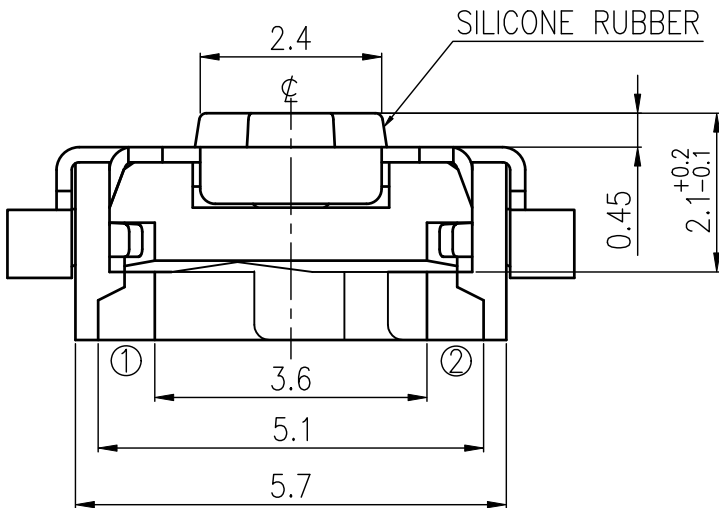
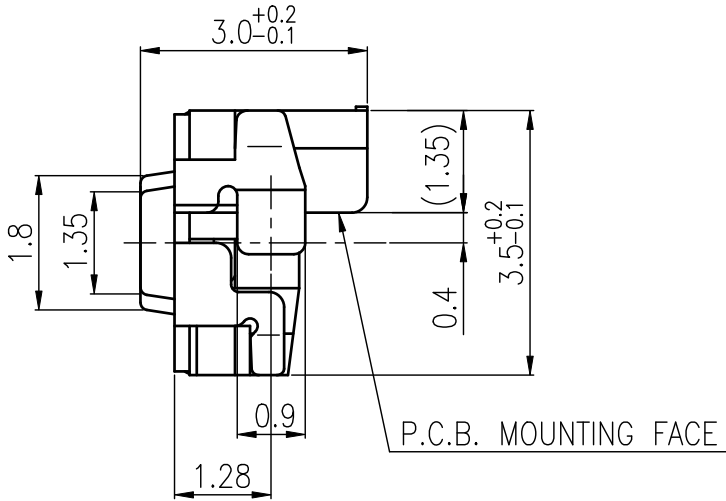
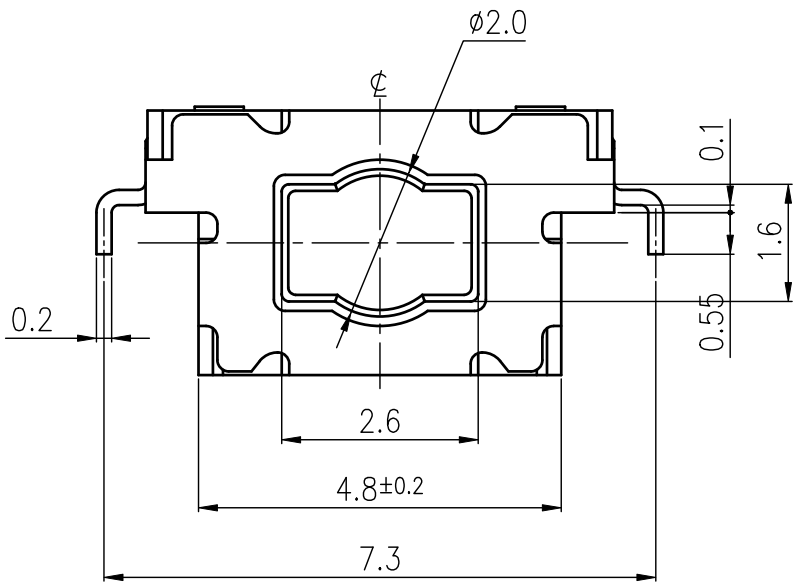
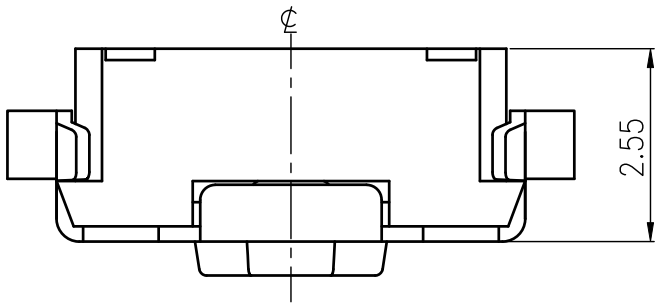


