

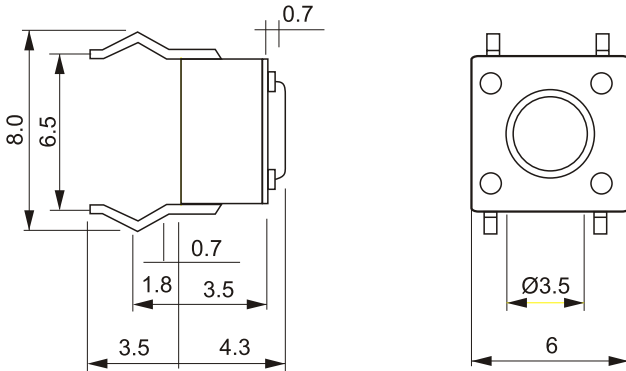
Tactile Switches





P 1102S

Dimensions in mm.



Contacts

- | | | |
|-----------------------|---|------------------------------|
| 1. Rating | : | DC 12v 50mA |
| 2. Contact | : | Mechanical Contact |
| 3. Travel | : | 0.25 0.1mm |
| 4. Operating Force | : | 160 30gf |
| 5. Contact Resistance | : | 50m max. |
| 6. Life | : | 10,000cycles min.@rated load |

Model No:

P11025 4.3

Specifications

1. Rating :50mA 12V DC (Resistive Load)
2. Electrical Performance

5. Solder Heat Resistance & Auto Soldering :255C for 5 Seconds

Item	Test Condition	Performance
Contact Resistance	100mA 5V Dc	100m max
Insulation Resistance	100V DC for 1 minute	100m min. @100/500 VDC.
Withstand Voltage	250V AC for 1 minute	Shall be free Dielectric

3. Mechanical Performance

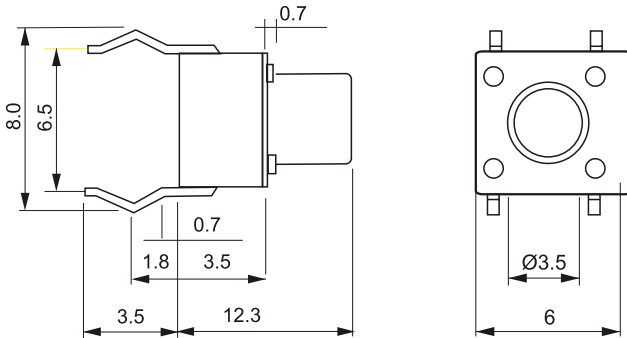
Item	Test Condition	Performance
Operating Force		As per Individual specifications
Stop Strength	3kg for 3 seconds	No Deformation and Mechanical Problem Found
Bounce	The key shall be struck lightly vertically at its center at a uniform Cycling Rate of 3 Operations Per Second	10m sec. Max
Life Test	2-3 Cycles/second with 5V DC 5mA Resistive Load Cycles of operation : As per Individual Specifications	Contact Resistance 200 m max Operating Force : 30% Initial Value Insulation Resistance : 10m min. @100/500VDC
Dry Heat Proof	80 2C for 96Hours After Test , Kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Moisture Resistance	60 2c 90-95% RH for 96 Hours After Test, kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Cold Proof	-30C for 96 Hours After Test, Kept in Normal Condition for 30 minutes	Equality to Initial Specifications

Item	Explanation	Figure
Operating Force	It refers to the Maximum load at the time of after switching over of the contacts. (Point A in the figure)	<p>The graph plots Operating Force (Y-axis, 0 to 200) against Travel (X-axis, 0 to 0.4). The force rises to a peak of approximately 180 at a travel of 0.2 (Point A), then drops to a minimum of approximately 50 at a travel of 0.25 (Point B), and finally rises again to approximately 160 at a travel of 0.4.</p>
Return Force	It refers to the returning force of the stem offers its full travel when pushed out. (Point B in the figure)	
Click Tactile Feedback	It refers to the feeling indicated on the inversion portion in the operating force vs. travel diagram shown in the figure. The greater this inversion part is, the clearer it is to the operator that the switch is moved.	
Travel	It refers to the distance of travel of the operating part before the contact is changed over. Generally, it is about 0.3mm in mechanical contact.	
Bounce	This refers to the state of repeating the contact opening or closing momentarily at the time of the change over of the switch to ON or OFF. Longer duration of this state may cause malfunction of the signal.	



P 1102L

Dimensions in mm.



