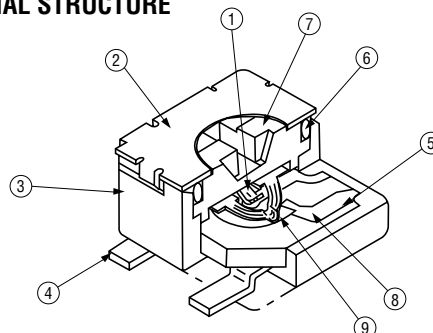


## FEATURES

- Top and side adjustment styles
- Has a rotor with a cross slot for ease of adjustment
- Leaded terminals provide strong as adhesive strength against P.C.B. bending
- J-hook, Gull wing and leaded terminal configurations
- Compatible with P.C.B. Pad Outline Dimensions for ST-3 series
- Sealed / Washable

## INTERNAL STRUCTURE



Part name		Material	Flammability
①	Wiper	Multi metal alloy	—
②	Cover	Stainless steel (SUS 304)	
③	Housing	Epoxy	UL-94V-0
④	Terminal	Copper alloy, Solder-plated	—
⑤	Base element	Ceramic	
⑥	“O” ring	Silicone rubber	UL-94HB
⑦	Rotor	PPS (Polyphenylenesulphide)	UL-94V-0
⑧	Electrode	Ag-Pd cermet	—
⑨	Resistive element	RuO <sub>2</sub> cermet	

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

## PART NUMBER DESIGNATION

S T - 3 2		T A	1 0 0 Ω	( 1 2 )
Series name				Resistance code
Form of packaging				Resistance value
T : Taping (Reel)				
Blank : Bulk in vinyl bags				
Blank				
				Product shape (Shape of terminal)
				A, G : J-hook
				B, H : Gull wing

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

## ST-32

## SURFACE MOUNT TYPE TRIMMERS

## ■ LIST OF PART NUMBERS

Adjustment position	Shape of terminal	Form of packaging	
		Taping (reel)	Vinyl bag
Top adjustment	A (J-hook)	ST-32TA	ST-32A
	B (Gull wing)	ST-32TB	ST-32B
Side adjustment	G (J-hook)	ST-32TG	ST-32G
	H (Gull wing)	ST-32TH	ST-32H
Pieces in package		500 pcs./reel	100 pcs./pack

## ■ ELECTRICAL CHARACTERISTICS

Nominal resistance range	10 Ω ~ 1 MΩ
Nominal resistance tolerance	± 20 %
Power ratings	0.125 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 angle	210 ° (1 turn)
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	10 Ω ~ 50 Ω : ± 250 ppm/°C maximum 100 Ω ~ 1 MΩ : ± 100 ppm/°C maximum
Insulation resistance	1000 MΩ minimum (DC500 V)
Dielectric strength	AC500 V, 60 s
Net weight	Approx. 0.05 g (ST-32A, B) Approx. 0.11 g (ST-32G, H)

## &lt;Nominal resistance values&gt;

10 Ω	20 Ω	50 Ω	100 Ω	200 Ω	300 Ω	500 Ω
1 kΩ	2 kΩ	3 kΩ	5 kΩ	10 kΩ	20 kΩ	30 kΩ
50 kΩ	100 kΩ	200 kΩ	500 kΩ	1 MΩ		

Fig.1

## ⤵ : Semi-standard

\* 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 specification is not sold separately and must be purchased in reel units.

## ■ MECHANICAL CHARACTERISTICS

Mechanical angle	250 ° (1 turn)
Operating torque	5 mN·m {51 gf·cm} maximum
Stop strength	20 mN·m {204 gf·cm} minimum
Rotational life	100 cycles [ $\Delta R/R \leq \pm (2 \Omega + 3 \%)$ ]
Thrust to rotor	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	[ $\Delta R/R \leq 2 \%$ ] [S.S. $\leq 1 \%$ ]
Humidity	−10 ~ +65 °C (80 ~ 98 %RH), 10 cycles, 240 h	[ $\Delta R/R \leq 2 \%$ ]
Shock	981 m/s <sup>2</sup> , 6 ms 6 directions for 3 times each	[ $\Delta R/R \leq 1 \%$ ] [S.S. $\leq 1 \%$ ]
Vibration	Amplitude of 1.52 mm or Acceleration of 196 m/s <sup>2</sup> , 10 ~ 2000 Hz, 3 directions, 12 times each	
Load life	70 °C, 0.125 W 1000 h	[ $\Delta R/R \leq 3 \%$ ] [S.S. $\leq 1 \%$ ]
Low temp. operation	−55 °C, 2 h	[ $\Delta R/R \leq 2 \%$ ] [S.S. $\leq 2 \%$ ]
High temp. exposure	125 °C, 250 h	[ $\Delta R/R \leq 3 \%$ ] [S.S. $\leq 2 \%$ ]
Immersion seal	85 °C, 60 s	No leaks (No continuous bubbles)
Soldering heat	260 °C, 10 s or 215 °C, 35 s	[ $\Delta R/R \leq 1 \%$ ]

