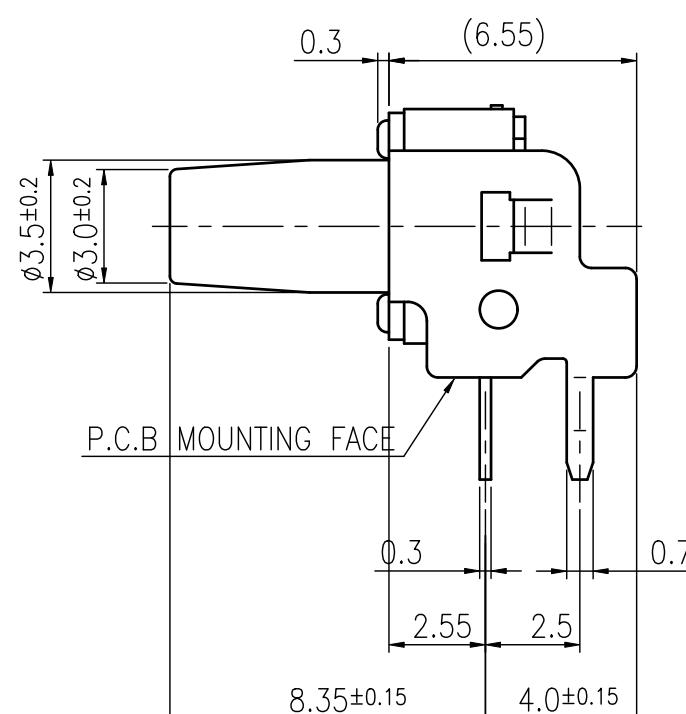
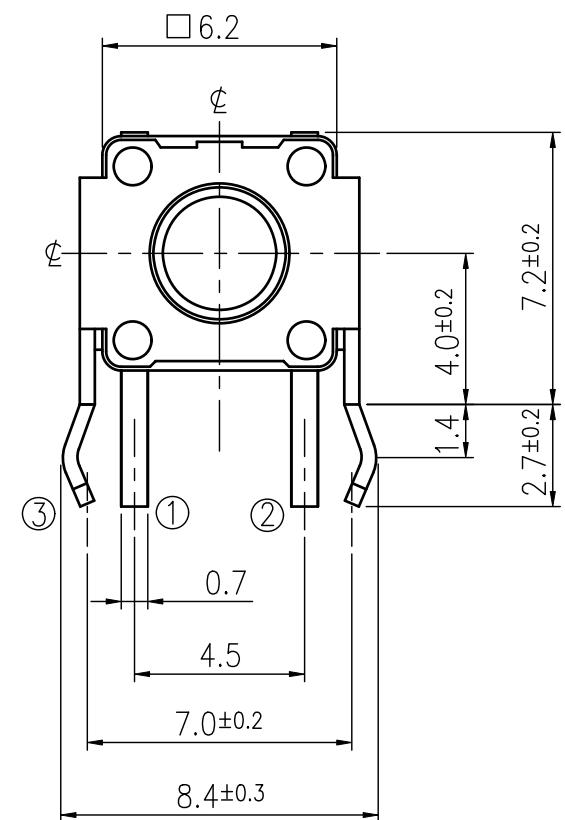
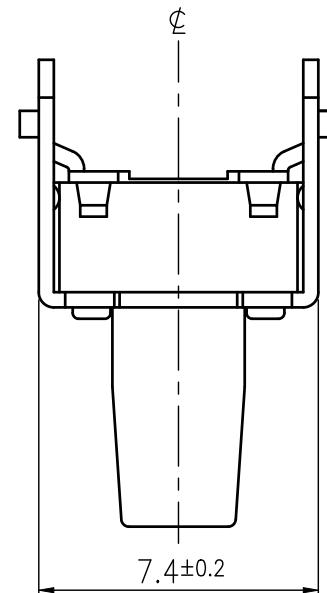
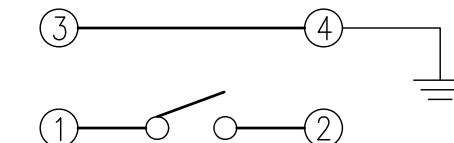


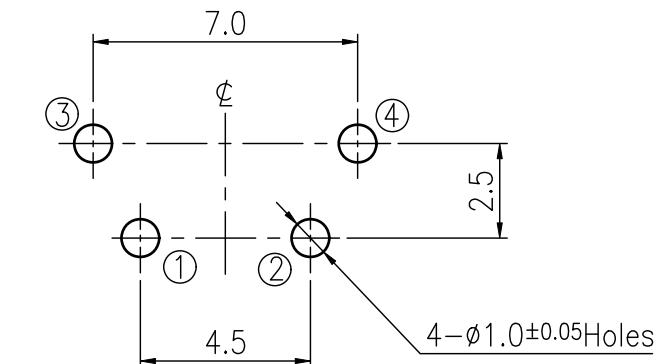
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SCHEMATIC



