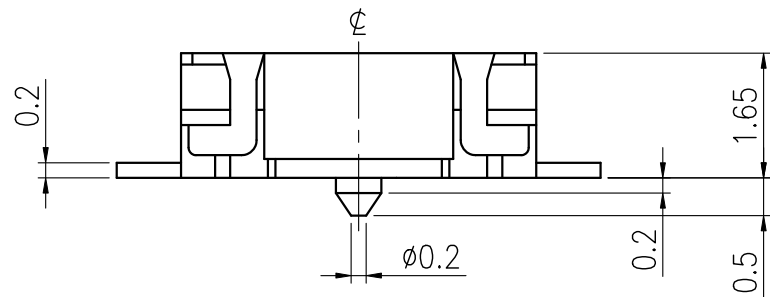
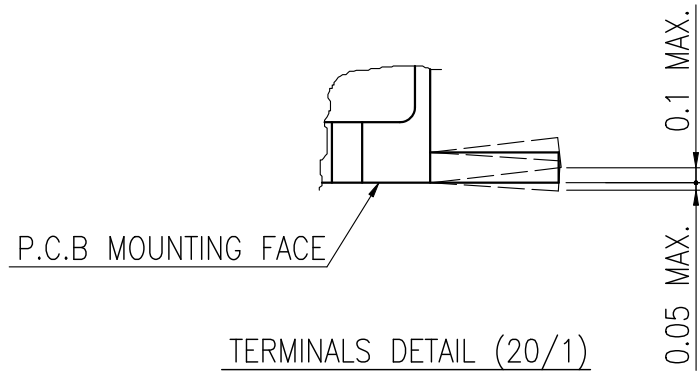
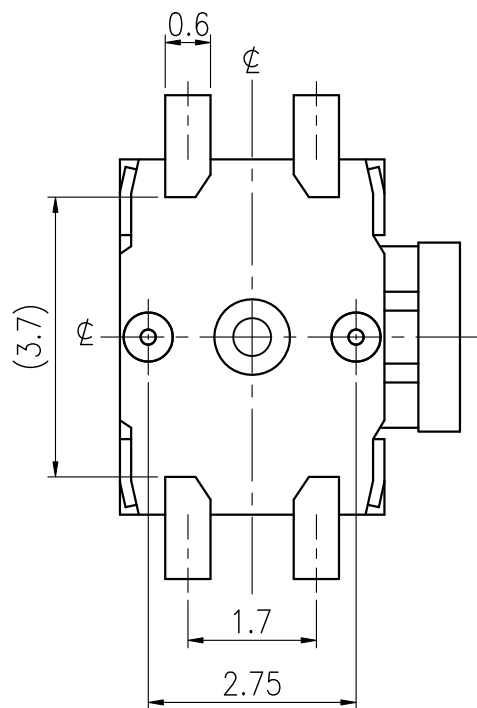
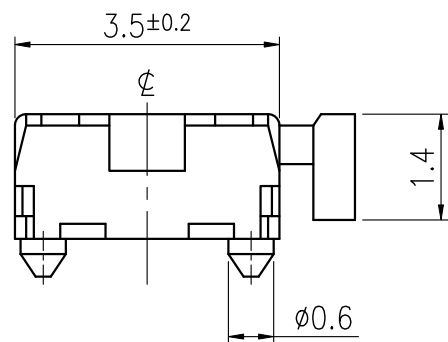
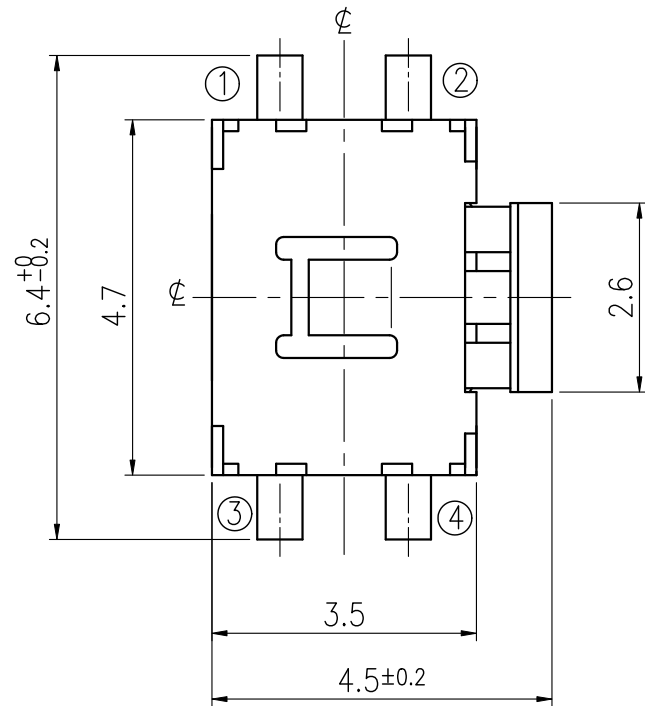


