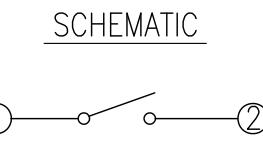
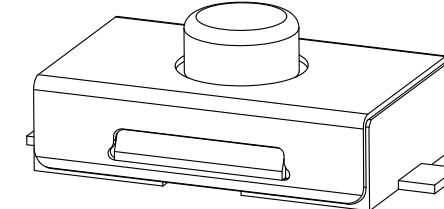
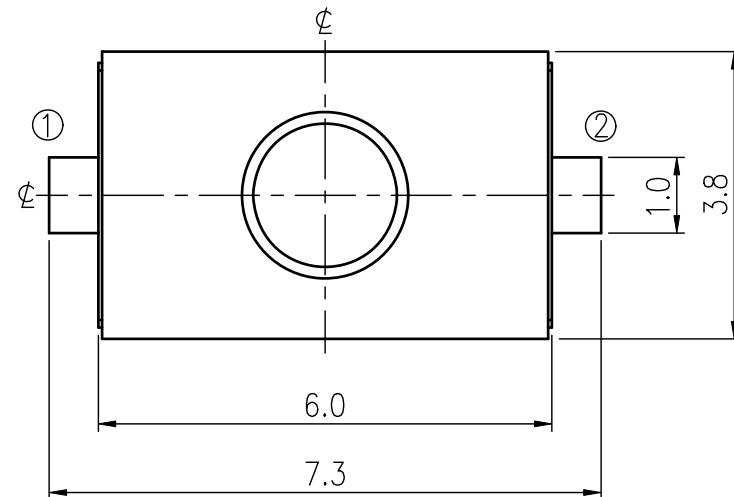


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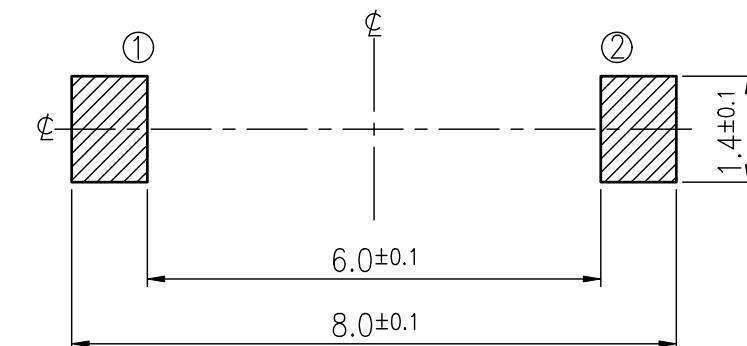
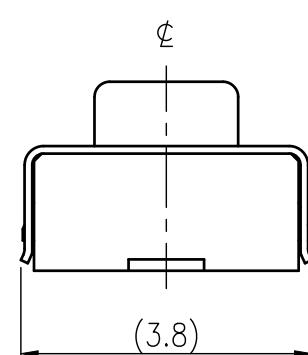
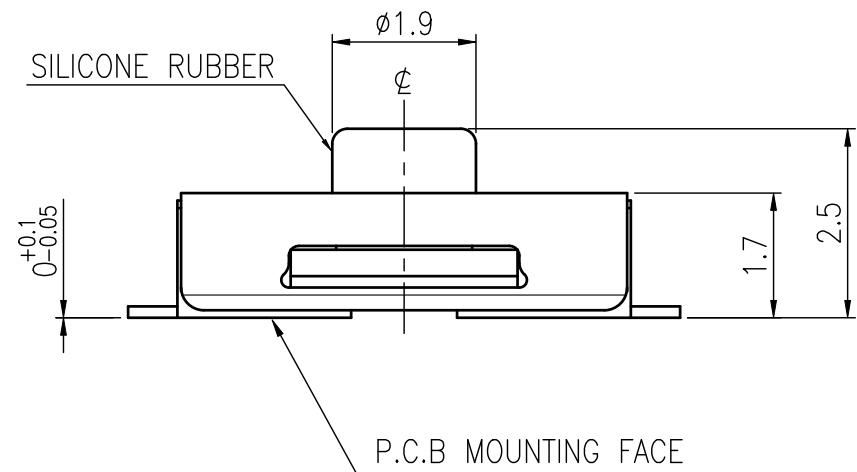


