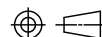
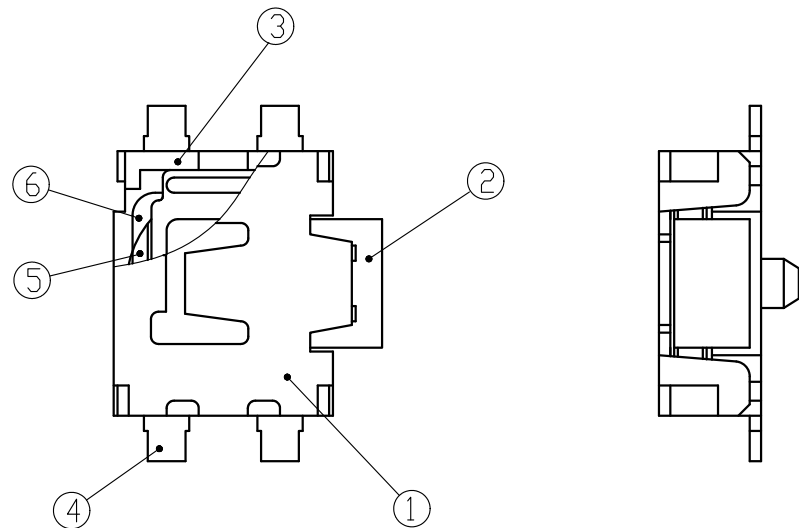


For Reference Only

TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.2			SIGNATURES		DATE	MODEL	
			DRAWER Max Chen		2013.04.24	TITLE TACT SWITCH	
			CHECKED				
	UNIT mm	SCALE 20/1	REVIEWED			NO. SEE MODEL NO.	
			APPROVALS <i>Dennis Hung</i>		2013.04.24		
TAIWAN MISAKI ELECTRONICS CO., LTD.							



6	TAPE	1	POLYIMIDE	
5	CONTACT PLATE	1	STAINLESS STEEL PLATE	Ag-PLATING
4	TERMINAL	4	COPPER ALLOY	Ag-PLATING
3	FRAME	1	POLYAMIDE RESIN	NATURAL COLOR
2	STEM	1	POLYAMIDE RESIN	COLOR: ☐ BLACK , ☒ NATURAL
1	COVER	1	STAINLESS STEEL PLATE	
NO.	PART NAME	Q'TY	MATERIAL	SPECIFICATION
				SIGNATURES
				DATE
				M O D E L
				DRAWN Max Chen 2013.04.24
				CHK'D
				REV'D
				APP'D Dennis Hung 2013.04.24
				TITLE TACT SWITCH
				NO. NTC311-ED1G-A220T
SYM	DESCRIPTION	DATE	APPROVED	DWG NO. TC311-24
TAIWAN MISAKI ELECTRONICS CO.,LTD.				

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

Model:

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: -40 ~ +85°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: 12V D.C. , 50mA.

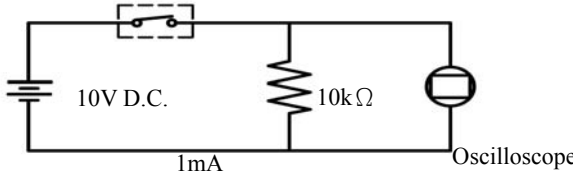
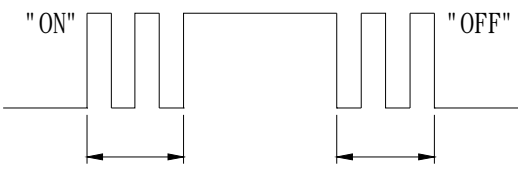
5. Electrical Performance:

No.	Items	Test conditions	Specifications
5.1	Contact Resistance	Shall be measure at 1kHz±200Hz (MAX. 20mV, MAX. 40mA.) or 1 A, 5V D.C. By voltage drop method.	500mΩ 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.	100 MΩ 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.

