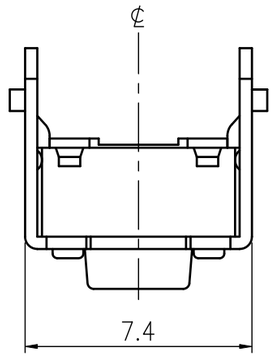
RoHS Compliant

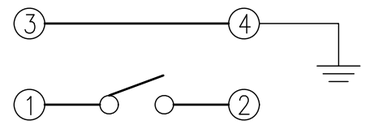
T-MEC
TAIWAN MISAKI ELECTRONICS CO., LTD.
ISSUED
2019.01.24
RD DCC

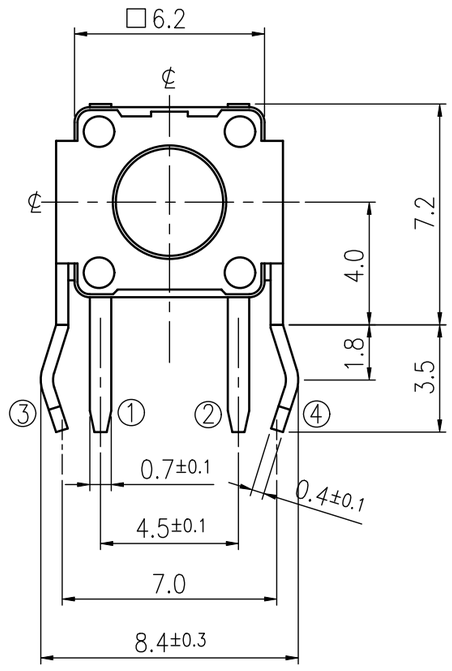
REVISIONS							
Rev	DESCRIPTION	DATE	DRAWER	Rev	DESCRIPTION	DATE	DRAWER
A	Initial Drawing	2018.09.03	Jane Shen	C			
B				D			

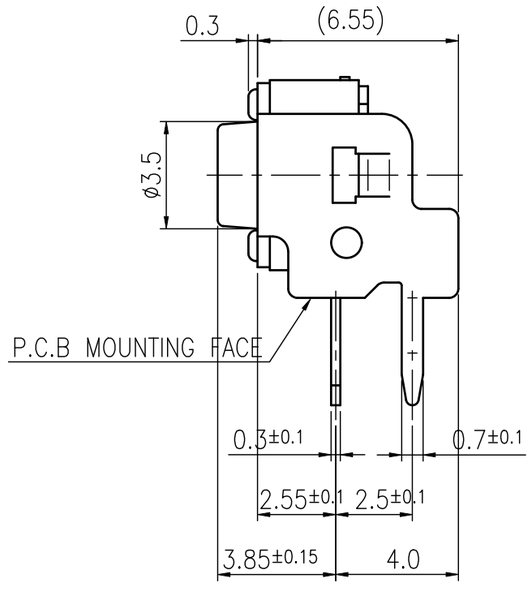
SPECIFICATIONS			
RATING	DC12V 50mA	TIMING	
CONTACT RESISTANCE	100mΩ MAX.	OPERATION (TORQUE)	260±50 gf
INSULATION RESISTANCE	DC500V – 100MΩ MIN.	STROKE (ANGLE)	$0.25^{+0.2}_{-0.1}$ mm
WITHSTAND VOLTAGE	AC250V – 1 MINUTE.	LIFE	200,000 CYCLES
REMARKS:			



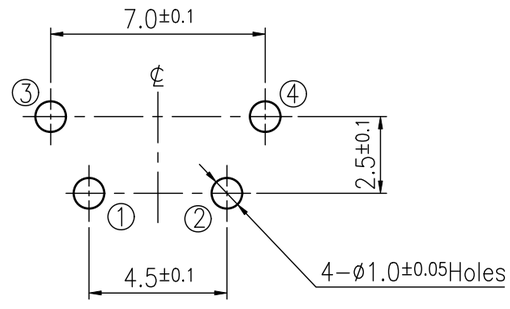
SCHEMATIC







P.C.B. LAYOUT



MODEL NO.	STEM COLOR
NTCV304–APD–B260–BK	BLACK
NTCV304–APD–B260–BL	BLUE

TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.2			SIGNATURES		DATE	MODEL
			DRAWER	Jane Shen	2018.09.03	TITLE: TACT SWITCH
			CHECKED			
	UNIT: mm	SCALE: 5/1	REVIEWED			NO.: See Model No.
			APPROVALS	Dennis Hung	2018.09.03	

