

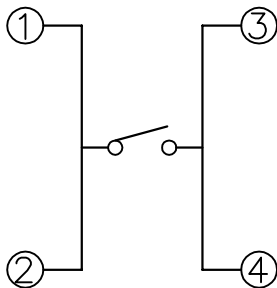
SPECIFICATION

1. OPERATING FORCE : 160gf±50gf
2. GENERAL TOLERANCE : ±0.3
3. TRAVEL :0.2±0.1m/m
4. CONTACT RESISTANCE : 100mΩ MAX
5. LIFE:100,000CYCLES MIN
6. REEL PACKING :7,000pcs
7. L =0.55mm

NOTE

1. Omission Dimensions To CAD Data File Reference.

Circuit Diagram



4	DUST COVER	POLYIMIDE-0.06t	NT	1	
3	CONTACT	SUS301- 0.05t	Ag(CLAD)	1	
2	TERMINAL	5210R-EH 0.1t	Ag	1	
1	CASE	LCP	BK	1	
No.	DESCRIPTIONS	MATERIAL	FINSH/COLOR	Q'TY	REMARK
△		TRIGON- OMETRY	UNIT	SCALE	<b>TACT SWITCH</b>
△		APPD	CHKD	DSGD	
△					
△					
△					
NO	10.05.06	CORRECTION			MODEL <b>INT-1197U05A</b>

# TACT SWITCH SPECIFICATION

## 1. GENERAL

- 1-1 Switch action : PUSH - ON type S.P.S.T
- 1-2 Switch rating : DC 12V, 50 mA Max.
- 1-3 Operation temperature range : - 20 °C ~ 70 °C
- 1-4 Preservative temperature range : - 30 °C ~ 80 °C
- 1-5 Appearance and dimensions : See outside drawing page
- 1-6 Standard conditions : Unless otherwise specified, the test and measurements shall be carried out as follows:

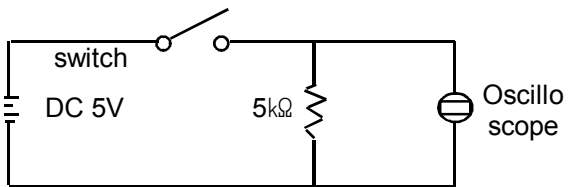
Ambient temperature : 5 ~ 35 °C  
 Relative humidity : 45 ~ 85 % RH  
 Air pressure : 86 ~ 106 kPa ( 860 ~ 1060 mbar)

However, if doubt arises on the decision based on the measured values under the above- mentioned conditions, the following conditions shall be employed.

Ambient temperature : 20 ± 2°C  
 Relative humidity : 65 ± 5 % RH  
 Air pressure : 86 ~ 106 kPa ( 860 ~ 1060 mbar)

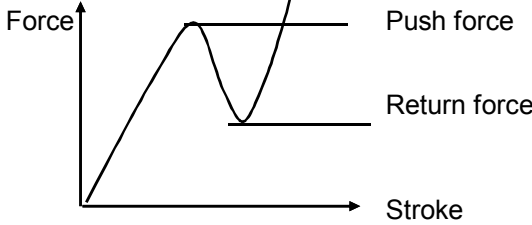
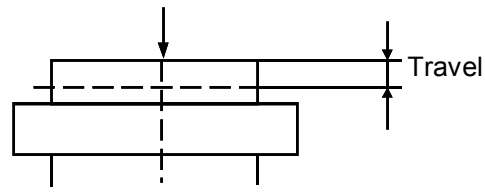
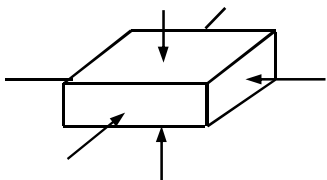
## 2. PERFORMANCE