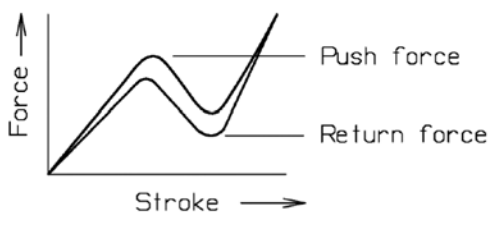
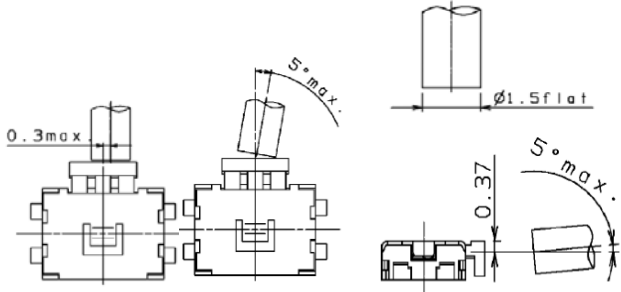
			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			James_Hung		Catherine Lee	Max Chen	SE-TC14N
			2011.04.22		2011.04.19	2011.04.19	PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					1/5

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

No.	Items	Test conditions	Specifications
5.4	Bounce	Lightly striking the center of the stem at a rate Encountered in normal use (3 to 4 operations per sec.) Switch  10V D.C. 1mA 10kΩ Oscilloscope  "ON" "OFF"	ON: 10m sec Max. OFF: 10m sec Max.

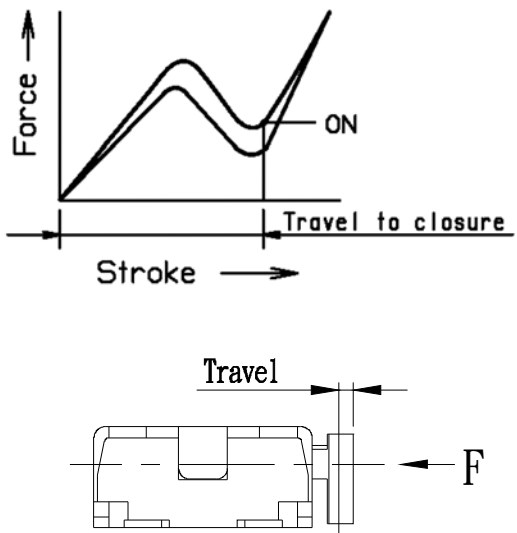
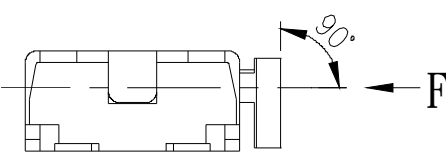
6. Mechanical Performance:

No.	Items	Test conditions	Specifications
6.1	Operating Force	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.  Force → Push force Return force Stroke →  0.3 max 5° max 0.5 flat 0.37 5° max	Push force: 220 ⁺⁸⁰₋₇₀ gf Return force: 20 gf min.

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			James_Hung		Catherine Lee	Max Chen	SE-TC14N
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A	NEW RELEASE						
SYM	DISCRIPTION	DATE					2/5

SPECIFICATIONS FOR TACT SWITCH

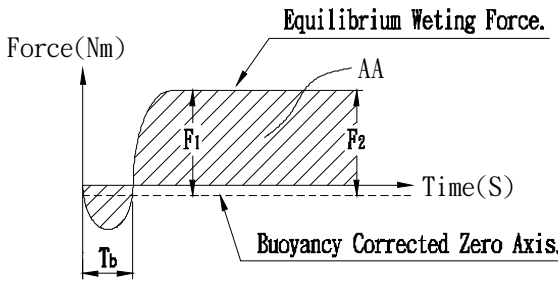
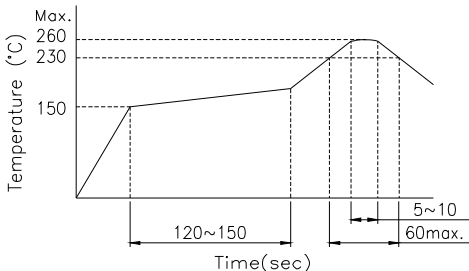
RoHS Compliant

No.	Items	Test conditions	Specifications
6.2	Travel	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. 	$0.2 \begin{matrix} +0.2 \\ -0.1 \end{matrix} \text{ mm.}$
6.3	Push Strength	Placing the switch such that the direction of switch operation is vertical and then a below station load shall be applied in the direction of stem operation. 3kgf for 1 minute. 	The terminals must not fall off and no structure is damaged. Item 5.1~5.4 shall be satisfied. Item 6.1~6.2 shall be satisfied.