RoHS Compliant

T-MEC
TAIWAN MISAKI ELECTRONICS CO., LTD.
ISSUED
2013.01.09
RD DCC



MODEL NO.	OPERATING FORCE	STROKE	LIFE/CYCLES
NTC316-AC1G-A160T	160±50gf	0.25±0.1mm	200,000
NTC316-AC1G-A220T	220±50gf	0.3 ^{+0.1} _{-0.2} mm	100,000

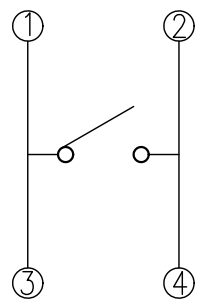
REVISIONS

Rev	DESCRIPTION	DATE	DRAWER	Rev	DESCRIPTION	DATE	DRAWER
A	Initial Drawing	2012.12.20	Jane Shen	C			
B				D			

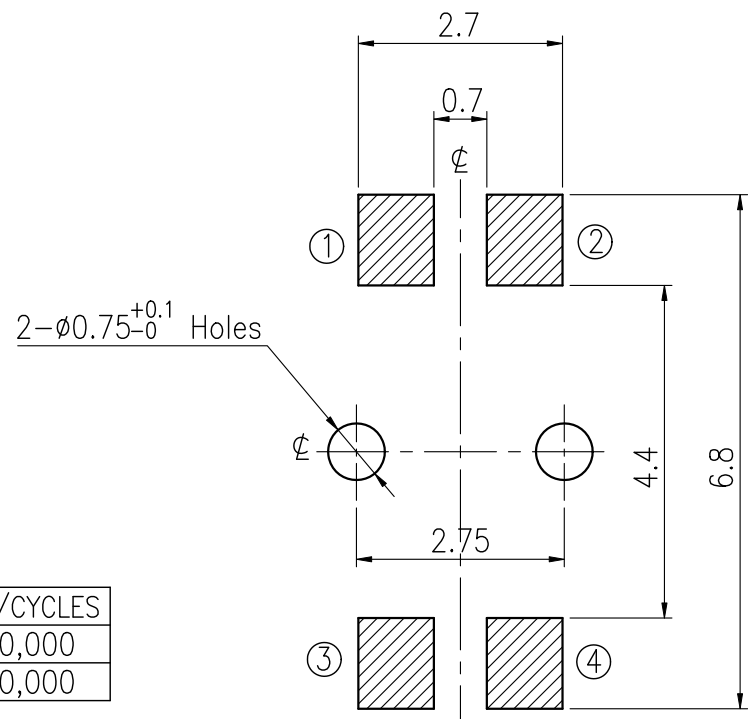
SPECIFICATIONS

RATING	DC12V 50mA	TIMING	
CONTACT RESISTANCE	100mΩ MAX.	OPERATION (TORQUE)	
INSULATION RESISTANCE	DC500V-100MΩ MIN.	STROKE (ANGLE)	
WITHSTAND VOLTAGE	AC250V- MINUTE	CONTACT RESISTANCE	1 Ω MAX.
REMARKS:		(AFTER CYCLES LIFE TEST)	