REVISIONS

Rev	DESCRIPTION	DATE	DRAWER	Rev	DESCRIPTION	DATE	DRAWER
A	Initial Drawing	2017.10.03	Jane Shen	c			
B				d			
SPECIFICATIONS							
RATING		DC32V 10mA		TIMING			
CONTACT RESISTANCE		100mΩ MAX.		OPERATION (TORQUE)		200±50 gf	
INSULATION RESISTANCE		DC100V-1000MΩ MIN.		STROKE (ANGLE)		0.3±0.15 mm	
WITHSTAND VOLTAGE		AC250V-1 MINUTE.		LIFE		100,000 CYCLES	
REMARKS:		Waterproof Grade : IP57					



P.C.B. LAYOUT

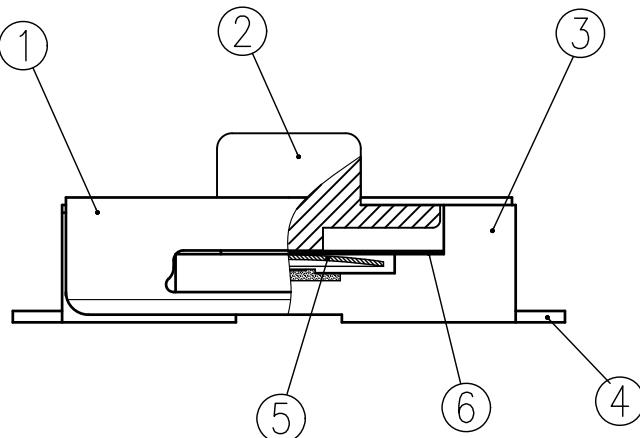


HATCHED AREA SHOWS SOLDERING LAND

TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.2			SIGNATURES		DATE	MODEL
			DRAWER	Jane Shen		
			CHECKED			
	UNIT	SCALE	REVIEWED	Dennis Hung	2017.10.03	TITLE TACT SWITCH
	mm	10/1	APPROVALS	Landry Su	2017.10.03	

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NO.	PART NAME	Q'TY	MATERIAL		SPECIFICATION		
5	TAPE	1	POLYIMIDE				
5	CONTACT PLATE	1	STAINLESS STEEL PLATE		Au PLATING		
4	TERMINAL	2	COPPER ALLOY		Au PLATING OVER Ni PLATING		
3	FRAME	1	POLYAMIDE RESIN		BLACK COLOR		
2	STEM	1	SILICON RUBBER		BLACK COLOR		
1	COVER	1	STAINLESS STEEL PLATE				
SYM	DESCRIPTION	DATE	APPROVED	SIGNATURES	DATE	M O D E L	
				DRAWN <i>Jane Shen</i>	2017.10.03	TITLE	TACT SWITCH
				CHK'D			
				REV'D <i>Landry Su</i>	2017.10.03	NO.	NTC219-AA2G-25200T
				APP'D <i>Dennis Hung</i>	2017.10.03		
						DWG NO.	TC219-03
TAIWAN MISAKI ELECTRONICS CO.,LTD.							

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

Model: NTC219-AA2G 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

Storage temperature range: -55 ~ +85°C

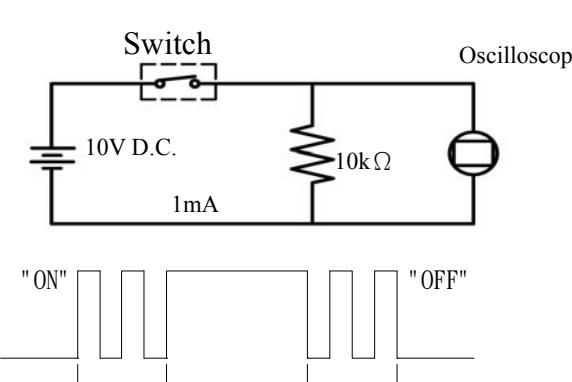
3. Construction:

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: 32V D.C. , 10mA.

