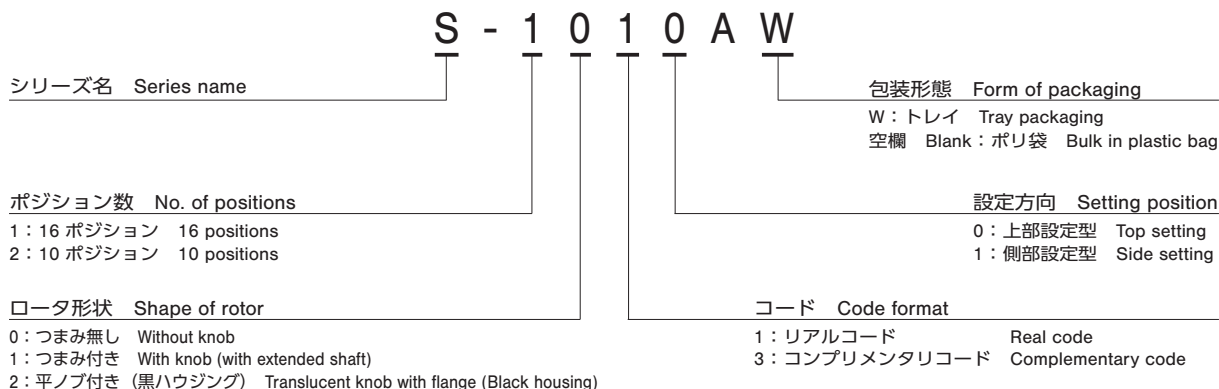
- RoHS 指令対応
- “O” リング採用により、ゴミ、ホコリの侵入防止、並びにはんだ付け後の洗浄が可能です
- 一般の DIP スイッチとピンコンパチブルのために置換えが出来ます
- 半透明平ノブ付き (S-1200A/2200A シリーズ)
  - ・半透明ノブによりポジショニングし易い
  - ・指先、ドライバによる設定が可能
- 樹脂材料は、UL 難燃クラス 94V-2 又は 94HB 認証品を採用しております
- RoHS compliant
- Protection against dust and whole cleaning after soldering is possible
- Pin compatible with conventional DIP switches
- Translucent knob with flange type (S-1200A/2200A series)
  - ・ Distinguished visibility with translucent flange
  - ・ Settable with fingers or screwdriver
- Resin materials are UL Recognized 94V-2 or 94HB

内部構造図 INTERNAL STRUCTURE  
S-1000A / 2000A series



| 名称<br>Part name                | 材料<br>Material  |
|--------------------------------|---|
| ① ハウジング<br>Housing             | PBT (ポリブチレンテレフタレート)<br>Polybutyleneterephthalate  |
| ② 接点<br>Contact                | 銅合金、金めっき<br>Copper alloy, Gold-plated   |
| ③ 端子<br>Terminal pin           |   |
| ④ ベース<br>Base                  | PBT (ポリブチレンテレフタレート)<br>Polybutyleneterephthalate  |
| ⑤ “O” リング<br>“O” ring          |   |
| ⑥ インサートロータ<br>Insert rotor     | ロータ: POM (ポリオキシメチレン)<br>Rotor: Polyoxymethylene<br>パターン: 銅合金、金めっき<br>Pattern: Copper alloy, Gold-plated |
| ⑦ 平ノブ<br>Translucent knob with | PAR (ポリアリレート Polyarylate)<br>※ S-12□□A/22□□A のみ<br>S-12□□A/22□□A only                                   |