Contacts

- | | | |
|-----------------------|---|------------------------------|
| 1. Rating | : | DC 12v 50mA |
| 2. Contact | : | Mechanical Contact |
| 3. Travel | : | 0.25 0.1mm |
| 4. Operating Force | : | 160 30gf |
| 5. Contact Resistance | : | 50m max. |
| 6. Life | : | 10,000cycles min.@rated load |

Model No:

P1102L 8.0

Specifications

1. Rating :50mA 12V DC (Resistive Load)
2. Electrical Performance
3. Electrical Life
4. Electrical Withstand Voltage
5. Solder Heat Resistance & Auto Soldering :255C for 5 Seconds

Item	Test Condition	Performance
Contact Resistance	100mA 5V Dc	100m max
Insulation Resistance	100V DC for 1 minute	100m min. @100/500 VDC.
Withstand Voltage	250V AC for 1 minute	Shall be free Dielectric

3. Mechanical Performance

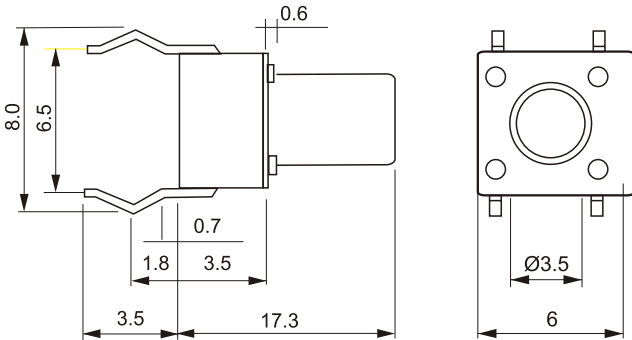
Item	Test Condition	Performance
Operating Force		As per Individual specifications
Stop Strength	3kg for 3 seconds	No Deformation and Mechanical Problem Found
Bounce	The key shall be struck lightly vertically at its center at a uniform Cycling Rate of 3 Operations Per Second	10m sec. Max
Life Test	2-3 Cycles/second with 5V DC 5mA Resistive Load Cycles of operation : As per Individual Specifications	Contact Resistance 200 m max Operating Force : 30% Initial Value Insulation Resistance : 10m min. @100/500VDC
Dry Heat Proof	80 2C for 96Hours After Test , Kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Moisture Resistance	60 2c 90-95% RH for 96 Hours After Test, kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Cold Proof	-30C for 96 Hours After Test, Kept in Normal Condition for 30 minutes	Equality to Initial Specifications

Item	Explanation	Figure
Operating Force	It refers to the Maximum load at the time of after switching over of the contacts. (Point A in the figure)	<p>The graph plots Operating Force (Y-axis, 0 to 200) against Travel (X-axis, 0 to 0.4). The curve starts at (0,0), rises to a peak labeled 'A' at approximately 170 force units at 0.2 travel, then drops to a minimum labeled 'B' at approximately 50 force units at 0.3 travel, and finally rises again to about 160 force units at 0.4 travel.</p>
Return Force	It refers to the returning force of the stem offers its full travel when pushed out. (Point B in the figure)	
Click Tactile Feedback	It refers to the feeling indicated on the inversion portion in the operating force vs. travel diagram shown in the figure. The greater this inversion part is, the clearer it is to the operator that the switch is moved.	
Travel	It refers to the distance of travel of the operating part before the contact is changed over. Generally, it is about 0.3mm in mechanical contact.	
Bounce	This refers to the state of repeating the contact opening or closing momentarily at the time of the change over of the switch to ON or OFF. Longer duration of this state may cause malfunction of the signal.	



P 1102XL

Dimensions in mm.



Contacts

- | | | |
|-----------------------|---|--------------------|
| 1. Contact | : | Mechanical Contact |
| 2. Rating | : | DC 12v 50mA |
| 3. Travel | : | 0.25 0.1mm |
| 4. Operating Force | : | 160 30gf |
| 5. Contact Resistance | : | 100m max. |
| 6. Life | : | 100,00 Cycles min |

Model No:
P1102XL 13.3

Specifications

1. Rating :50mA 12V DC (Resistive Load)
2. Electrical Performance

5. Solder Heat Resistance & Auto Soldering :255C for 5 Seconds

Item	Test Condition	Performance
Contact Resistance	100mA 5V Dc	100m max
Insulation Resistance	100V DC for 1 minute	100m min. @100/500 VDC.
Withstand Voltage	250V AC for 1 minute	Shall be free Dielectric

