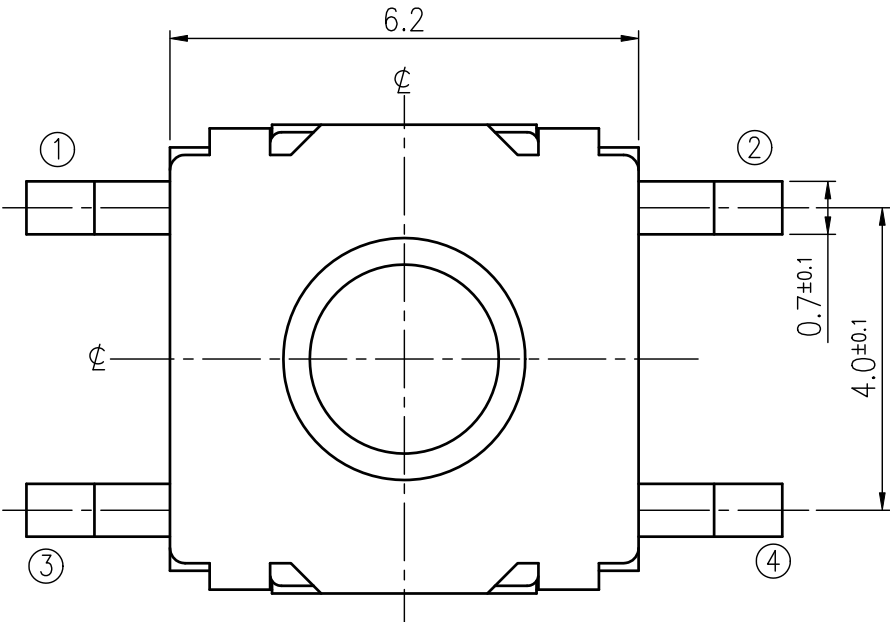


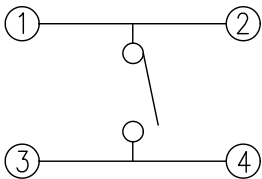
RoHS Compliant



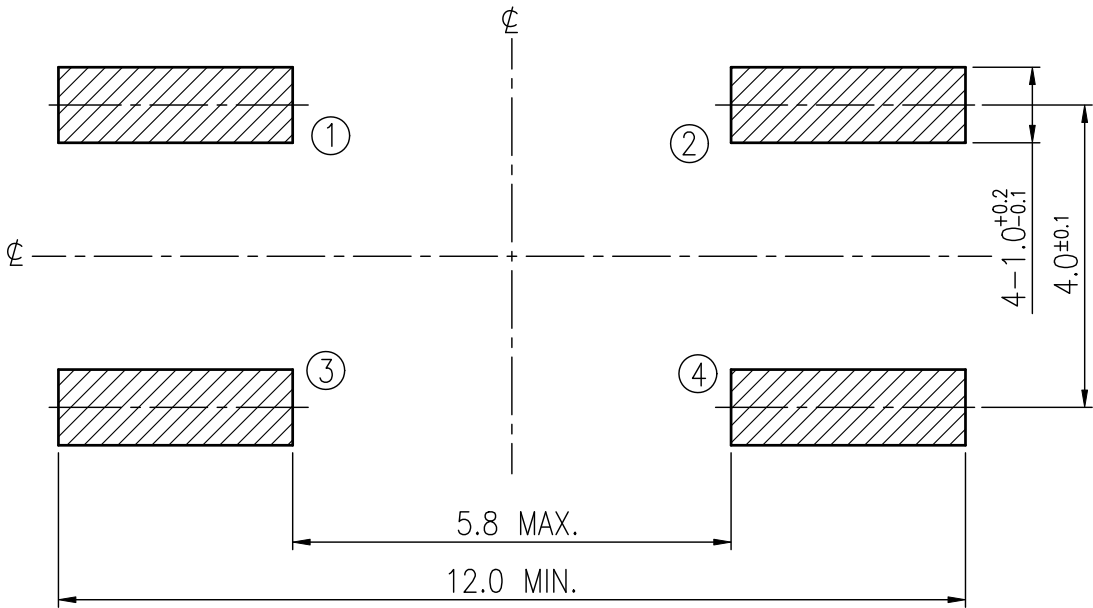
REVISIONS							
Rev	DESCRIPTION	DATE	DRAWER	Rev	DESCRIPTION	DATE	DRAWER
A	Initial Drawing	2018.10.04	Jane Shen	C			
B				D			
SPECIFICATIONS							
RATING		DC24V 50mA		TIMING			
CONTACT RESISTANCE		100mΩ MAX.		OPERATION (TORQUE)		160±50 gf	
INSULATION RESISTANCE		DC500V – 100MΩ MIN.		STROKE (ANGLE)		0.35±0.2 mm	
WITHSTAND VOLTAGE		AC250V – 1 MINUTE.		LIFE		5,000,000 CYCLES	
REMARKS:		Waterproof Grade : IP67					



