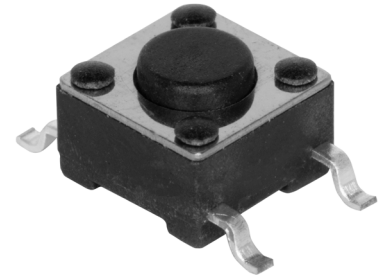




SERIES: TS04 | **DESCRIPTION:** TACTILE SWITCH

FEATURES

- surface mount
- black actuator



SPECIFICATIONS

| parameter | conditions/description | min | typ | max | units |
|-----------------------|-----------------------------------------------------------------------------------------------------------|------|-----------------------------|------|----------------------------|
| rated voltage | | 1 | | 12 | Vdc |
| rated current | | 0.01 | | 50 | mA |
| withstanding voltage | for 1 minute | | 250 | | Vac |
| contact resistance | applying load of 2 times operating force at 5 Vdc, 10 mA | | | 100 | mΩ |
| insulation resistance | at 100 Vdc for 1 minute | 100 | | | MΩ |
| operating force | see force table | | | | |
| actuator travel | | 0.15 | 0.25 | 0.35 | mm |
| operating temperature | | -30 | | 80 | °C |
| storage temperature | | -40 | | 90 | °C |
| life | rated load, 2 cycles/second, 1.5 times operating force 100 gf models 160 gf models 260 gf models | | 100,000 80,000 60,000 | | cycles cycles cycles |
| vibration | 10~55~10 Hz, 1.5 mm amplitude, 2 hours on each XYZ | | | | |
| flammability rating | see material table | | | | |
| RoHS | yes | | | | |

PART NUMBER KEY

TS04 - 66 - XX - BK - XXX - SMT - XX

Base Number

Actuator Height:

43 = 4.3 mm *73 = 7.3 mm
 50 = 5.0 mm 75 = 7.5 mm
 55 = 5.5 mm 85 = 8.5 mm
 65 = 6.5 mm 95 = 9.5 mm
 70 = 7.0 mm

Push Force:

100 = 100 gf
 160 = 160 gf
 260 = 260 gf

Packaging:

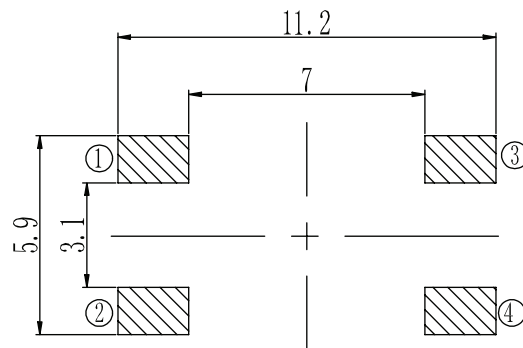
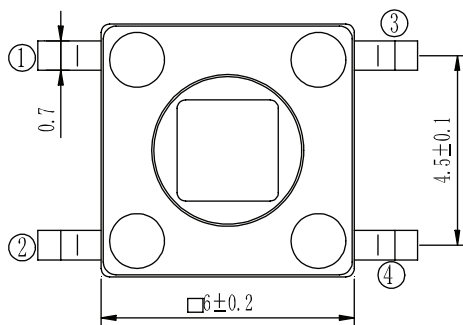
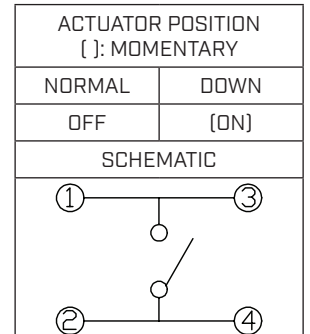
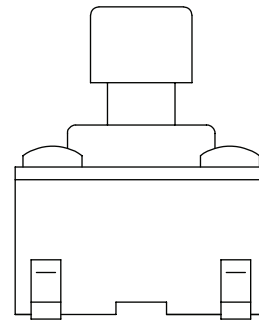
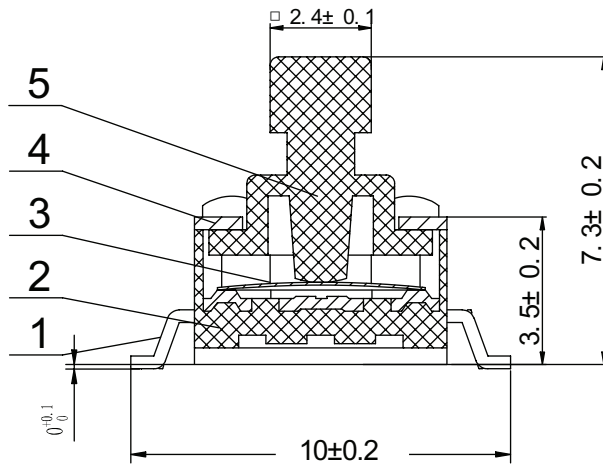
"blank" = bag
 TR = tape and reel

