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1. GENERAL MATTERS.

1.1 Application: This specification is applied to low current circuit tactile switch for electronic equipment.

1.2 Operating temperature range : -20 ~ 70℃, 45 ~ 85% RH

1.3 Storage temperature range : -30 ~ 80℃.However, 96 hours maximum for continuos storage over a range -20 ~ -30℃ and a range 70 ~ 80℃.

1.4 Test conditions

The standard test conditions shall be 5 ~ 35℃ in temperature, 45 ~ 85% RH and 860 ~ 1060mbar in atmospheric pressure.

Should any doubt arise in judgement, tests shall be conducted at 20±2℃, 65±5% RH and 860 ~ 1060mbar.

2. RATED VOLTAGE AND CURRENT.

12V DC, 50mA

3. ELECTRICAL PERFORMANCE

	PROPERTY	TEST CONDITION	PERFORMANCE
3.1	Contact arrangement		1 pole, 1 throw
3.2	Contact resistance	Measured at 10mA, 5V DC or by ohmmeter allowing a small current at 1KHz with 150% of Actuating force.	less than 100mΩ
3.3	Insulation resistance	100V DC is applied between terminals and between terminals and earth for 1 minute ±5 seconds.	greater than 100MΩ
3.4	Dielectric strength	250V AC (50~60HZ, cut-off current 0.5mA)is applied between terminals and between terminals and earth for 1 minute.	No insulation defect shall be observed
3.5	Bounce	Measured by lightly striking the center of the button stem at a rate of 3 operations/sec.	less than 10msec

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4. MECHANICAL PERFORMANCE

	PROPERTY	TEST CONDITION	PERFORMANCE
4.1	Actuating force	A gradually increasing load is applied to the center of the button stem.	160±50gf
4.2	Return force	After actuating, the load is gradually decreased until the stem returns to its free position.	greater than 40gf
4.3	Push strength	Switch shall be checked after following test. -. A static force of 3Kgf shall be applied to the direction of operation for 15 seconds. -. A static load of 1Kgf shall be applied to the direction of pulling for 15 seconds. -. A static force of 1Kgf shall be applied to the direction of operation for 15 seconds and a static force of 510gf -. shall be applied to the orthogonal direction of operation for 15 seconds. -. A static force of 5Kgf shall be applied to the direction of operation for 1 minute.	The requirement in Item 3 and 4.1, 4.2 shall be satisfied
4.4	Travel		0.35+0.2/-0.1mm
4.5	Terminal strength	A static load of 300gf shall be applied to the tip of terminal in the desired direction for 1 minute.	The requirement in Item 3 and 4.1, 4.2 shall be satisfied
4.6	Solderability	Solder bath temperature : 230±5℃ Dipping time : 3±0.5 sec.	95% or more of immersion area shall be covered with new solder
4.7	Solder heat resistance	Solder bath temperature : 260±5℃ Dipping time : 10±0.5 sec. Dipping depth : 1.0 ~ 1.5mm from the Case bottom After testing, the sample is allowed to stand under normal temperature and humidity conditions for 2 hour.	The requirement in Item 3 and 4.1, 4.2 shall be satisfied

5. DURABILITY

	PROPERTY	TEST CONDITION	PERFORMANCE
5.1	Operating life	100,000 cycles operation with a load of 150% of Actuating force at a rate of 2 cycles/sec. With a resistive load supplying 12V DC, 50mA	contact resistance : 500mΩ max. Bounce : 20m sec max. Actuating force : Within± 30% of the initial value
5.2	Vibration resistance	Vibration frequency range : 10 ~ 55 ~ 10Hz (1 cycle) Total amplitude : 1.5mm This motion shall be applied for a period of 2 hours in each of 3 mutually perpendicular axis.	The requirement in Item 3 and 4.1, 4.2 shall be satisfied

