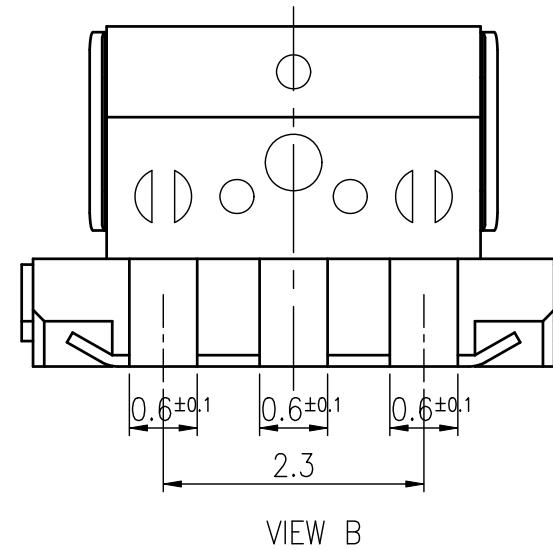
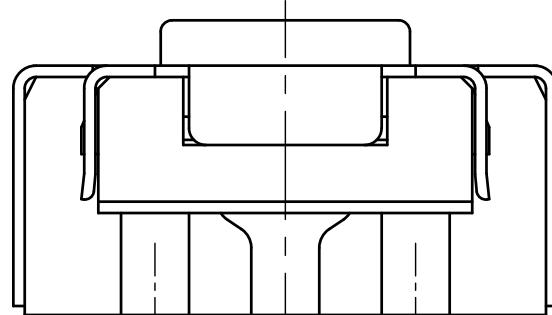
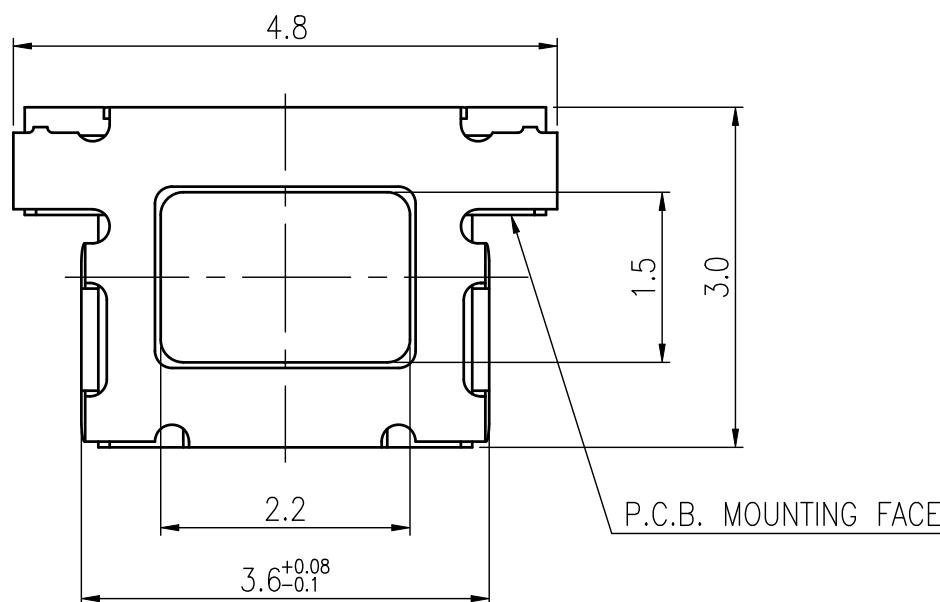
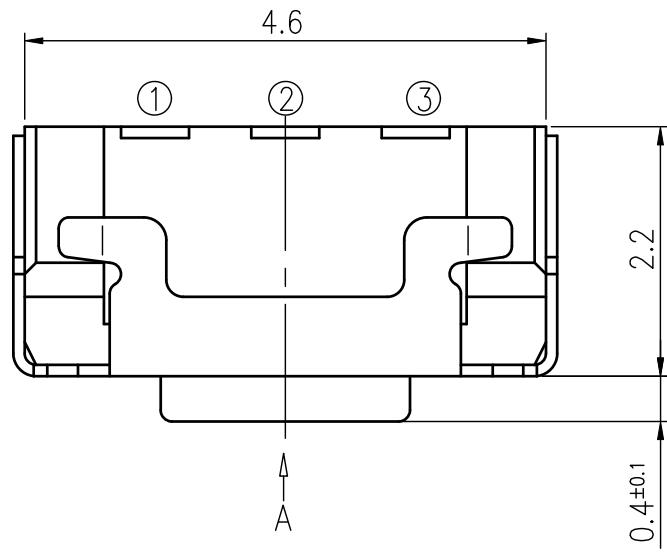
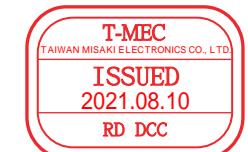


