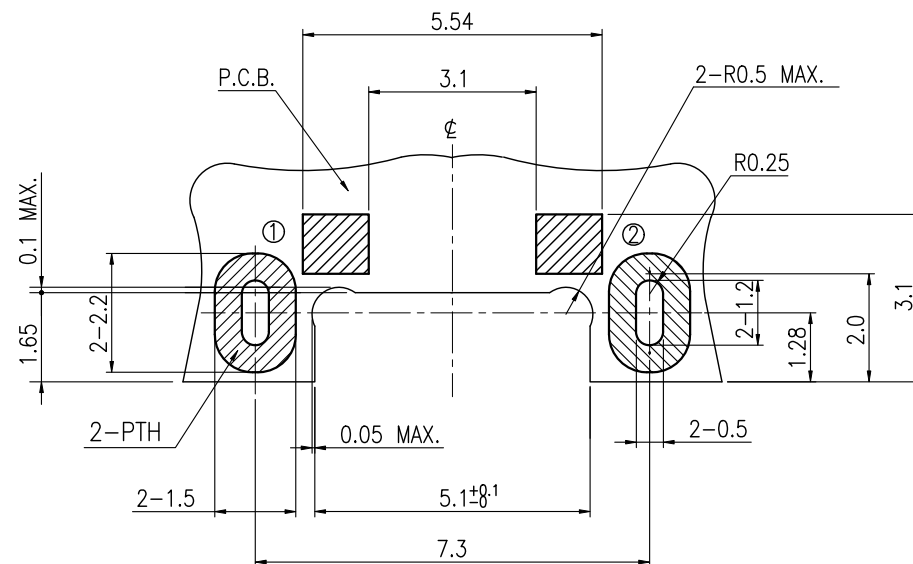
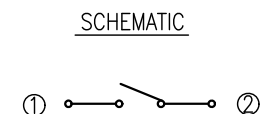
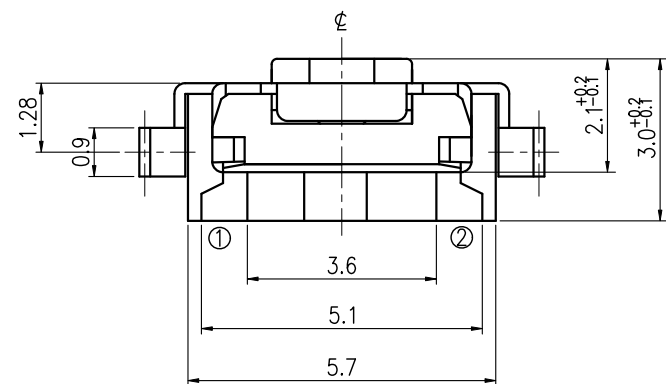
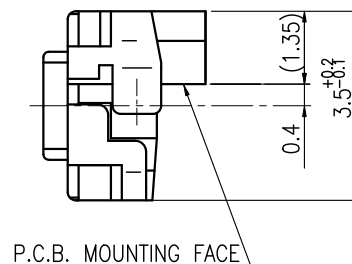
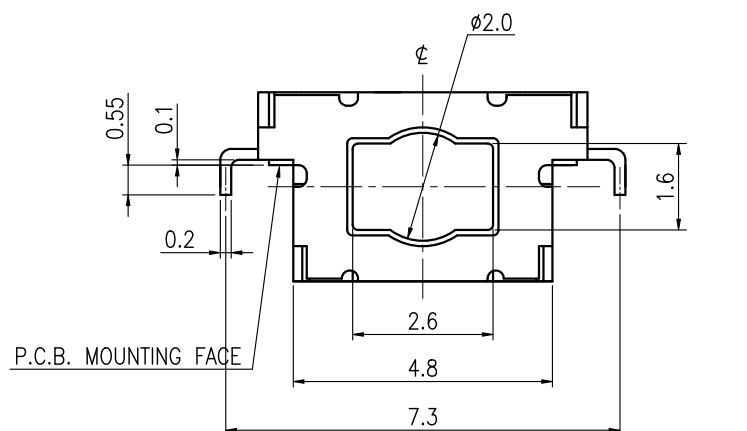
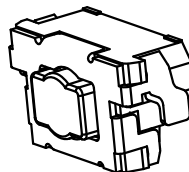
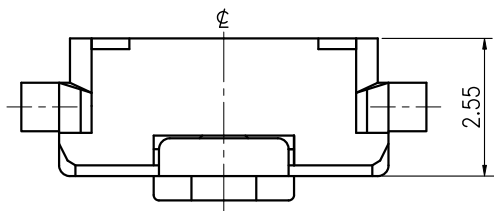