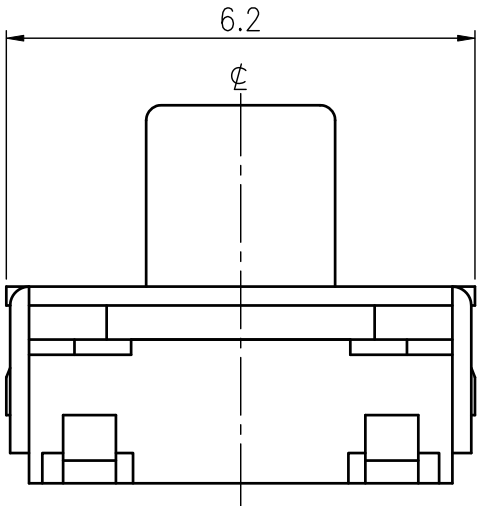
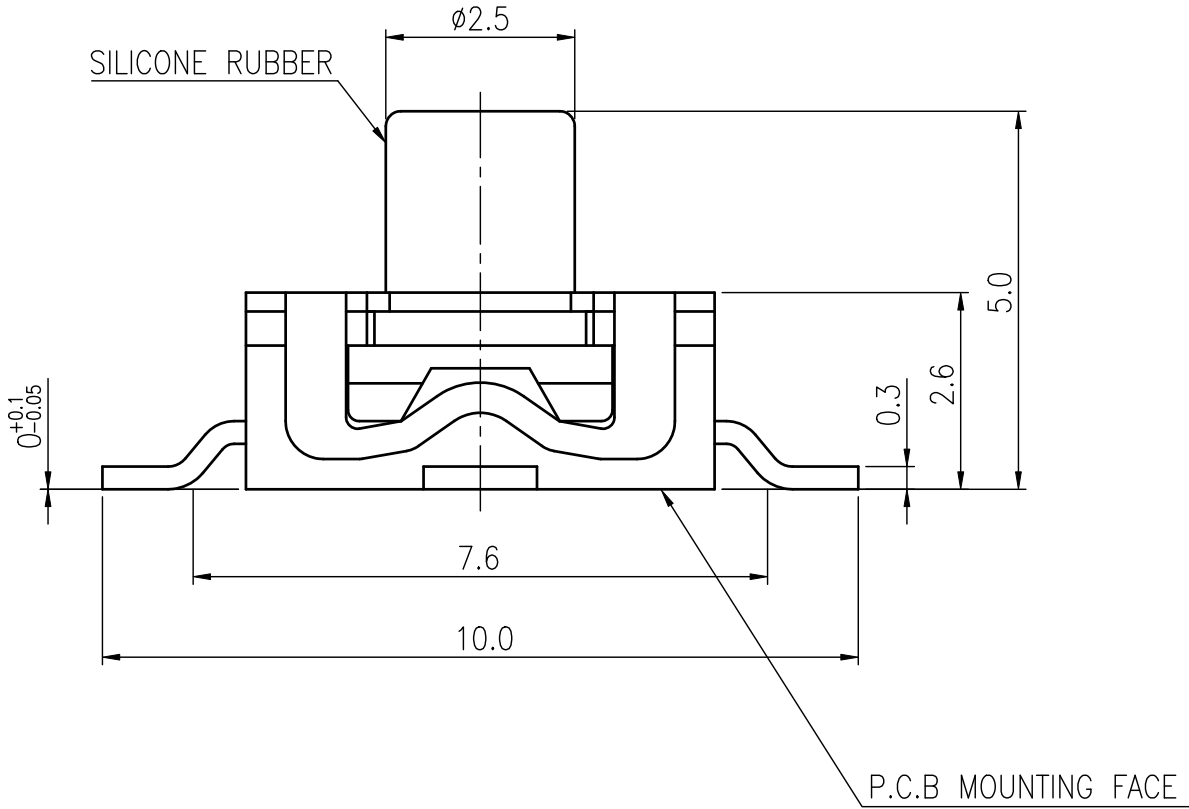
SCHEMATIC



