

RoHS Compliant

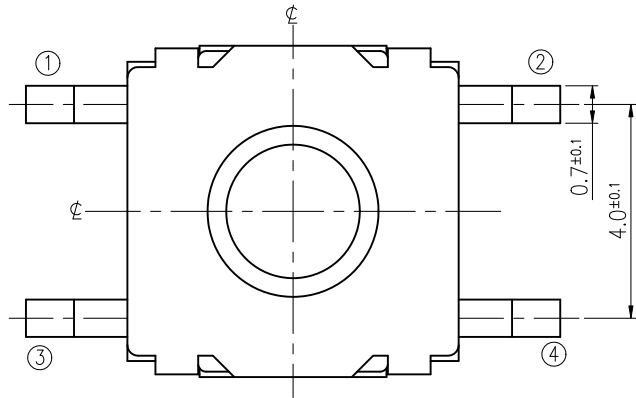
For Reference Only

REVISIONS

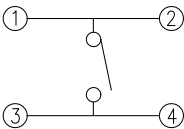
Rev	DESCRIPTION	DATE	DRAWER	Rev	DESCRIPTION	DATE	DRAWER
A	Initial Drawing	2017.08.22	Jane Shen	C			
B				D			

SPECIFICATIONS

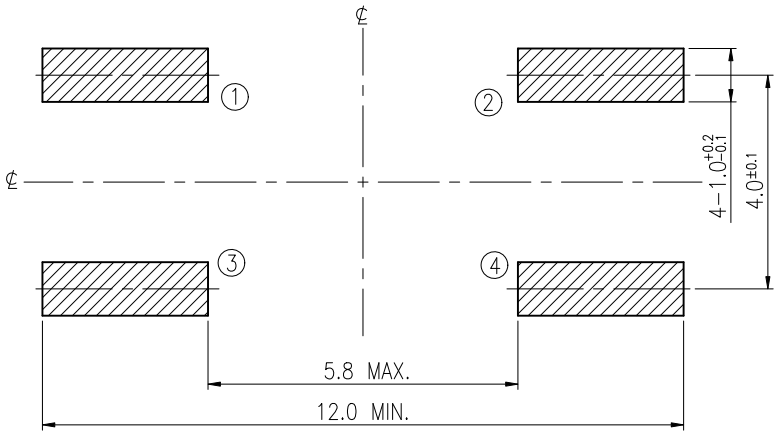
RATING	DC32V 50mA	TIMING	
CONTACT RESISTANCE	100mΩ MAX.	OPERATION (TORQUE)	160±50 gf
INSULATION RESISTANCE	DC100V-1000MΩ MIN.	STROKE (ANGLE)	0.5±0.25 mm
WITHSTAND VOLTAGE	AC250V-1 MINUTE.	LIFE	300,000 CYCLES
REMARKS:	Waterproof Grade : IP67		



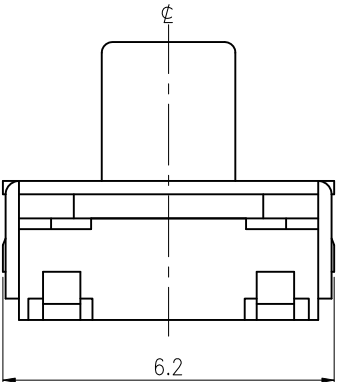
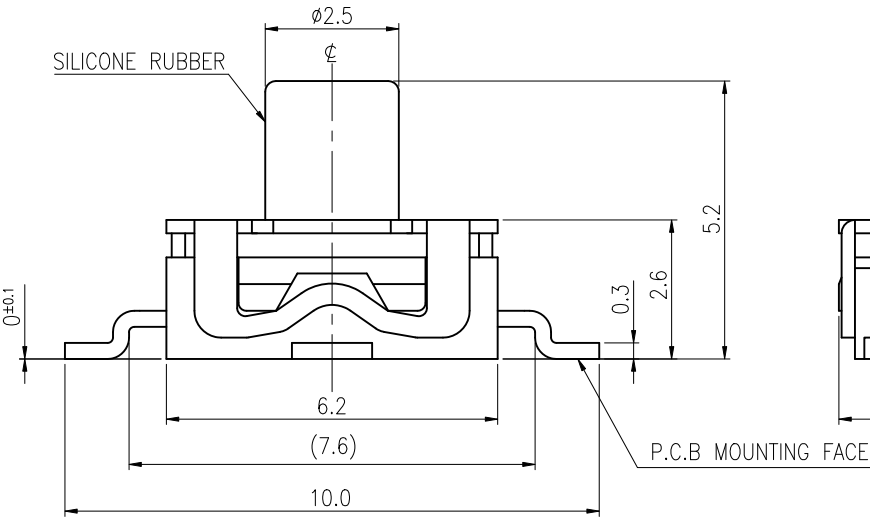
SCHEMATIC