### 型式表示 PART NUMBER DESIGNATION



※ご注文に際しては、型式一覧表をご確認ください。

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

# S-1000A/2000A ROTARY CODED SWITCHES

## 型式一覧表 LIST OF PART NUMBERS

| 形状<br>Shape                              | 包装形態<br>Form of packaging | 2進化10進<br>Binary coded decimal |                                   | 2進化16進<br>Binary coded hexadecimal |                                   | 包装数量<br>Pieces in package |              |
|--|---------------------------|--------------------------------|-----------------------------------|------------------------------------|-----------------------------------|---------------------------|--------------|
|  |                           | リアルコード<br>Real code            | コンプリメンタリコード<br>Complementary code | リアルコード<br>Real code                | コンプリメンタリコード<br>Complementary code |                           |              |
| 上部<br>設定<br>Top<br>setting               | つまみ無し<br>Without knob     | トレイ Tray packaging             | S-2010AW                          | S-2030AW                           | S-1010AW                          | S-1030AW                  | 50 pcs./tray |
|  |                           | ポリ袋 Plastic bag                | S-2010A                           | S-2030A                            | S-1010A                           | S-1030A                   | 25 pcs./pack |
|  | つまみ付き<br>With knob        | トレイ Tray packaging             | S-2110AW                          | S-2130AW                           | S-1110AW                          | S-1130AW                  | 50 pcs./tray |
|  |                           | ポリ袋 Plastic bag                | S-2110A                           | S-2130A                            | S-1110A                           | S-1130A                   | 25 pcs./pack |
| 平ノブ付き<br>Translucent knob<br>with flange | トレイ Tray packaging        | S-2210AW                       | S-2230AW                          | S-1210AW                           | S-1230AW                          | 50 pcs./tray              |              |
|  | ポリ袋 Plastic bag           | S-2210A                        | S-2230A                           | S-1210A                            | S-1230A                           | 25 pcs./pack              |              |
| 側部<br>設定<br>Side<br>setting              | つまみ無し<br>Without knob     | トレイ Tray packaging             | S-2011AW                          | S-2031AW                           | S-1011AW                          | S-1031AW                  | 50 pcs./tray |
|  |                           | ポリ袋 Plastic bag                | S-2011A                           | S-2031A                            | S-1011A                           | S-1031A                   | 25 pcs./pack |
|  | つまみ付き<br>With knob        | トレイ Tray packaging             | S-2111AW                          | S-2131AW                           | S-1111AW                          | S-1131AW                  | 50 pcs./tray |
|  |                           | ポリ袋 Plastic bag                | S-2111A                           | S-2131A                            | S-1111A                           | S-1131A                   | 25 pcs./pack |
| 平ノブ付き<br>Translucent knob<br>with flange | トレイ Tray packaging        | S-2211AW                       | S-2231AW                          | S-1211AW                           | S-1231AW                          | 50 pcs./tray              |              |
|  | ポリ袋 Plastic bag           | S-2211A                        | S-2231A                           | S-1211A                            | S-1231A                           | 25 pcs./pack              |              |

※ご注文に際しては、上記型式をご確認ください。

トレイ仕様は、切り売りいたしませんので、トレイ単位で、ご注文をお願いします。

※ Verify the above part numbers when placing orders.

Tray version can be supplied only in tray units.

## 端子接続 / プリント基板加工寸法

### TERMINAL CONNECTION / P.C.B. THROUGH HOLE DIMENSIONS

(Unit: mm)

|  | Top setting                                | Side setting   |
|--|--|--|
| 端子接続図<br>(裏面図)<br>Terminal pin layout<br>(Bottom view)             | <p>Real code</p> <p>Complementary code</p> | <p>Operating face of real code</p> <p>Operating face of complementary code</p> |
| プリント基板<br>加工寸法<br>(反対面から見た図)<br>P.C.B. dimensions<br>(Bottom view) |  |  |

## コードフォーマット CODE FORMAT

| No. of positions | S-1000A series (16 positions) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------------------|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|                  | S-2000A series (10 positions) |   |   |   |   |   |   |   |   |   | A | B | C | D | E | F |   |
| Position         | 0                             | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |   |   |   |   |   |   |   |
| Code             | Real code                     | 8 |   |   |   |   |   |   | ● | ● | ● | ● | ● | ● | ● | ● |   |
|                  |                               | 4 |   |   |   | ● | ● | ● |   |   |   | ● | ● | ● | ● | ● |   |
|                  |                               | 2 |   |   | ● | ● |   | ● | ● |   |   | ● | ● |   | ● | ● | ● |
|                  | Complementary code            | 8 | ● | ● | ● | ● | ● | ● | ● |   |   |   |   |   |   |   |   |
|                  |                               | 4 | ● | ● | ● | ● |   |   |   | ● | ● | ● | ● |   |   |   |   |
|                  |                               | 2 | ● | ● |   |   | ● | ● |   | ● | ● |   |   | ● | ● |   |   |
|                  | 1                             | ● |   | ● |   |   | ● |   | ● |   | ● |   |   | ● |   | ● |   |

