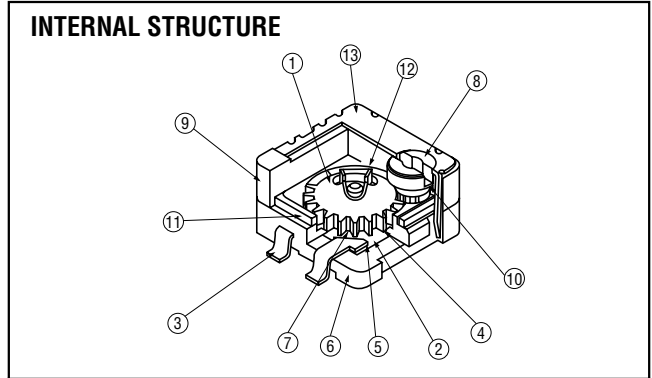




FEATURES

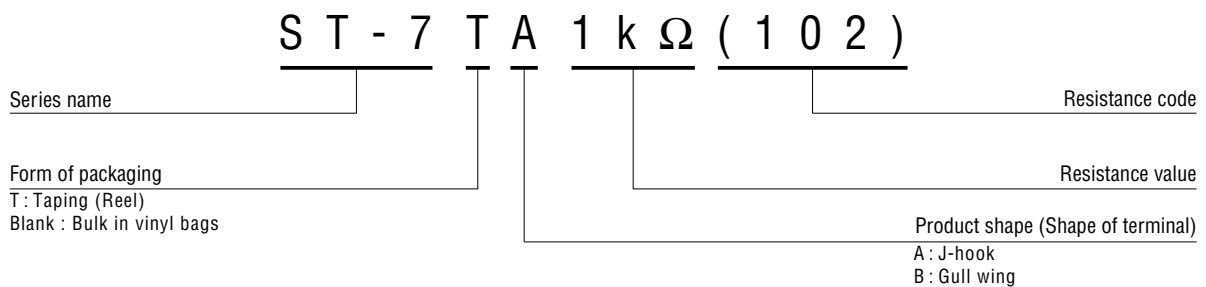
- Fine adjustment is possible
- Automatic mounting is possible (Taping)
- Flow/reflow soldering is possible
- Sealed construction (Washable)



| Part name | Material | Flammability |
|---------------------|-----------------------------|--------------|
| ① Rotor gear | PPS (Polyphenylenesulphide) | UL-94V-0 |
| ② Base element | Ceramic | — |
| ③ Terminal pin | Copper alloy, Solder-plated | |
| ④ Resistive element | RuO ₂ cermet | |
| ⑤ Electrode | Ag-Pd cermet | UL-94V-0 |
| ⑥ Housing base | PPS (Polyphenylenesulphide) | |
| ⑦ Wiper | Multi metal alloy | — |
| ⑧ Shaft | PPS (Polyphenylenesulphide) | UL-94V-0 |
| ⑨ Housing | | |
| ⑩ Shaft "O" ring | Silicone rubber | UL-94HB |
| ⑪ Base "O" ring | | |
| ⑫ Clutch spring | Stainless steel | — |
| ⑬ Cover | | |

CFCs, Halon, Carbon tetrachloride and designated bromic flame retardant PBBOs and PBBs are not used in our products.

PART NUMBER DESIGNATION



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

LIST OF PART NUMBERS

| Adjustment position | Shape of terminal | Form of packaging | |
|---------------------|-------------------|-------------------|----------------|
| | | Taping (reel) | Bulk packaging |
| Top adjustment | A (J-hook) | ST-7TA | ST-7A |
| | B (Gull wing) | ST-7TB | ST-7B |
| Pieces in package | | 500 pcs./reel | 50 pcs./pack |

<Nominal resistance values>

| | | | | | | |
|-------|-------|-------|--------|--------|--------|------|
| 50 Ω | 100 Ω | 200 Ω | 500 Ω | 1 kΩ | 2 kΩ | 5 kΩ |
| 10 kΩ | 20 kΩ | 50 kΩ | 100 kΩ | 200 kΩ | 500 kΩ | 1 MΩ |

Fig. 1

- * The above part numbers are all available with the respective combination of <Nominal resistance values> (Fig. 1).
- * Verify the above part numbers when placing orders.
- * Taping version must be purchased in reel units.

