

RoHS Compliant

For Reference Only

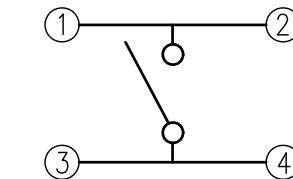
REVISIONS

Rev	DESCRIPTION	DATE	DRAWER	Rev	DESCRIPTION	DATE	DRAWER
A	Initial Drawing	2024.05.20	Jane Shen	C			
B				D			

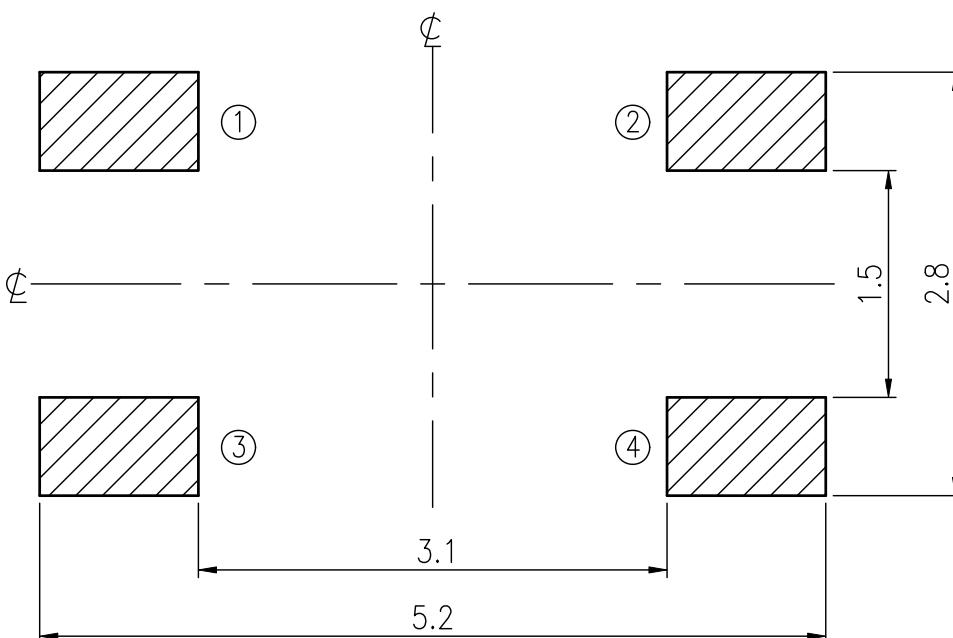
SPECIFICATIONS

RATING	DC16V 50mA	TIMING
CONTACT RESISTANCE	500mΩ MAX.	OPERATION (TORQUE)
INSULATION RESISTANCE	DC500V – 100MΩ MIN.	STROKE (ANGLE) 0.2±0.1 mm
WITHSTAND VOLTAGE	AC250V – 1 MINUTE.	LIFE CYCLES
REMARKS:		

