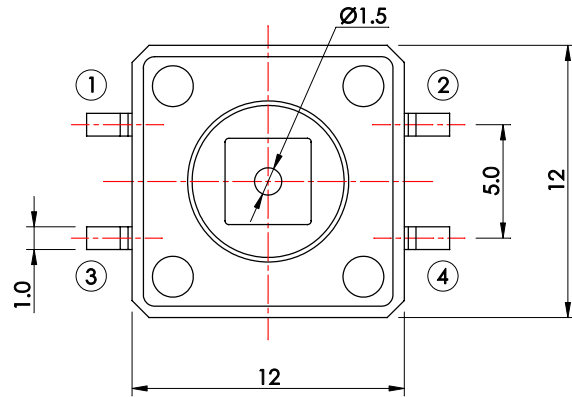


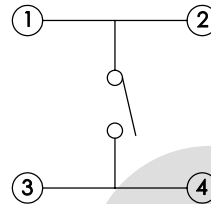
版本：V2.2

本圖面若與目錄之規格尺寸不符，以本圖面規格尺寸為主。
Below is our main specification if different from catalog.

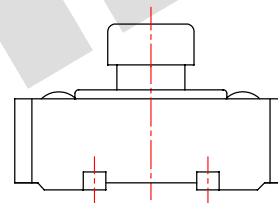
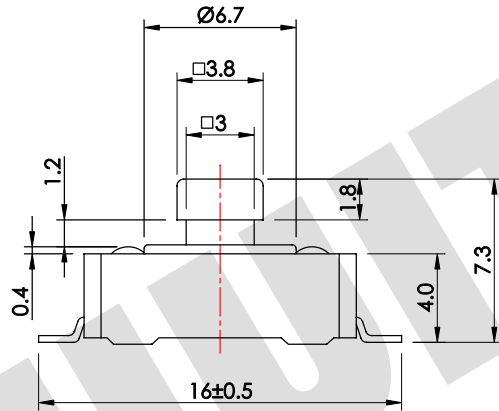
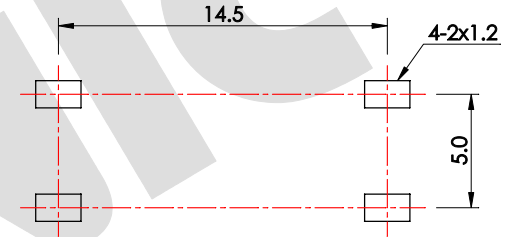
Lead free process



SCHEMATIC



P.C.B. LAYOUT



Lead free process

1273SHA-XXXG-LF

OPERATING FORCE
160, 250



SPECIFICATION

- Rating: 50mA 12V DC Max.
- Travel: 0.3±0.15mm.
- Contact resistance: 100mΩ Max.(initial)
- Insulation resistance: 100MΩ Min. at 500V DC.
- Withstand voltage: 250V AC for 1 minute.
- Operating force: 160±50g.
- Minimum load: 10mA 3.3V DC.(reference only)
- Life: 100,000 Cycles.
- Soldering temperature: 250°C Max. for 3 sec.
- Soldering time: 1 time only.
- Note1: Unwashable, don't be immersed by epoxy and organic solvent.
- Note2: Please check the actual size, do not scale the drawing page.

MATERIAL

- Base: Nylon 6T.
- Cover: SPCC, Ni plated.
- Stem: Nylon 6T.
- Terminal: Brass, Ag plated.
- Contact: C5210R-EH, Ag plated.

V2.2	△		
V2.1	無	改版	2015.07.27
V2.0	無	新繪製	2010.01.28
版本 VER.	符號 SYMBOL	修改內容 ALTERATION	更新日期 DATE

產品 PRODUCT		Tact Switch		型號 MODEL NO.		1273SHA-160G-LF	
製圖 DRAWN BY	核圖 CHECKED BY	主管 APPROVED BY		單位 UNIT	mm		
Allen Liao	Chuck Young	Margaret Lee		比例 SCALE	3 : 1		
				公差 TOLERANCE	.X=±0.3mm, .XX=±0.2mm		

SWITRONIC
INDUSTRIAL CORP.
Switches



一綺電子企業股份有限公司

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13F-3 NO. 415, SEC. 4, Hsin Yi Road, Taipei, Taiwan
TEL : 886-2-27290229 (Rep.) FAX : 886-2-27582086
URL : http://www.switronic.com.tw
E-MAIL : switches@ms36.hinet.net

一綺電子企業股份有限公司

SWITRONIC INDUSTRIAL CORP.

MODEL NO: 12XXSHA(LF) Series

V2.0

V.DATE:2015/07/29

1、Induction：

This specification intends to provides a guideline for the engineering qualification and summarize the results of standard "Tact Switch". All the dimension here in millimeter unless indicated otherwise. All the tests and measurements shall be made in the following standard conditions unless otherwise specified.