ELECTRICAL CHARACTERISTICS

| | |
|----------------------------|--|
| Nominal resistance range | 50 Ω ~ 1 MΩ |
| Total resistance tolerance | ± 20 % |
| Power ratings | 0.25 W (70 °C) 0 W (125 °C) |
| Resistance law | Linear law |
| Maximum input voltage | DC200 V or power rating, whichever is smaller |
| Maximum wiper current | 100 mA or power rating, whichever is smaller |
| Effective electrical turn | 2.5 turns |
| End resistance | 1 % or 2 Ω, whichever is greater |
| C.R.V. | 1 % or 3 Ω, whichever is greater |
| Operating temp. range | -55 ~ +125 °C |
| Temp. coefficient | 50 Ω : ± 250 ppm/°C maximum 100 Ω ~ 1 MΩ : ± 100 ppm/°C maximum |
| Insulation resistance | 1000 MΩ minimum (DC500 V) |
| Dielectric strength | AC600 V, 60 s |
| Net weight | Approx. 0.25 g |

MECHANICAL CHARACTERISTICS

| | |
|-------------------|--|
| Mechanical turn | 3 turns |
| Operating torque | 5 mN·m {51 gf·cm} maximum |
| Mechanical stop | Clutch action |
| Rotational life | 100 cycles [ΔR/R ≤ ± (2 Ω + 3 %)] |
| Thrust to shaft | 5 N {0.51 kgf} minimum |
| Solderability | 235 °C, 2 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

ENVIRONMENTAL CHARACTERISTICS

| Test item | Test conditions | Specifications |
|---------------------|--|-------------------------------------|
| Thermal shock | -65 ~ +125 °C (0.5 h), 5 cycles | [ΔR/R ≤ 2 %] [S.S. ≤ 1 %] |
| Humidity | -10 ~ +65 °C (80 ~ 98 %RH), 10 cycles, 240 h | [ΔR/R ≤ 2 %] |
| Shock | 981 m/s ² , 6 ms 6 directions for 3 times each | [ΔR/R ≤ 1 %] [S.S. ≤ 1 %] |
| Vibration | Amplitude of 1.52 mm or Acceleration of 196 m/s ² , 10~2000 Hz, 3 directions, 12 times each | [ΔR/R ≤ 1 %] [S.S. ≤ 1 %] |
| Load life | 70 °C, 0.25 W, 1000 h | [ΔR/R ≤ 3 %] [S.S. ≤ 1 %] |
| Low temp. operation | -55 °C, 2 h | [ΔR/R ≤ 2 %] [S.S. ≤ 2 %] |
| High temp. exposure | 125 °C, 250 h | [ΔR/R ≤ 3 %] [S.S. ≤ 2 %] |
| Immersion seal | 85 °C, 60 s | No leaks (No continuous bubbles) |
| Soldering heat | 260 °C, 10 s or 215 °C, 35 s | [ΔR/R ≤ 1 %] |