### 2-1 Electrical characteristics

NO	ITEM	TEST CONDITIONS	PERFORMANCE
2.1.1	Contact resistance	Applying a static load twice the actuating force to the center of the stem, measurements shall be made with a 1KHz small-current contact resistance meter	100 mΩ max.
2.1.2	Insulation resistance	Measurements shall be made following application of DC 100V potential across terminals and across terminals and frame for one minute.	100 MΩ min.
2.1.3	Dielectric withstanding voltage	AC 250 V(50 Hz or 60 Hz) shall be applied across terminals and across terminals and frame for one minute.	There shall be no breakdown.
2.1.4	Bounce	Lightly striking the center of the stem at a rate encountered in normal use ( 3 to 4 operations per sec ) bounce shall be tested at "ON" and "OFF".  <div style="text-align: center;">  </div>	10 msec max.

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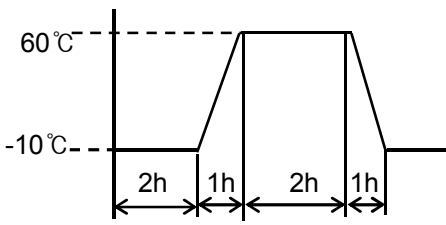
### 2-2 Mechanical characteristics

NO	ITEM	TEST CONDITIONS	PERFORMANCE
2.2.1	Operation force	Push by recommended operating condition 	Push force : $250 \pm 50\text{gf}$ Return force : $50\text{ gf min.}$
2.2.2	Travel	Push by recommended operating condition $F = (\text{Operation force}) \times 2$ 	$0.2 \pm 0.1\text{ mm}$
2.2.3	Stop strength	A static load of 3 kgf shall be applied in the direction of stem operation for a period of 60 seconds.	No damage (Electrical and mechanical)
2.2.5	Vibration test	1)Amplitude : 1.5 mm 2)Sweep rate :10-55-10 Hz for 1 minute. 3)Sweep method : Logarithmic frequency sweep rate. 4)Vibration direction : X.Y.Z ( 3 directions ) 5)Time : Each direction 2 hours ( Total 6 hours )	No 2.1 and 2.2.1 to 2.2.2 shall be satisfied.
2.2.6	Impact shock test	1)Acceleration : 80 G 2)Cycles of test : 3 cycles each in 6 directions, for a total 18 cycles. 	No 2.1 and 2.2.1 to 2.2.2 shall be satisfied.
2.2.7	Soldering heat test	Soldering area : $t/2$ of P.W.B thickness ( P.W.B : $t = 1.6$ ) Soldering temperature : $260 \pm 5\text{ }^\circ\text{C}$ Soldering time : $5 \pm 1\text{ sec.}$	No damage (Electrical and mechanical)

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**2-3 Climatic characteristics**

NO	ITEM	TEST CONDITIONS	PERFORMANCE
2.3.1	Cold test	1) Temperature : $-30 \pm 2^{\circ}\text{C}$ 2) Duration of test : 96 hours 3) Take off a drop water 4) Standard condition after test : 1 hour	Contact resistance : 200 mΩ max. No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.
2.3.2	Heat test	1) Temperature : $80 \pm 2^{\circ}\text{C}$ 2) Duration of test : 96 hours 3) Standard conditions after test : 1 hour	Contact resistance : 200 mΩ max. No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.
2.3.3	Temperature cycle	1) Test cycles : 5 cycles 2) Standard conditions after test : 1 hour 3) 1 cycle : 	Contact resistance : 200 mΩ max. No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.
2.3.4	Humidity test	1) Temperature : $60 \pm 2^{\circ}\text{C}$ 2) Relative humidity : 90 ~ 95% 3) Duration of test : 96 hours 4) Take off a drop water 5) Standard conditions after test : 1 hour	Contact resistance : 200 mΩ max. No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.
2.3.5	Operating life test	1) DC 5 V, 5 mA Resistance load 2) Operation speed : 2 ~ 3 cycles/sec 3) Push force : Maximum value of operation force 4) Cycles of operation : 100,000 cycles	Contact resistance : 200 mΩ max. Bounce : 20 msec max. Actuating force: +10 / -30% initial force No 2.1.2 to 2.1.3 and 2.2.2 shall be satisfied.