RECOMMENDED P.C.B LAYOUT

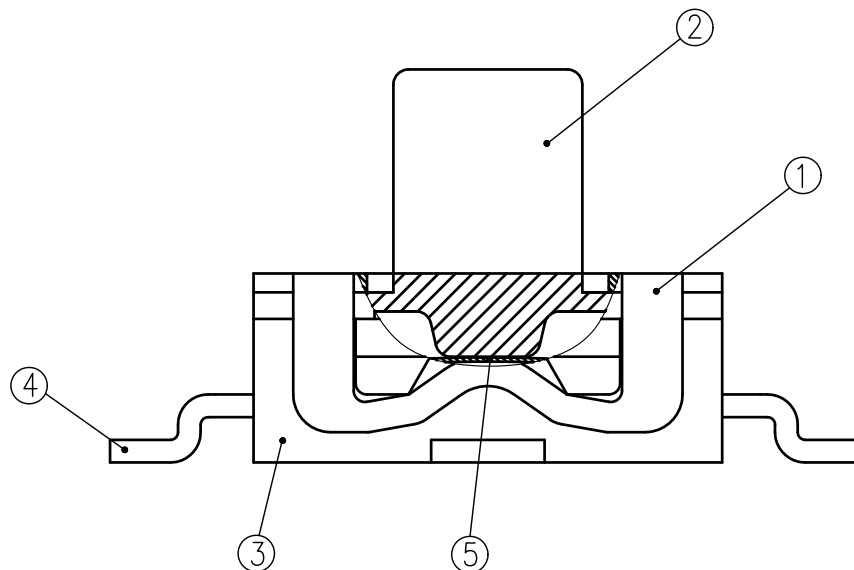


HATCHED AREA SHOWS SOLDERING LAND



TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.2			SIGNATURES		DATE	MODEL	
			DRAWER	Jane Shen	2017.08.22	TACT SWITCH	
			CHECKED				
	UNIT mm	SCALE 10/1	REVIEWED	Landry Tu	2017.08.22	NO. NTC202-AA1G-52160T	
			APPROVALS	Dennis Hung	2017.08.22		

TAIWAN MISAKI ELECTRONICS CO., LTD.



5	CONTACT PLATE	1	STAINLESS STEEL PLATE	Ag PLATING
4	TERMINAL	4	COPPER ALLOY	Ag PLATING OVER Ni PLATING
3	FRAME	1	POLYAMIDE RESIN	BLACK COLOR
2	STEM	1	SILICON RUBBER	BLACK COLOR
1	COVER	1	STAINLESS STEEL PLATE	
NO.	PART NAME	Q'TY	MATERIAL	SPECIFICATION
				SIGNATURES
				DATE
				M O D E L
				DRAWN Jane Shen 2017.08.22
				CHK'D
				REV'D Landry Su 2017.08.22
				APP'D Dennis Hung 2017.08.22
SYM	DESCRIPTION	DATE	APPROVED	TITLE TACT SWITCH
TAIWAN MISAKI ELECTRONICS CO.,LTD.				NO. NTC202-AA1G-52160T
				DWG NO. TCB202-01

SPECIFICATIONS FOR TACT SWITCH

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Model: NTC_202-AA1_ 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. , 50mA.

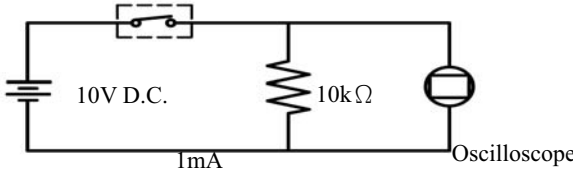
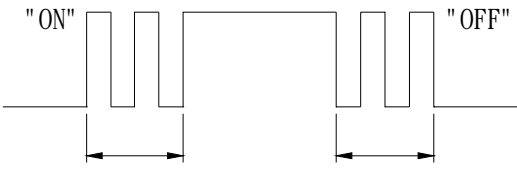
5. Electrical Performance:

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.	1000MΩ 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.

