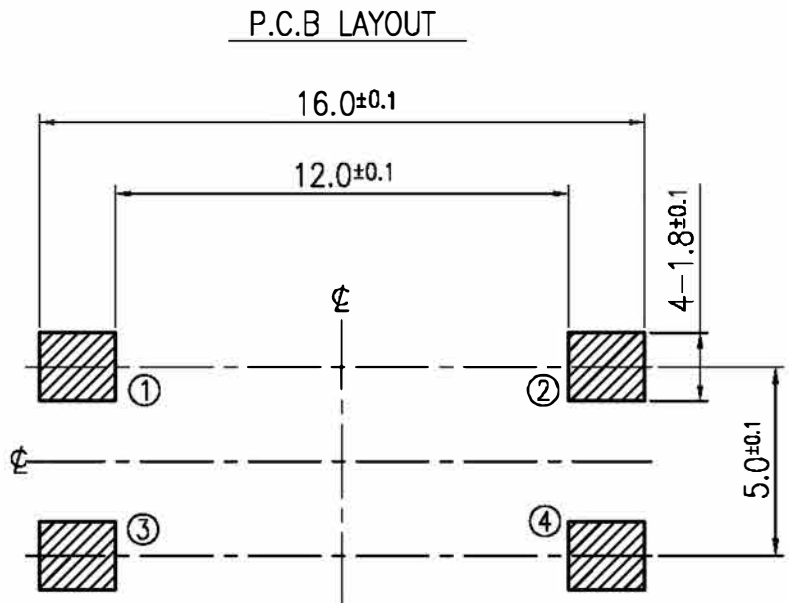
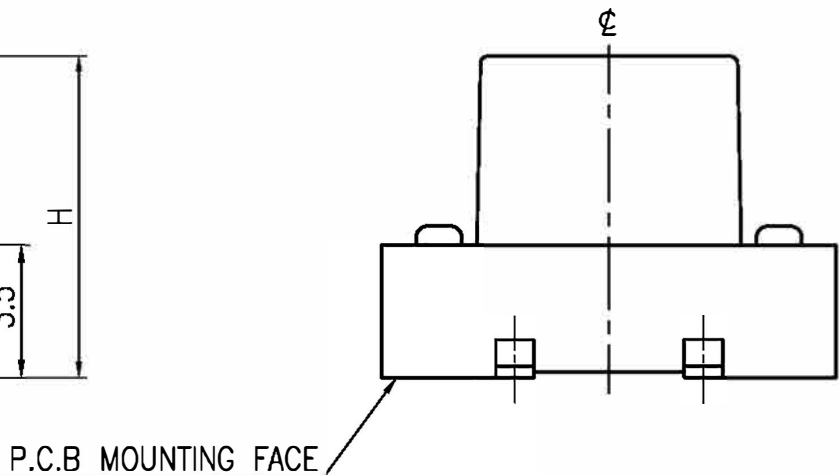
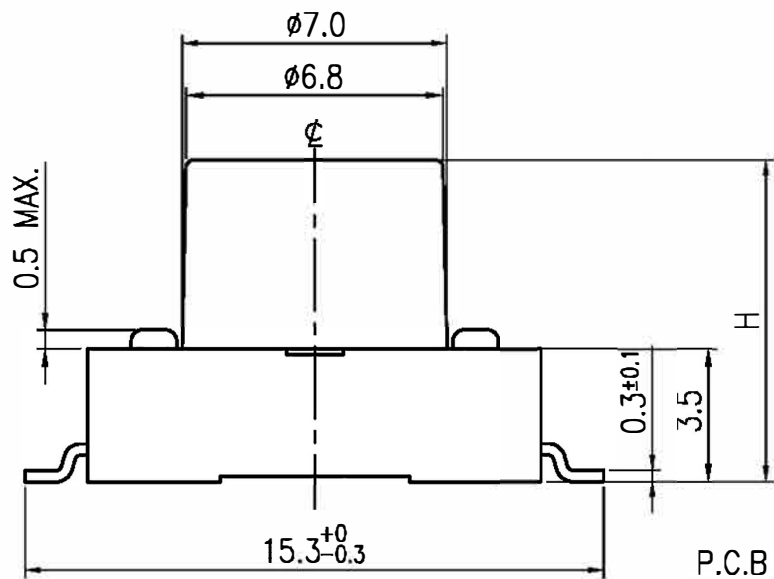
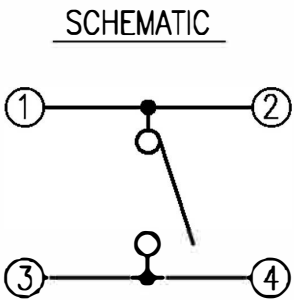