SCHEMATIC



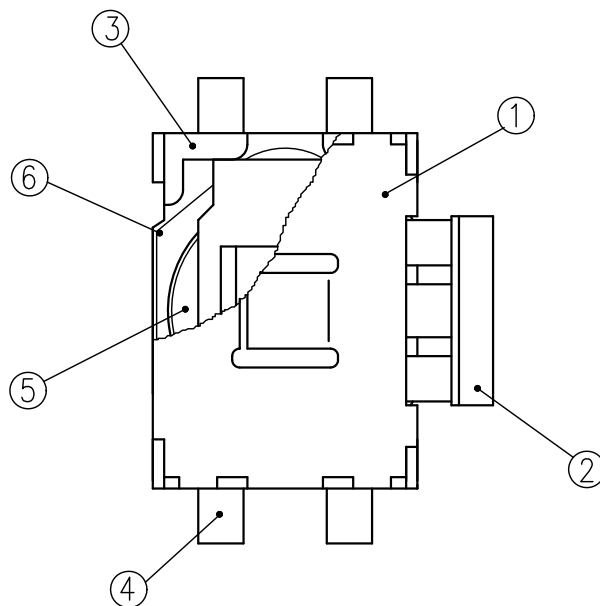
P.C.B MOUNTING PLAN

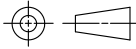


HATCHED AREA SHOWS SOLDERING LAND

TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.1		SIGNATURES		DATE	MODEL
		DRAWER	Jane Shen	2012.12.20	TACT SWITCH
		CHECKED	Jamie Li	2012.12.20	
		REVIEWED			NO. See Model No.
		APPROVALS	Dennis Hung	2012.12.20	

TAIWAN MISAKI ELECTRONICS CO., LTD.



6	TAPE	1	POLYIMIDE	
5	CONTACT PLATE	1	STAINLESS STEEL PLATE	Ag-PLATING
4	TERMINAL	4	COPPER ALLOY	Ag PLATING OVER Ni PLATING
3	FRAME	1	POLYAMIDE RESIN	☒ C/BLACK, ☐ D/NATURE COLOR
2	STEM	1	POLYAMIDE RESIN	☒ 160/NATURE, ☐ 220/BLACK COLOR
1	COVER	1	STAINLESS STEEL PLATE	
NO.	PART NAME	Q'TY	MATERIAL	SPECIFICATION
				SIGNATURES
				DATE
				M O D E L
				DRAWN Jane Shen
				2012.12.20
				CHK'D Jamie Li
				2012.12.20
				REV'D
				APP'D Dennis Hung
				2012.12.21
SYM	DESCRIPTION	DATE	APPROVED	
TAIWAN MISAKI ELECTRONICS CO.,LTD.				
				DWG NO. TC316-01
				TITLE TACT SWITCH
				NO. NTC316-AC1G-A16 0T

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

Model: NTC316-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.

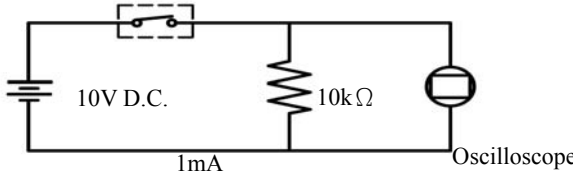
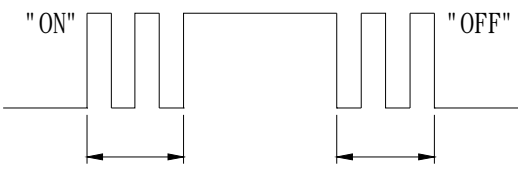
5. Electrical Performance:

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.

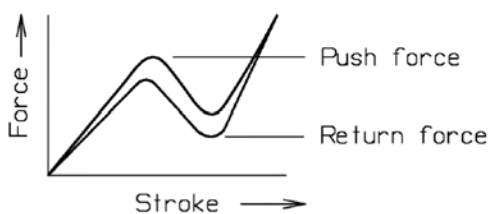
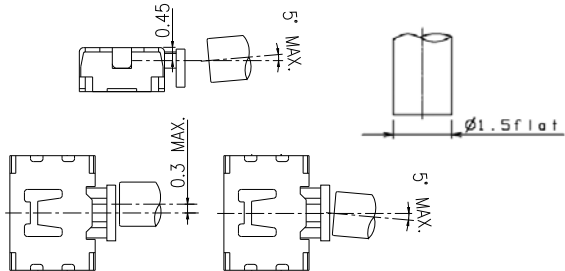
			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			<i>Dennis Hung</i>		Jamie Li	Jane Shen	SE-TC20N
			2011.08.04		2011.08.04	2011.07.21	PAGINATE
A	NEW RELEASE						
SYM	DISCRIPTION	DATE					1/5

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" "OFF"	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 →  0.45 5 MAX. 0.3 MAX. Ø1.5 flat 5 MAX.	Push force: 160 +/-50 gf 220 +/-50 gf Return force: 160 gf : 20 gf min. 220 gf : 30 gf min

APPROVED BY

REVIEWED BY

CHECKED BY

DESIGNED BY

SPEC NO.