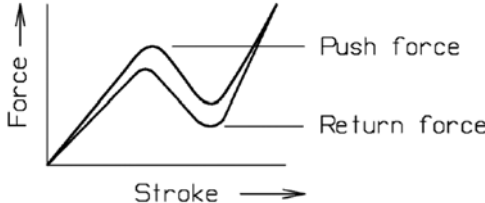
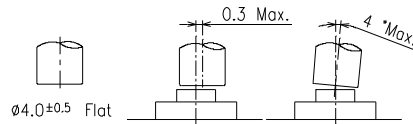
			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			Dennis Hung			Jane Shen 2017.03.15	SE-TC47N
							PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					1/5

SPECIFICATIONS FOR TACT SWITCH

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No.	Items	Test conditions	Specifications
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>Switch</p>  <p>"ON" "OFF"</p> 	<p>ON: $\leq 1\text{m sec.}$ OFF: 1m sec.</p>

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:</p> <p>160±50 gf</p>

APPROVED BY

REVIEWED BY

CHECKED BY

DESIGNED BY

SPEC NO.

Dennis Hung

Jane Shen
2017.03.15

SE-TC47N
PAGINATE

A NEW RELEASE

SYM DISCRIPTION

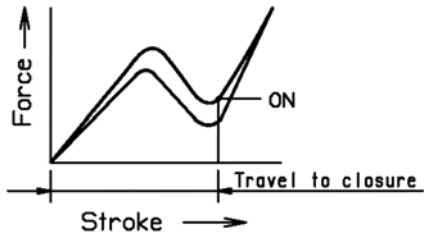
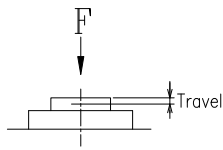
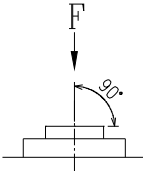
DATE

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SPECIFICATIONS FOR TACT SWITCH

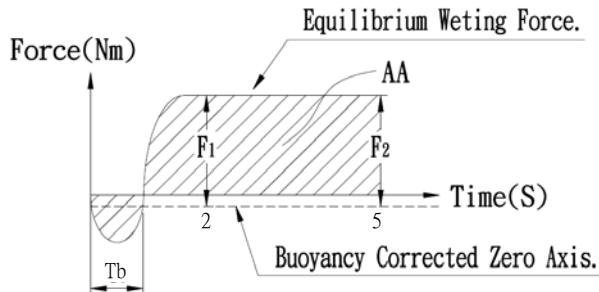
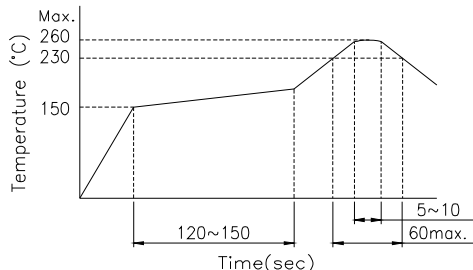
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No.	Items	Test conditions	Specifications
6.2	Travel	<p>Placing the switch such that the direction of switch operation is vertical and then applying a below static load to the center of the stem, the travel distance for the switch to come to a stop shall be measured.</p>  	0.6±0.25 mm.
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 15 seconds.</p> 	<p>The terminals must not fall off and no structure is damaged .</p> <p>Item 5.1~5.4 shall be satisfied.</p> <p>Item 6.1~6.2 shall be satisfied.</p>

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SPECIFICATIONS FOR TACT SWITCH

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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  <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	No less than 90% of the F1 Value	AA	Area calculated using sample buoyancy and 50% maximum theoretical force	Conform to the criteria in the left 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												
6.5	Solder Heat Resistance <p>(1) Manual soldering temperature: Temperature: 350℃ Max. Time: 3 Sec. Max.</p> <p>(2) Reflow Soldering: Number of reflow pass: 2 cycles.</p> 												

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SYM	DISCRIPTION	DATE					4/5

SPECIFICATIONS FOR TACT SWITCH

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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	Waterproof test	Immersion tank water-lever on enclosure: 0.15 M above top. 1 M above bottom. Duration of test : 30 min.												
7.5	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:

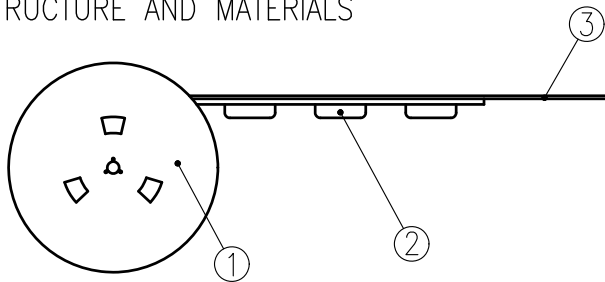
No.	Items	Test conditions	Specifications
8.1	Life Test	(1) 5V D.C. , 5mA Resistance load. (2) Operating speed: 120 cycles/minute. (2) Push force: Maximum value of operation force. (3) Operation number: 300,000 times.	Contact Resistance: 1 Ω MAX. Bounce: 1m sec.(ON,OFF) Operating Force: Within ±30% of specifications. Item 5.2 shall be satisfied. Item 6.2 shall be satisfied.