Note: *7.3 mm height versions have square actuator top. All other models have round actuator top.

MECHANICAL DRAWING (7.3 MM HEIGHT MODELS)

units: mm
tolerance: ± 0.2 mm
unless otherwise noted

| ITEM | DESCRIPTION | MATERIAL | PLATING/COLOR |
|------|-------------|-----------------|---------------|
| 1 | terminals | brass | silver |
| 2 | case | PA66 (UL94HB) | black |
| 3 | contacts | stainless steel | silver |
| 4 | cover | stainless steel | |
| 5 | stem | PA66 (UL94HB) | black |



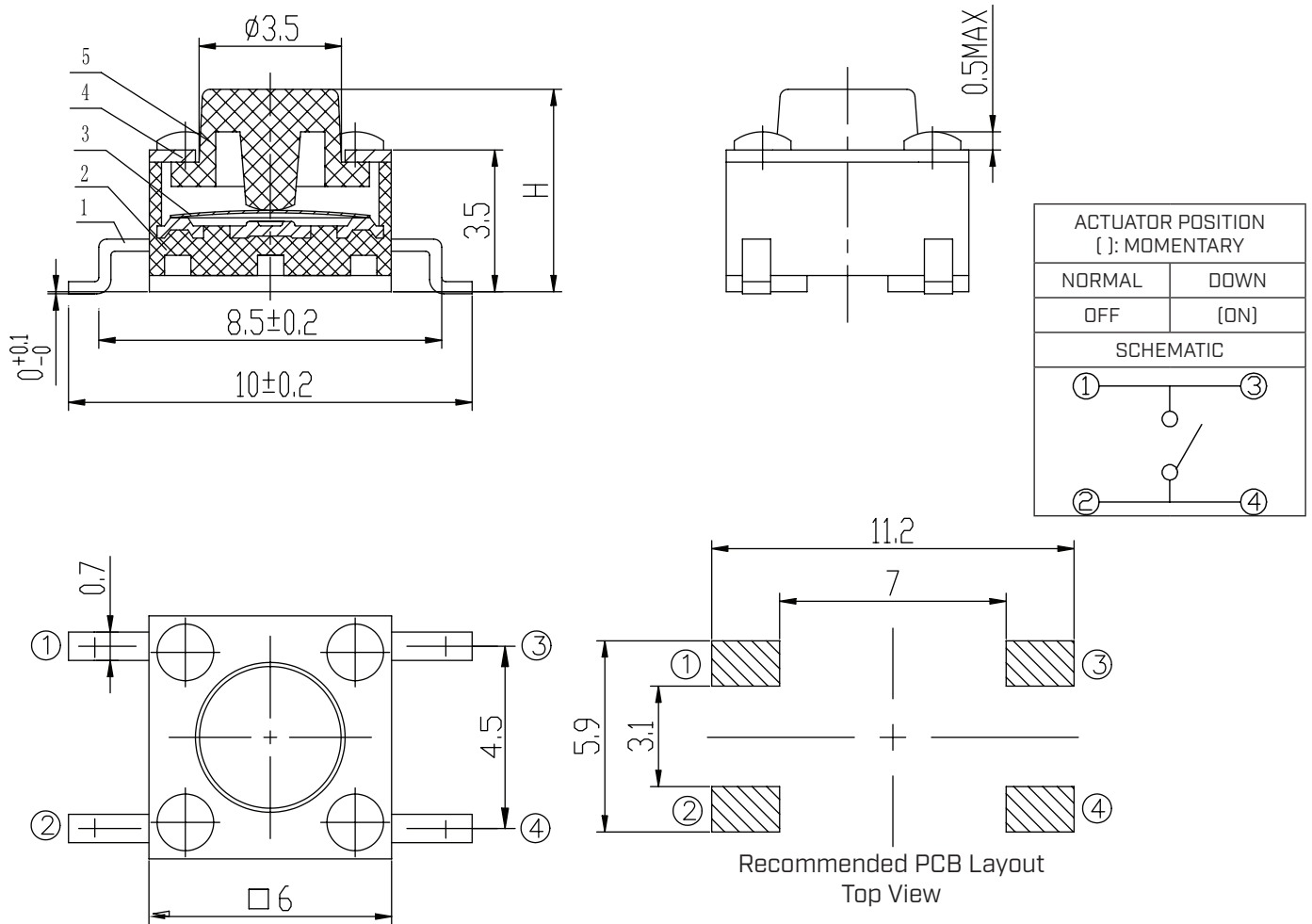
Recommended PCB Layout
Top View

| Operating Force Table | | |
|-----------------------|-----------------|------------------|
| Model | Press Force [N] | Return Force [N] |
| 100 | 1.0 \pm 0.3 | >0.2 |
| 160 | 1.6 \pm 0.5 | >0.2 |
| 260 | 2.6 \pm 0.5 | >0.2 |

MECHANICAL DRAWING (ALL OTHER HEIGHT MODELS)

units: mm
 tolerance: ± 0.2 mm
 unless otherwise noted