REVISIONS							
Rev	DESCRIPTION	DATE	DRAWER	Rev	DESCRIPTION	DATE	DRAWER
A	Initial Drawing	2010.10.15	Jane Shen	C			
B				D			

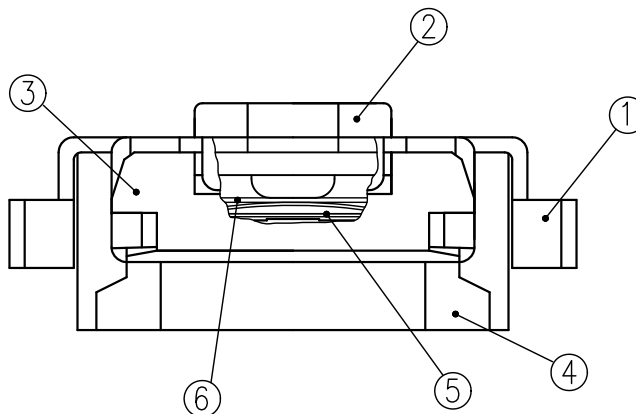
SPECIFICATIONS			
RATING	DC12V 50mA	TIMING	
CONTACT RESISTANCE	100mΩ MAX.	OPERATION (TORQUE)	160±50 gf
INSULATION RESISTANCE	DC500V - 100MΩ MIN.	STROKE (ANGLE)	0.15±0.1 mm
WITHSTAND VOLTAGE	AC250V - 1 MINUTE	CONTACT RESISTANCE	2Ω MAX.
REMARKS:		(AFTER 200,000 CYCLES LIFE TEST)	

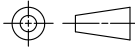


Recommend P.C.B. Layout

TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.1			SIGNATURES		DATE	MODEL	
			DRAWER <u>Jane Shen</u>		2010.10.15	TACT SWITCH	
			CHECKED <u>James_Hung</u>		2010.10.18		
	UNIT mm	SCALE 10/1	REVIEWED <u>Dennis Hung</u>		2010.10.18	NO. NTC302-BA1G-A160T	
			APPROVALS <u>W. J. Hong</u>		2010.10.18		

TAIWAN MISAKI ELECTRONICS CO., LTD.



6	TAPE	1	POLYIMIDE	
5	CONTACT PLATE	1	STAINLESS STEEL PLATE	Ag-CLAD
4	TERMINAL	2	COPPER ALLOY	Ag-PLATING or Ag-CLAD
3	FRAME	1	LIQUID CRYSTAL POLYMER	NATURE COLOR
2	STEM	1	LIQUID CRYSTAL POLYMER	BLACK COLOR
1	COVER	1	STAINLESS STEEL PLATE	Ag-PLATING
NO.	PART NAME	Q'TY	MATERIAL	SPECIFICATION
				SIGNATURES
				DATE
				M O D E L
				DRAWN <b>Jane Shen</b>
				2010.10.15
				CHK'D
				REV'D
				NO. NTC302-BA1G-A160T
				APP'D <b>James_Hung</b>
				2010.10.15
SYM	DESCRIPTION	DATE	APPROVED	DWG NO. TC302-03
TAIWAN MISAKI ELECTRONICS CO.,LTD.				