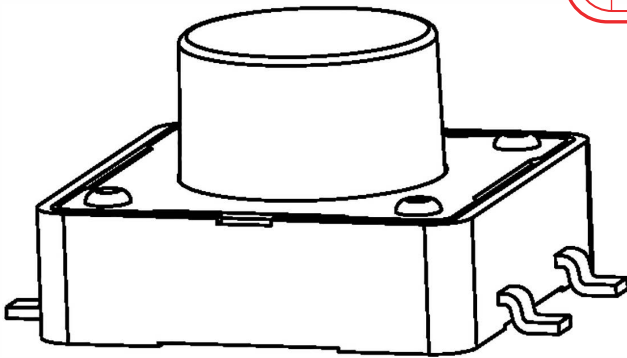
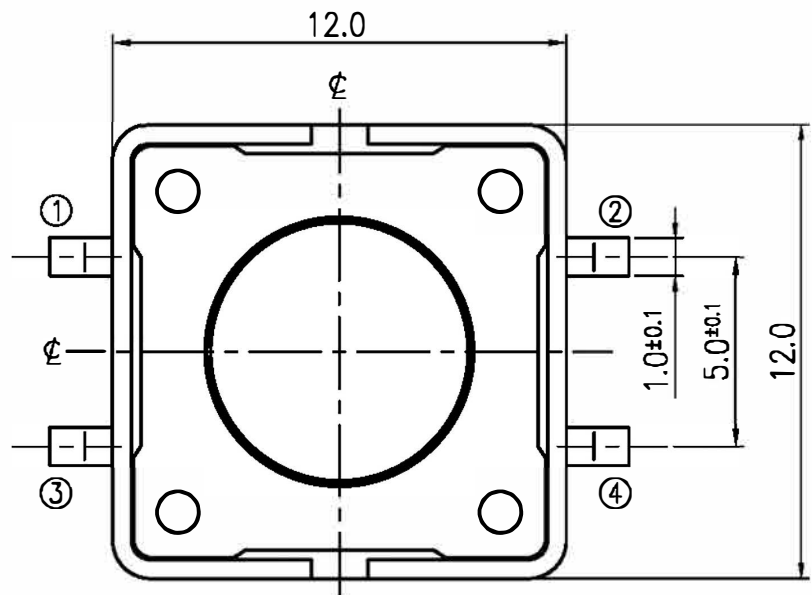
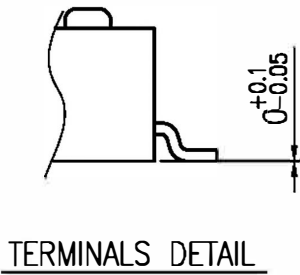