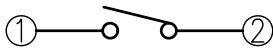
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For Reference Only

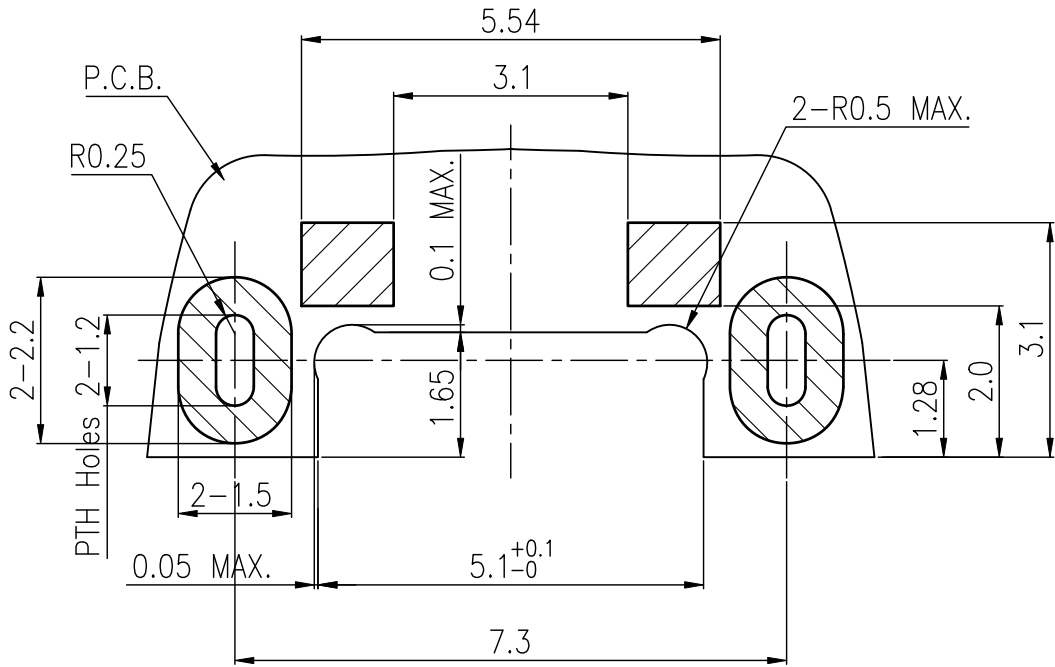
REVISIONS							
Rev	DESCRIPTION	DATE	DRAWER	Rev	DESCRIPTION	DATE	DRAWER
A	Initial Drawing	2024.12.10	Jane Shen	C			
B				D			
SPECIFICATIONS							
RATING		DC12V 50mA		TIMING			
CONTACT RESISTANCE		100mΩ MAX.		OPERATION (TORQUE)		160±50 gf	
INSULATION RESISTANCE		DC500V-100MΩ MIN.		STROKE (ANGLE)		0.25±0.1 mm	
WITHSTAND VOLTAGE		AC250V-1 MINUTE		CONTACT RESISTANCE		100,000 CYCLES	
REMARKS:							



SCHEMATIC

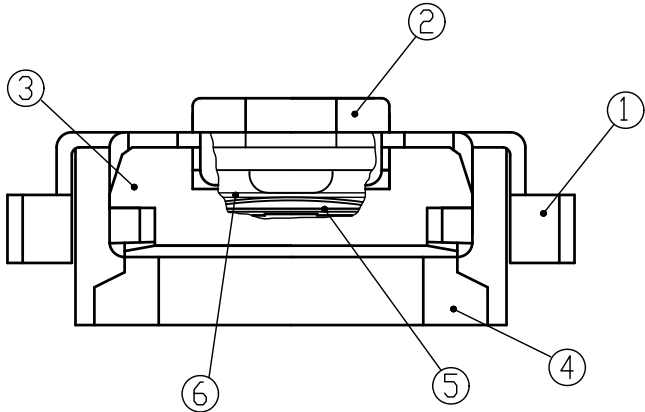


RECOMMEND P.C.B. LAYOUT



TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.1			SIGNATURES		DATE	MODEL
			DRAWER	Jane Shen	2024.12.10	TITLE
			CHECKED			TACT SWITCH
			REVIEWED			NO.
			APPROVALS	Qiuyuan Chuang	2024.12.10	NTC302-G01-21160-MD

TAIWAN MISAKI ELECTRONICS CO., LTD.