ΔR/R : Change in total resistance
S.S. : Setting stability

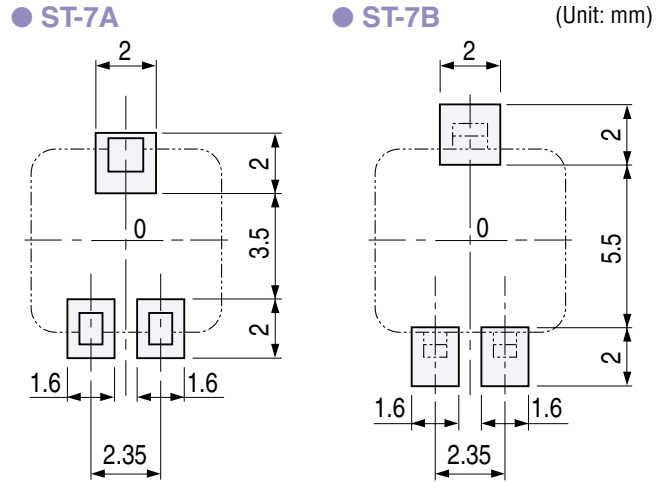
ST-7

SURFACE MOUNT TYPE TRIMMERS

MAXIMUM INPUT RATINGS

| Nominal resistance values (Ω) | Resistance code | Maximum input voltage (V) | Maximum wiper current (mA) |
|-------------------------------|-----------------|---------------------------|----------------------------|
| 50 | 500 | 3.53 | 70.7 |
| 100 | 101 | 5.00 | 50.0 |
| 200 | 201 | 7.07 | 35.4 |
| 500 | 501 | 11.2 | 22.4 |
| 1 k | 102 | 15.8 | 15.8 |
| 2 k | 202 | 22.4 | 11.2 |
| 5 k | 502 | 35.4 | 7.07 |
| 10 k | 103 | 50.0 | 5.00 |
| 20 k | 203 | 70.7 | 3.54 |
| 50 k | 503 | 112 | 2.24 |
| 100 k | 104 | 158 | 1.58 |
| 200 k | 204 | 200 | 1.00 |
| 500 k | 504 | 200 | 0.40 |
| 1 M | 105 | 200 | 0.20 |

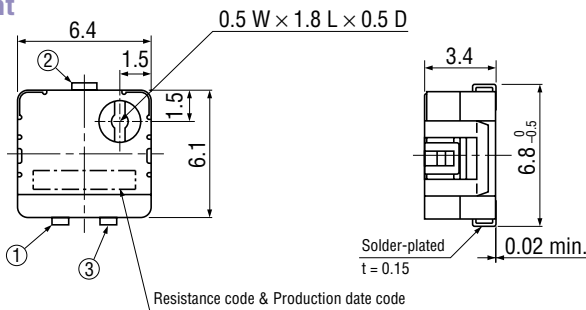
RECOMMENDED P.C.B. PAD OUTLINE DIMENSIONS



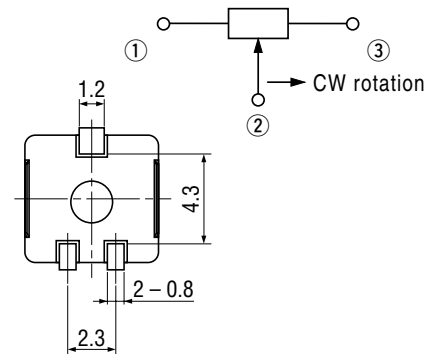
Note) The zero point is the center of mounting.

OUTLINE DIMENSIONS

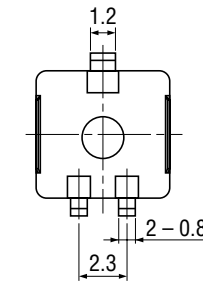
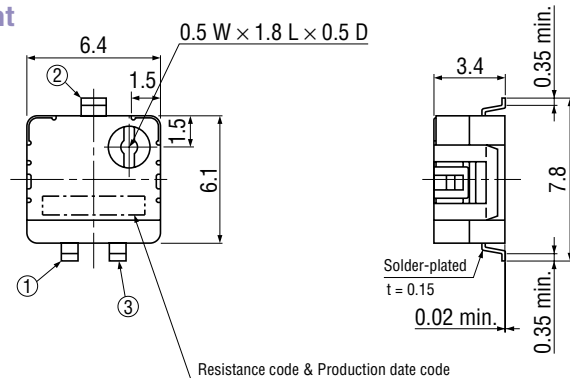
ST-7A Top adjustment



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



ST-7B Top adjustment



* The ST-7 series has a different terminal arrangement from the ST-3 and ST-4 series. Pay attention to the location of terminals number 1 and 3. (Resistance decreases when the shaft is turned CCW.)