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			James_Hung		Catherine Lee	Max Chen	SE-TC14N
			2011.04.22		2011.04.19	2011.04.19	PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					3/5

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

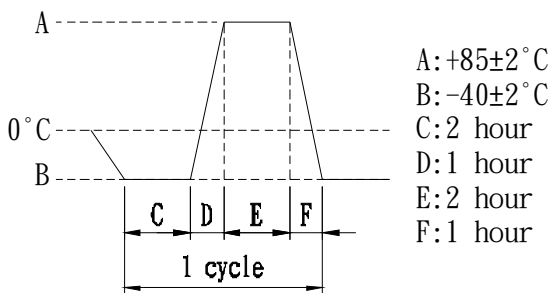
No.	Items	Test conditions	Specifications							
6.4	Solderability	Test Temperature : 235 ± 5℃ Immersion Angle : 90° Immersion Speed : 1 mm/sec. Immersion Depth : 0.1mm Dwell Time : 5 seconds 	Conform to the criteria in the left table.							
		<table><tr><th>Para.</th><th>Criteria</th></tr><tr><td>Tb</td><td>≤ 1 second</td></tr><tr><td>F1</td><td>50% of maximum theoretical wetting force at or before two seconds</td></tr><tr><td>F2</td><td>No less than 90% of the F1 Value</td></tr><tr><td>AA</td><td>Area calculated using sample buoyancy and 50% maximum theoretical force</td></tr></table>		Para.	Criteria	Tb	≤ 1 second	F1	50% of maximum theoretical wetting force at or before two seconds	F2
Para.	Criteria									
Tb	≤ 1 second									
F1	50% of maximum theoretical wetting force at or before two seconds									
F2	No less than 90% of the F1 Value									
AA	Area calculated using sample buoyancy and 50% maximum theoretical force									
6.5	Solder Heat Resistance	(1) Manual soldering temperature: Temperature: 350℃ Max. Time: 3 Sec. Max. (2) Reflow Soldering: Number of reflow pass: 2 cycles. 	Shall be free form pronounced deforming in appearance. Item 5.1~5.4 shall be satisfied. Item 6.1~6.2 shall be satisfied.							

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			James_Hung		Catherine Lee	Max Chen	SE-TC14N
			2011.04.22		2011.04.19	2011.04.19	PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					4/5

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

7. Weather Performance:

No.	Items	Test conditions	Specifications
7.1	Humidity Test	(1) Temperature: $60\pm 2^{\circ}\text{C}$. (2) Relative humidity: 90~95% (3) Duration of test: 500 Hour. (4) Take off drop water. (5) Standard conditions after test: 1 Hour.	Contact resistance: 500mΩ Max Item 5.2~5.4 shall be satisfied. Item 6.1~6.2 shall be satisfied.
7.2	Heat Test	(1) Temperature: $85\pm 2^{\circ}\text{C}$. (2) Duration of test: 500 Hour. (3) Standard conditions after test: 1 Hour.	
7.3	Cold Test	(1) Temperature: $-40\pm 2^{\circ}\text{C}$. (2) Duration of test: 500 Hour. (3) Take off 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.  A: $+85\pm 2^{\circ}\text{C}$ B: $-40\pm 2^{\circ}\text{C}$ C: 2 hour D: 1 hour E: 2 hour F: 1 hour	

8. Durability:

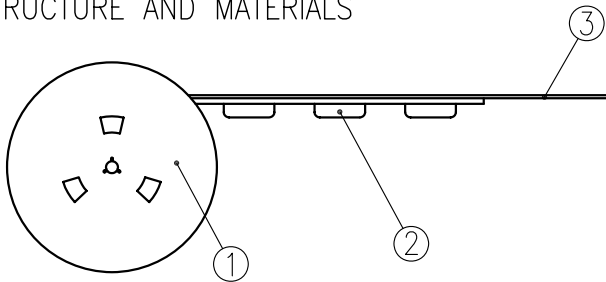
No.	Items	Test conditions	Specifications
8.1	Life Test	(1) 5V D.C. , 5mA Resistance load. (2) Operating speed: 120 cycles/minute. (2) Push force: Maximum value of operation force. (3) Operation number: 100,000 times.	Contact Resistance: 1 Ω MAX. Bounce: 20m sec Max.(ON,OFF) Operating Force: Within $\pm 30\%$ of specifications. Item 5.2 shall be satisfied. Item 6.2 shall be satisfied.