RECOMMENDED P.C.B LAYOUT

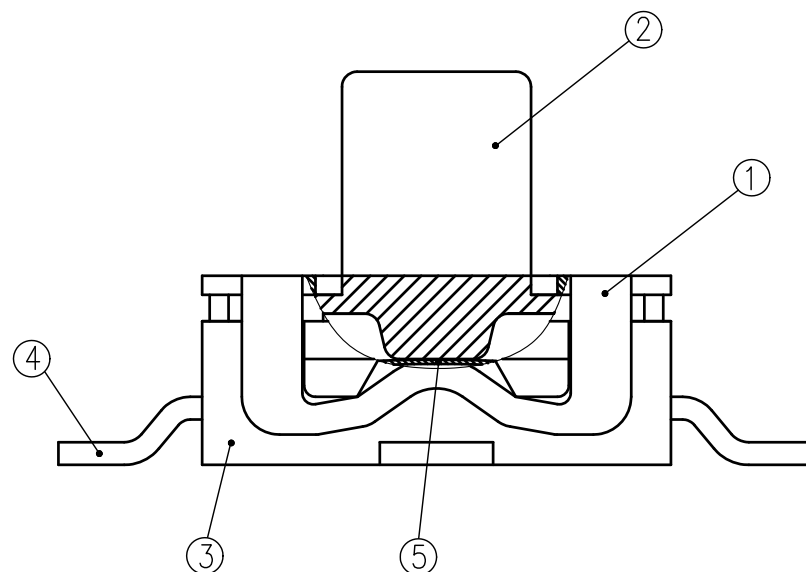


HATCHED AREA SHOWS SOLDERING LAND



TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.2	SIGNATURES		DATE	MODEL
	DRAWER	Jane Shen	2018.10.04	TITLE TACT SWITCH
	CHECKED			
	UNIT	mm	SCALE	10/1
	REVIEWED	Landy Su	2018.10.04	NO. NTC202-AA1G-50160TX
	APPROVALS	Dennis Hung	2018.10.04	

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5	CONTACT PLATE	2	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	SILICON RUBBER	WHITE COLOR
1	COVER	1	STAINLESS STEEL PLATE	
NO.	PART NAME	Q'TY	MATERIAL	SPECIFICATION
				SIGNATURES
				DATE
				M O D E L
				DRAWN Jane Shen 2018.10.04
				CHK'D
				REV'D Landry Pu 2018.08.04
				APP'D Dennis Hung 2018.08.04
				TITLE TACT SWITCH
				NO. NTC202-AA1G-50160TX
				DWG NO. TC202-18
SYM	DESCRIPTION	DATE	APPROVED	
TAIWAN MISAKI ELECTRONICS CO.,LTD.				

# SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

Model: NTC\_202-AA1(G,U)- 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:24V D.C. , 50mA.

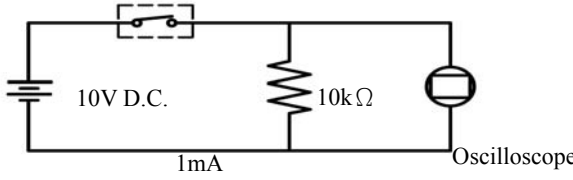
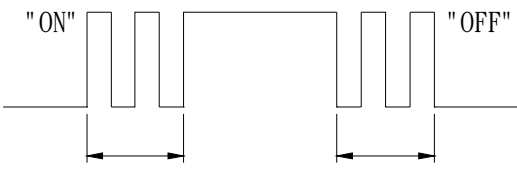
## 5. Electrical Performance:

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.	100MΩ 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.