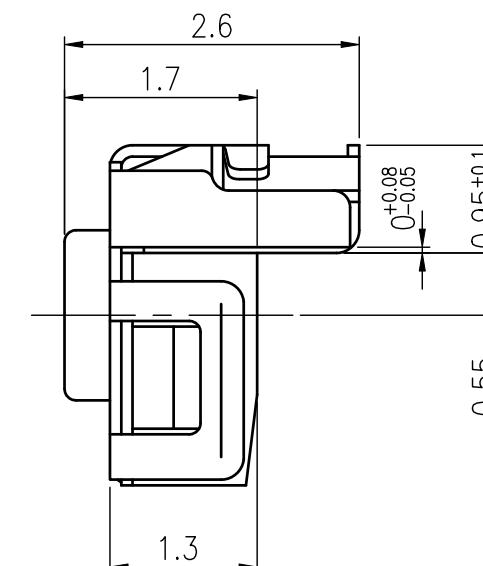
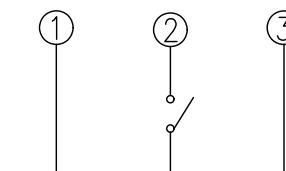
RoHS Compliant



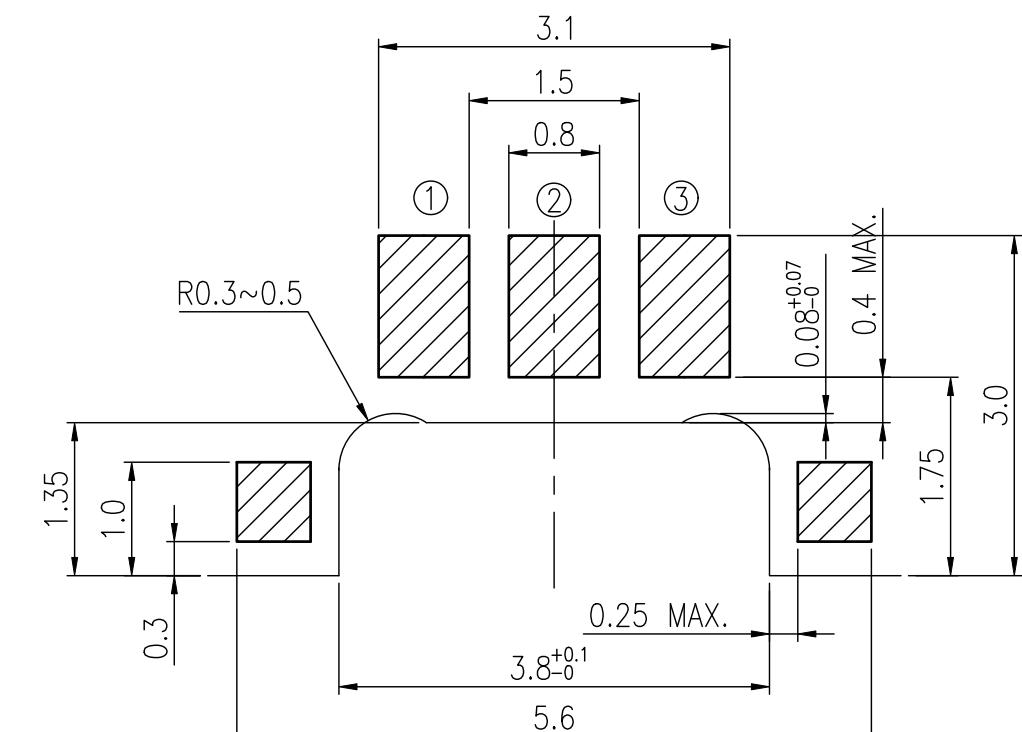
REVISIONS							
Rev	DESCRIPTION	DATE	DRAWER	REV	DESCRIPTION	DATE	DRAWER
A	Initial Drawing	2020.07.23	Jane Shen	C			
B				D			
SPECIFICATIONS							
RATING	DC15V 20mA MAX.	TIMING					
CONTACT RESISTANCE	100mΩ MAX.	OPERATION (TORQUE)					
INSULATION RESISTANCE	DC100V – 100MΩ MIN.	STROKE (ANGLE)	0.15±0.1 mm				
WITHSTAND VOLTAGE	AC250V – 1 MINUTE	LIFE	200,000 CYCLES				
REMARKS:							