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			James_Hung		Catherine Lee	Max Chen	SE-TC14N
			2011.04.22		2011.04.19	2011.04.19	PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					5/5

THE PACKING SPECIFICATIONS

RoHS Compliant

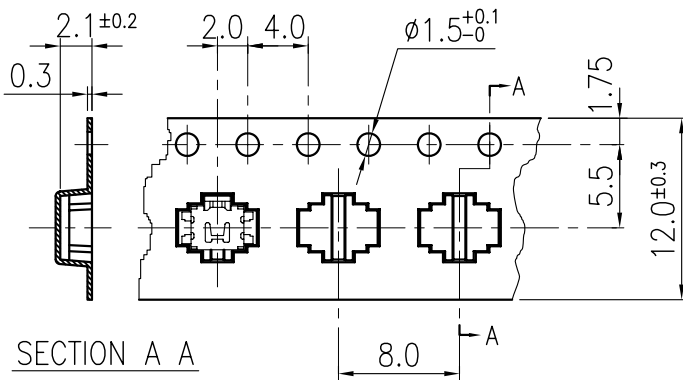
1.STRUCTURE AND MATERIALS



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

- PACKAGING QUANTITY : 3,500 PCS/REEL
- MORE THAN 10 EMPTY POCKETS SHOULD BE REMAINED AT BOTH ENDS OF THE CARRIER TAPE FOR EACH REEL.
- SHORTAGE LESS THAN 10 PCS A REEL IS ACCEPTABLE BUT MORE THAN 3 RUNNING POCKETS SHORTAGE IS NOT ALLOWED.
- STRIPPING STRENGTH OF COVER TAPE IS BETWEEN 10 gf TO 70 gf AND STRIPPING ANGLE SHOULD BE WITHIN 165° ~ 180°.
- THE SWITCH SHOULD NOT BE STAYED IN CARRIER TAPE WHEN CARRIER TAPE UPSIDE DOWN.
- END OF CARRIER TAPE IS APART FROM REEL EASILY.
- THE DIRECTION OF MARK IS FREE.
- DIMENSIONS :

CARRIER TAPE



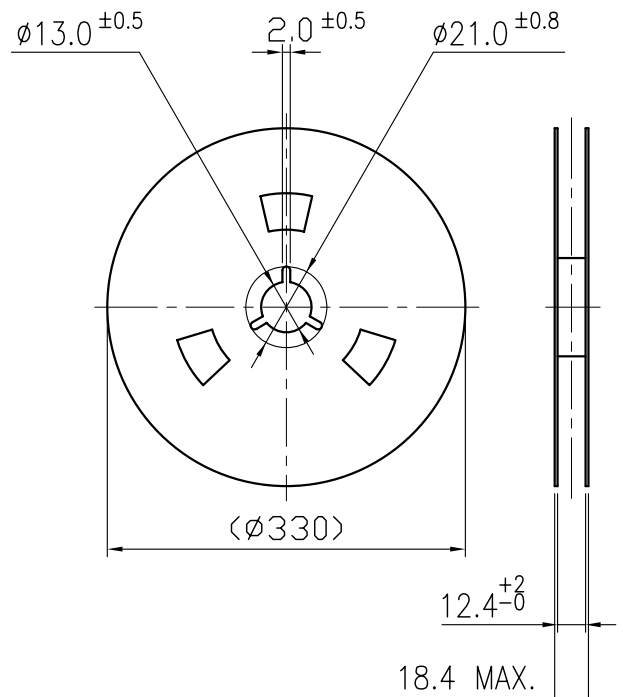
SECTION A A

DRAWING DIRECTION

COVER TAPE



REEL



				APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	MODEL NO.
						Ken Lin	Max Chen	NTC311-ED1G-A220T
						2007.05.18	2007.05.18	PAGINATE.
								1/1
								SPEC NO.
								P-380
SYM	DISCRIPTION	DATE	APPROVED					

TAIWAN MISAKI ELECTRONICS CO.,LTD.