# SPECIFICATIONS FOR TACT SWITCH

RoHS Compliance

Model: NTC302-SERIES

## 1. Test condition:

Standard test conditions shall be 5~35°C in temperature, 45~85%RH in humidity and 86~106Kpa in atmospheric pressure.  
Should any doubt arise in judgment, tests shall be conducted at 20±2°C in temperature, 60~70% RH in Humidity and 86~106 kpa in atmospheric pressure.

## 2. Operating temperature range: -40 ~ +85°C

Preservative temperature range: Single condition: -40 ~ +85°C ; Taping condition: -20 ~ +60°C

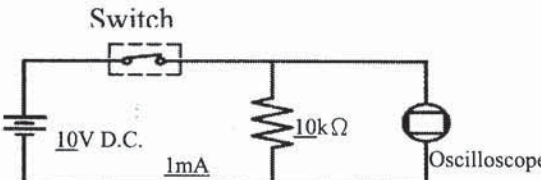
## 3. Construction:

3.1 Shape and dimension are subject to attached drawing regulation.

3.2 Appearance: Whole should be a good completion, no rust, no crack and good plating.

## 4. Rating: 15V D.C. , 20mA.

## 5. Electrical Performance:

No.	Items	Test conditions	Specifications
5.1	Contact Resistance	Shall be measure at 1kHz±200Hz (MAX. 20mV, MAX. 50mA.) or 1 A, 5V D.C. By voltage drop method.	100mΩ Max.
5.2	Insulation Resistance	Shall be measured by applying 500V D.C. Between all terminals and between the terminals and the frame for 1 minute ± 5 seconds.	100MΩ Min.
5.3	Withstand Voltage	250V A.C. (50~60Hz 2mA) shall be applied between all terminals and between the terminals and the frame for 1 minute.	No dielectric breakdown shall be occurred.
5.4	Bounce	<p>Lightly striking the center of the stem at a rate encountered in normal use ( 3 to 4 operations per sec.)</p> 	<p>ON: 10m sec Max. OFF: 10m sec Max.</p>

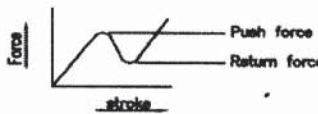
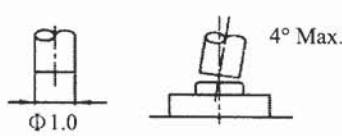
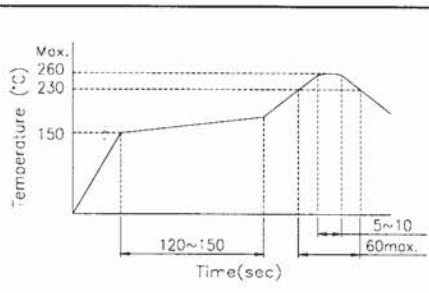
			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
						Jnae Shen	SE-TC49N
						2009.12.18	PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					1/3

TAIWAN MISAKI ELECTRONICS CO., LTD.

# SPECIFICATIONS FOR TACT SWITCH

RoHS Compliance

## 6. Mechanical Performance:

No.	Items	Test conditions	Specifications
6.1	Operating Force	<p>Placing the switch such that the direction of switch operation is vertical and then gradually increasing the load applied to the center of the stem, the maximum load required for the switch to come to a stop shall be measured.</p> 	$160 \pm 50$ gf.
6.2	Travel	<p>Placing the switch such that the direction of switch operation is vertical and then applying a below static load to the center of the stem, the travel distance for the switch to come to a stop shall be measured.</p> 	$0.15 \pm 0.1$ mm.
6.3	Control Strength	The static load of 3kgf shall be applied in the operating direction of the control unit for 15 seconds.	Shall be free from extreme wobble, vent or electrical and mechanical abnormality. Not deformation of the appearance.
6.4	Solderability	<p>Soldering temperature: <math>235 \pm 5^\circ\text{C}</math>. Soldering time: <math>2 \pm 0.5</math> seconds.</p>	75% or more of surface area of the portion immersed in solder shall be satisfied.
6.4	Solder Heat Resistance	<p>(1) Manual soldering temperature: Temperature: <math>350^\circ\text{C}</math> Max. Time: 3 Sec. Max. (2) Reflow Soldering: Number of reflow pass: 2 cycles.</p> 	<p>Shall be free from pronounced deforming in appearance. Of item 5.1~5.4 shall be satisfied. Of item 6.1~6.2 shall be satisfied.</p>