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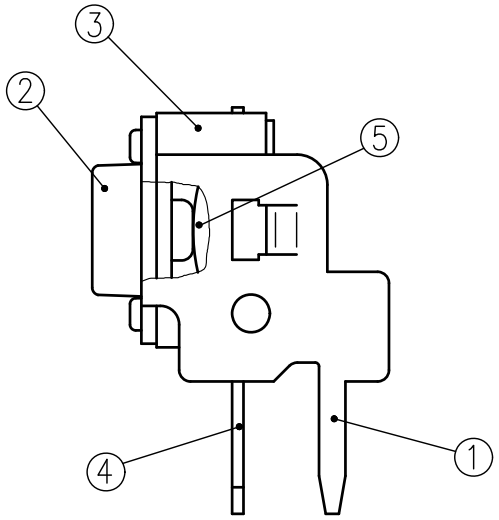

NO.	PART NAME	Q'TY	MATERIAL	SPECIFICATION
5	CONTACT PLATE	1	STAINLESS STEEL PLATE	Ag PLATING Ag:0.5um
4	TERMINAL	2	COPPER ALLOY	Ag PLATING OVER Ni PLATING Ni:0.15um,Ag:0.4um
3	FRAME	1	POLYHTHALAMIDE	BLACK COLOR
2	STEM	1	LIQUID CRYSTAL POLYMER	■BK:BLACK, □BL:BLUE COLOR
1	BRACKET	1	CARBON STEEL PLATE	MATTE Sn PLATING OVER Ni PLATING

SYM	DESCRIPTION	DATE	APPROVED

SIGNATURES		DATE
DRAWN	Jane Shen	208.09.03
CHK'D		
REV'D		
APP'D	*Dennis Hung*	2018.09.03

M O D E L

TITLE TACT SWITCH

NO. NTCV304-APD-B260-BK

DWG NO. TCV304-02

TAIWAN MISAKI ELECTRONICS CO., LTD.

SPECIFICATIONS FOR TACT SWITCH

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Model: NTCV304 Series

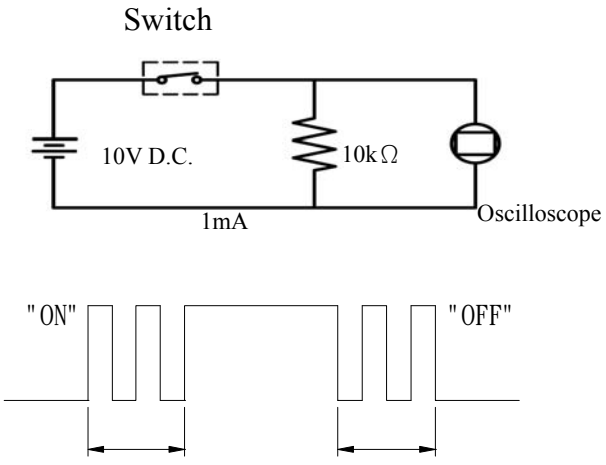
1. Test condition:
   Standard test conditions shall be 5~35℃ in temperature, 45~85%RH in humidity and 86~106Kpa in atmospheric pressure. Should any doubt arise in judgment, tests shall be conducted at 20±2℃ in temperature, 60~70% RH in Humidity and 86~106 kpa in atmospheric pressure.

2. Operating temperature range: -40 ~ +85℃
   Storage temperature range: -40 ~ +85℃

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.