RoHS Compliant

REVISIONS							
Rev	DESCRIPTION	DATE	DRAWER	Rev	DESCRIPTION	DATE	DRAWER
A	Initial Drawing	2016.05.16	Jane Shen	C			
B				D			
SPECIFICATIONS							
RATING		DC12V 50mA		TIMING			
CONTACT RESISTANCE		100mΩ MAX.		OPERATION (TORQUE)			
INSULATION RESISTANCE		DC500V – 100MΩ MIN.		STROKE (ANGLE)		0.3±0.1mm	
WITHSTAND VOLTAGE		AC250V – 1 MINUTE.		CONTACT RESISTANCE		2Ω MAX.	
REMARKS:				(AFTER CYCLES LIFE TEST)			



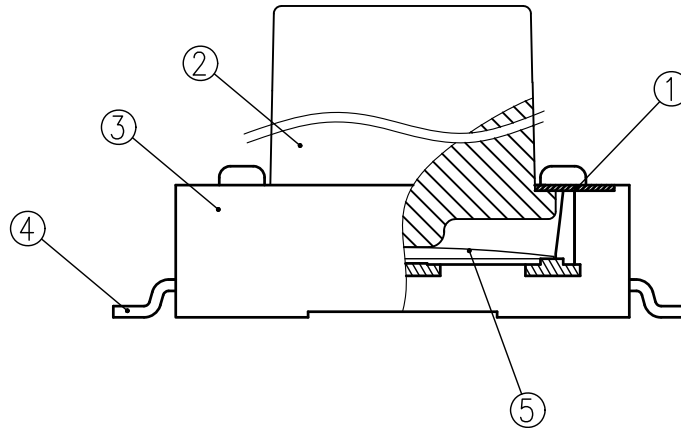
MODEL NO.	H	OPERATING FORCE	LIFE
NTC045-AD1G-B120T	4.3	120±50 gf	1,000,000
NTC045-AD1G-B160T		160±50 gf	500,000
NTC045-AD1G-B260T		260±70 gf	300,000
NTC045-AD1G-C120T	8.5	120±50 gf	1,000,000
NTC045-AD1G-C160T		160±50 gf	500,000
NTC045-AD1G-C260T		260±70 gf	300,000
NTC045-AD1G-G120T	7.3	120±50 gf	1,000,000
NTC045-AD1G-G160T		160±50 gf	500,000
NTC045-AD1G-G260T		260±70 gf	300,000



TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.2		SIGNATURES	DATE	MODEL
	UNIT mm	DRAWER Jane Shen	2016.05.16	TITLE TACT SWITCH
	SCALE 5/1	CHECKED		
		REVIEWED		NO. See Model No.
		APPROVALS		

TAIWAN MISAKI ELECTRONICS CO., LTD.

Dennis Jfung 2016.05.16



5	CONTACT PLATE	1	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	COLOR: <input type="checkbox"/> 160/BLACK, <input checked="" type="checkbox"/> 120,260/NATURE		
1	COVER	1	STAINLESS STEEL PLATE			
NO.	PART NAME	Q'TY	MATERIAL	SPECIFICATION		
				SIGNATURES	DATE	M O D E L
				DRAWN Jane Shen	2016.05.16	TITLE TACT SWITCH
				CHK'D		
				REV'D		
				APP'D Dennis Hung	2016.05.16	NO. NTC045-AD1G-B120T
SYM	DESCRIPTION	DATE	APPROVED			DWG NO. NTC045-12
TAIWAN MISAKI ELECTRONICS CO.,LTD.						

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

Model: NTC045-A(D,E)1G 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℃

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.

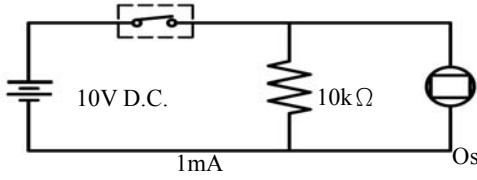
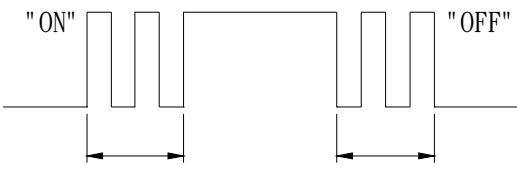
5. Electrical Performance:

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.

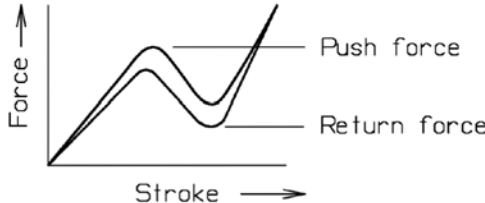
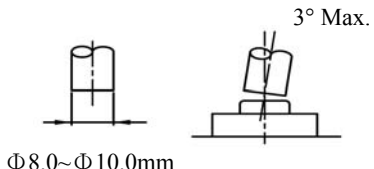
			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			Dennis Hung			Jane Shen 2016.05.17	SE-TC20N
							PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					1/5

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>Switch</p>  <p>10V D.C. 10kΩ 1mA Oscilloscope</p>  <p>"ON" "OFF"</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>Force ↑ Push force Return force Stroke →</p>  <p>3° Max. Φ8.0~Φ10.0mm</p>	<p>Push force: 120 +/-50 gf 160 +/-50 gf 260 +/-70 gf</p>

APPROVED BY REVIEWED BY CHECKED BY DESIGNED BY SPEC NO.