$\Delta R/R$  : Change in total resistance  
S.S. : Setting stability

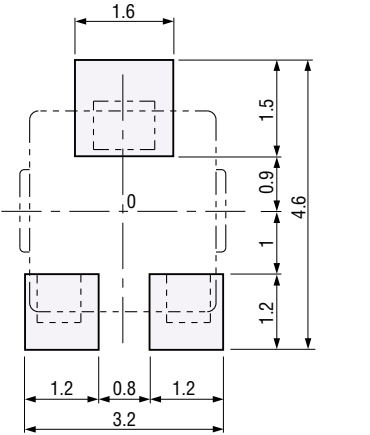
MAXIMUM INPUT RATINGS

Nominal resistance values (Ω)	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
➡ 10	11	1.00	100
➡ 20	21	1.58	79.1
50	51	2.50	50.0
100	12	3.53	35.4
200	22	5.00	25.0
300	32	6.12	20.4
500	52	7.91	15.8
1 k	13	11.2	11.2
2 k	23	15.8	7.91
3 k	33	19.4	6.45
5 k	53	25.0	5.00
10 k	14	35.4	3.54
20 k	24	50.0	2.50
30 k	34	61.2	2.04
50 k	54	79.1	1.58
100 k	15	112	1.12
200 k	25	158	0.79
500 k	55	200	0.40
1 M	16	200	0.20

➡ : Semi-standard

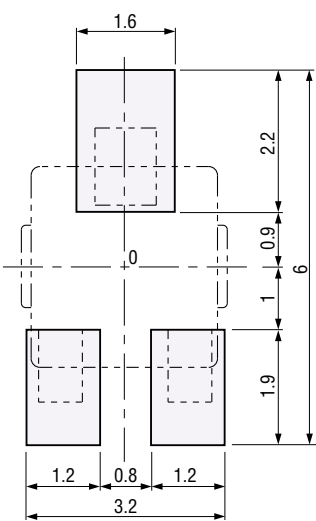
RECOMMENDED P.C.B. PAD OUTLINE DIMENSIONS

● ST-32A, G



For reflow soldering

● ST-32B, H



(Unit : mm)

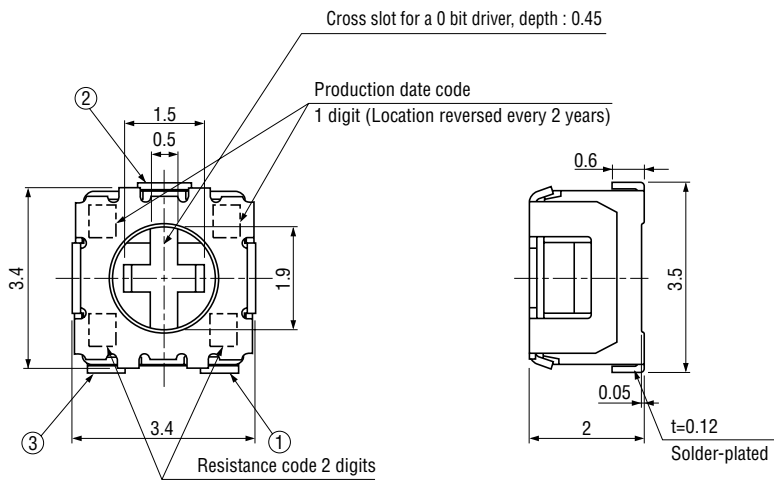
Note) The zero point is the center of mounting.