MODEL NO.	OPERATION
NTC313-DK1G-A160T	160±50 gf
NTC313-DK1G-A350T	350±80 gf

SCHEMATIC



P.C.B LAYOUT  
(VIEW FROM THE DIRECTION A)

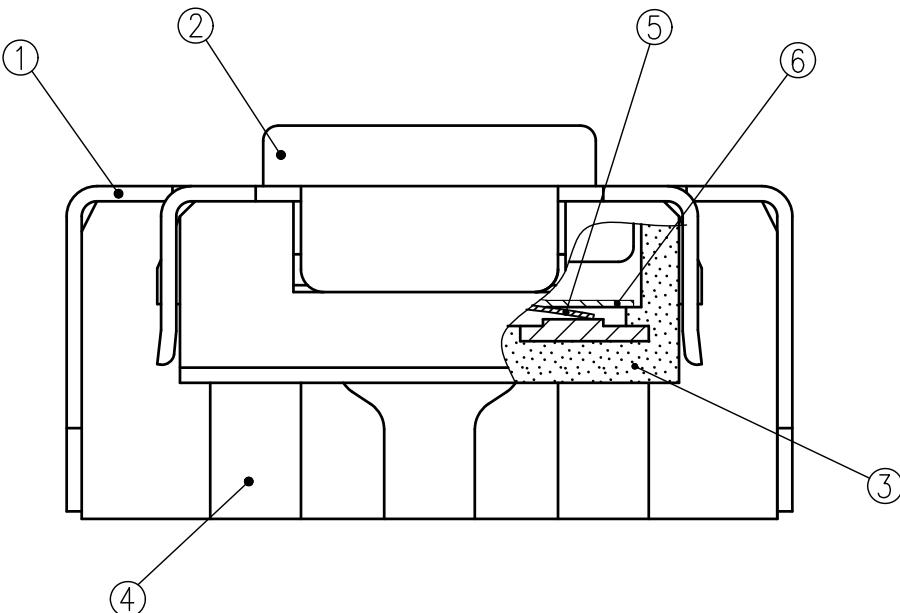


(TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.1)

TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.2			SIGNATURES		DATE	MODEL
			DRAWN	Jane Shen		
CHECKED			<i>Landry Su</i>		2021.08.04	TITLE TACT SWITCH
			REVIEWED			
UNIT mm	SCALE 15/1	APPROVALS Qiyuan Chuang			2021.08.04	NO. SEE MODEL NO.

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NO.	PART NAME	Q'TY	MATERIAL		SPECIFICATION	
6	TAPE	1	POLYIMIDE			
5	CONTACT PLATE	2	STAINLESS STEEL PLATE		Ag PLATING	
4	TERMINAL	3	COPPER ALLOY		Ag PLATING OVER Ni PLATING	
3	FRAME	1	LIQUID CRYSTAL POLYMER		BLACK COLOR	
2	STEM	1	LIQUID CRYSTAL POLYMER		BLUE COLOR	
1	COVER	1	STAINLESS STEEL PLATE		Ag PLATING OVER Ni PLATING	
SYM	DESCRIPTION	DATE	APPROVED	SIGNATURES	DATE	MODEL
				DRAWN Jane Shen	2021.08.04	TITLE TACT SWITCH
				CHK'D <i>Landy Su</i>	2021.08.04	
				REV'D		NO. NTC313- DK1G-A350T
				APP'D	2021.08.04	
				DWG NO.	NTC313-K04	
TAIWAN MISAKI ELECTRONICS CO.,LTD.						

# SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

Model: NTC313-(DK,EK)1G- 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

Preservative 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: 15V D.C. , 20mA.

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 100V 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.