| ITEM | DESCRIPTION | MATERIAL | PLATING/COLOR |
|------|-------------|-----------------|---------------|
| 1 | terminals | brass | silver |
| 2 | case | PA66 (UL94HB) | black |
| 3 | contacts | stainless steel | silver |
| 4 | cover | stainless steel | |
| 5 | stem | PA66 (UL94HB) | black |

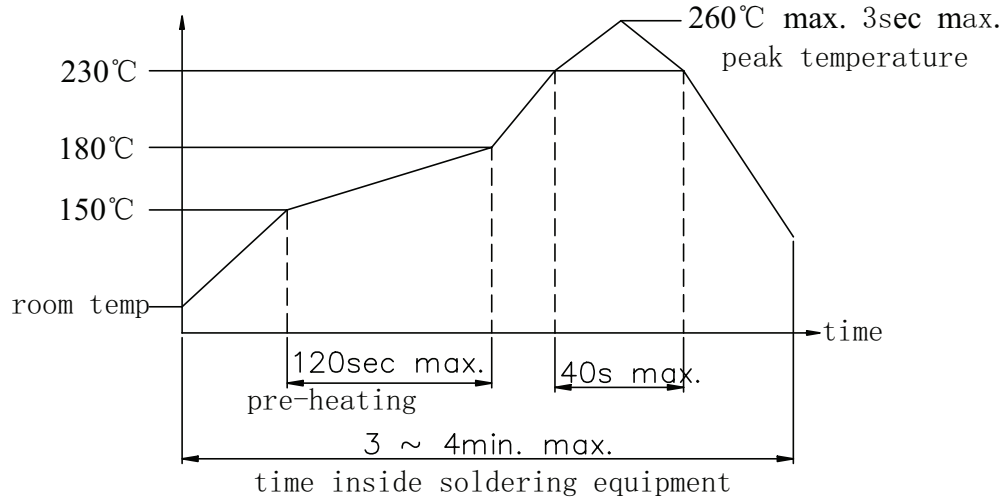


| Model | Press Force [N] | Return Force [N] |
|-------|-----------------|------------------|
| 100 | 1.0 \pm 0.3 | >0.2 |
| 160 | 1.8 \pm 0.5 | >0.2 |
| 260 | 2.6 \pm 0.5 | >0.2 |

SOLDERABILITY

| parameter | conditions/description | min | typ | max | units |
|-------------------------------|------------------------|-----|-----|-----|-------|
| hand soldering | for maximum 3 seconds | | | 350 | °C |
| reflow soldering ¹ | see reflow profile | | | 260 | °C |

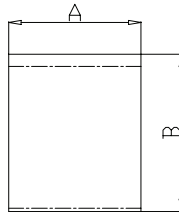
Notes: 1. Do not exceed 2 reflow cycles.