ST-32  
SURFACE MOUNT TYPE TRIMMERS

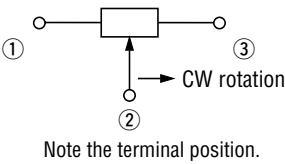
SURFACE MOUNT  
TYPE TRIMMERS

OUTLINE DIMENSIONS

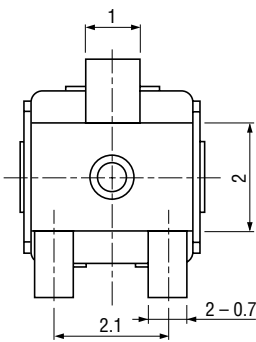
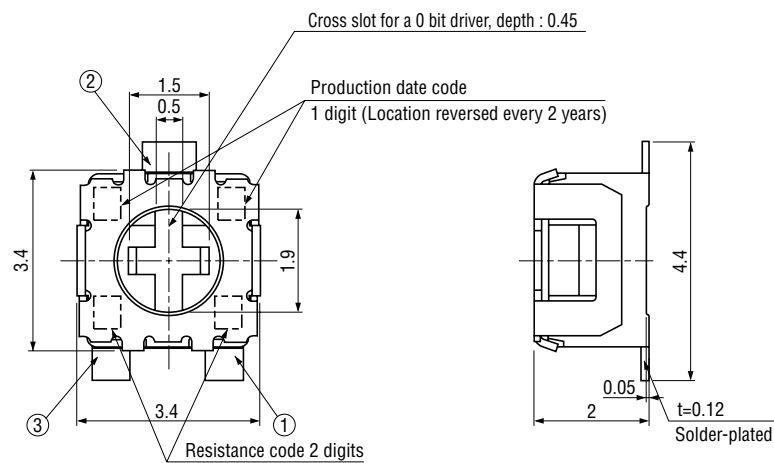
ST-32A  
Top adjustment



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

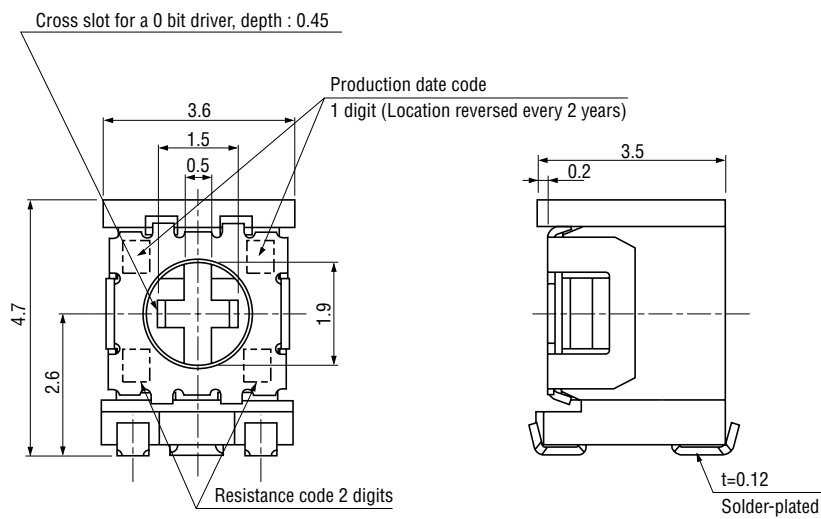


ST-32B  
Top adjustment

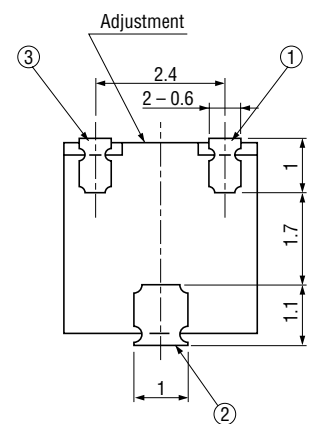
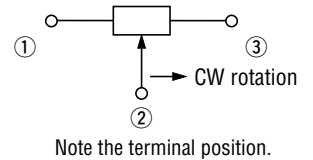


### OUTLINE DIMENSIONS

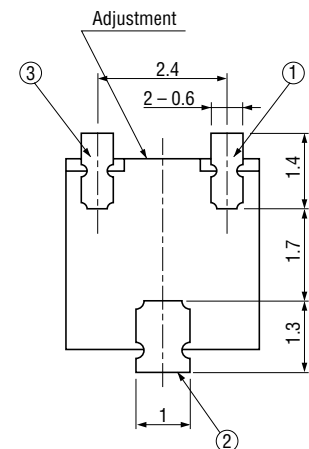
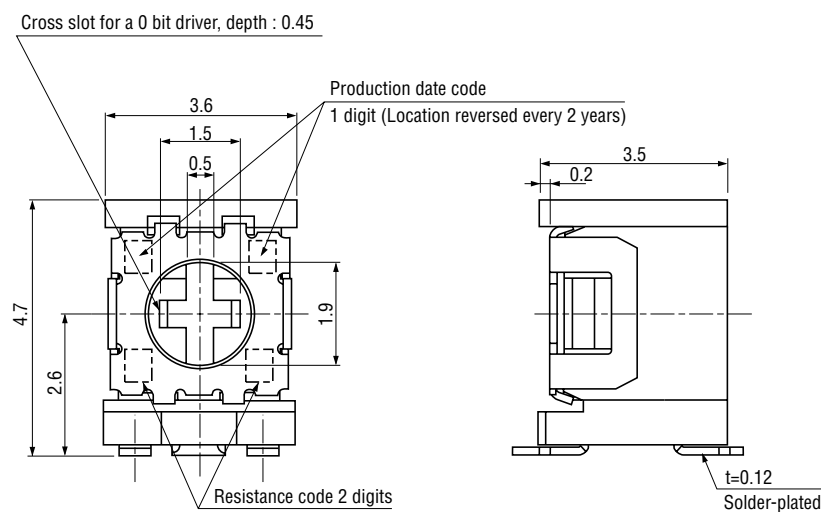
#### ● ST-32G Side adjustment