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			Dennis Hung			Jane Shen	SE-TC47N
						2017.03.15	PAGINATE
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SYM	DISCRIPTION	DATE					5/5

THE PACKING SPECIFICATIONS

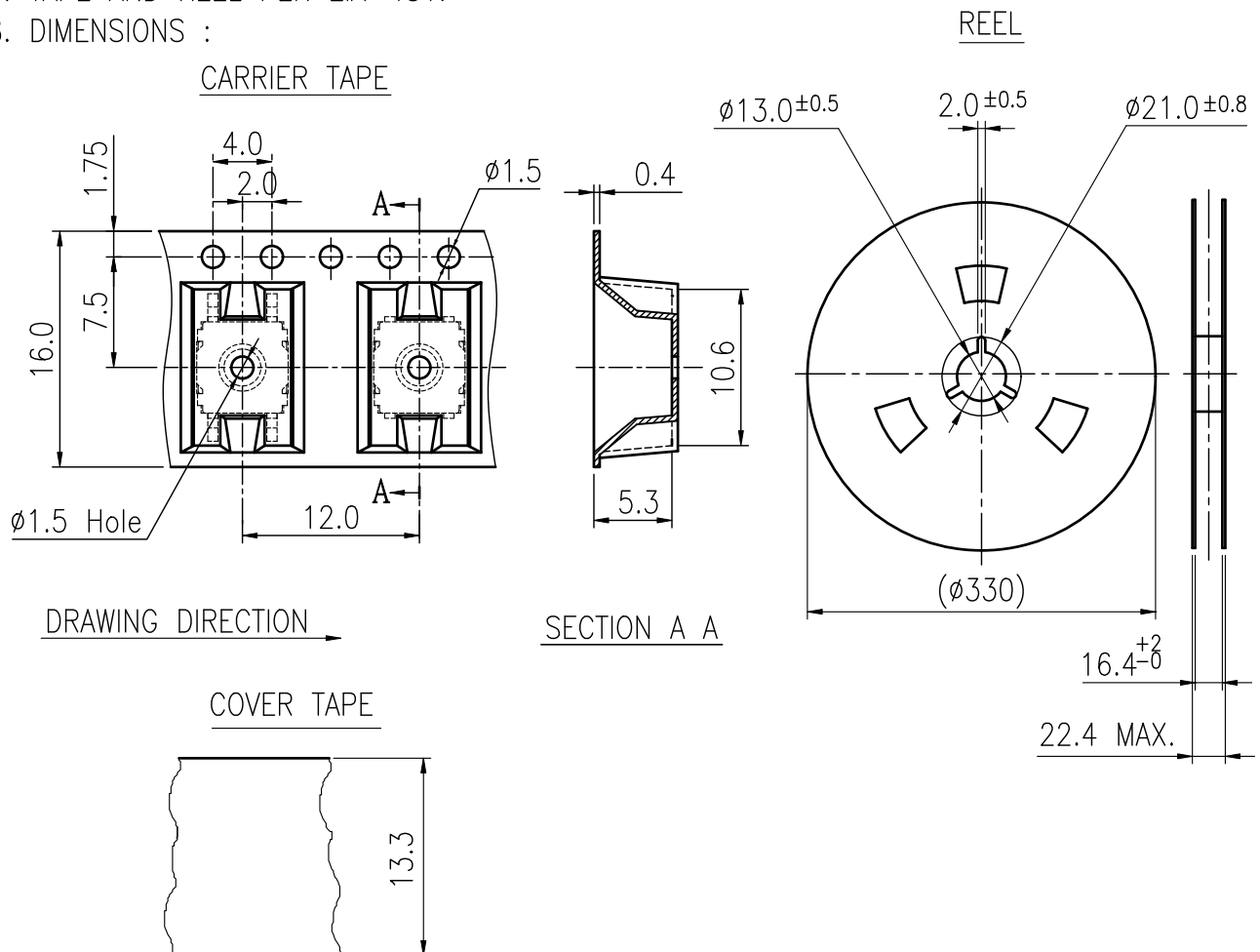
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1.STRUCTURE AND MATERIALS



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

- PACKAGING QUANTITY : 1,000 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 ACCETABLE 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° ~ 180 °.
- 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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							Jane Shen	NTC202-AA1(G,U)-52
							2017.03.31	PAGINATE. 1/1
								SPEC NO. P-811
SYM	DISCRIPTION	DATE	APPROVED					

TAIWAN MISAKI ELECTRONICS CO.,LTD.