5. Electrical Performance:

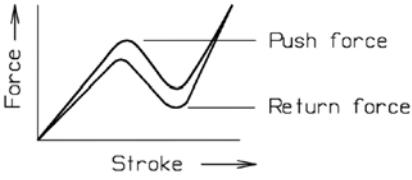
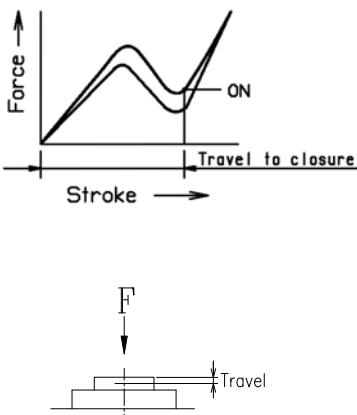
No.	Items	Test conditions	Specifications
5.1	Contact Resistance	Shall be measure at 1kHz±200Hz (MAX. 20mV, MAX. 50mA.) or 1 A, 5V D.C. By voltage drop method.	100mΩ Max.
5.2	Insulation Resistance	Shall be measured by applying 100V D.C. Between all terminals and between the terminals and the frame for 1 minute ± 5 seconds.	1000M(1G)Ω 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: 1m sec Max. OFF:1m sec Max.</p>

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							SE-TC117N
							PAGINATE
A	NEW RELEASE						
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SPECIFICATIONS FOR TACT SWITCH

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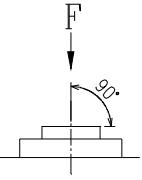
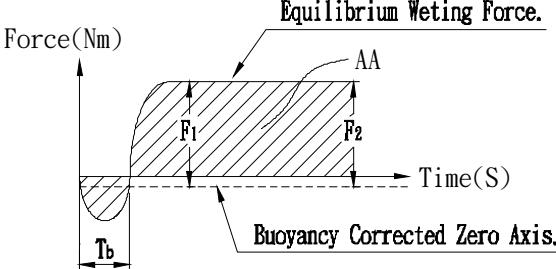
6. Mechanical Performance:

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> 	<p>Push force: 200 ± 50 gf</p>
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> 	<p>0.3 ± 0.15 mm.</p>

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SPECIFICATIONS FOR TACT SWITCH

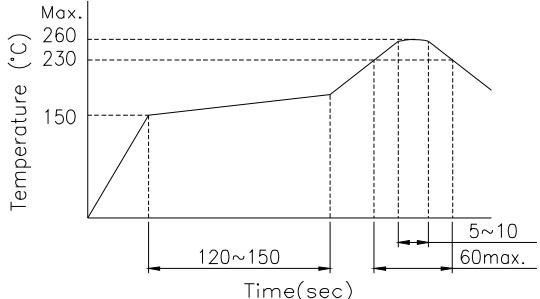
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No.	Items	Test conditions	Specifications										
6.3	Push Strength	<p>Placing the switch such that the direction of switch operation is vertical and then a below station load shall be applied in the direction of stem operation.</p> <p>3kgf for 15seconds</p> 	<p>No damage. (Electrical and mechanical)</p>										
6.4	Solderability	<p>Test Temperature : $235 \pm 5^\circ\text{C}$ Immersion Angle : 90° Immersion Speed : 1 mm/sec. Immersion Depth : 0.1mm Dwell Time : 5 seconds</p> <p>Equilibrium Weting Force.</p>  <p>Criteria</p> <table border="1"> <thead> <tr> <th>Para.</th> <th>Criteria</th> </tr> </thead> <tbody> <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> </tbody> </table>	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	<p>Conform to the criteria in the left table.</p>
Para.	Criteria												
Tb	≤ 1 second												
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SPECIFICATIONS FOR TACT SWITCH