6	TAPE	1	POLYIMIDE			
5	CONTACT PLATE	1	STAINLESS STEEL PLATE	Ag PLATING OVER Ni PLATING		
4	TERMINAL	2	COPPER ALLOY	Ag PLATING OVER Ni PLATING		
3	FRAME	1	LIQUID CRYSTAL POLYMER	BLACK COLOR		
2	STEM	1	SILICONE	YELLOW COLOR		
1	COVER	1	STAINLESS STEEL PLATE	Ag PLATING OVER Ni PLATING		
NO.	PART NAME	Q'TY	MATERIAL	SPECIFICATION		
				SIGNATURES	DATE	M O D E L
				DRAWN Jane Shen	2024.12.10	TITLE TACT SWITCH
				CHK'D		
				REV'D		
				APP'D Qiuyuan Chuang	2024.12.10	
SYM	DESCRIPTION	DATE	APPROVED	NO. NTC302-G01-21160-MD		
TAIWAN MISAKI ELECTRONICS CO.,LTD.						DWG NO. TC302-13

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

Model: NTC_302

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℃

Preservative 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.

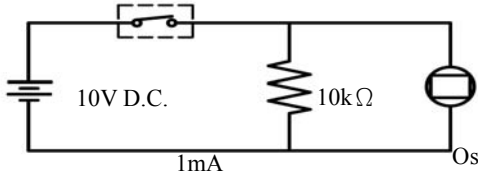
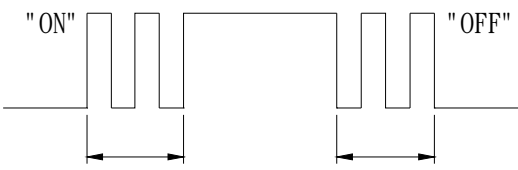
5. Electrical Performance:

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.

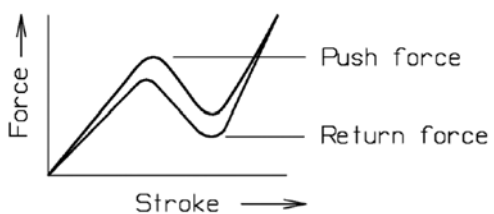
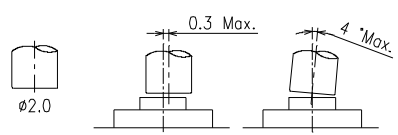
			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
						Jane Shen	SE-TC49N
						2015.12.07	PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					1/5

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

No.	Items	Test conditions	Specifications
5.4	Bounce	Lightly striking the center of the stem at a rate Encountered in normal use (3 to 4 operations per sec.) Switch  10V D.C. 10kΩ 1mA Oscilloscope 	ON: 10m sec Max. OFF: 10m sec Max.

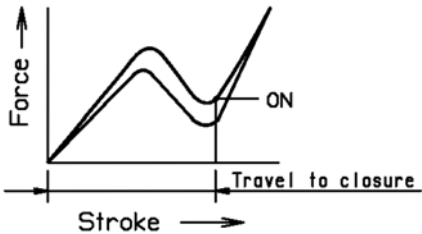
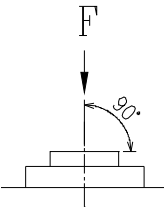
6. Mechanical Performance:

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.  Force ↑ Push force Return force Stroke → 	Push force: 160 +/-50 gf

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SYM	DISCRIPTION	DATE					

SPECIFICATIONS FOR TACT SWITCH

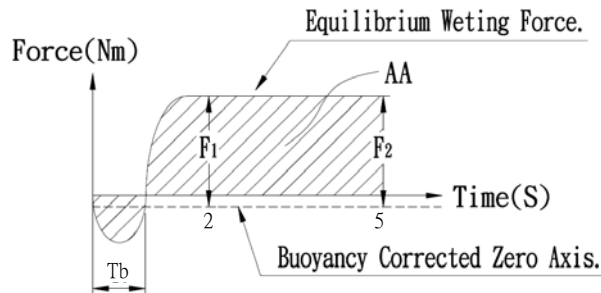
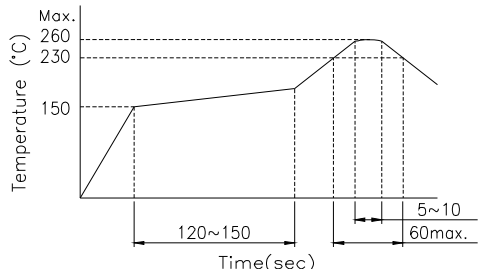
RoHS Compliant

No.	Items	Test conditions	Specifications
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 +/-0.1 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 30 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.