Dennis Hung

Jamie Li
2011.08.04

Jane Shen
2011.07.21

SE-TC20N
PAGINATE

2011.08.04

A NEW RELEASE

SYM DISCRIPTION

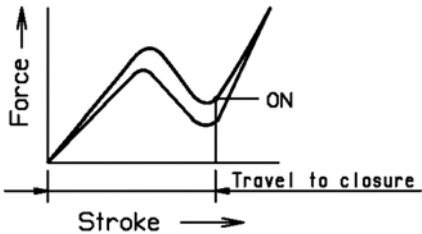
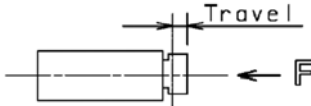
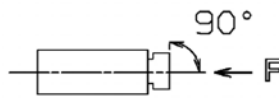
DATE

2/5

TAIWAN MISAKI ELECTRONICS CO., LTD.

SPECIFICATIONS FOR TACT SWITCH

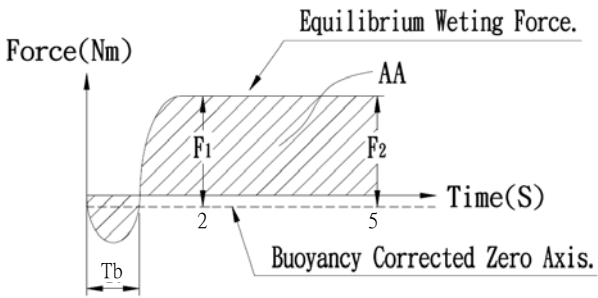
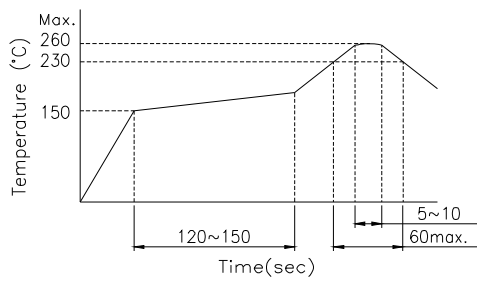
RoHS Compliant

No.	Items	Test conditions	Specifications
6.2	Travel	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.  	160 gf: 0.25 +/-0.1 mm. 220 gf: 0.3 +0.1/-0.2 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 15 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

			APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	SPEC NO.
			<i>Dennis Hung</i>		Jamie Li	Jane Shen	SE-TC20N
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A	NEW RELEASE						
SYM	DISCRIPTION	DATE					3/5

SPECIFICATIONS FOR TACT SWITCH

RoHS Compliant

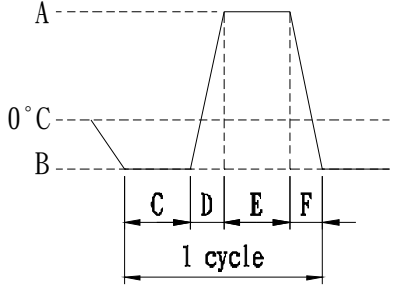
No.	Items	Test conditions	Specifications										
6.4	Solderability	Test Temperature : 235 ± 5℃ Immersion Angle : 90° Immersion Speed : 1 mm/sec. Immersion Depth : 0.1mm Dwell Time : 5 seconds  <table border="1" data-bbox="448 808 1062 1153"><thead><tr><th>Para.</th><th>Criteria</th></tr></thead><tbody><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	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 												

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							SE-TC20N
			<i>Dennis Hung</i>		Jamie Li	Jane Shen	PAGINATE
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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: $60\pm 2^{\circ}\text{C}$. (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:

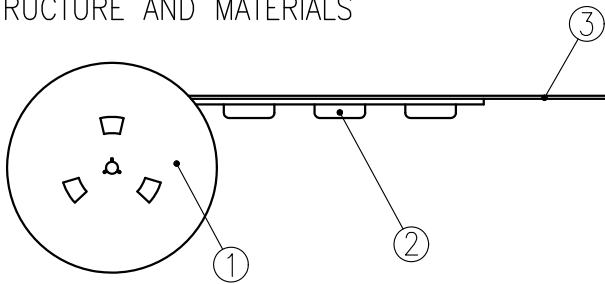
No.	Items	Test conditions	Specifications
8.1	Life Test	(1) 5V D.C. , 5mA Resistance load. (2) Operating speed: 120 cycles/minute. (2) Push force: Maximum value of operation force. (3) Operation number: 160gf:200,000 , 220gf:100,000 times.	Contact Resistance: 1 Ω MAX. Bounce: 20m sec Max.(ON,OFF) Operating 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 2011.08.04		Jamie Li 2011.08.04	Jane Shen 2011.07.21	SE-TC20N
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SYM	DISCRIPTION	DATE					5/5