6.WEATHER PROOF

6.1	Cold heat proof	After testing at -25±2℃ for 96hrs, the sample is allowed to stand under normal temperature and humidity conditions for 2 hour and measurement is performed within 1 hour after that. Water drops should be wiped off.	The requirement in Item 3 and 4.1, 4.2 shall be satisfied
6.2	Dry heat proof	After testing at 85±2℃ for 96hrs, the sample is allowed to stand under normal temperature for 2 hour and measurement is performed within 1 hour after that.	
6.3	Damp heat proof	After testing at 40±2℃ and 90~95% in relative humidity for 96 hrs, the sample is allowed to stand under normal temperature and humidity conditions for 2 hour, and measurement is performed within 1 hour after that. Water drops should be wiped off.	Insulation resistance : greater than 10MΩ The Others, The requirement in Item3 and 4.1, 4.2 shall be satisfied
6.4	Thermal shock	Test conditions(1 cycle) : -. 1 Step : -25℃ 30 minute. -. 2 Step : +25℃ 5 minute. -. 3 Step : 85℃ 30 minute. -. 4 Step : +25℃ 5 minute. After the test conducted under 5 cycles, the sample is allowed to stand under normal temperature and humidity conditions for 2 hour, and the measurement is performed within 1 hour.	The requirement in Item 3 and 4.1, 4.2 shall be satisfied
6.5	Salt mist	Switch shall be checked after following test. Temperature : 35±2℃ Salt solution : 5±1%(Solids by weight) Duration : -. 8 hours spray, 16 hours pause(1 cycle) -. Total : 2 cycles After the test, salt deposit shall be removed in running water.	No remarkable corrosion shall be recongnized in metal part

7. AUTOMATIC SOLDERING CONDITIONS

(In case the automatic flow soldering is to be used)

7.1 Soldering temperature : less than 260℃.

7.2 Soldering time : continuous dipping duration shall not exceed 10 seconds.

7.3 Permissible soldering times : less than twice

(The second soldering would be conducted after the temperature goes down to a normal temperature)

7.4 Preheat temperature : less than 100℃

(circumferential temperature of the printed wiring board)

7.5 Preheat time : less than 45 seconds.

7.6 Flux streaming : Flux streaming shall be controlled so that it shall not swell beyond the printed wiring board where components are installed.

7.7 Other precautions : 1) Flux shall not be applied to the switch terminals and the part mounting surface of the Printed Wiring board before soldering.

2) Do not wash the switch after soldering.

8. The specification is applied in the radial taping for tactile switch.

9. Packaging materials

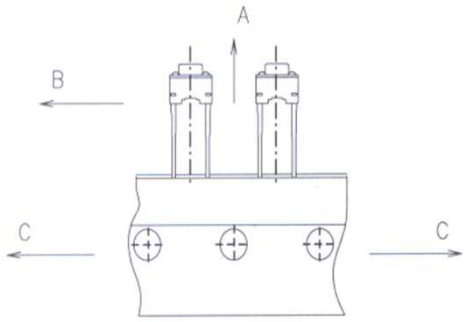
ITEM	DESCRIPTION
OUTER PACKAGE	CARTONS
INNER PACKAGE	CARTONS
ADHESIVE TAPE	503
CARRIER TAPE	JP-1 (PAPER)

10. Taping strength

10.1 When the force of 500gf is applied to A direction after taping, the switch should not be loosened or pulled out. Also the adjacent switches should not be loosened.

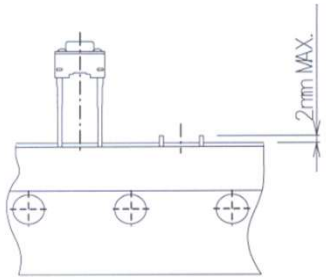
10.2 When the force of 100gf is applied to B direction for 3 seconds, the switch should not be titled.

10.3 When the force of 1.5Kgf is applied to C direction , carrier tape should not be separated.



11. Terminal cutting metho

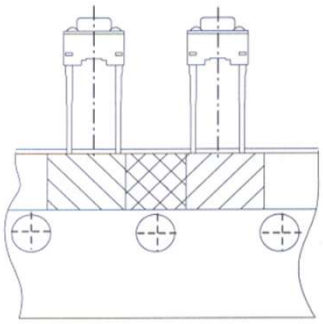
When a bad switch is removed from the tape, the rest of terminal length after cutting should be less than 2mm.