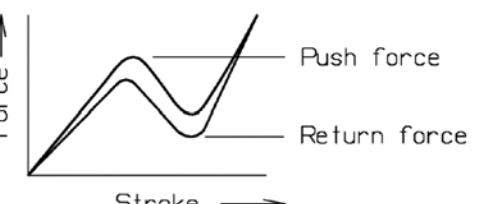
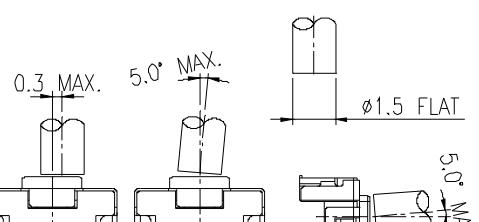
			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
						Jane Shen	SE-TC77N
							PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					1/5

## SPECIFICATIONS FOR TACT SWITCH

## RoHS Compliant

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></p> <p>1mA</p> <p>Oscilloscope</p> <p></p>	<p>ON: 10m sec Max. OFF:10m sec Max.</p>

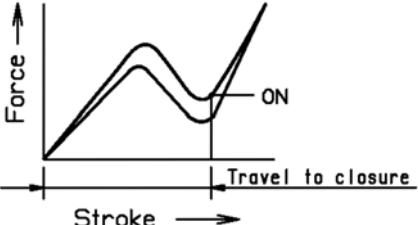
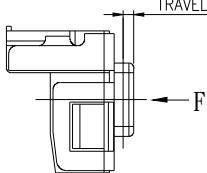
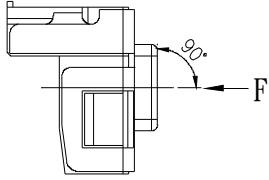
## 6. Mechanical Performance:

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>The graph plots Force (Y-axis) against Stroke (X-axis). It shows two curves: a higher curve labeled 'Push force' and a lower curve labeled 'Return force'. Both curves start at the origin, rise to a peak, and then return to the baseline.</p>  <p>The drawings show the switch assembly with dimensions: 0.3 MAX. for the stem height, 5.0° MAX. for the stem angle, and Ø1.5 FLAT for the mounting base. The assembly is shown in three views: front, side, and top-down.</p>	<p>Push force:</p> <p>160±50gf 250±50gf 350±80gf</p>

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							SE-TC77N
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SYM	DISCRIPTION	DATE				Jane Shen	

# SPECIFICATIONS FOR TACT SWITCH

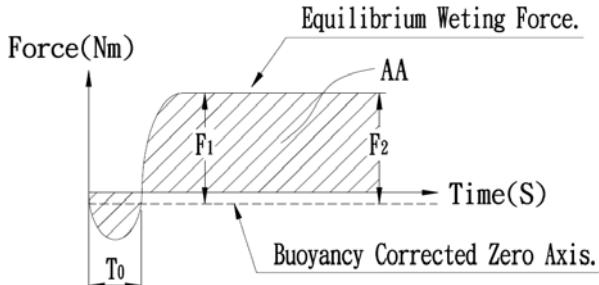
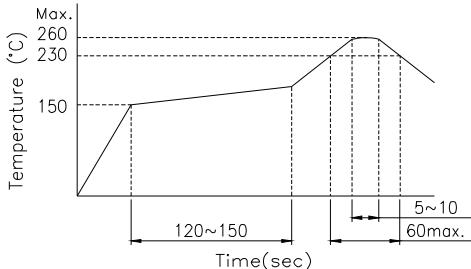
RoHS Compliant

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>  	0.15± 0.1mm.
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 seconds.</p> 	No damage. (Electrical and mechanical)

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SYM	DESCRIPTION	DATE					3/5

# SPECIFICATIONS FOR TACT SWITCH

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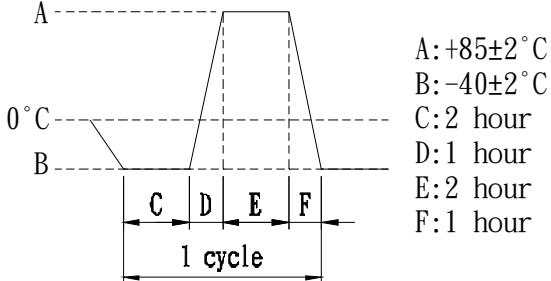
No.	Items	Test conditions	Specifications										
6.4	Solderability	<p>Test Temperature : <math>235 \pm 5^\circ\text{C}</math>      Immersion Angle : <math>90^\circ</math>      Immersion Speed : 1 mm/sec.      Immersion Depth : 0.1mm      Dwell Time : 5 seconds</p>  <table border="1"> <thead> <tr> <th>Para.</th><th>Criteria</th></tr> </thead> <tbody> <tr> <td>Tb</td><td><math>\leq 1</math> 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	$\leq 1$ 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	$\leq 1$ 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: <math>350^\circ\text{C}</math> Max.      Time: 3 Sec. Max.      (2) Reflow Soldering:      Number of reflow pass: 2 cycles.</p> 	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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SYM	DISCRIPTION	DATE					4/5

# SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

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

## 8. Durability:

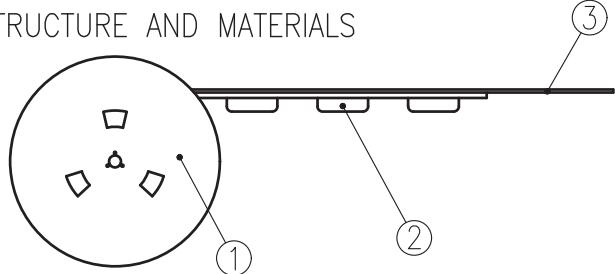
No.	Items	Test conditions	Specifications
8.1	Life Test	(1) 5V D.C. , 5mA Resistance load. (2) Operating speed:120 cycles/minute. (3) Push force: Maximum value of operation force. (4) Operation number: 200,000 times.	<p>Contact Resistance: <math>2\Omega</math> MAX.</p> <p>Bounce: 20m sec Max.(ON,OFF)</p> <p>Operating Force: Within <math>\pm30\%</math> of specifications. Item 5.2 shall be satisfied. Item 6.2 shall be satisfied.</p>

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
						Jane Shen	SE-TC77N
							PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					5/5

# THE PACKING SPECIFICATIONS

RoHS Compliant

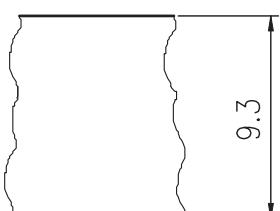
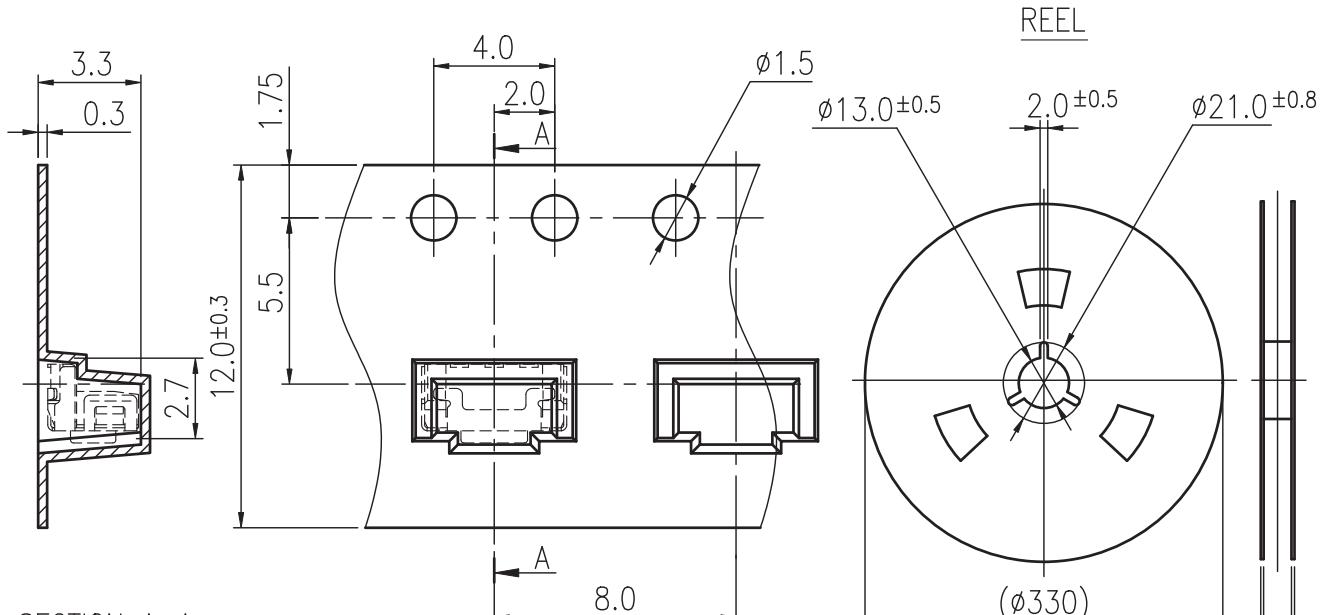
## 1. STRUCTURE AND MATERIALS



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

- PACKAGING QUANTITY : 2,500 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 :

### CARRIER TAPE



SYM	DESCRIPTION	DATE	APPROVED	APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	MODEL NO.
				Qiyuan Chuang			Jane Shen	NTC313-DK1G-A
								PAGINATE. 1/1
								SPEC NO. P-600-1