● ...Contact closed

# S-1000A/2000A

## ROTARY CODED SWITCHES

### 標準仕様

#### STANDARD SPECIFICATIONS

|                                 |  |
|---------------------------------|--|
| 回路構成<br>Circuit type            | BCD (Real code, complementary code)<br>BCH (Real code, complementary code)   |
| 使用温度範囲<br>Operating temp. range | -40 ~ 85 °C  |
| 保存温度範囲<br>Storage temp. range   |  |
| シール性<br>Sealing                 | 洗浄可能 Washable by "O" ring<br>※詳細は 150、151 ページをご覧ください。<br>※ Please refer to page 150,151  |
| 質量<br>Net weight                | Approx. 0.87 g<br>(S-1010A, S-1030A, S-2010A, S-2030A)<br>Approx. 1.13 g<br>(S-1011A, S-1031A, S-2011A, S-2031A)<br>Approx. 0.97 g<br>(S-1110A, S-1130A, S-2110A, S-2130A)<br>Approx. 1.23 g<br>(S-1111A, S-1131A, S-2111A, S-2131A)<br>Approx. 1.02 g<br>(S-1210A, S-1230A, S-2210A, S-2230A)<br>Approx. 1.28 g<br>(S-1211A, S-1231A, S-2211A, S-2231A) |

### 機械的特性

#### MECHANICAL CHARACTERISTICS

|                            |  |
|----------------------------|--|
| ポジション数<br>No. of positions | 16 (S-1000A), 10 (S-2000A)   |
| 回転トルク<br>Adjustment torque | 13 mN·m {133 gf·cm} minimum  |
| ステップ角度<br>Stepping angle   | 22.5° (S-1000A), 36° (S-2000A)   |
| 端子強度<br>Terminal strength  | 15 N {1.53 kgf} minimum  |
| はんだ付け性<br>Solderability    | 245 ± 3 °C, 2 ~ 3 s  |
| はんだ耐熱性<br>Soldering heat   | フロー : 260 ± 3°Cの槽内に端子先端から<br>基板の裏面まで 5 ~ 6 秒間浸漬を<br>2 回<br>Flow : 260 ± 3 °C as the temperature in a<br>pot of molten solder, immersion from<br>head of terminal to backside of board,<br>5 ~ 6 s, two times maximum |
|                            | 手はんだ Manual soldering :<br>380 ± 10 °C, 3 ~ 4 s  |

{ } : 参考値 Reference only

### 電気的特性

#### ELECTRICAL CHARACTERISTICS

|                               |   |
|-------------------------------|---|
| 接点定格<br>Contact rating        | DC50 V 100 mA<br>Switching<br>DC5 V 100 mA<br>Minimum<br>DC20 mV 1 μA |
| 接触抵抗<br>Contact resistance    | 100 mΩ maximum  |
| 絶縁抵抗<br>Insulation resistance | 1000 MΩ (DC100 V) minimum   |
| 耐電圧<br>Dielectric strength    | AC300 V, 60 s   |

### 環境特性

#### ENVIRONMENTAL CHARACTERISTICS

|                                       |   |
|---------------------------------------|---|
| 耐振性<br>Vibration                      | 振幅 (Amplitude) 1.5 mm (全振幅) or<br>加速度 (Acceleration) 98 m/s <sup>2</sup> ,<br>10-500-10 Hz, 3 directions for 2 h each |
| 耐衝撃性<br>Shock                         | 490 m/s <sup>2</sup> , 11 ms<br>6 directions for 3 times each   |
| 耐久性<br>Load life                      | 10000 steps<br>DC5 V, 100 mA  |
| 耐湿性 (定常状態)<br>Humidity (Steady state) | 抵抗負荷 Resistance load DC50V 100mA<br>60 °C, 相对湿度 Relative humidity 90 ~ 95 %, 1000 h                                   |
| 耐熱性<br>High temp. exposure            | 85 °C, 1000 h   |
| 耐寒性<br>Low temp. exposure             | -40 °C, 96 h  |
| 温度サイクル<br>Thermal shock               | -40 (0.5 h) ~ 85 °C (0.5 h), 5 cycles   |