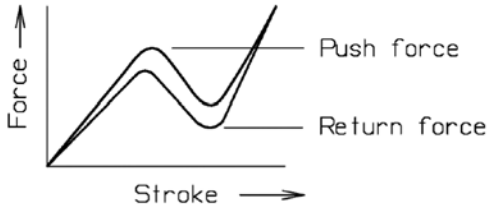
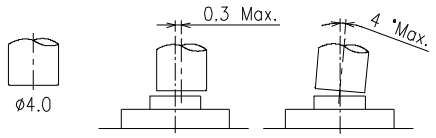
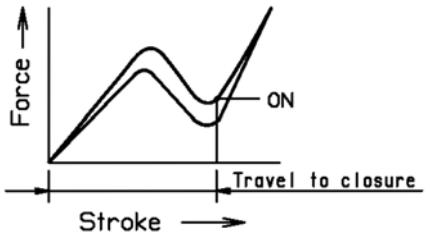
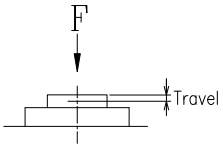
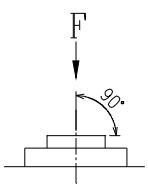
4. Rating: 12V D.C. , 50mA.

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	Lightly striking the center of the stem at a rate Encountered in normal use (3 to 4 operations per sec.) 	ON: 10m sec Max. OFF:10m sec Max.

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			Dennis Hung	James_Hung	Jamie Li	Jane Shen	SE-TC02
			2011.06.02	2011.06.02	2011.06.02	2011.06.02	PAGINATE
A	NEW RELEASE						1/4
SYM	DISCRIPTION	DATE					

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.  	Push force: 260 +/-50 gf Return force: 30 gf min.
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.  	0.25 +0.2/-0.1 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 60 seconds. 	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.

SPECIFICATIONS FOR TACT SWITCH

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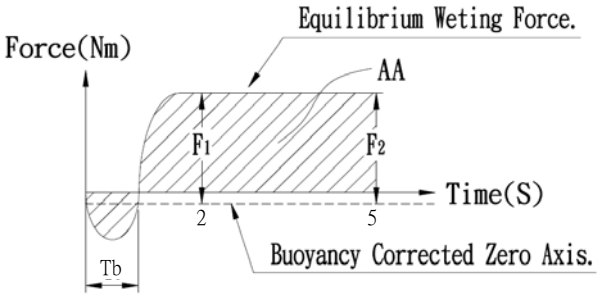
<table>
<tr><th>No.</th><th>Items</th><th>Test conditions</th><th>Specifications</th></tr>
<tr><td>6.4</td><td>Solderability</td><td>Test Temperature : 235 ± 5℃
Immersion Angle : 90°
Immersion Speed : 1 mm/sec.
Immersion Depth : 0.1mm
Dwell Time : 5 seconds

<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></td><td>Conform to the criteria in the left table.</td></tr>
<tr><td>6.5</td><td>Solder Heat Resistance</td><td>MANUAL SOLDERING
<table>
<tr><th></th><th>Temperature</th><th>Time</th></tr>
<tr><td>Manual Soldering Temperature</td><td>350℃ max.</td><td>3 Sec. max.</td></tr>
</table>
WAVE SOLDERING
<table>
<tr><th>Parameters</th><th>Lead-Free Specification*</th></tr>
<tr><td>Preheating Time</td><td>60 sec. max.</td></tr>
<tr><td>Preheating Temperature</td><td>110℃ max.</td></tr>
<tr><td>Continuous Dipping Time</td><td>5 sec. max.</td></tr>
<tr><td>Soldering Temperature</td><td>260℃ max.</td></tr>
</table></td><td>Shall be free form pronounced deforming in appearance.
Item 5.1~5.4 shall be satisfied.
Item 6.1~6.2 shall be satisfied.</td></tr>
</table>

SPECIFICATIONS FOR TACT SWITCH

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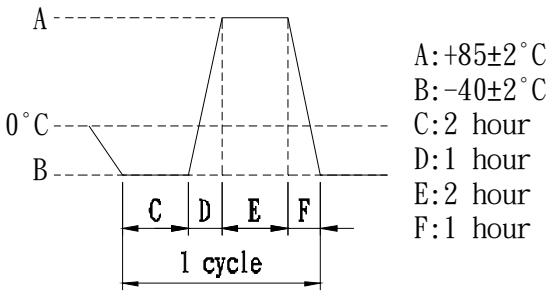
7. Weather Performance:

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 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±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 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. 	