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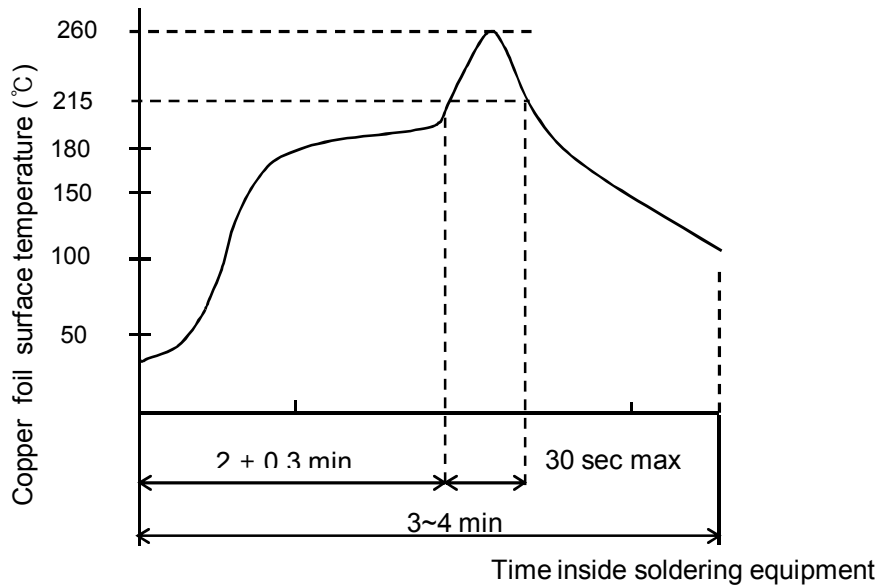
### 3. SOLDERING

#### 3-1. Reflow soldering conditions

Preheat : Temperature on the copper foil surface should reach  $180^{\circ}\text{C}$ ,  $2 \pm 0.3$  minutes after the

P.W.B entered into the soldering equipment.

Soldering heat : Temperature on the copper foil surface should reach the peak temperature of 260°C within 5seconds after the P.W.B entered into soldering heat zone.



**Temperature Profile**

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# REEL PACKAGING SPECIFICATION

## 1. SCOPE

This specification covers the requirements of the taping packaging for INT-1197U05 standard type of tact switches.

## 2. PACKAGING MATERIALS

ITEM	DESCRIPTION
Package	Cartons
Reel	Cover : Polystyrene Sideboard : Polystyrene
Carrier tape	Polystyrene
Cover tape	Polystyrene

## 3. PACKANGING QUANTITY

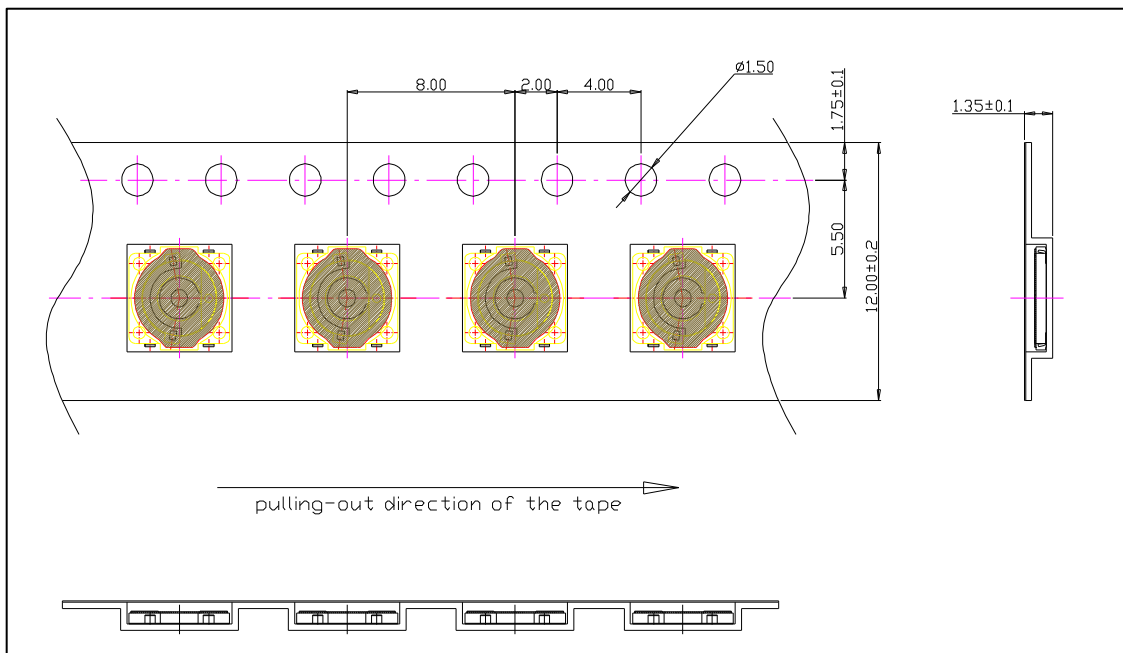
### 3.1 The number of the reels.