# S-1000A/2000A

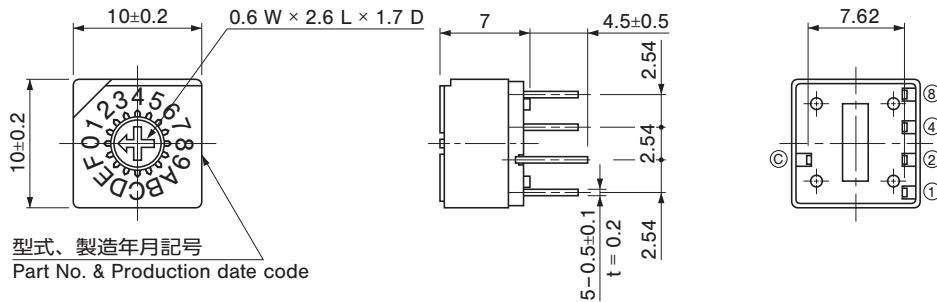
## ROTARY CODED SWITCHES

### 外形寸法図 OUTLINE DIMENSIONS

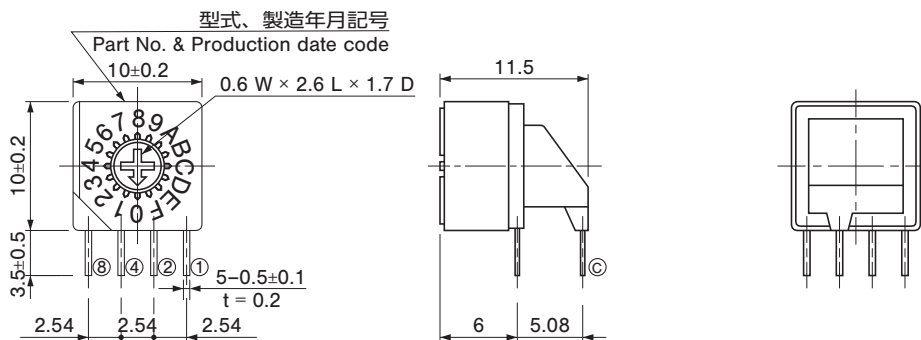
Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)