12. Adhesive tape or carrier tape connecting method

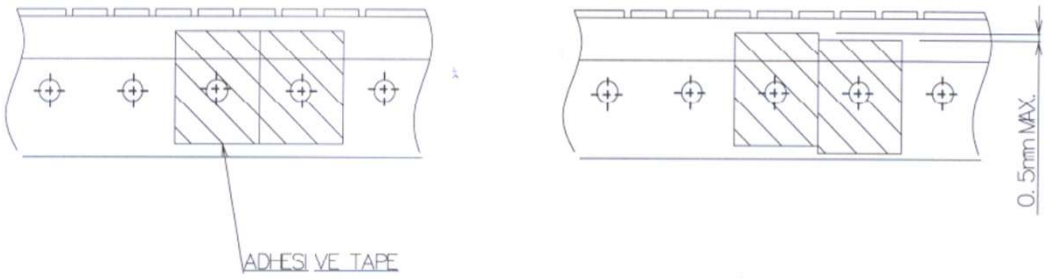
12.1 Adhesive tape

As the following figure, the adhesive tape should not cover the pilot holes.



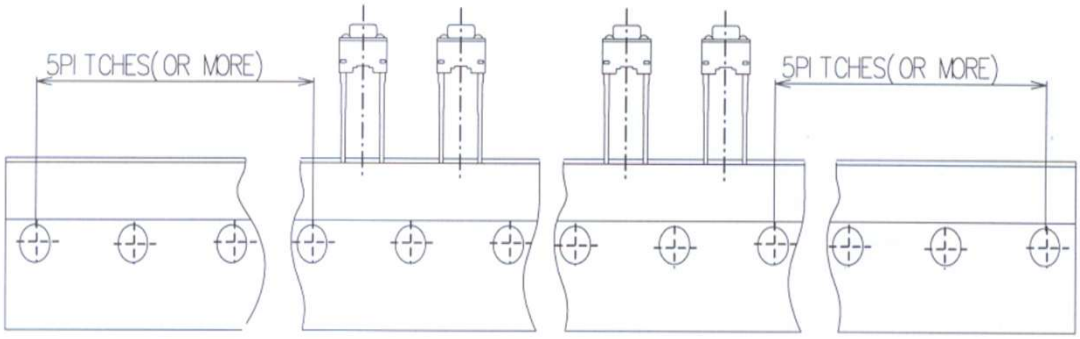
12.2 Carrier tape

After cutting , carrier tape shall be connected with the other carrier tape using adhesive tape



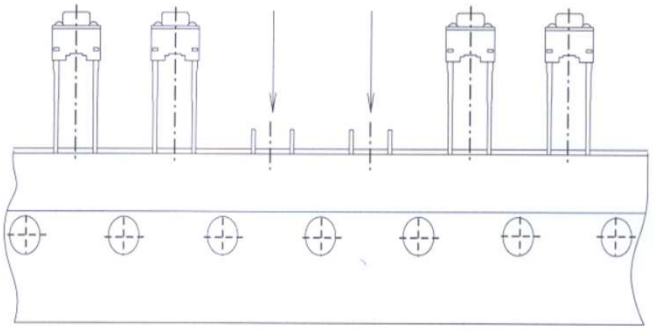
13. Missing switch

13.1 No switch should exist in the length of minimum 5pitches at both the beginning and ending sections.



13.2 Middle section

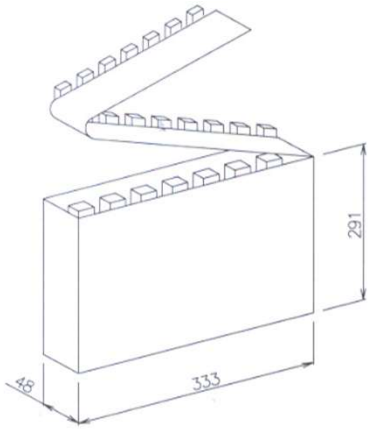
Not more than 2 consecutive switches can be missing.



13.3 Loss rate of package quantity shall be less than 0.5%

14. Packaging procedure

14.1 Carrier tape is folded zigzag every 25pitches and 1 switch shall be removed at the fold.



14.2 Marking

Each of inner package shall be marked with the following information.

MODEL NO.		INSPECTOR
PART NO.		
LOT NO.		
Q'TY		
CUSTOMER		

15. Storage conditions

15.1 Storage environment : -20 to 50℃, 20 to 85% RH

(Storage in high temperature and humidity shall be prohibited).

15.2 Storage period

The storage period should be maximum 6 months from the date of delivery.

16. Standard packaging quantity

16.1 The maximum number of the inner packages per an outer package shall be 10.

16.2 The maximum number of the switches per an inner package shall be 1,000.