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
						Jnae Shen	SE-TC49N
						2009.12.18	PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					2/3

TAIWAN MISAKI ELECTRONICS CO., LTD.

# SPECIFICATIONS FOR TACT SWITCH

RoHS Compliance

## 7. Weather Performance:

No.	Items	Test conditions	Specifications											
7.1	Humidity Test	(1) Temperature: 60±2℃. (2) Relative humidity: 90~95% (3) Duration of test: 500 Hour. (4) Take off a drop water. (5) Standard conditions after test: 1 Hour.	Contact resistance: 500mΩ Max Of item 5.2~5.4 shall be satisfied. Of item 6.1~6.2 shall be satisfied.											
7.2	Heat Test	(1) Temperature: 85±2℃. (2) Duration of test: 500 Hour. (3) Standard conditions after test: 1 Hour.												
7.3	Cold Test	(1) Temperature: -40±2℃. (2) Duration of test: 500 Hour. (3) Take off a drop water. (4) Standard conditions after test: 1 Hour.												
7.4	Temperature cycle	(1) Test cycle: 20 cycles. (2) Standard conditions after test: 1 Hour. <table><tr><td></td><td>Temperature</td><td>Duration of test</td></tr><tr><td rowspan="4">1 cycles</td><td>20±5℃</td><td>1 Hour</td></tr><tr><td>-40±2℃</td><td>1 Hour</td></tr><tr><td>20±5℃</td><td>1 Hour</td></tr><tr><td>85±2℃</td><td>1 Hour</td></tr></table>			Temperature	Duration of test	1 cycles	20±5℃	1 Hour	-40±2℃	1 Hour	20±5℃	1 Hour	85±2℃
	Temperature	Duration of test												
1 cycles	20±5℃	1 Hour												
	-40±2℃	1 Hour												
	20±5℃	1 Hour												
	85±2℃	1 Hour												

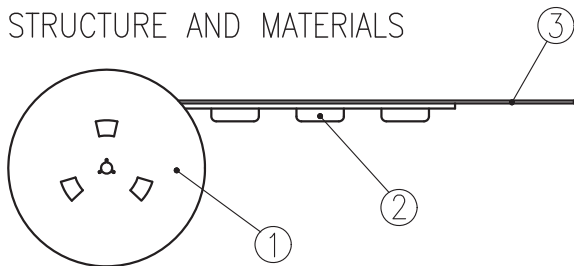
## 8. Durability:

No.	Items	Test conditions	Specifications
8.1	Life Test (Without Load)	(1) Operating speed: 120~180 cycles/minute. (2) Push force: Maximum value of operation force. (3) Operation number: 200,000 times.	Contact Resistance: <u>2</u> $\Omega$ MAX.  Operating Force: Within $\pm 30\%$ of specifications. Of item 5.2 shall be satisfied. Of item 6.2 shall be satisfied.

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
						Jnae Shen	SE-TC49N
						2009.12.18	PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					3/3

TAIWAN MISAKI ELECTRONICS CO., LTD.