PACKAGING SPECIFICATIONS

<Taping packaging specifications>

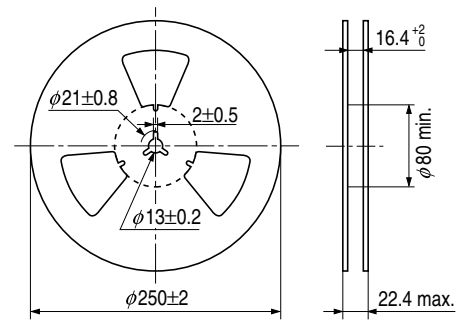
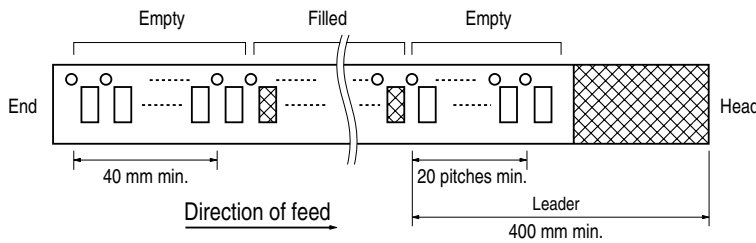
- Taping version is packaged in 500 pcs. per reel. Orders will be accepted for units of 500 pcs., i.e., 500, 1000, 1500 pcs., etc.
- Taping version is boxed with one reel (500 pcs.).

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)



Reel & embossed tape materials

Embossed tape: Plastic
 Reel: Paper

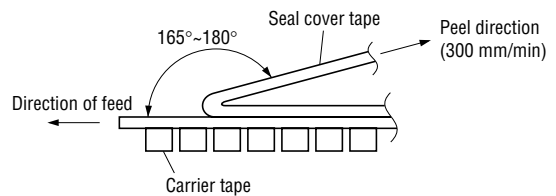
Embossed tape pull strength

9.8 N {1kgf} minimum

Peeling strength of seal tape

0.098~0.69 N {10~70gf}

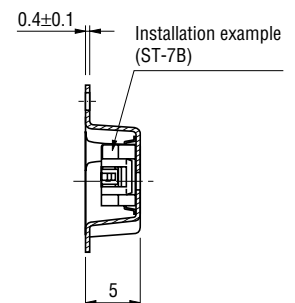
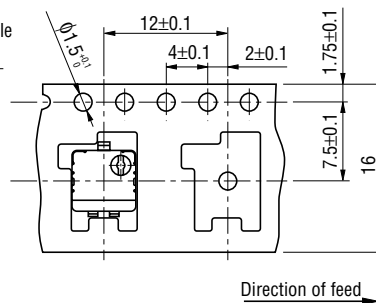
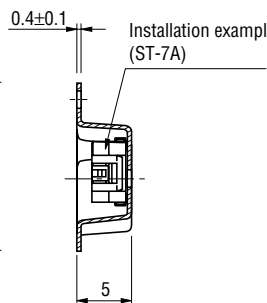
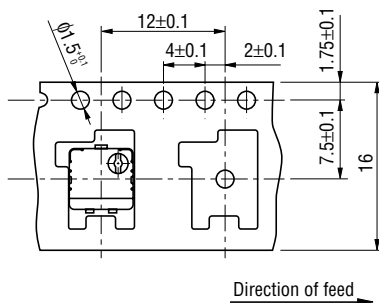
Test method for peeling strength of seal tape



{ } : Reference only

ST-7TA

ST-7TB



<Bulk packaging specifications>

- Unit of bulk in vinyl bag packaging is 50 pcs. per pack.
- Boxing of bulk in vinyl bags is performed with 200 pcs. per box.