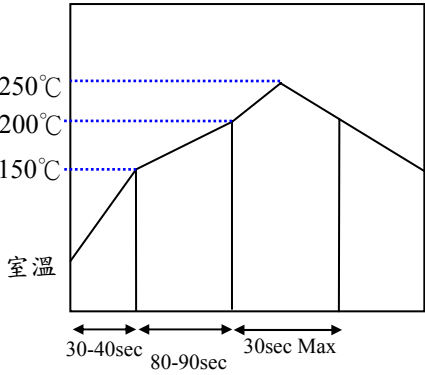
Normal temperature	Temperature 5 to 35°C
Normal humidity	Relative humidity 45 to 85%
Normal pressure	Pressure 860 to 1060 m bars

2、Electrical performance

Item	Test Condition	Specification
2.1 Contact resistance	To be measure with AC 1 K Hz \pm 200 Hz. (Max 20mV, Max 50mA)or 10mA, 5V DC. Applying a static load twice the operation force to the center of the stem	Max 100 m Ω
2.2 Insulation resistance	To be measured with an insulation measuring device of 500V DC between all the terminals and between the terminals and the frame for 1 minute \pm 5 seconds.	Min 100 M Ω
2.3 Dielectric breakdown voltage	AC 250V (50 - 60Hz ,2mA current) being applied between all the adjacent terminals and between the terminal and frame for 1 minute.	No breakdown insulation
2.4 Switch capacitance	To measured with frequency 1 MHz \pm 10 KHz applied between adjacent terminal and circuit.	Max 5PF
2.5 Bounce	Lightly striking the center of the stem at a rate encountered in normal use (3 to 4 operations per sec) bounce shall be tested at "on" and "off".	10m sec Max

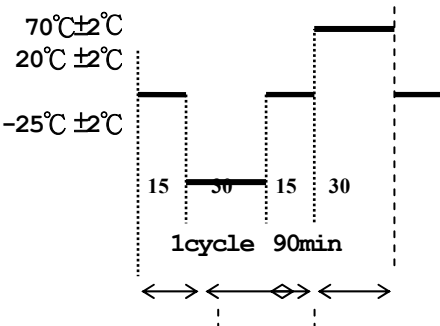
3、Mechanical characteristic

Item	Test conditions	Specification
3.1 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 stem, the maximum load required for the stem to come to a stop shall be measured	<input checked="" type="checkbox"/> 160 ± 50 gf <input type="checkbox"/> 250 ± 50 gf <input type="checkbox"/> Other specified _____
3.2 Stop strength	Measurement is made with a static load applied to the foot of the control unit in the operating vertical direction. A static force of 3K gf being applied in one direction on the tip of the terminal for 1 minute. One time each terminal.	No bending or deflection experienced. The terminal may be bent, but shall not break or damage the insulation material.
3.3 Traveling Stroke	Placing the switch such that the direction of switch operation is vertical and then applying a static load twice the operating force to the center of stem, the travel distance for the stem to come to a stop shall be measured.	0.3±0.15 mm
3.4 Return Force	The sample switch is installed such that the direction of switch operation is vertical and, upon depression of the stem in its center the whole travel distance, the force of the stem to Return to its free position shall be measured.	50 gf Min
3.5 Vibration test	The range of vibration : 10 ~ 55 Hz Total width of vibration : 1.5 mm The proportion of vibration : 10 ~ 55~ 10 (Hz) approx. 1 minute The variation of the number of vibration : Logarithmic or approximately straight line The directions : 3 vertical directions including operation direction Duration : 2 hours each { total 6 hours }	Contact resistance (2.1)Max 50 mΩ Insulation resistance(2.2)Min100MΩ Dielectric breakdown voltage (2.3)AC 250 V 1 minute no breakdown insulation Operating force (3.1) :meet original spec. traveling stroke 0.25±0.1mm As per individual specifications no apparent effect on physical appearance or mechanical functions
3.6 Impact shock	Measurements shall be made following the test set forth below: (1).Acceleration:50G	

	(2).Action time:11 ± 1 m sec (3).Cycles of test: 3 cycles each in 6 directions, for a total of 18 cycle.	
3.7 Solder ability	Soldering temperature : 250°C Max. Immersing time : 3 sec. 	More than 70% of the part immersed can be covered with solder.
3.8 Soldering temperature	P.C board terminal at 250°C, 3 second, 1 time only.	No defect in appearance shall be observed but the electrical characteristic (2) shall be maintained.

