

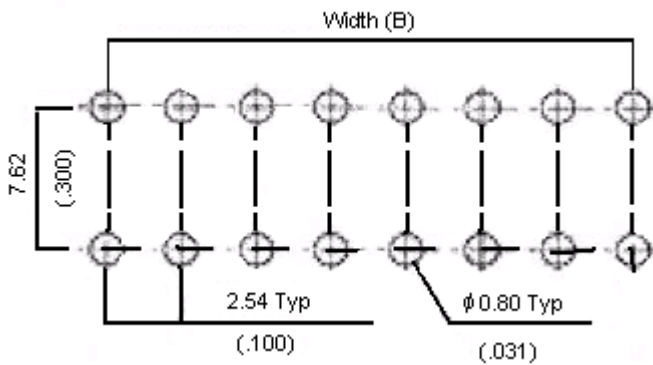
# Piano Key - Short & Long Actuator

## DIL Switches



### Features:

- SPST with low contact resistance.
- Down for off.
- Vapour phase solderable, IR reflow solderable.
- Insert moulding of terminals and ultrasonic welding.
- Fully sealed construction permits washing with freon, alcohol, water and steam.
- Double contacts for high reliability.



Dimensions : Millimetres (Inches)

### 1. Style:

This specification describes "WASHABLE OF DUAL IN-LINE PACKAGE SWITCHES", mainly used as signal switch of electric devices, with the general requirements off mechanical and electrical characteristics.

Operating temperature : -20°C to +70°C.

Storage temperature range : -40°C to +85°C.

### 2. Current Range:

Non-switching : 100mA, 50V dc.

Switching : 25mA, 24V dc.

3. Type of Actuation : Actuated by sliding.




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### 4. Test Sequence

Item	Description	Test Conditions	Requirements
<b>Electric Performance:</b>			
1	Visual Examination	By visual examination check without any out pressure and testing.	There shall be no defects that affect the serviceability of the product.
2	Contact Resistance	1. To be measured between the two terminals associated with each switch pole. 2. Measurements shall be made with a 1KHz shall current contact resistance meter.	50mΩ maximum (initial).
3	Insulation Resistance	500V dc, 1 minute ±5 seconds.	100MΩ minimum.
4	Dielectric Withstanding Voltage	300V ac (50Hz or 60Hz) shall be applied between all the adjacent terminals and between the terminal and the frame for 1 minute.	There shall be no breakdown or flashover.
5	Capacitance	1MHz ±10kHz.	5pF maximum.
<b>Mechanical Performance:</b>			
6	Operation Force	Applied in the direction of operation. ON → OFF OFF → ON 	800gf maximum.
7	Stop Strength	A static load of PI: Short actuator: 1kgf, Long actuator: 1kgf is applied in the operating direction and pulling direction, operated for a period of 15 seconds.	There shall be no sign of damage mechanically.
8	Soldering Heat Resistance	1. Soldering temperature: P.C.Board Terminal PI 260°C ±5°C	As show in item 2 to 6.
		5 ±1 seconds.	
		2. Duration of solder immersion: 5 ±1 seconds.	
		3. Frequency of solder process: 2 times maximum. (PCB is 1.6mm in thickness).	
9	Vibration	Shall be vibrated in accordance with Method 201A of MIL-STD-202F 1.Frequency : 10-55-10Hz 1 minute/cycle 2.Direction : 3 vertical directions including the direction of operation. 3.Test time : 2 hours each direction.	As show in item 2 to 6.
10	Shock	Shall be shocked in accordance with Method 213B Condition A MIL-STD-202F 1.Acceleration : 50G. 2.Action time : 11 ±1m seconds. 3.Testing direction : 6 sides. 4.Test cycle : 3 times in each direction.	As show in item 2 to 6.
11	Solderability	1.PI soldering temperature : 230 ±5°C. 2.Flux : 5 - 10 seconds. 3.Duration of solder immersion : 3 ±0.5 seconds.	No anti-soldering and the coverage of dipping into solder must more than 75% was requested.

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Item	Description	Test Conditions	Requirements
<b>Mechanical Performance:</b>			
12	Seal (Washable)	The switch is placed at a depth of 5cm in fluorocarbon FC-40 for 1 minute 50°C.	1. Visually monitor the successive bubbling distance within 25mm. 2. As shown in item 2 to 6.
<p>Seal Characteristics : (It is not necessary to apply this kind of test for non-washable series).</p> <p>1. Do not wash immediately after soldering, do it after returning the switches back to thermal temperature. 2. Do not apply external force to the switch during washing. 3. The switch cannot be used where subject to direct contact with water (except for cleaning processing).</p>			
<b>Durability</b>			
13	Operation Life	Measurements shall be made following the test set forth below: 1. 25mA, 24V dc resistive load. 2. Rate of operation : 15 to 20 cycles/minute. 3. Cycle of operation : 200 cycles.	1. As shown in item 3 and 4. 2. Contact resistance : 50mΩ maximum (final-after test).
<b>Weather Proof</b>			
14	Resistance Low Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made : 1. Temperature : -40 ±3°C 2. Time : 96 hours	As show in item 2 to 6.
15	Resistance High Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made : 1. Temperature : 85 ±2°C 2. Time : 96 hours	1. As show in item 3 to 6. 2. Contact resistance : 50mΩ maximum (final-after test).
16	Resistance Humidity	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made : 1. Temperature : 40 ±2°C. 2. Relative Humidity : 90 to 95%. 3. Time : 96 hours.	1. As show in item 4 to 6 2. Contact resistance : 50mΩ maximum (final-after test). 3. Insulation Resistance : 100mΩ minimum.

## Specifications

Number of Ways	Width (B)	Type	Part Number
4	12.45	Piano Key - Long Actuator	PI041900
8	22.61		PI081900
10	27.69		PI101900
4	12.45	Piano Key - Short Actuator	PI040900
8	22.61		PI080900
10	27.69		PI100900

Dimensions : Millimetres



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### Notes:

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