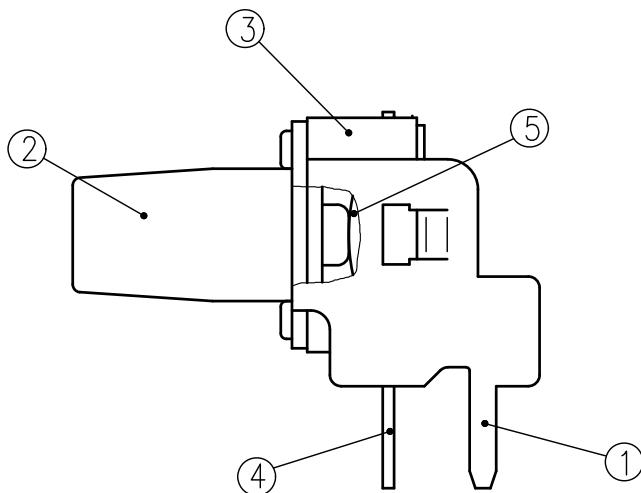
P.C.B. LAYOUT



TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.1			SIGNATURES		DATE	MODEL
			DRAWER	Jane Shen		
CHECKED			<i>Landy Su</i>		2018.10.01	TITLE TACT SWITCH
	UNIT mm	SCALE 5/1	REVIEWED			
APPROVALS			<i>Dennis Hung</i>		2018.10.01	NO. NTCX304-APD-C16001

TAIWAN MISAKI ELECTRONICS CO., LTD.

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NO.	PART NAME	Q'TY	MATERIAL		SPECIFICATION	
5	CONTACT PLATE	1	STAINLESS STEEL PLATE		Ag PLATING	
4	TERMINAL	2	COPPER ALLOY		Ag PLATING OVER Ni PLATING	
3	FRAME	1	POLYHTHALAMIDE		BLACK COLOR	
2	STEM	1	LIQUID CRYSTAL POLYMER		BLACK COLOR	
1	BRACKET	1	CARBON STEEL PLATE		MATTE Sn PLATING OVER Ni PLATING	
SYM	DESCRIPTION	DATE	APPROVED	SIGNATURES	DATE	MODEL
				DRAWN <i>Jane Shen</i>	2018.10.01	TITLE TACT SWITCH
				CHK'D <i>Landry Su</i>	2018.10.01	
				REV'D		NO. NTCX304-APD-C16001
				APP'D <i>Dennis Hung</i>	2018.10.01	
				DWG NO.	TCX304-011	
TAIWAN MISAKI ELECTRONICS CO.,LTD.						

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

Model: NTCX304-APD 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: -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:

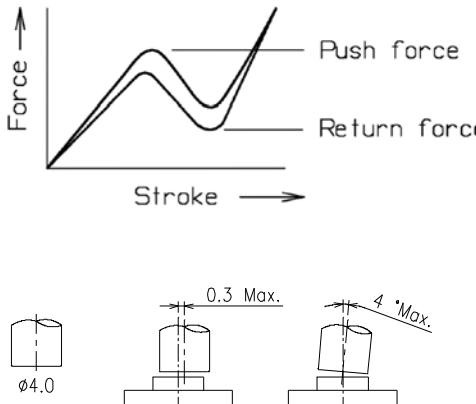
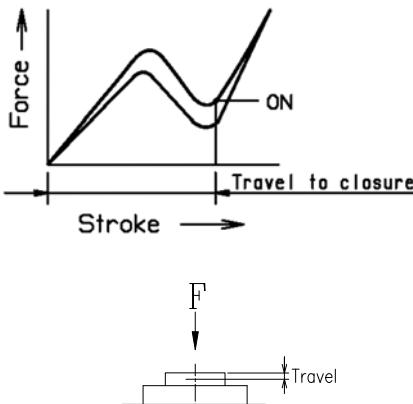
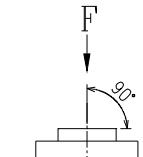
No.	Items	Test conditions	Specifications
5.1	Contact Resistance	Shall be measure at 1kHz±200Hz (MAX. 20mV, MAX. 50mA.) or 1 A, 5V D.C. By voltage drop method.	100mΩ Max.
5.2	Insulation Resistance	Shall be measured by applying 500V D.C. Between all terminals and between the terminals and the frame for 1 minute ± 5 seconds.	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.
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: 10m sec Max. OFF:10m sec Max.</p>