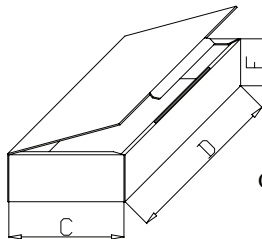
PACKAGING (BAG)

units: mm

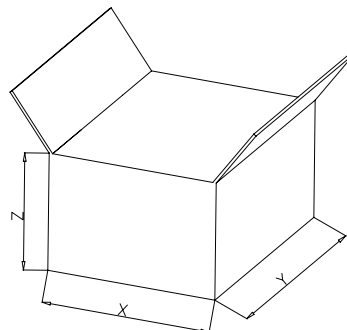
Bag Size: 190 x 160 mm
 Carton Box Size: 445 x 350 x 280 mm
 Bag QTY: 1,000 pcs per bag
 Carton Box QTY: 60,000 pcs per carton



A=160mm、B=190mm



C=160mm、D=216mm、E=48mm

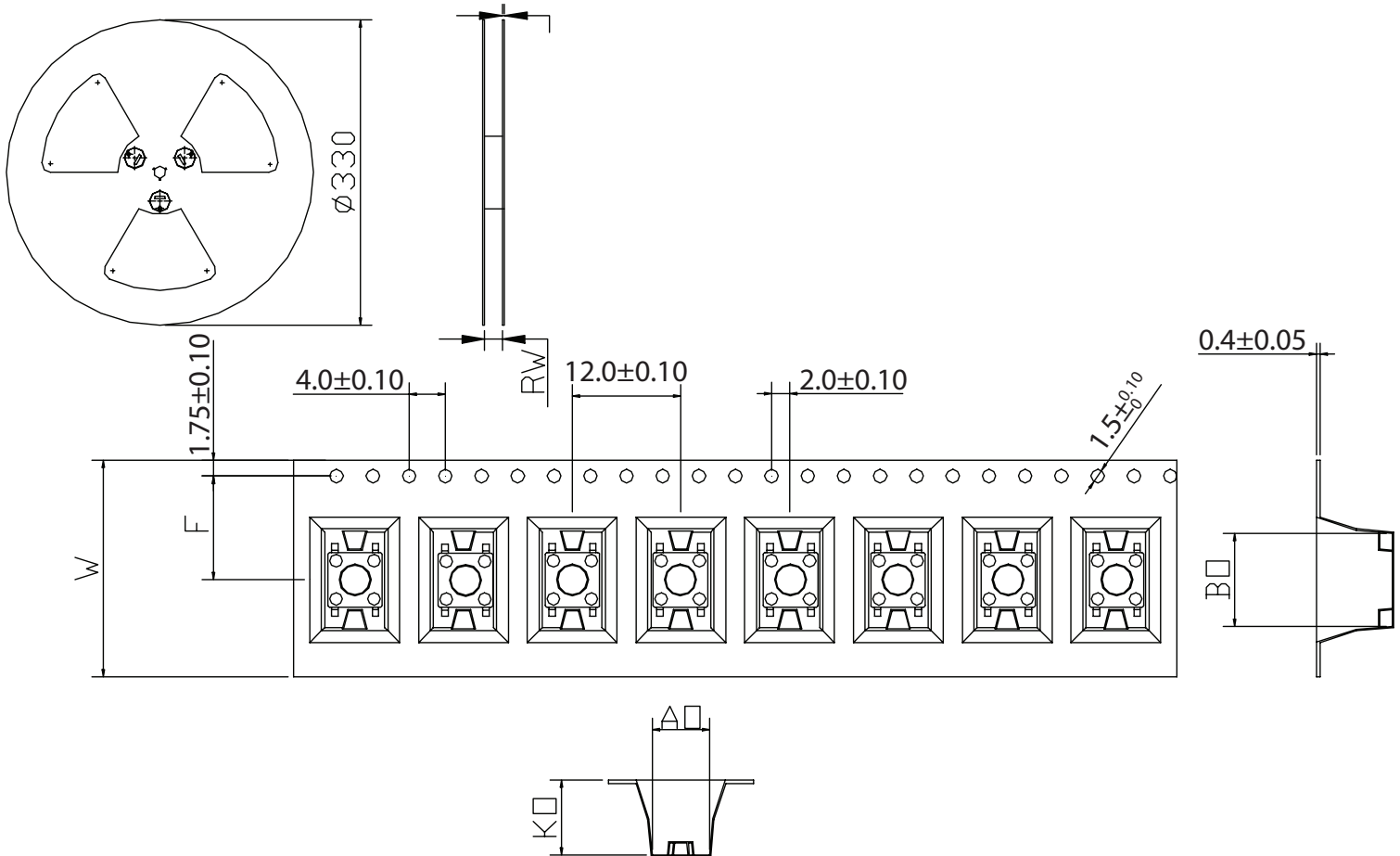


X=350mm、Y=455、Z=280mm

PACKAGING (TAPE & REEL)

Packaging Table

| Actuator Height Models (mm) | Reel QTY | Carton Size [XxYxZ] (mm) | Carton QTY | RW (mm) | W (mm) | A0 (mm) | B0 (mm) | K0 (mm) | F (mm) |
|-----------------------------|----------|--------------------------|------------|---------|--------|---------|----------|-------------------------------------|----------|
| 4.3 | 1,000 | 340 x 430 x 340 | 20,000 | 16.5 | 16±0.3 | 6.3±0.1 | 10.4±0.1 | 4.5±0.1 | 7.5±0.1 |
| 5.0 | 1,000 | 340 x 430 x 340 | 20,000 | 16.5 | 16±0.3 | 6.3±0.1 | 10.4±0.1 | 5.2±0.1 | 7.5±0.1 |
| 5.5 | 1,000 | 340 x 430 x 340 | 20,000 | 16.5 | 16±0.3 | 6.3±0.1 | 10.4±0.1 | 5.7±0.1 | 7.5±0.1 |
| 6.5 | 800 | 340 x 430 x 340 | 16,000 | 16.5 | 16±0.3 | 6.3±0.1 | 10.4±0.1 | 6.7±0.1 | 7.5±0.1 |
| 7.0 | 750 | 340 x 430 x 340 | 10,500 | 24.5 | 24±0.3 | 6.3±0.1 | 10.3±0.1 | 7.3±0.1 | 11.5±0.1 |
| 7.3 | 750 | 340 x 430 x 340 | 10,500 | 24.5 | 24±0.3 | 6.4±0.1 | 10.5±0.1 | 7.8±0.1 | 11.5±0.1 |