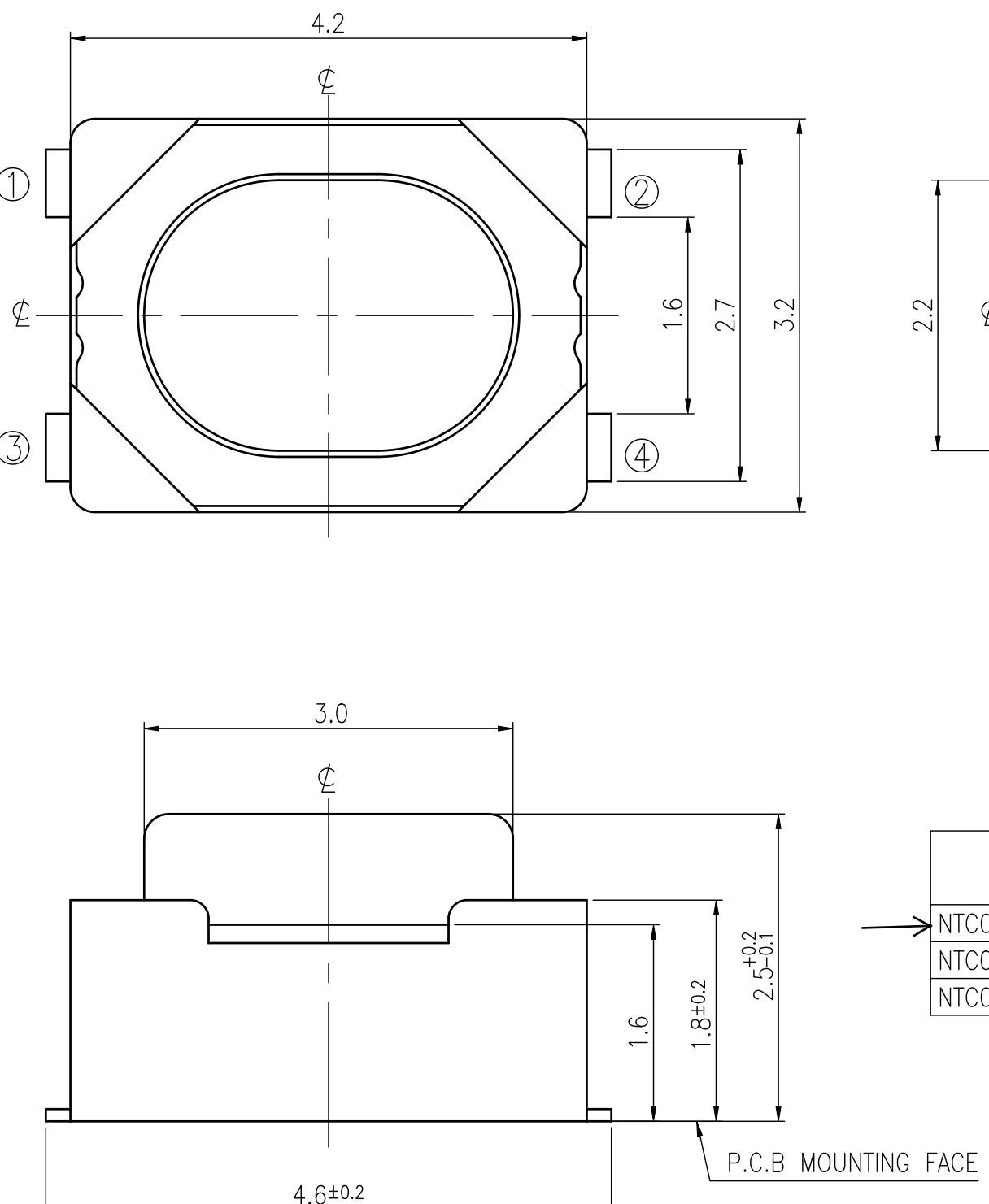
SCHEMATIC



P.C.B LAYOUT



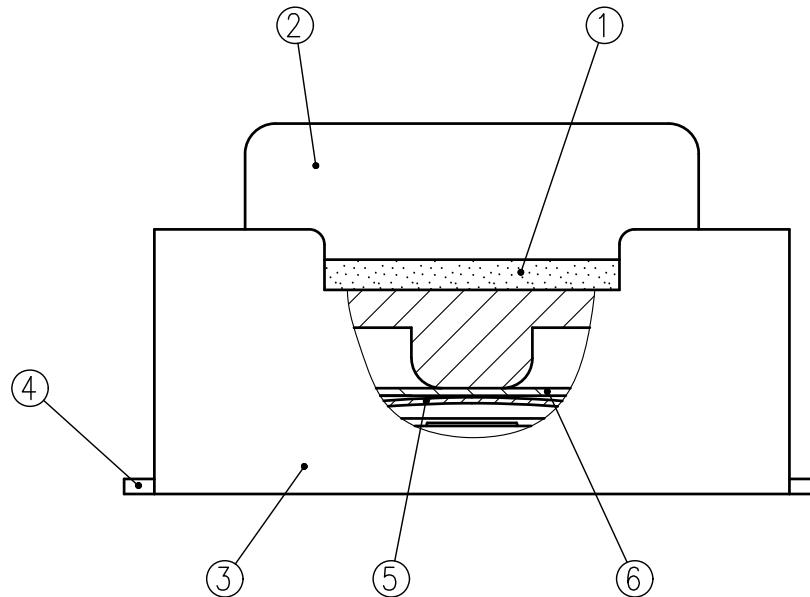
MODEL NO.	OPERATING FORCE	LIFE
NTC013-K-A16001	160±50gf	100,000
NTC013-K-A26001	260±70gf	50,000
NTC013-K-A40001	400±100gf	100,000



TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.1			SIGNATURES		DATE	MODEL		
			DRAWER	Jane Shen				
	UNIT mm	SCALE 20/1	REVIEWED		2024.05.20	TITLE TACT SWITCH		
			APPROVALS	Qiyuan Chuang				

TAIWAN MISAKI ELECTRONICS CO., LTD.