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No.	Items	Test conditions	Specifications
6.5	Solder Heat Resistance	<p>(1) Manual soldering temperature: Temperature: 350°C Max. Time: 3 Sec. Max.</p> <p>(2) Reflow Soldering: Number of reflow pass: 2 cycles.</p> 	<p>Shall be free from pronounced deforming in appearance.</p> <p>Item 5.1~5.4 shall be satisfied.</p> <p>Item 6.1~6.2 shall be satisfied.</p>

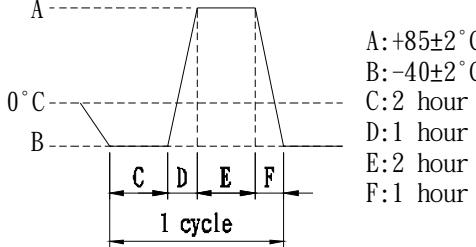
7. Weather Performance:

No.	Items	Test conditions	Specifications
7.1	Humidity Test	<p>(1) Temperature: 60±2°C.</p> <p>(2) Relative humidity: 90~95%</p> <p>(3) Duration of test: 500 Hour.</p> <p>(4) Take off drop water.</p> <p>(5) Standard conditions after test: 1 Hour.</p>	
7.2	Heat Test	<p>(1) Temperature: 125±2°C.</p> <p>(2) Duration of test: 500 Hour.</p> <p>(3) Standard conditions after test: 1 Hour.</p>	<p>Contact resistance: 500mΩ Max</p> <p>Item 5.2~5.4 shall be satisfied.</p> <p>Item 6.1~6.2 shall be satisfied.</p>
7.3	Cold Test	<p>(1) Temperature: -40±2°C.</p> <p>(2) Duration of test: 500 Hour.</p> <p>(3) Take off drop water.</p> <p>(4) Standard conditions after test: 1 Hour.</p>	

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SPECIFICATIONS FOR TACT SWITCH

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7.4	Waterproof test	Immersion tank water-lever on enclosure: 0.15 M above top. 1 M above bottom. Duration of test : 30 min.	Contact resistance: 500mΩ Max Item 5.2~5.4 shall be satisfied. Item 6.1~6.2 shall be satisfied.
7.5	Temperature cycle	(1) Test cycle: 20 cycles. (2) 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.

8. Durability:

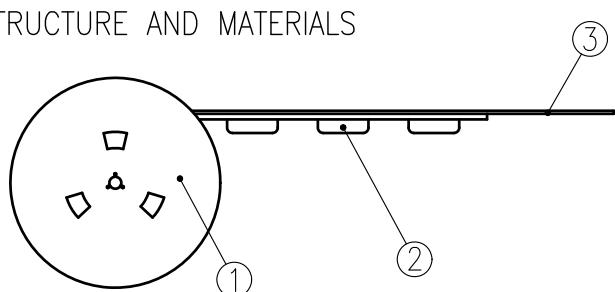
No.	Items	Test conditions	Specifications
8.1	Life Test	(1) 5V D.C. , 5mA Resistance load. (2) Operating speed:120 cycles/minute. (2) Push force: Maximum value of operation force. (3) Operation number: 100,000 times.	Contact Resistance: 10Ω MAX. Bounce: 10m sec Max.(ON,OFF) Operating Force: Within ±30% of specifications. Item 5.2 shall be satisfied. Item 6.2 shall be satisfied.