10 reels at maximum. Which contain 70,000 switches shall be packed in a package.

### 3.2 The number of the switches.

7,000 switches shall be packed in a reel.

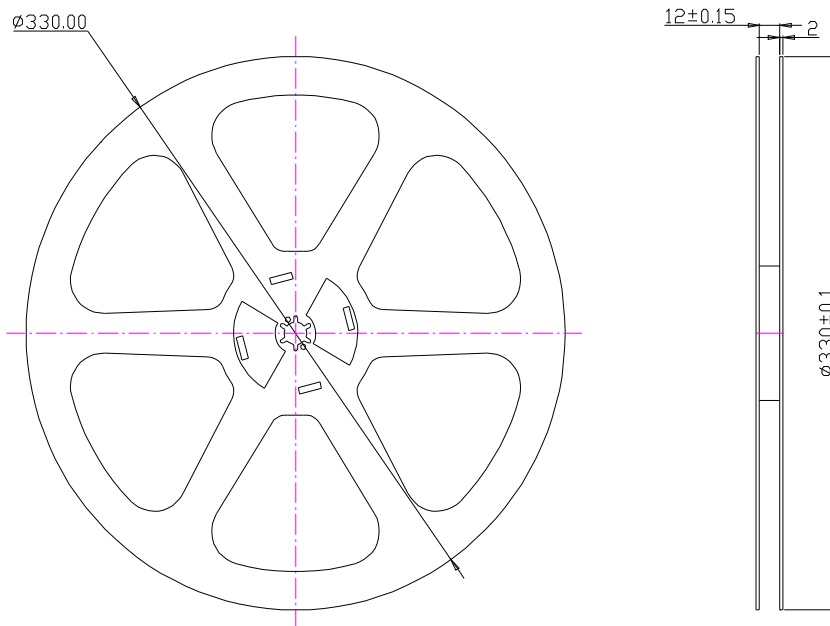
## 4. TAPE FORM AND DIMENSIONS



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## 5. REEL FORM AND DIMENSIONS



**6. PACKAGING PROCEDURE**

- 6.1 At the beginning of reeling, the end of the tape, 200mm or more, shall be empty and fit into the groove in the reel core.
- 6.2 After reeling, the end of the tape,  $130 \pm 4$ mm, shall be empty and the tape edge shall cut in  $45^\circ$  the cover tape shall be extended  $250 \pm 10$ mm from the tape edge and fixed with tape .
- 6.3 Total number of missing switches shall be less then 10 in one reel.  
( Three consecutive switches may be missing )

**7. STORAGE CONDITION**

Storage enviroment :  $-20^\circ\text{C} \sim 50^\circ\text{C}$ ,  $20\% \sim 85\%RH$ .  
( Storage in high temperature and high humidity shall be avoided )

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