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NO.	PART NAME	Q'TY	MATERIAL		SPECIFICATION		
6	TAPE	1	POLYIMIDE				
5	CONTACT PLATE	1	STAINLESS STEEL PLATE		Ag PLATING OVER Ni PLATING		
4	TERMINAL	4	COPPER ALLOY		Ag PLATING OVER Ni PLATING		
3	FRAME	1	LIQUID CRYSTAL POLYMER		NATURAL COLOR		
2	STEM	1	LIQUID CRYSTAL POLYMER		COLOR <input checked="" type="checkbox"/> 160:BLACK, <input type="checkbox"/> 260:NATURAL		
1	COVER	1	STAINLESS STEEL PLATE				
SYM	DESCRIPTION	DATE	APPROVED	SIGNATURES	DATE	M O D E L	
				DRAWN Jane Shen	2024.05.20	TITLE	TA C T S W I T C H
				CHK'D			
				REV'D		NO.	N T C 013-K-A160 01
				APP'D Qiu Yuan Chuang	2024.05.20		
				DWG NO.		T C 013-K-02	
T A I W A N M I S A K I E L E C T R O N I C S C O . , L T D .							

SPECIFICATIONS FOR TACT SWITCH

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Model: NTC_013-K-_ 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: -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: 16V D.C. , 50mA.

5. Electrical Performance:

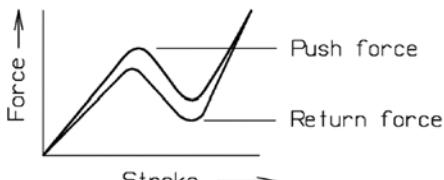
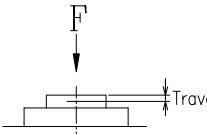
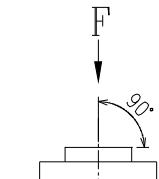
No.	Items	Test conditions	Specifications
5.1	Contact Resistance	Shall be measure at 1kHz±200Hz (MAX. 20mV, MAX. 50mA.) or 1 A, 5V D.C. By voltage drop method.	500mΩ Max.
5.2	Insulation Resistance	Shall be measured by applying 500V D.C. Between all terminals and between the terminals and the frame for 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.
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>ON: 10m sec Max. OFF:10m sec Max.</p>

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			QIUYUAN CHUANG			Jane Shen	SE-TC30N
A	NEW RELEASE						PAGINATE
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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>160+/-50 gf 260+/-70 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> 	<p>Travel (Stroke):</p> <p>0.2 +/-0.1 mm.</p>
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>3 kgf 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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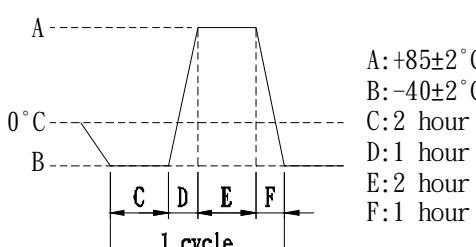
		<p>Test Temperature : $235 \pm 5^\circ\text{C}$ Immersion Angle : 90° Immersion Speed : 1 mm/sec. Immersion Depth : 0.1mm Dwell Time : 5 seconds</p> <p>Force(Nm)</p> <p>Equilibrium Wetting Force.</p> <p>AA</p> <p>F1</p> <p>F2</p> <p>Time(S)</p> <p>Buoyancy Corrected Zero Axis.</p>	Conform to the criteria in the left table.										
6.4	Solderability	<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	Area calculated using sample buoyancy and 50% maximum theoretical force	
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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: 350°C Max. Time: 3 Sec. Max. (2) Reflow Soldering: Number of reflow pass: 2 cycles.</p> <p>Temperature (°C)</p> <p>Max. 260</p> <p>230</p> <p>150</p> <p>120~150</p> <p>5~10</p> <p>60max.</p> <p>Time(sec)</p>	<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.</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.	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: $+85\pm2^{\circ}\text{C}$ B: $-40\pm2^{\circ}\text{C}$ C: 2 hour D: 1 hour E: 2 hour F: 1 hour</p>