4、Reliability

Item	Test conditions	Specification
4.1 Cold resistance	Switch for testing being kept in the conditions at $-30\pm 2^{\circ}\text{C}$ in temperature for 96 hours, and in a normal ambient condition for one hour, then to be measured within one hour. (Drops of water being taken away)	Contact resistance (2.1) Max 50 mΩ Insulation resistance(2.2) Min 100 MΩ Dielectric breakdown voltage: AC 250 V 1 minute no breakdown insulation Operating force (3.1) :meet original spec.
4.2 Dry heat resistance	Switch for testing being kept in the conditions at $70\pm 2^{\circ}\text{C}$ in temperature for 96 hours, and in a normal ambient condition for one hour, then to be measured within one hour.	There shall be no defects in appearance or in the mechanical functions
4.3 Resistance to humidity	Switch for testing being kept in the conditions at $40\pm 2^{\circ}\text{C}$ in temperature and 90 ~ 95 % RH for 96 hours, and in a normal ambient condition for one hour, then measured within one hour.	Contact resistance (2.1) Max 200 mΩ Insulation resistance(2.2) Min 10 MΩ Dielectric breakdown voltage: AC250 V 1 minute no breakdown insulation Operating force (3.1) :meet original spec. There shall be no defects in appearance or in the mechanical functions

4.4 Salt-spray test	<p>The sample is allowed to stand in the test chamber controlled to $35 \pm 2^{\circ}\text{C}$ in temperature and $5 \pm 1\%$ (weight ratio) salt-water concentration for 24 ± 1 hours and is subjected to test. Then, salt deposits attached to the sample are washed away with water.</p>	<p>Shall be free from functionally harmful rust.</p>
4.5 Temperature cycle test	<p>After 5 cycle testing under the following conditions, the sample is allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement is made within 1 hour after that. Water drops should be eliminated.</p> 	<p>Contact resistance (2.1) Max 50 mΩ Insulation resistance(2.2) Min 100 MΩ Dielectric breakdown voltage: AC 250 V 1 minute no breakdown insulation Operating force (3.1) :meet original spec there shall be no defects in appearance or in the mechanical functions.</p>

5 · Durability

Item	Test conditions	Specification
5.1 Operation life	<p>Measurements shall be made following the test set forth below:</p> <p>(1).DC 12V 50mA resistive load</p> <p>(2) Rate of operation: 2 to 3 operations per second</p> <p>(3). Depression: Twice the operation force</p> <p>(4) Cycle of operation:</p> <p><input type="checkbox"/> 50,000 cycles</p> <p><input checked="" type="checkbox"/> 100,000 cycles</p> <p><input type="checkbox"/> 500,000 cycles</p> <p><input type="checkbox"/> 1,000,000 cycles</p>	<p>Contact resistance:500 m ohm Max</p> <p>Insulation resistance:10 M ohm Min</p> <p>Bounce 10 m sec Max</p> <p>operation force :initial force $\pm 30\%$</p> <p>Item 2.3,3.3:original spec.</p>

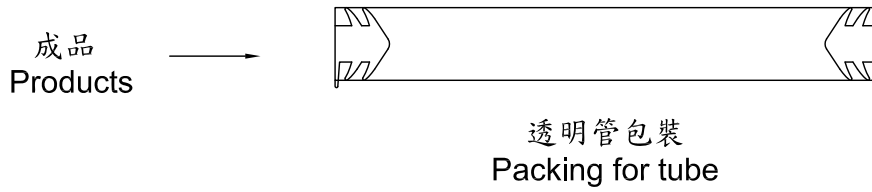
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入料包裝方式

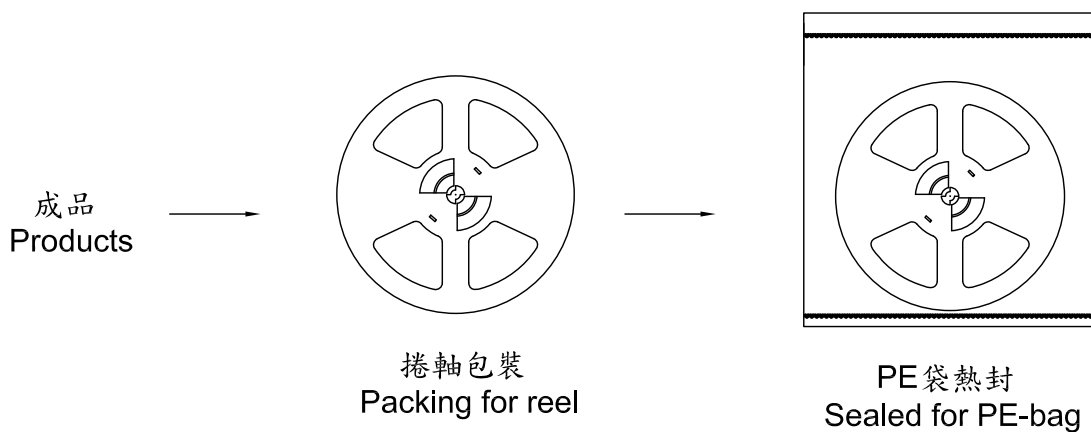
Packing for Products

管裝方式
Packing for tube



Packing for tube : _____ pcs / tube.

捲裝方式
Packing for reel



Packing for reel : 500 pcs / reel , 1 reel / polybag.

Quantity thickness for polybag : 0.08 mm , Quantity desiccating agent : 1 pcs.

一綺電子企業股份有限公司

SWITRONIC INDUSTRIAL CORP.

產品綠色環保標章

"G" Mark for All RoHS Compliant Products

環保標章式樣

Initial "G": Standing for Green Label



外箱標示

Marked on The Outside of Carton As:

