

RoHS Compliant

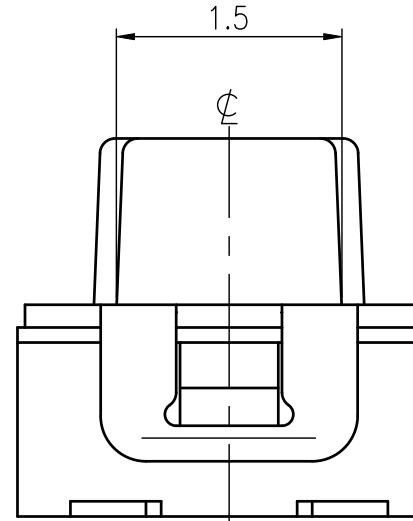
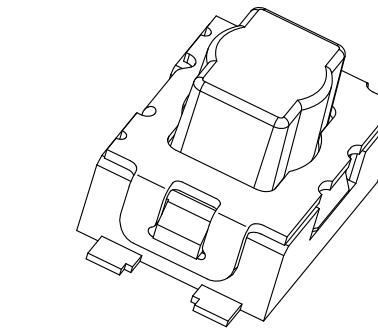
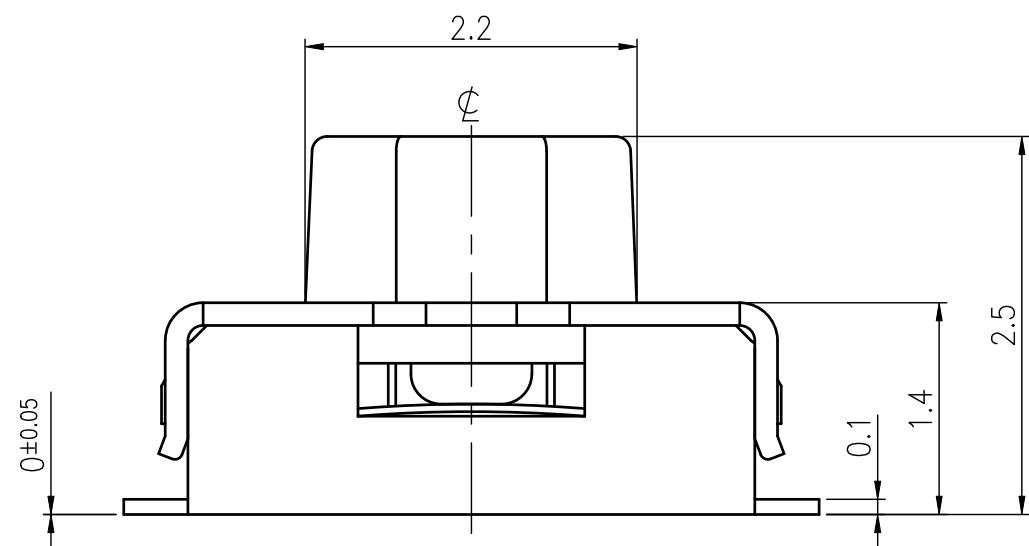
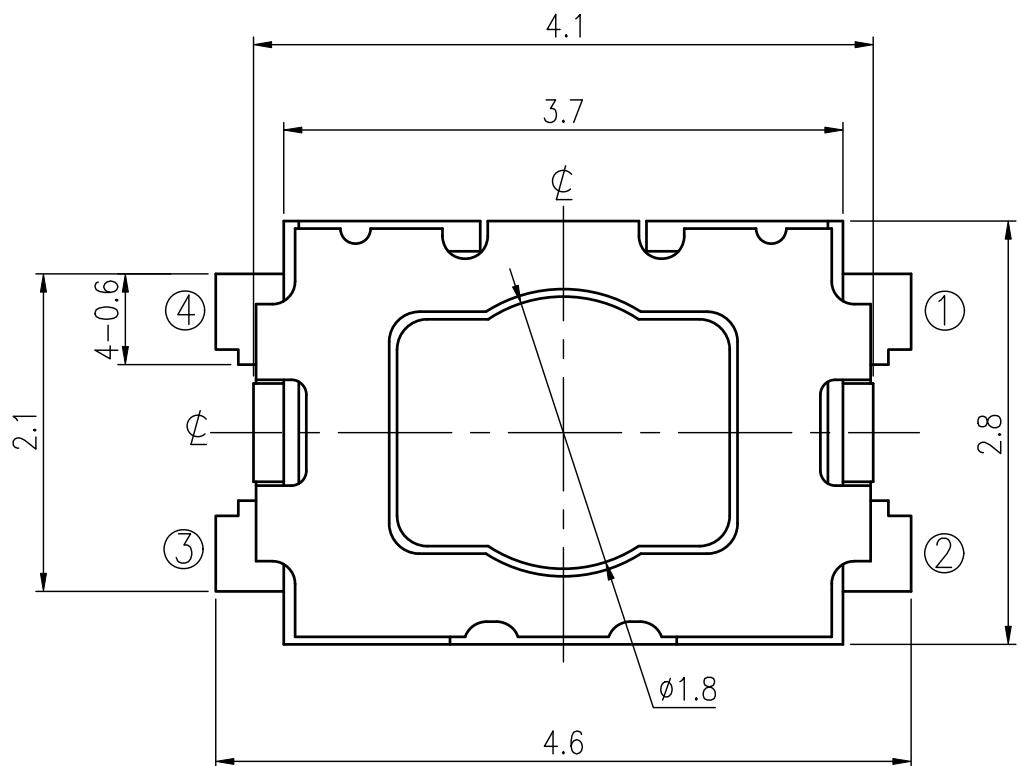


REVISIONS

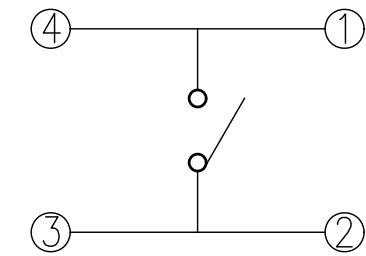
Rev	DESCRIPTION	DATE	DRAWER	Rev	DESCRIPTION	DATE	DRAWER
A	Initial Drawing	2020.01.14	Jane Shen	C			
B				D			

SPECIFICATIONS

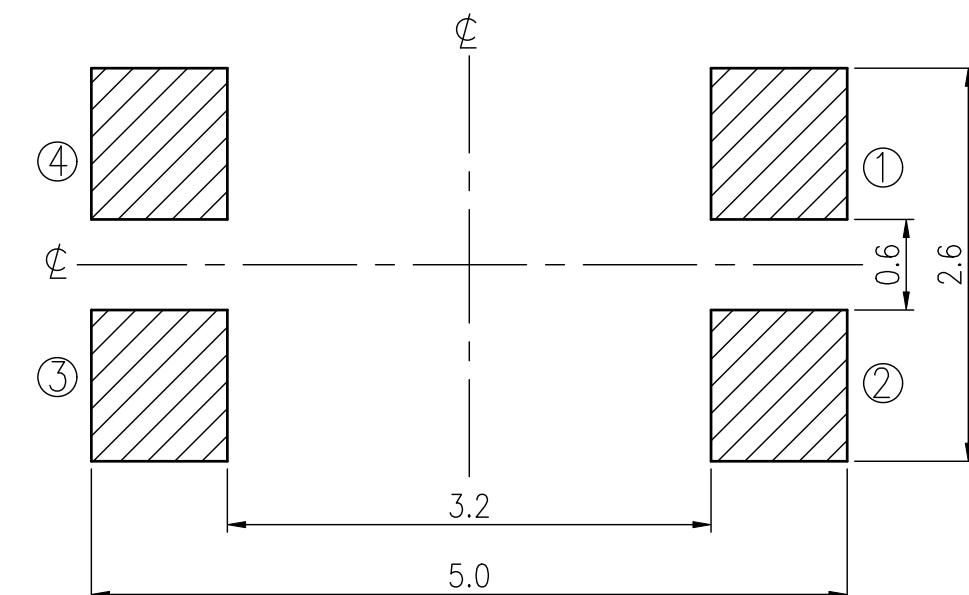
RATING	DC32V 50mA	TIMING	
CONTACT RESISTANCE	100mΩ MAX.	OPERATION (TORQUE)	
INSULATION RESISTANCE	DC500V-1GΩ MIN.	STROKE (ANGLE)	0.25 ^{+0.1} _{-0.15} mm
WITHSTAND VOLTAGE	AC250V-1 MINUTE	LIFE	
REMARKS: Waterproof Grade : IP67			



SCHEMATIC



P.C.B LAYOUT



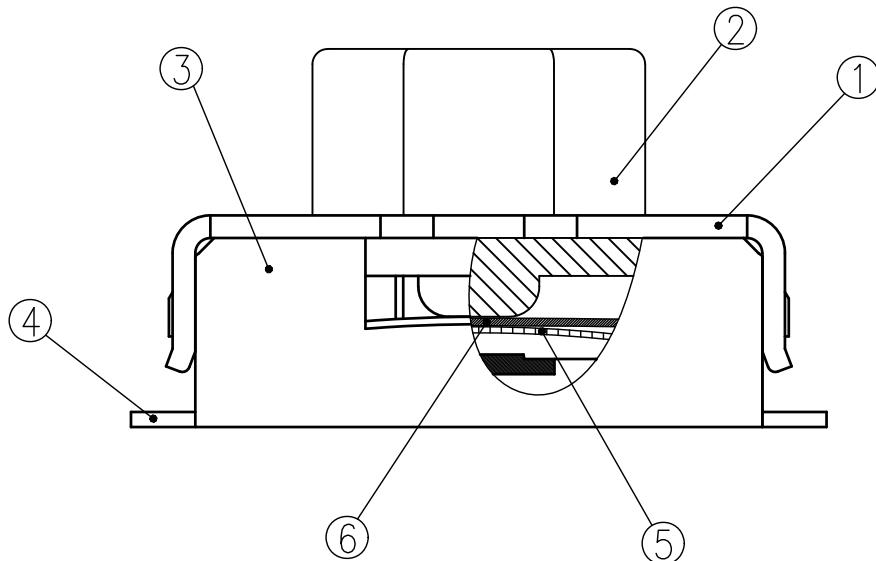
MODEL NO.	OPERATION FORCE	LIFE CYCLES
NTC228-AA1G-B200T	200±50 gf	200,000
NTC228-AA1G-B300T	300±75 gf	150,000
NTC228-AA1G-B400T	400±100 gf	100,000



TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.1			SIGNATURES	DATE	MODEL
			DRAWER	Jane Shen	TITLE TACT SWITCH
CHECKED	<i>Landry Su</i>	2020.01.14			
	UNIT mm	SCALE 20/1	REVIEWED		NO. SEE MODEL NO.
			APPROVALS	Qiuyuan Chuang	

TAIWAN MISAKI ELECTRONICS CO., LTD.

RoHS Compliant



NO.	PART NAME	Q'TY	MATERIAL		SPECIFICATION		
6	TAPE	1	POLYIMIDE				
5	CONTACT PLATE	3	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	POLYAMIDE RESIN		BLACK COLOR		
1	COVER	1	NICKEL SILVER				
SYM	DESCRIPTION	DATE	APPROVED	SIGNATURES	DATE	M O D E L	
				DRAWN Jane Shen	2020.01.14	TITLE TACT SWITCH	
				CHK'D <i>Landry Su</i>	2020.01.14		
				REV'D			
				APP'D Qiu Yuan Chuang	2020.01.14		
TAIWAN MISAKI ELECTRONICS CO.,LTD.						DWG NO.	TC228-08

SPECIFICATIONS FOR TACT SWITCH

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Model: NTC_228-(A,B)_ 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:

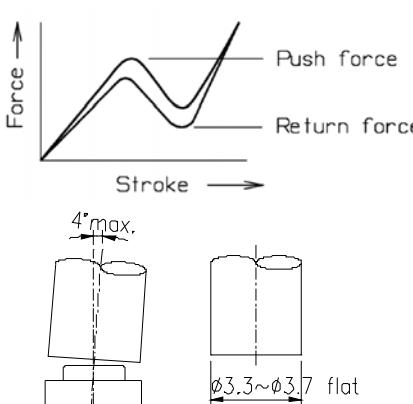
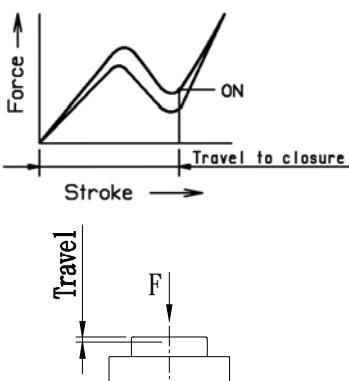
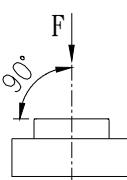
No.	Items	Test conditions	Specifications
5.1	Contact Resistance	Shall be measure at 1kHz±200Hz (MAX. 20mV, MAX. 40mA.) or 1 A, 5V D.C. By voltage drop method.	100mΩ Max.
5.2	Insulation Resistance	Shall be measured by applying 500V D.C. Between all terminals and between the terminals and the frame for 1 minute ± 5 seconds.	1GΩ 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: ≤ 3 m sec. OFF: ≤ 3 m sec.</p>