8. Durability:

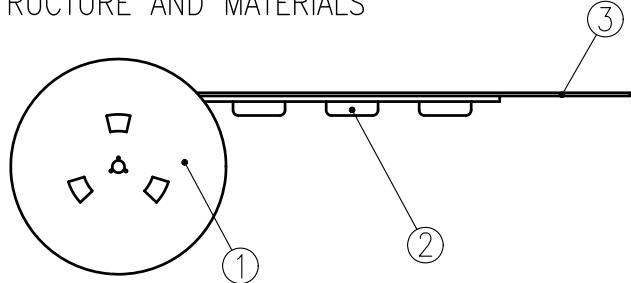
8.1	Life Test	(1) 5V D.C. , 5mA Resistance load. (2) Operating speed: 60 cycles/minute. (3) Push force: Maximum value of operation force. (4) Operation number: $160\&400\text{gf}=100,000$ times. $260\text{gf}=50,000$ times.	Contact Resistance: 2Ω MAX. Bounce: 20m sec Max.(ON,OFF) Operating Force: Within $\pm30\%$ of specifications. Item 5.2 shall be satisfied. Item 6.2 shall be satisfied.
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							SE-TC30N
							PAGINATE
A	NEW RELEASE		QIUYUAN CHUANG			JANE SHEN	
SYM	DISCRIPTION	DATE				2024.05.20	4/4

THE PACKING SPECIFICATIONS

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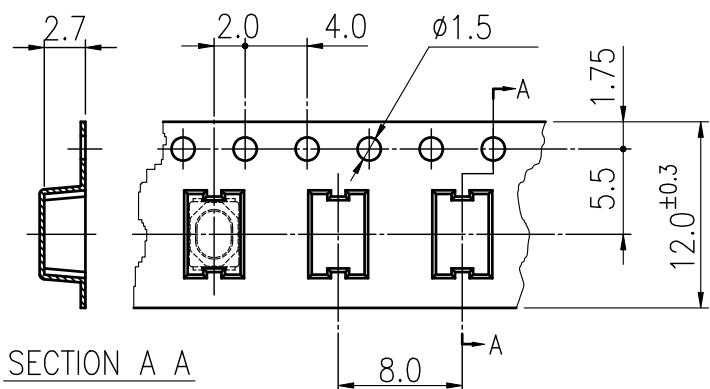
1. STRUCTURE AND MATERIALS



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

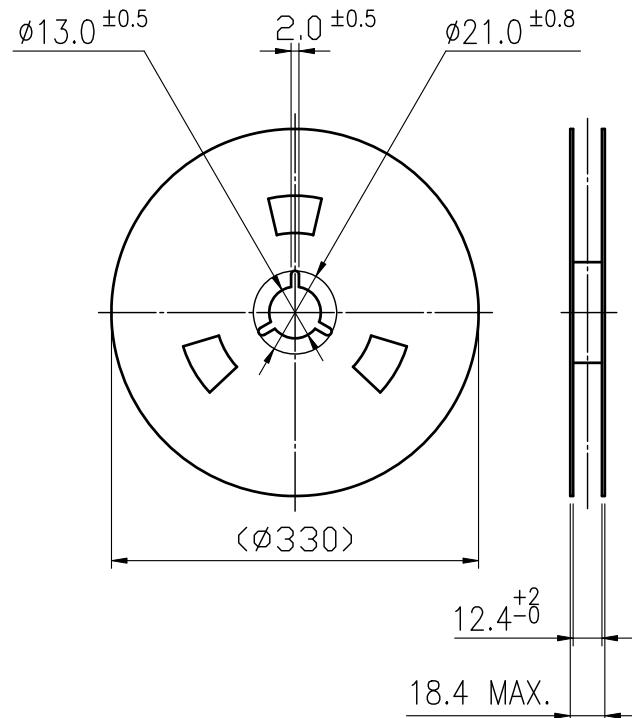
- PACKAGING QUANTITY : 2,900 PCS/REEL
- MORE THAN 10 EMPTY POCKETS SHOULD BE REMAINED AT BOTH ENDS OF THE CARRIER TAPE FOR EACH REEL.
- SHORTAGE LESS THAN 10 PCS A REEL IS ACCEPTABLE BUT MORE THAN 3 RUNNING POCKETS SHORTAGE IS NOT ALLOWED.
- STRIPPING STRENGTH OF COVER TAPE IS BETWEEN 10 gf TO 130 gf AND STRIPPING ANGLE SHOULD BE WITHIN 165° ~ 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

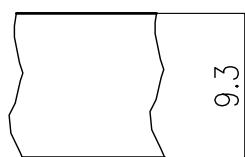


DRAWING DIRECTION

REEL



COVER TAPE



SYM	DISCRIPTION	DATE	APPROVED	APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	MODEL NO.
				Qiu Yuan Chuang			Jane Shen	NTC_013-K-
								PAGINATE.
								1/1
								SPEC NO.
								P-433