Dennis Hung

Jane Shen
2016.05.17

SE-TC20N

PAGINATE

A NEW RELEASE

SYM DISCRIPTION

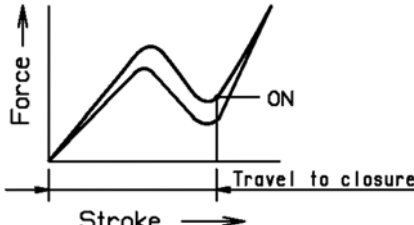
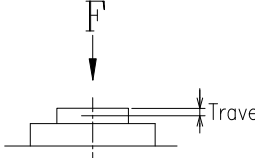
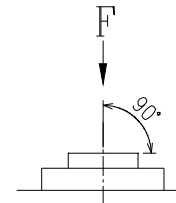
DATE

2/5

TAIWAN MISAKI ELECTRONICS CO., LTD.

SPECIFICATIONS FOR TACT SWITCH

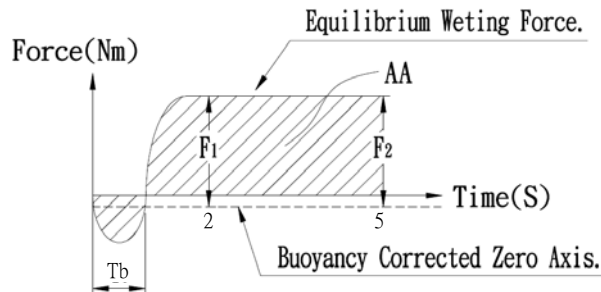
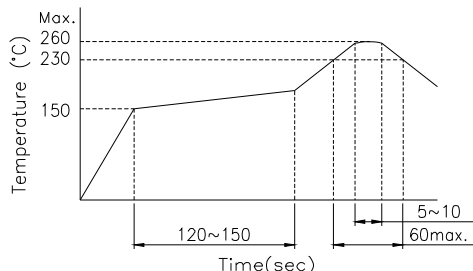
RoHS Compliant

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>  	0.3 +0.1/-0.1 mm.
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>

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
						Jane Shen	SE-TC20N
						2016.05.17	PAGINATE
A	NEW RELEASE		Dennis Hung				
SYM	DISCRIPTION	DATE					3/5

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	Conform to the criteria in the left table.							
		<div></div> <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
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									
6.6	Solder Heat Resistance	(1) Manual soldering temperature: Temperature: 350℃ Max. Time: 3 Sec. Max. (2) Reflow Soldering: Number of reflow pass: 2 cycles.	Shall be free form pronounced deforming in appearance. Item 5.1~5.4 shall be satisfied. Item 6.1~6.2 shall be satisfied.							
		<div></div>								

APPROVED BY REVIEWED BY CHECKED BY DESIGNED BY SPEC NO.

Dennis Hung

Jane Shen
2016.05.17

SE-TC20N

PAGINATE

A NEW RELEASE

SYM DISCRIPTION

DATE

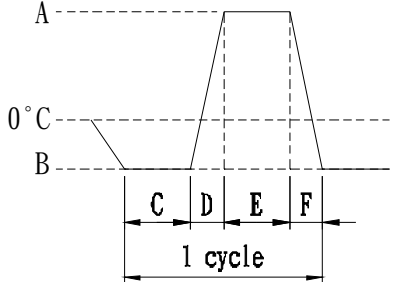
4/5

TAIWAN MISAKI ELECTRONICS CO., LTD.

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.  <p>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 1 cycle</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. (2) Push force: Maximum value of operation force. (3) Operation number: 120gf:1,000,000 times. 160gf:500,000 times. 260gf:300,000 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.

APPROVED BY

REVIEWED BY

CHECKED BY

DESIGNED BY

SPEC NO.