#### (S-1000A series)

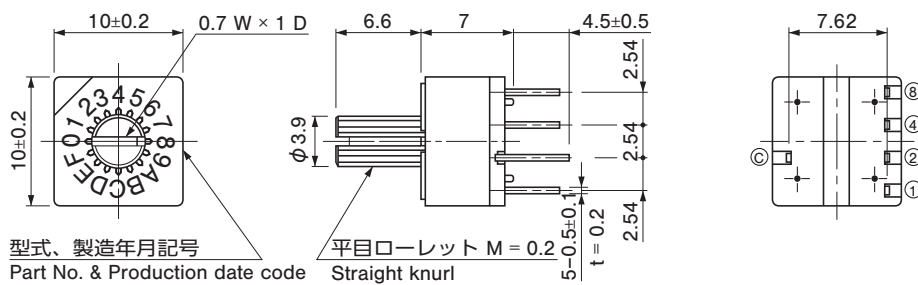
- S-1010A
  - S-1030A
- Top setting



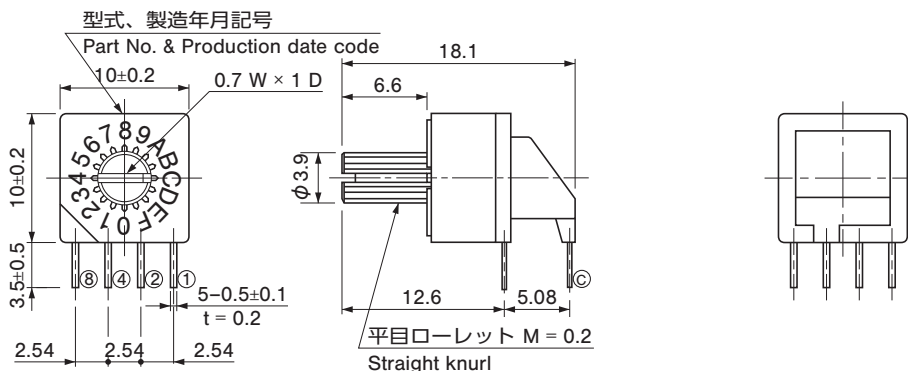
- S-1011A
  - S-1031A
- Side setting



- S-1110A
  - S-1130A
- Top setting



- S-1111A
  - S-1131A
- Side setting



# S-1000A/2000A

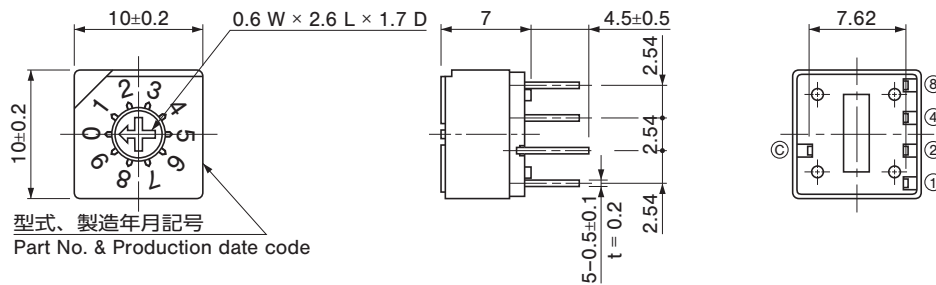
## ROTARY CODED SWITCHES

### 外形寸法図 OUTLINE DIMENSIONS

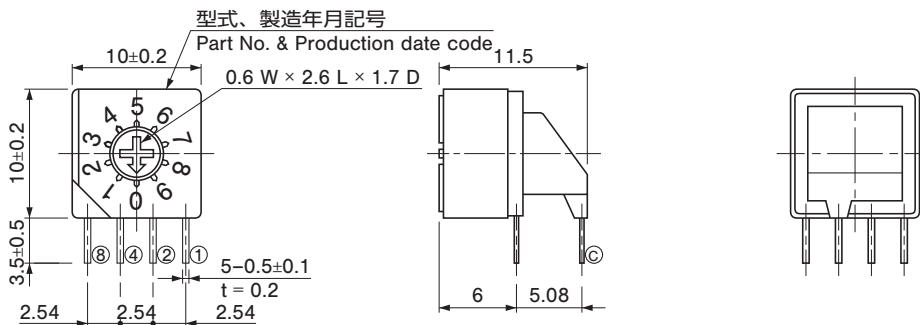
Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)

(S-2000A series)