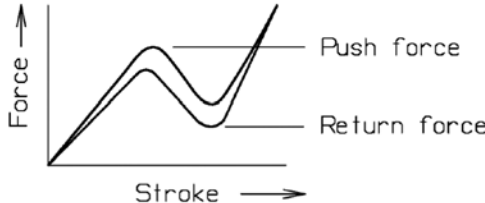
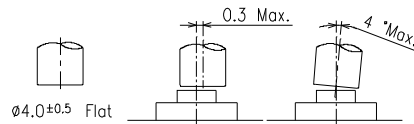
			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
						Jane Shen	SE-TC47N
						2017.10.13	PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					1/5

# 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: <math>\leq 1\text{m sec}</math> OFF: <math>\leq 1\text{m sec.}</math></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>ø4.0±0.5 Flat 0.3 Max. 4° Max.</p>	<p>Push force: 160±50 gf</p>

APPROVED BY

REVIEWED BY

CHECKED BY

DESIGNED BY

SPEC NO.

*Dennis Hung*

Jane Shen  
2017.10.13

SE-TC47N  
PAGINATE

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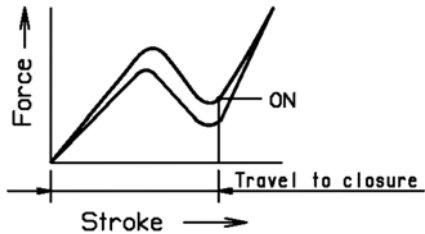
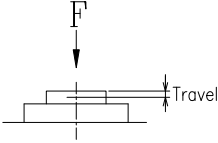
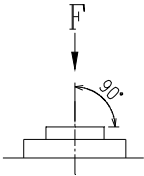
SYM DISCRIPTION

DATE

2/5

# SPECIFICATIONS FOR TACT SWITCH

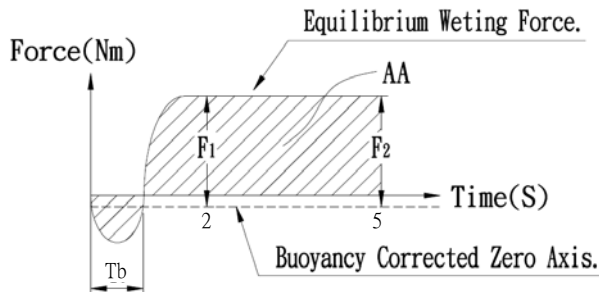
RoHS Compliant

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>  	0.35±0.2 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 15 seconds.</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>

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# SPECIFICATIONS FOR TACT SWITCH

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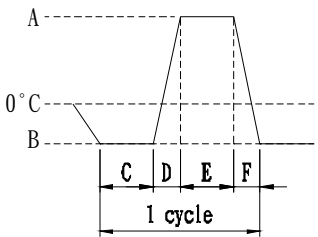
No.	Items	Test conditions	Specifications							
6.4	Solderability	Test Temperature : 235 ± 5℃ Immersion Angle : 90° Immersion Speed : 1 mm/sec. Immersion Depth : 0.1mm Dwell Time : 5 seconds	Conform to the criteria in the left table.							
		<div></div> <table><tr><th>Para.</th><th>Criteria</th></tr><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									
6.5	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 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					

# 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 a drop water. (5) Standard conditions after test: 1 Hour.	Contact resistance: <u>500mΩ</u> Max Of item 5.2~5.4 shall be satisfied. Of 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 a drop water. (4) Standard conditions after test: 1 Hour.	
7.4	Waterproof test	Immersion tank water-level on enclosure: 0.15 M above top. 1 M above bottom. Duration of test : 30 min.	
7.5	Temperature cycle	(1) Test cycle: <u>20</u> cycles. (2) Standard conditions after test: 1 Hour.   <p>A: <math>+85\pm 2^{\circ}\text{C}</math> B: <math>-40\pm 2^{\circ}\text{C}</math> C: 2 hour D: 1 hour E: 2 hour F: 1 hour</p>	