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SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

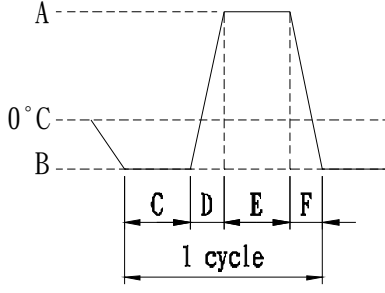
No.	Items	Test conditions	Specifications										
6.4	Solderability	Test Temperature : 235 ± 5℃ Immersion Angle : 90° Immersion Speed : 1 mm/sec. Immersion Depth : 0.1mm Dwell Time : 5 seconds  <table><tr><th>Para.</th><th>Criteria</th></tr><tr><td>Tb</td><td>≤ 1 second</td></tr><tr><td>F1</td><td>50% 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 (1) Manual soldering temperature: Temperature: 350℃ Max. Time: 3 Sec. Max. (2) Reflow Soldering: Number of reflow pass: 2 cycles. 												

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SYM	DISCRIPTION	DATE					

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

7. Weather Performance:

No.	Items	Test conditions	Specifications
7.1	Humidity Test	(1) Temperature: $60\pm 2^{\circ}\text{C}$. (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: $85\pm 2^{\circ}\text{C}$. (2) Duration of test: 500 Hour. (3) Standard conditions after test: 1 Hour.	
7.3	Cold Test	(1) Temperature: $-40\pm 2^{\circ}\text{C}$. (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: $+85\pm 2^{\circ}\text{C}$ B: $-40\pm 2^{\circ}\text{C}$ 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. (2) Push force: Maximum value of operation force. (3) Operation number: 100,000 times.	Contact Resistance: 2Ω MAX. Bounce: 20m sec Max.(ON,OFF) Operating Force: Within $\pm 30\%$ of specifications. Item 5.2 shall be satisfied. Item 6.2 shall be satisfied.

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						Jane Shen	SE-TC49N
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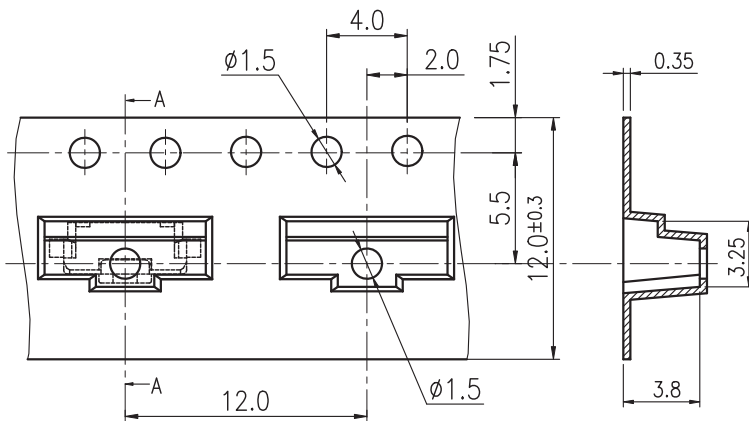
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STRUCTURE AND MATERIALS

The diagram illustrates the structure and materials of a composite beam. It consists of two parts: a circular cross-section on the left and a longitudinal view on the right. The cross-section shows a central core (1) surrounded by three trapezoidal layers (2) and an outer shell (3). The longitudinal view shows the beam's profile with the same layers labeled 1, 2, and 3.