| 7.5 | 750 | 340 x 430 x 340 | 10,500 | 24.5 | 24±0.3 | 6.4±0.1 | 10.5±0.1 | 7.8±0.1 | 11.5±0.1 |
| 8.5 | 500 | 340 x 430 x 340 | 7,000 | 24.5 | 24±0.3 | 6.3±0.1 | 10.4±0.1 | 8.6 ^{+0.1} _{-0.1} | 11.5±0.1 |
| 9.5 | 500 | 340 x 430 x 340 | 7,000 | 24.5 | 24±0.3 | 6.3±0.1 | 10.4±0.1 | 9.6 ^{+0.1} _{-0.1} | 11.5±0.1 |



- Note: 1. Actuator height 4.3 & 5.0 models have about 15-25 open positions reserved for the front and rear positions of the reel.
 2. Actuator height 5.5 & 6.5 models have about 15-30 open positions reserved for the front and rear positions of the reel.
 3. Actuator height 7.0, 7.3, & 7.5 models have about 20-35 open positions reserved for the front and rear positions of the reel.
 4. Actuator height 8.5 & 9.5 models have about 30-50 open positions reserved for the front and rear positions of the reel.

REVISION HISTORY

| rev. | description | date |
|------|--------------------------------------|------------|
| 1.0 | initial release | 09/20/2021 |
| 1.01 | added 7.3 mm height model drawing | 11/03/2021 |
| 1.02 | logo, datasheet style update | 08/05/2022 |
| 1.03 | added tape and reel packaging option | 05/12/2023 |

The revision history provided is for informational purposes only and is believed to be accurate.



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