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SYM	DISCRIPTION	DATE	Dennis Hung			Jane Shen 2016.10.19	SE-TC02 PAGINATE 1/4

SPECIFICATIONS FOR TACT SWITCH

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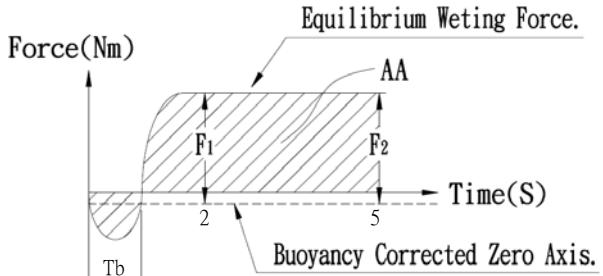
6. Mechanical Performance:

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 Return force Stroke →</p> <p>0.3 Max. 4 Max.</p> <p>Ø4.0</p>	<p>Push force: 160 +/-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>ON Travel to closure Stroke →</p> <p>F Travel</p>	<p>0.25 +0.2/-0.1 mm.</p>
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 60 seconds.</p> 	<p>The terminals must not fall off and no structure is damaged.</p> <p>Item 5.1~5.4 shall be satisfied. Item 6.1~6.2 shall be satisfied.</p>

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SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

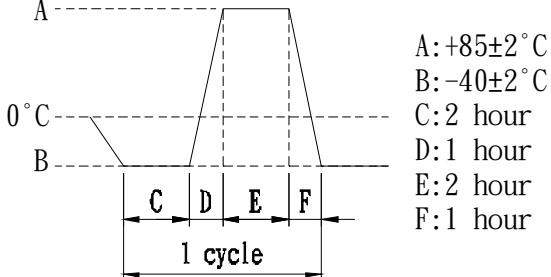
No.	Items	Test conditions	Specifications																
6.4	Solderability	<p>Test Temperature : $235 \pm 5^\circ\text{C}$ Immersion Angle : 90° Immersion Speed : 1 mm/sec. Immersion Depth : 0.1mm Dwell Time : 5 seconds</p>  <table border="1" data-bbox="446 819 1060 1163"> <thead> <tr> <th>Para.</th><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	Conform to the criteria in the left table.						
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6.5	Solder Heat Resistance	<p>MANUAL SOLDERING</p> <table border="1" data-bbox="446 1298 1033 1388"> <thead> <tr> <th></th><th>Temperature</th><th>Time</th></tr> </thead> <tbody> <tr> <td>Manual Soldering Temperature</td><td>350°C max.</td><td>3 Sec. max.</td></tr> </tbody> </table> <p>WAVE SOLDERING</p> <table border="1" data-bbox="446 1484 1029 1686"> <thead> <tr> <th>Parameters</th><th>Lead-Free Specification*</th></tr> </thead> <tbody> <tr> <td>Preheating Time</td><td>60 sec. max.</td></tr> <tr> <td>Preheating Temperature</td><td>110°C max.</td></tr> <tr> <td>Continuous Dipping Time</td><td>5 sec. max.</td></tr> <tr> <td>Soldering Temperature</td><td>260°C max.</td></tr> </tbody> </table>		Temperature	Time	Manual Soldering Temperature	350°C max.	3 Sec. max.	Parameters	Lead-Free Specification*	Preheating Time	60 sec. max.	Preheating Temperature	110°C max.	Continuous Dipping Time	5 sec. max.	Soldering Temperature	260°C max.	Shall be free from pronounced deforming in appearance. Item 5.1~5.4 shall be satisfied. Item 6.1~6.2 shall be satisfied.
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SPECIFICATIONS FOR TACT SWITCH

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7. Weather Performance:

No.	Items	Test conditions	Specifications
7.1	Humidity Test	(1) Temperature: $60\pm2^{\circ}\text{C}$. (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: $85\pm2^{\circ}\text{C}$. (2) Duration of test: 500 Hour. (3) Standard conditions after test: 1 Hour.	
7.3	Cold Test	(1) Temperature: $-40\pm2^{\circ}\text{C}$. (2) Duration of test: 500 Hour. (3) Take off drop water. (4) 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.
7.4	Temperature cycle	(1) Test cycle: 20 cycles. (2) Standard conditions after test: 1 Hour. 	A: $+85\pm2^{\circ}\text{C}$ B: $-40\pm2^{\circ}\text{C}$ 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. (3) Push force: Maximum value of operation force. (4) Operating force: 1,000,000 times.	Contact Resistance: 2Ω MAX. Bounce: 20m sec Max.(ON,OFF) Operating Force: Within $\pm30\%$ of specifications. Item 5.2 shall be satisfied. Item 6.2 shall be satisfied.

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