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
							SE-TC102N
							PAGINATE
A	NEW RELEASE					Jane Shen 2018.09.05	
SYM	DISCRIPTION	DATE					1/4

SPECIFICATIONS FOR TACT SWITCH

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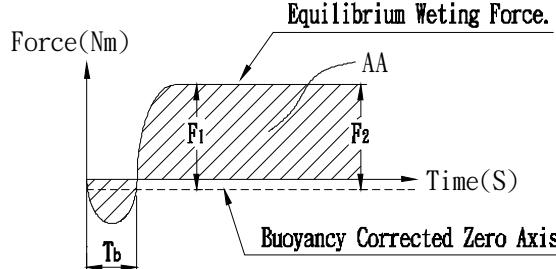
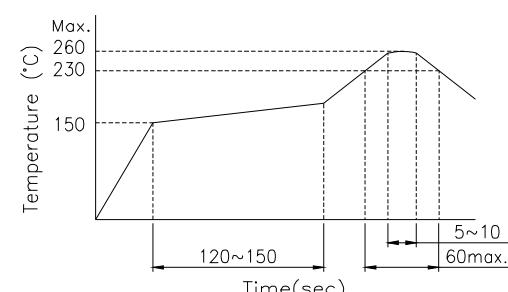
6. Mechanical Performance:

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:</p> <p>200±50 gf 300±75 gf 400±100 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> 	0.25 +0.1 / -0.15 mm
6.3	Push Strength	<p>Placing the switch such that the direction of switch operation is vertical and then a below static load shall be applied in the direction of stem operation.</p> <p>3kgf for 15 sec.</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>

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			Qiyuan Chuang			Jane Shen 2018.09.05	SE-TC102N
A	NEW RELEASE						PAGINATE
SYM	DISCRIPTION	DATE					2/4

SPECIFICATIONS FOR TACT SWITCH

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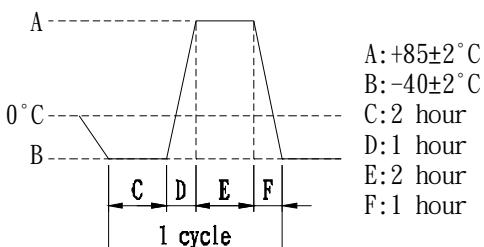
6.4	Solderability	<p>Test Temperature : $235 \pm 5^\circ\text{C}$ Immersion Angle : 90° Immersion Speed : 1 mm/sec. Immersion Depth : 0.1mm Dwell Time : 5 seconds</p> 	Conform to the criteria in the left table.								
		<table border="1"> <thead> <tr> <th>Para.</th><th>Criteria</th></tr> </thead> <tbody> <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
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6.5	Solder Heat Resistance	<p>(1) Manual soldering temperature: Temperature: 350°C Max. Time: 3 Sec. Max. (2) Reflow Soldering: Number of reflow pass: 2 cycles.</p> 	<p>Shall be free form pronounced deforming in appearance. 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

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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.	
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.	 <p>A: $+85\pm2^{\circ}\text{C}$ B: $-40\pm2^{\circ}\text{C}$ C: 2 hour D: 1 hour E: 2 hour F: 1 hour 1 cycle: 6 hours</p>

8. Durability:

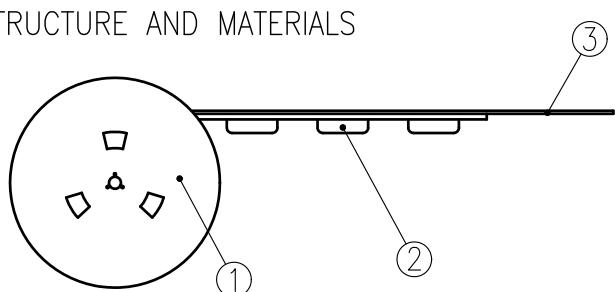
No.	Items	Test conditions	Specifications
8.1	Life Test	(1) 5V D.C. , 5mA Resistance load. (2) Operating speed: 120 cycles/minute. (3) Push force: Maximum value of operation force. (4) Operation number: 200gf=200,000 times. 300gf=150,000 times. 400gf=100,000 times.	Contact Resistance: 10Ω MAX. Bounce: 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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							SE-TC102N
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SYM	DISCRIPTION	DATE					4/4