Dennis Hung

Jane Shen
2016.05.17

SE-TC20N
PAGINATE

A NEW RELEASE

SYM DISCRIPTION

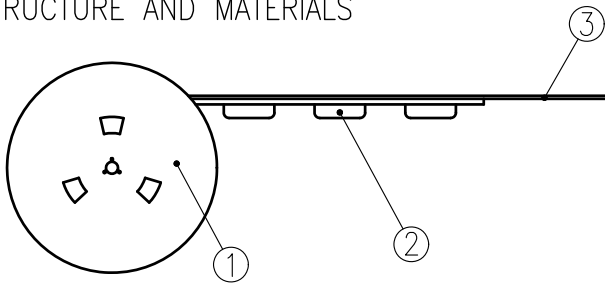
DATE

5/5

THE PACKING SPECIFICATIONS

RoHS Compliant

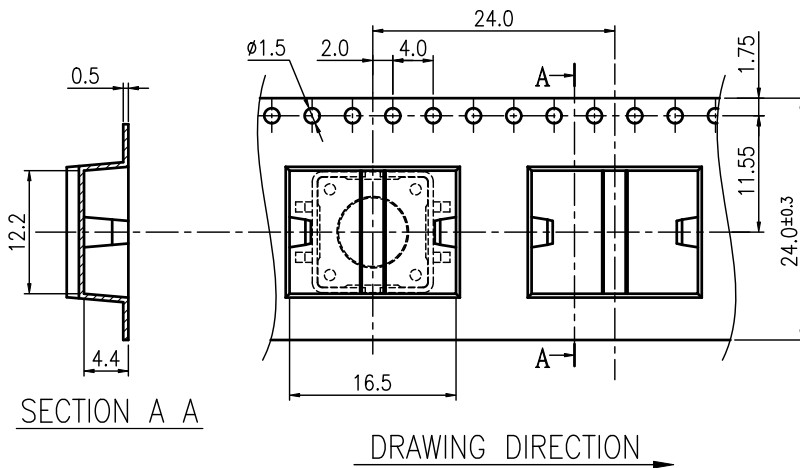
1.STRUCTURE AND MATERIALS



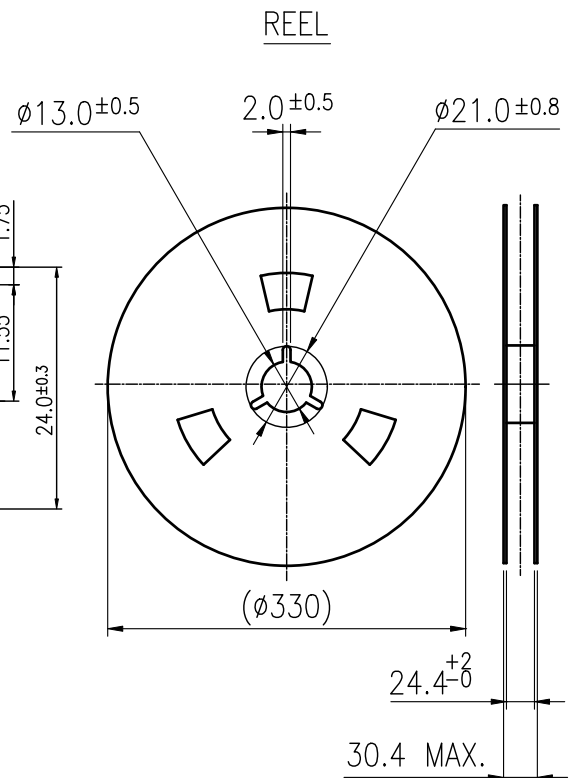
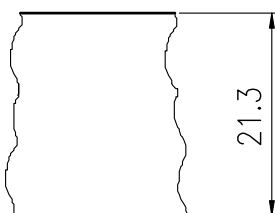
③	COVER TAPE	POLYESTER
②	CARRIER TAPE	POLYSTYRENE
①	REEL	POLYSTYRENE
NO.	PARTS NAME	MATERIALS

- PACKAGING QUANTITY : 400 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 ACCETABLE 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° ~ 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



COVER TAPE



				APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	MODEL NO.
							Jane Shen	NTC045-AD1G-B120T
							2016.05.16	PAGINATE. 1/1
								SPEC NO. P-781
SYM	DISCRPTION	DATE	APPROVED					

TAIWAN MISAKI ELECTRONICS CO.,LTD.