## 8. Durability:

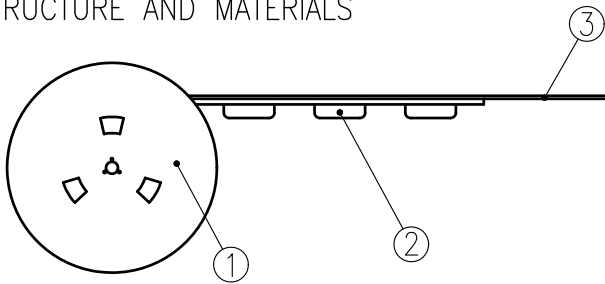
No.	Items	Test conditions	Specifications
8.1	Life Test	(1) 5V D.C. , 5mA Resistance load. (2) Operating speed: 90 cycles/minute. (2) Push force: Maximum value of operation force. (3) Operation number: 5,000,000 times.	Contact Resistance: 10Ω MAX.  Bounce: 20m sec Max.(ON,OFF)  Operating Force: Within $\pm 30\%$ of specifications. Item 5.2 shall be satisfied. Item 6.2 shall be satisfied.

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# THE PACKING SPECIFICATIONS

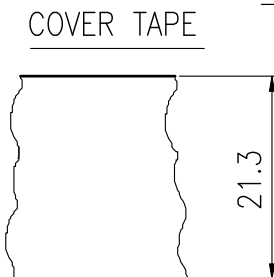
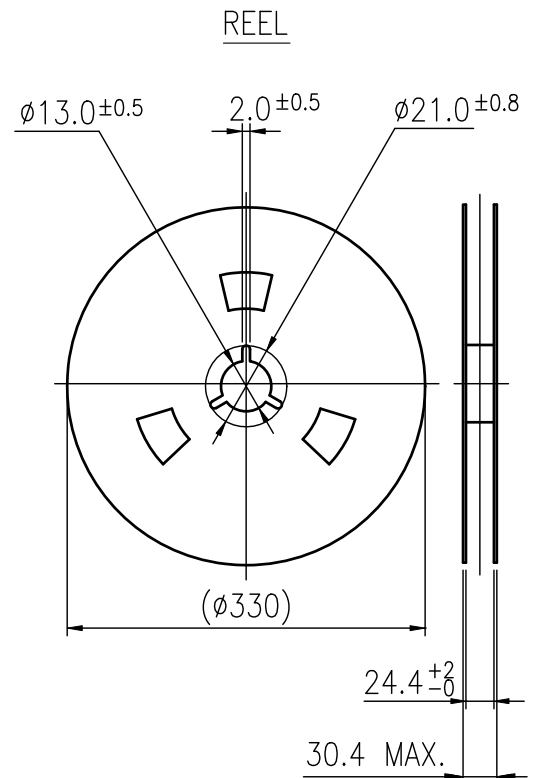
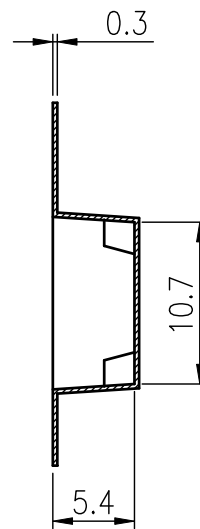
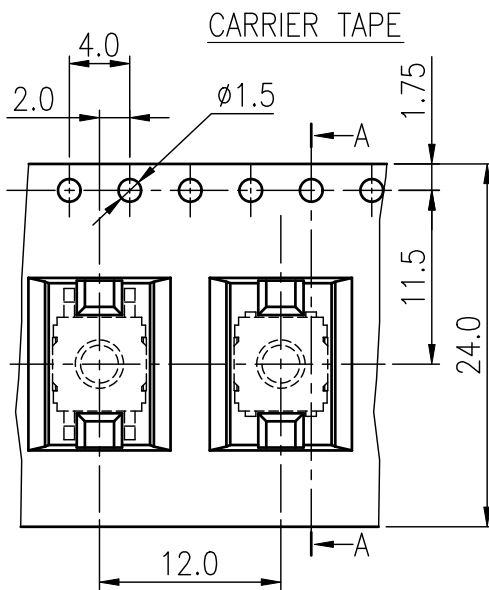
RoHS Compliant

## 1.STRUCTURE AND MATERIALS



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

- PACKAGING QUANTITY : 1000 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 :



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							Jane Shen	NTC 202-AA1 -5 160
							2017.10.17	PAGINATE.
								1/1
								SPEC NO.
								P-772
SYM	DISCRPTION	DATE	APPROVED					

TAIWAN MISAKI ELECTRONICS CO.,LTD.