THE PACKING SPECIFICATIONS

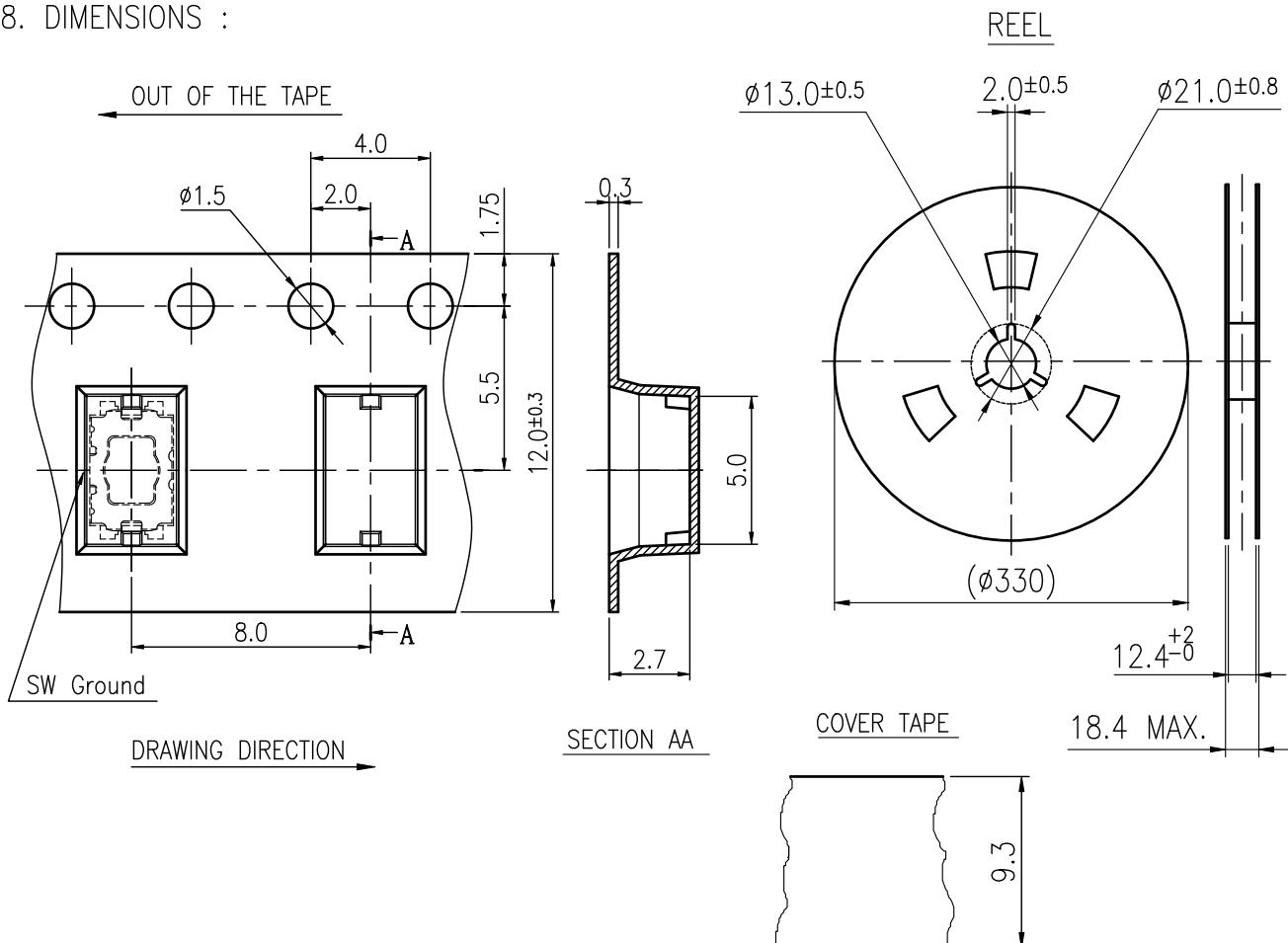
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1. STRUCTURE AND MATERIALS



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 :



SYM	DESCRIPTION	DATE	APPROVED	APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	MODEL NO.
				Qiyuan Chuang			Jane Shen	NTC_228-(A,B)A_G-B
								PAGINATE. 1/1 SPEC NO. P-819