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THE PACKING SPECIFICATIONS

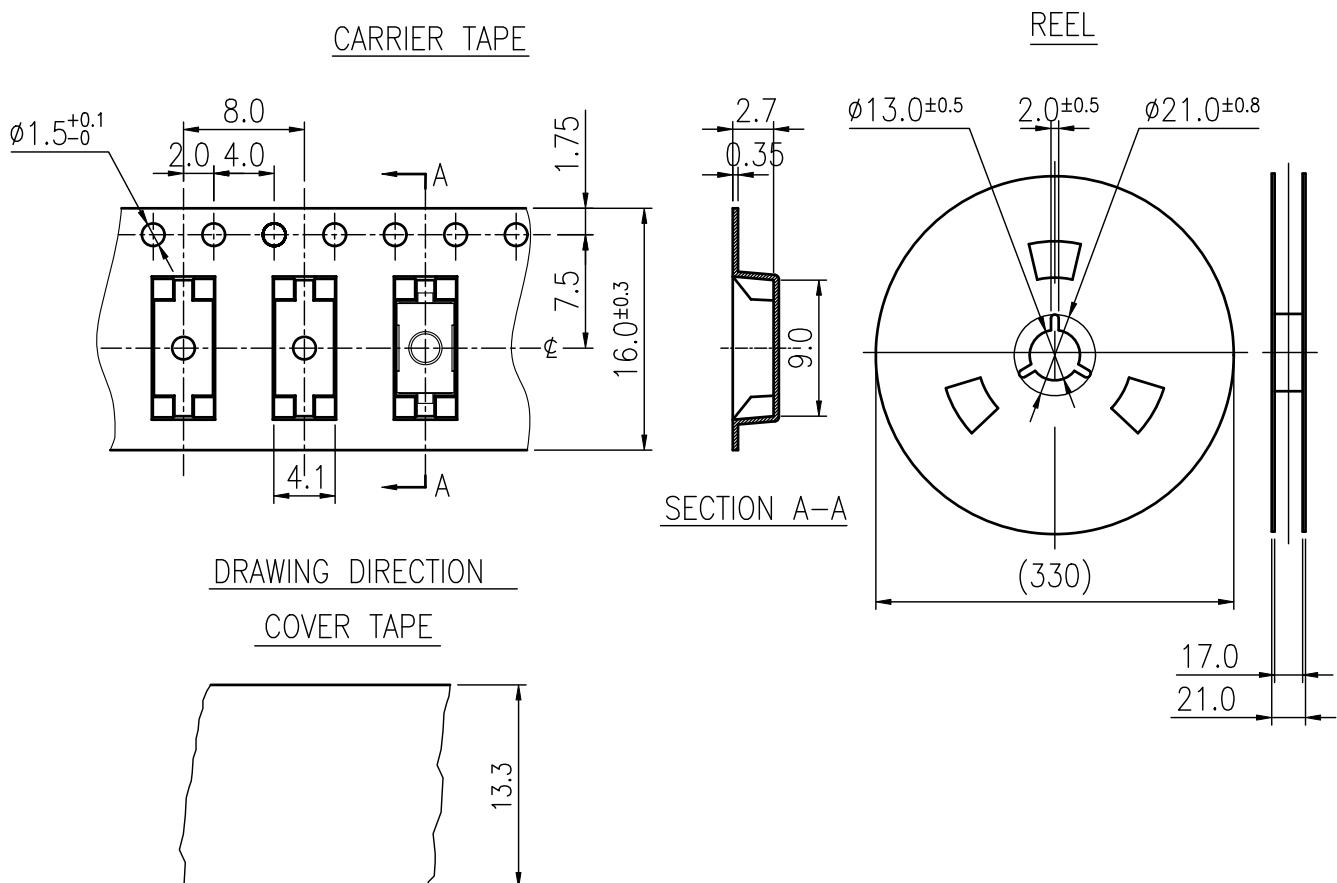
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1. STRUCTURE AND MATERIALS



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

- PACKAGING QUANTITY : 3,000 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 130 gf AND STRIPPING ANGLE SHOULD BE WITHIN $165^\circ \sim 180^\circ$.
- THE PRODUCT IN THE POCKET OF CARRIER TAPE SHOULD BE PLACED IN A SPECIFIED CORRECT POSITION.
- TAPE AND REEL PER EIA-481.
- DIMENSIONS :



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								PAGINATE.
								1/1
SYM	DESCRIPTION	DATE	APPROVED					SPEC NO.
								P-78