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

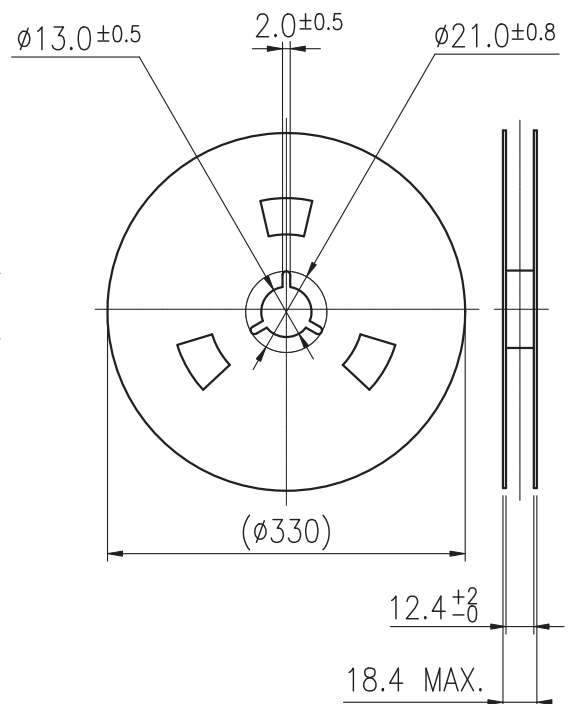
- CARRIER TAPE



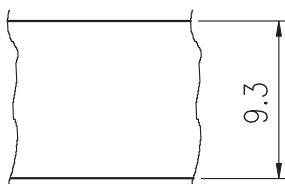
DRAWING DIRECTION _____

SECTION A A

REEL



COVER TAPE



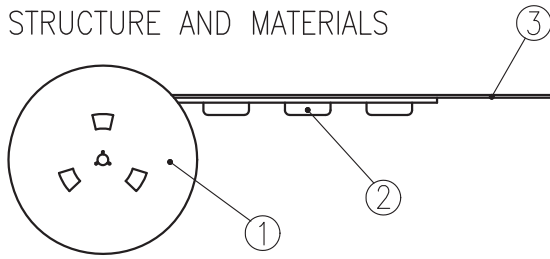
				APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	MODEL NO.	
				Dennis Hung			Jane Shen	NTC302-BA1G-A160TX	
								PAGINATE.	SPEC NO.
			2011.06.30					1/1	P-673
SYM.	DISCRPTION	DATE	APPROVED						

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THE PACKING SPECIFICATIONS

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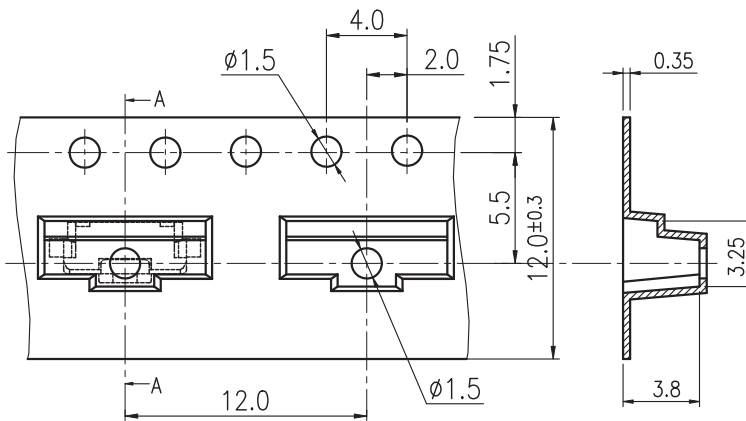
1. STRUCTURE AND MATERIALS



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

- PACKAGE QUANTITY : 1200 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 ACCTABLE BUT MORE THAN 3 RUNNIGE 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 :

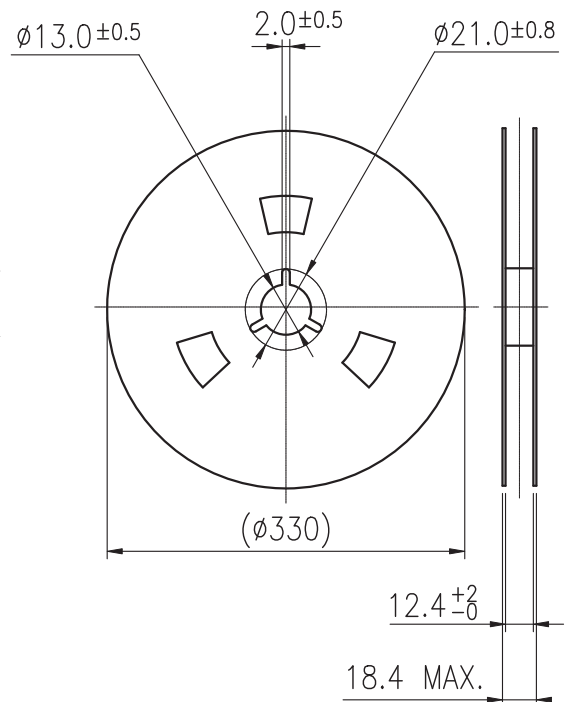
CARRIER TAPE



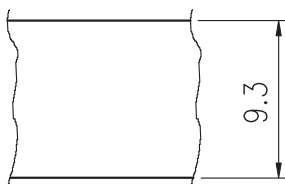
DRAWING DIRECTION →

SECTION A A

REEL



COVER TAPE



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				<i>Dennis Hung</i>			Jane Shen	NTC302-G01-21160-MD
				2011.06.30			2011.06.30	PAGINATE.
SYM	DISCRIPTION	DATE	APPROVED					1/1
								SPEC NO.
								P-673

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