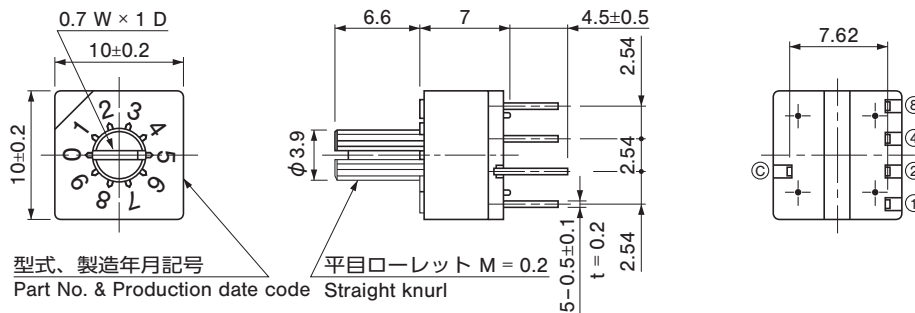
- S-2010A
  - S-2030A
- Top setting



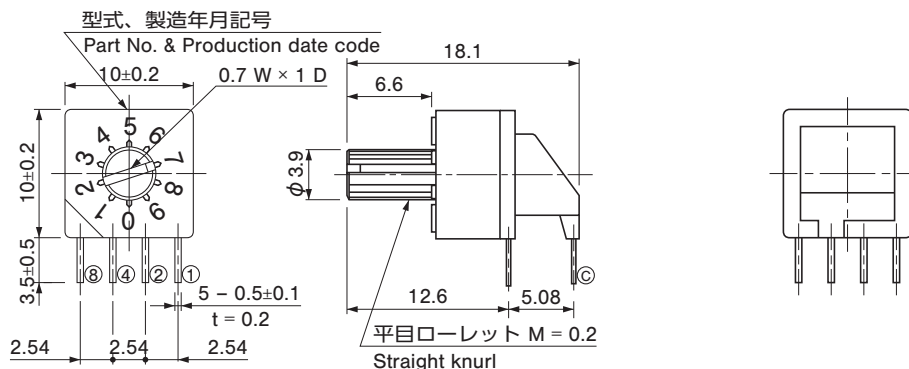
- S-2011A
  - S-2031A
- Side setting



- S-2110A
  - S-2130A
- Top setting



- S-2111A
  - S-2131A
- Side setting



# S-1000A/2000A

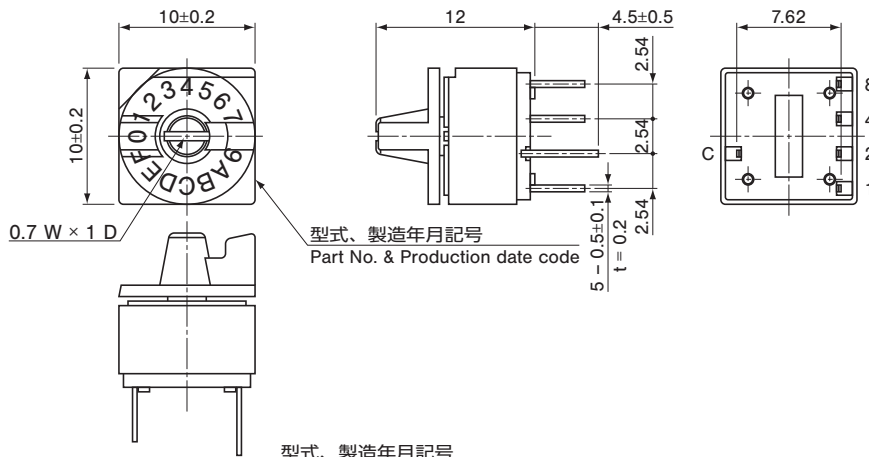
## ROTARY CODED SWITCHES

### 外形寸法図 OUTLINE DIMENSIONS

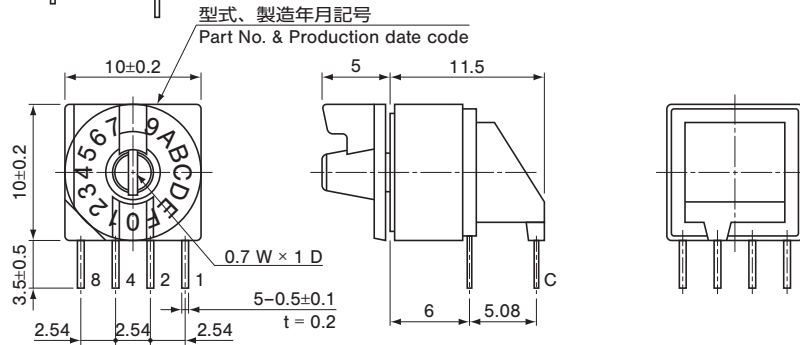
Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)

(S-1200A/2200A series)