## 1. STRUCTURE AND MATERIALS



③	COVER TAPE	POLYESTER
②	CARRIER TAPE	POLYSTYRENE
①	REEL	POLYSTYRENE
NO.	PARTS NAME	MATERIALS

2. PACKAGE QUANTITY : 1200 PCS/REEL.

3. MORE THAN 10 EMPTY POCKETS SHOULD BE REMAINED AT BOTH ENDS OF THE CARRIER TAPE FOR EACH REEL.

4. SHORTAGE LESS THAN 10 PCS A REEL IS ACCETABLE BUT MORE THAN 3 RUNNIGE POCKETS SHORTAGE IS NOT ALLOWED.

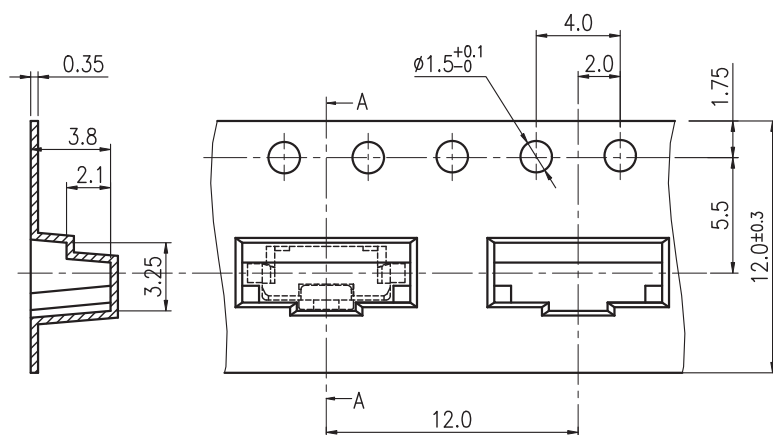
5. STRIPPING STRENGTH OF COVER TAPE IS BETWEEN 10 gf TO 70 gf AND STRIPPING ANGLE SHOULD BE WITHIN 165°~180°.

6. THE PRODUCT IN THE POCKET OF CARRIER TAPE SHOULD BE PLACED IN A SPECIFIED CORRECT POSITION.

7. TAPE AND REEL PER EIA-481.

8. DIMENSIONS :

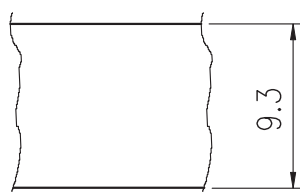
## CARRIER TAPE



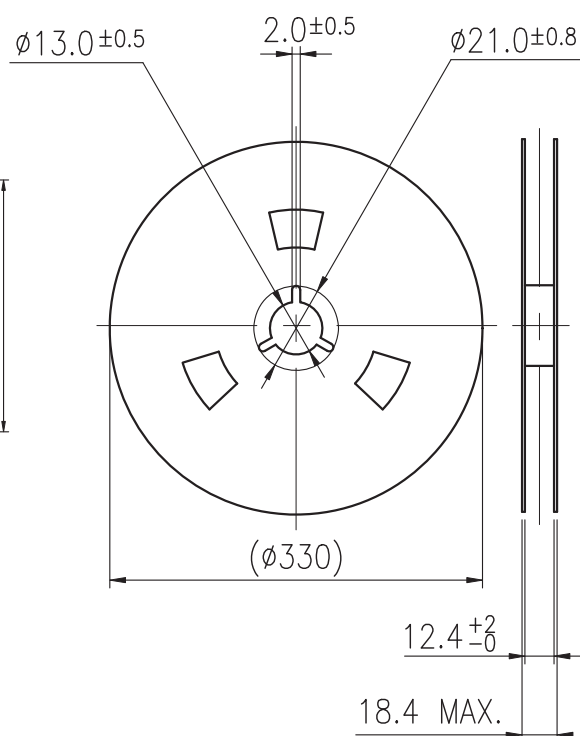
SECTION A A

DRAWING DIRECTION

## COVER TAPE



## REEL



				APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	MODEL NO.
				<i>Fred Chen</i>	<i>Ken Lin</i>	Max Chen	Jane Shen	NTC302-BA1G-A160T
				2008.12.16	2008.12.15	2008.12.15	2008.12.15	PAGINATE.
								1/1
								SPEC NO.
								P-494
SYM	DISCRIPTION	DATE	APPROVED					