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



#### ● ST-32H Side adjustment



# ST-32

## SURFACE MOUNT TYPE TRIMMERS

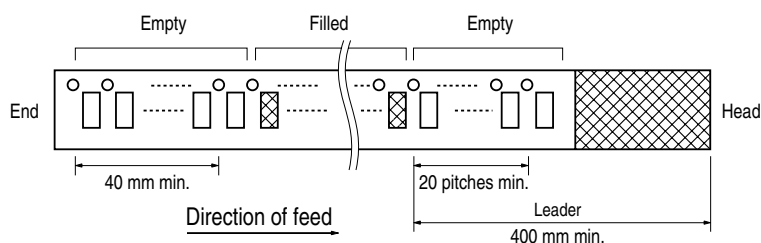
### PACKAGING SPECIFICATIONS

#### <Taping packaging specifications>

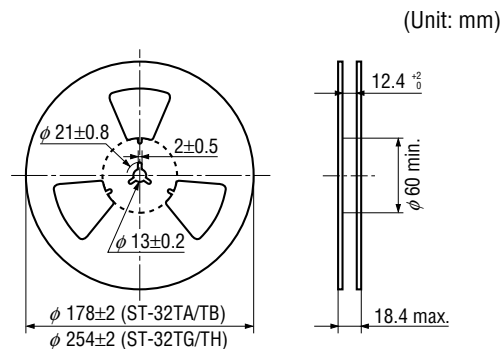
- Taping version is packaged in 500 pcs. per reel.  
Orders will be accepted for units of 500 pcs., i.e., 500, 1000, 1500 pcs., etc.
- ST-32TA and TB versions are boxed with 4 reels (2000 pcs.). ST-32TG and TH versions are boxed with one reel (500 pcs.).

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

#### EMBOSSED TAPE DIMENSIONS



#### REEL DIMENSIONS



#### Reel & embossed tape materials

Embossed tape: Plastic  
Reel: Paper

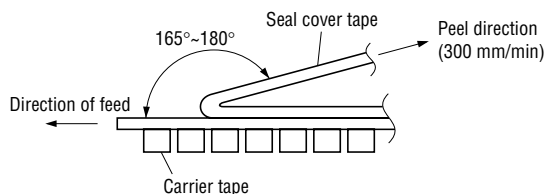
#### Embossed tape pull strength

9.8 N {1kgf} minimum

#### Peeling strength of seal tape

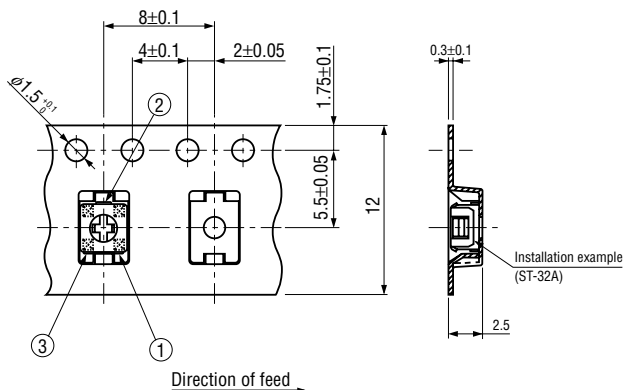
0.098~0.69 N {10~70gf}

#### Test method for peeling strength of seal tape

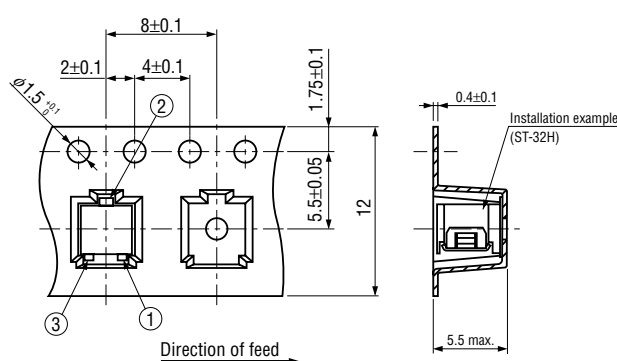


{ } : Reference only

#### ST-32TA, TB



#### ST-32TG, TH



#### <Vinyl bag packaging specifications>

- Unit of bulk in vinyl bag packaging is 100 pcs. per pack.
- Boxing of bulk in vinyl bags is performed with 500 pcs. per box.