8. Durability:

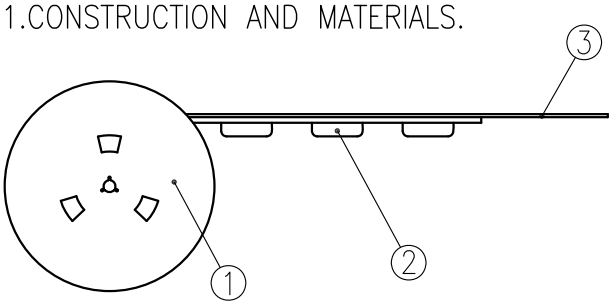
No.	Items	Test conditions	Specifications
8.1	Life Test	(1)5V D.C. , 5mA Resistance load. (2) Operating speed: 120 cycles/minute. (2) Push force: Maximum value of operation force. (3)Operating force: 200,000 times.	Contact Resistance: 2Ω MAX. Bounce: 20m sec Max.(ON,OFF) Operating Force: Within ±30% of specifications. Item 5.2 shall be satisfied. Item 6.2 shall be satisfied.

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			Dennis Hung	James_Hung	Jamie Li	Jane Shen	SE-TC02
			2011.06.02	2011.06.02	2011.06.02	2011.06.02	PAGINATE
A	NEW RELEASE						4/4
SYM	DISCRIPTION	DATE					

THE PACKING SPECIFICATIONS

RoHS Compliance

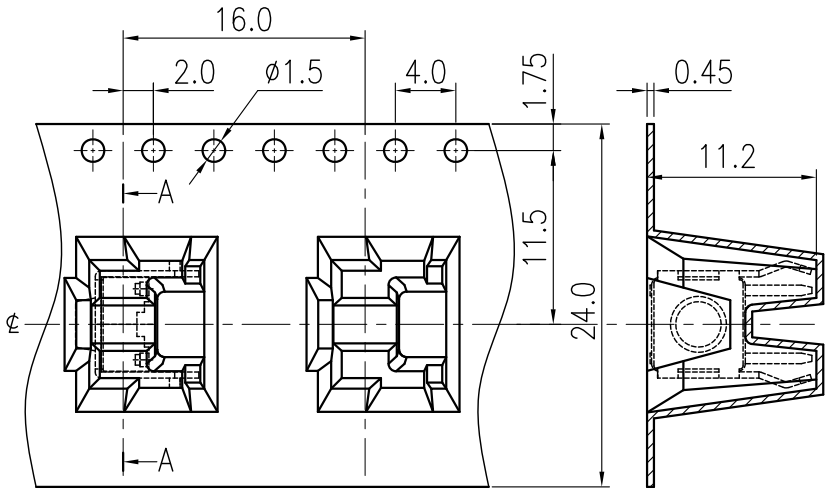
1.CONSTRUCTION AND MATERIALS.



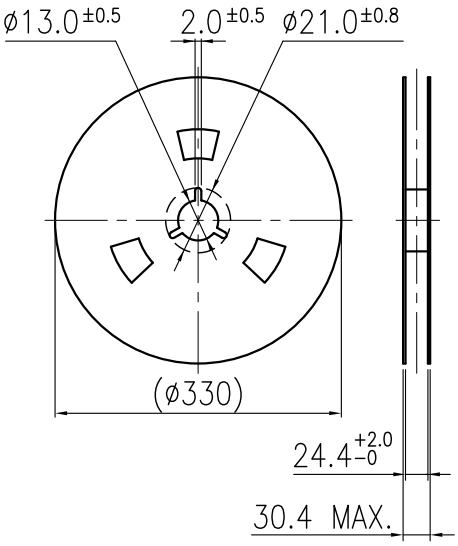
NO.	PARTS NAME	MATERIALS
③	COVER TAPE	POLYESTER
②	CARRIER TAPE	POLYSTYRENE
①	REEL	POLYSTYRENE

2. PACKAGE QUANTITY : 350 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. DIMENSIONS:

CARRIER TAPE



REEL



COVER TAPE

SYM	DISCRIPTION	DATE	APPROVED

APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	MODEL NO.	
Fred Chen 0521 2008	Ken Lin 2008.05.21	Jane Shen 2008. 05. 21	Catherine Lee 2008. 05. 21	NTCV304-APD-B260-BK	
				PAGINATE. 1/1	SPEC NO. P-462

TAIWAN MISAKI ELECTRONICS CO.,LTD.