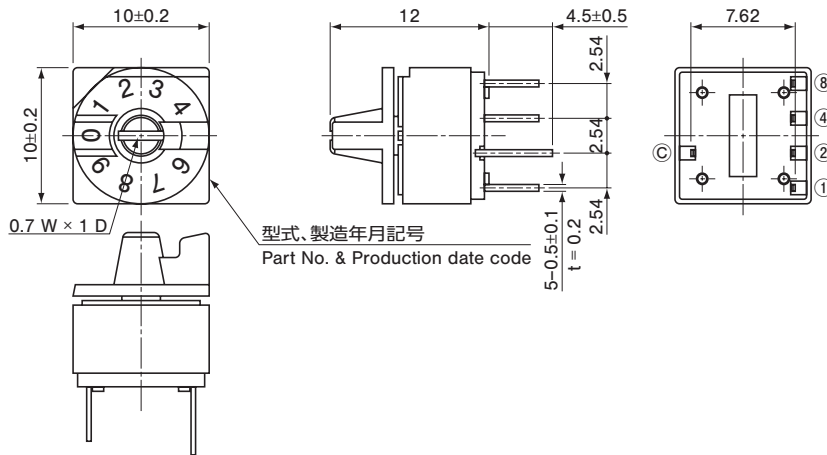
- S-1210A
  - S-1230A
- Top setting



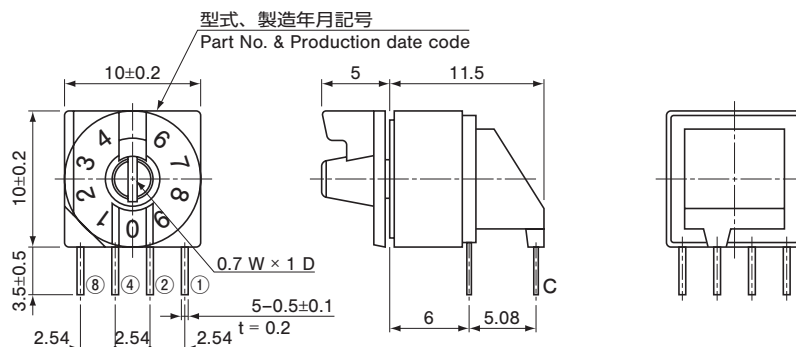
- S-1211A
  - S-1231A
- Side setting



- S-2210A
  - S-2230A
- Top setting



- S-2211A
  - S-2231A
- Side setting



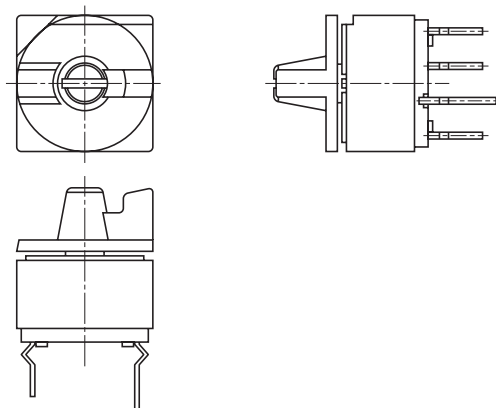
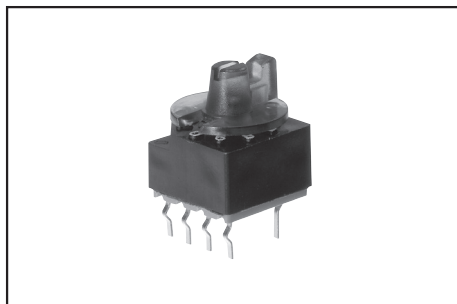
# S-1000A/2000A

## ROTARY CODED SWITCHES

### ■平ノブ付キック加工品 (受注生産)

Snap-in terminal pin with translucent knob with flange (Made to order basis)

#### ● S-1200AK and S-2200AK



### ■包装仕様

#### 〈トレイの包装仕様〉

- トレイでの最小包装は、50個/トレイとなりますので、50個単位（50個、100個、150個…）でのご注文をお願い致します。
- トレイの箱詰めは、10トレイごとに製品箱に包装致します。

#### 〈ポリ袋の包装仕様〉

- ポリ袋での最小包装は、10個/袋となりますので、10個単位（10個、20個、30個…）でのご注文をお願い致します。
- ポリ袋の箱詰めは、25個以上（標準は50個）を製品箱に包装致します。

### ■ PACKAGING SPECIFICATIONS

#### <Tray packaging specifications>

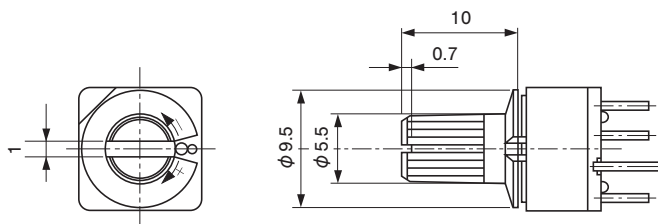
- Tray version is packaged in 50 pcs. per tray. Orders will be accepted for units of 50 pcs., i. e., 50, 100, 150 pcs. etc.
- Tray version is boxed with 10 trays.

#### <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 25 pcs. (standard 50 pcs.) per box.

### ■長軸用ノブ付品 SWITCHES WITH KNOB AS EXTENDED SHAFT

(Unit: mm)



ノブは、S-1000A、S-2000A、SA-5000、SS-10 共用です。

The large knob is common to S-1000A, S-2000A, SA-5000 and SS-10 series.

※ノブは固定されているため、取り外しはできません。ノブ単体での販売はしていません。

※ Knob can't be detached due to being fixed. Simple knob can't be sold.