THE PACKING SPECIFICATIONS

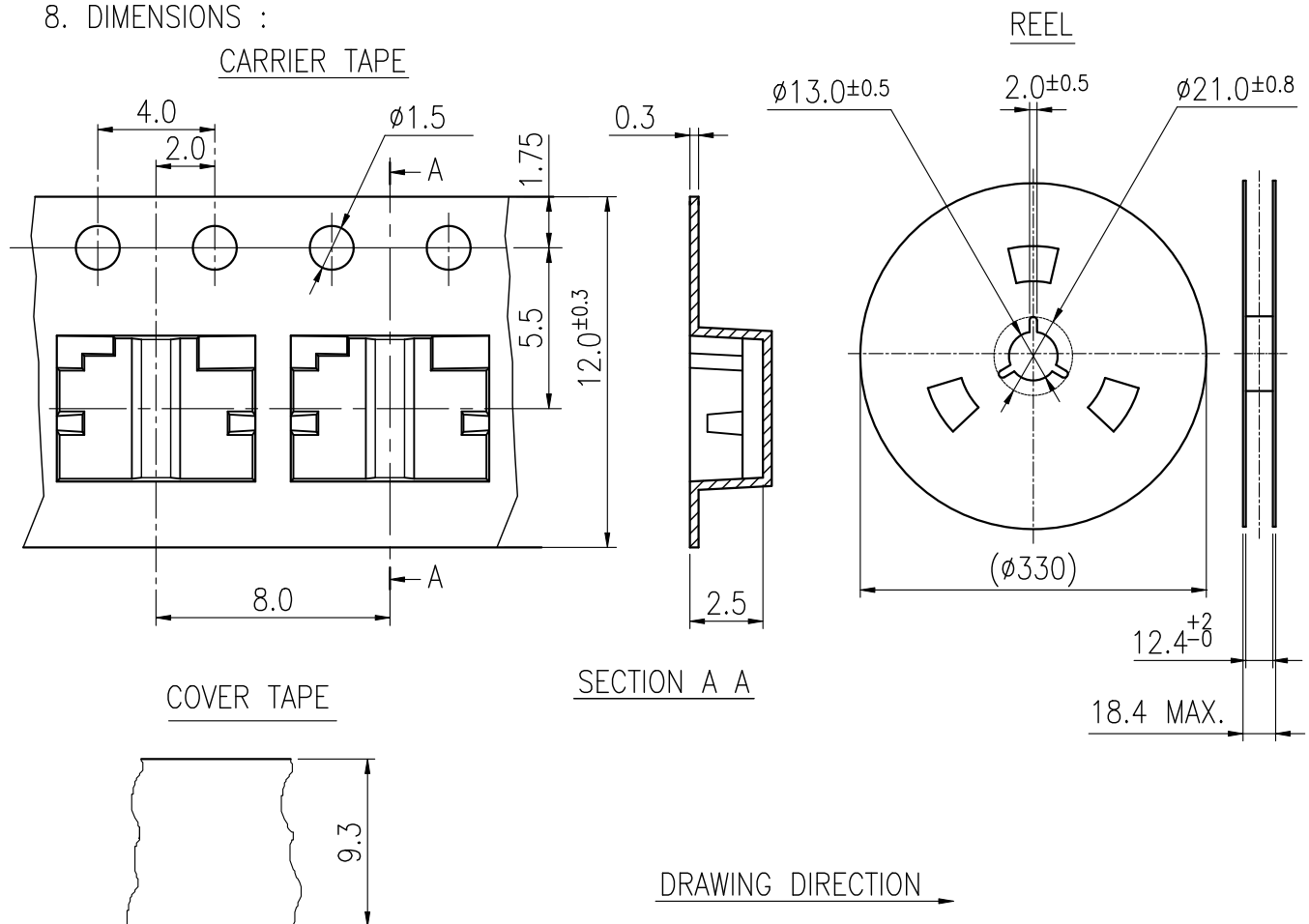
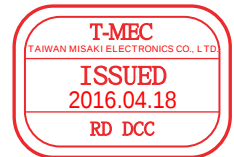
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1.STRUCTURE AND MATERIALS



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

- PACKAGING QUANTITY : 3,300 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 :



				APPROVED BY	REVIEWED BY	CHECKED BY	DESIGNED BY	MODEL NO.
								NTC316- AC1G-A160T
								PAGINATE.
								1/1
								SPEC NO.
								P-68
SYM	DISCRPTION	DATE	APPROVED					

TAIWAN MISAKI ELECTRONICS CO.,LTD.