3. Mechanical Performance

Item	Test Condition	Performance
Operating Force		As per Individual specifications
Stop Strength	3kg for 3 seconds	No Deformation and Mechanical Problem Found
Bounce	The key shall be struck lightly vertically at its center at a uniform Cycling Rate of 3 Operations Per Second	10m sec. Max

3. Mechanical Performance

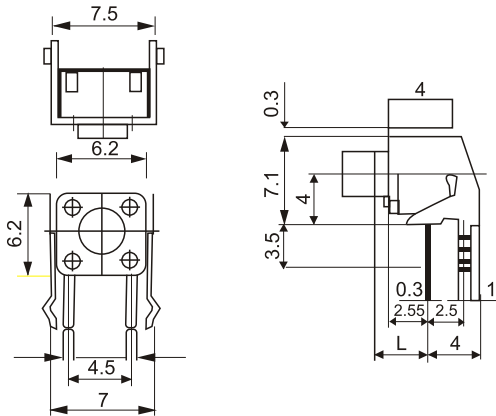
Item	Test Condition	Performance
Life Test	2-3 Cycles/second with 5V DC 5mA Resistive Load Cycles of operation : As per Individual Specifications	Contact Resistance 200 m max Operating Force : 30% Initial Value Insulation Resistance : 10m min. @100/500VDC
Dry Heat Proof	80 2C for 96Hours After Test , Kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Moisture Resistance	60 2c 90-95% RH for 96 Hours After Test, kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Cold Proof	-30C for 96 Hours After Test, Kept in Normal Condition for 30 minutes	Equality to Initial Specifications

Item	Explanation	Figure
Operating Force	It refers to the Maximum load at the time of after switching over of the contacts. (Point A in the figure)	
Return Force	It refers to the returning force of the stem offers its full travel when pushed out. (Point B in the figure)	
Click Tactile Feedback	It refers to the feeling indicated on the inversion portion in the operating force vs. travel diagram shown in the figure. The greater this inversion part is, the clearer it is to the operator that the switch is moved.	
Travel	It refers to the distance of travel of the operating part before the contact is changed over. Generally, it is about 0.3mm in mechanical contact.	
Bounce	This refers to the state of repeating the contact opening or closing momentarily at the time of the change over of the switch to ON or OFF. Longer duration of this state may cause malfunction of the signal.	



P 1102V

Dimensions in mm.



Contacts

1. Rating	:	DC 12v 50mA
2. Contact	:	Mechanical Contact
3. Travel	:	0.25 0.1mm
4. Operating Force	:	160 30gf
5. Contact Resistance	:	50m max.
6. Life	:	10,000cycles min.@rated load

Model	No:
1102V S	0.6
1102VAL	0.6
1120VBXL	9.3

Specifications

- 1.Rating :50mA 12V DC (Resistive Load)
- 2.Electrical Performance

5.Solder Heat Resistance & Auto Soldering :255C for 5 Seconds

Item	Test Condition	Performance
Contact Resistance	100mA 5V Dc	100m max
Insulation Resistance	100V DC for 1 minute	100m min. @100/500 VDC.
Withstand Voltage	250V AC for 1 minute	Shall be free Dielectric

3.Mechanical Performance

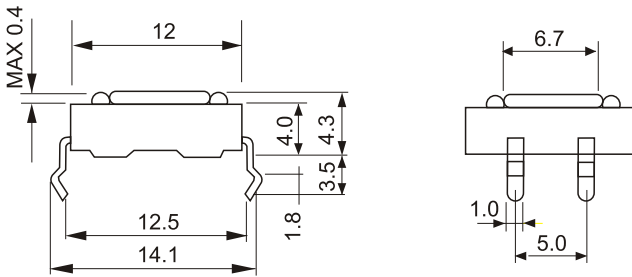
Item	Test Condition	Performance
Operating Force		As per Individual specifications
Stop Strength	3kg for 3 seconds	No Deformation and Mechanical Problem Found
Bounce	The key shall be struck lightly vertically at it's center at a uniform Cycling Rate of 3 Operations Per Second	10m sec. Max
Life Test	2-3 Cycles/second with 5V DC 5mA Resistive Load Cycles of operation : As per Individual Specifications	Contact Resistance 200 m max Operating Force : 30% Initial Value Insulation Resistance : 10m min. @100/500VDC
Dry Heat Proof	80 2C for 96Hours After Test , Kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Moisture Resistance	60 2c 90-95% RH for 96 Hours After Test, kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Cold Proof	-30C for 96 Hours After Test, Kept in Normal Condition for 30 minutes	Equality to Initial Specifications

Item	Explanation	Figure
Operating Force	It refers to the Maximum load at the time of after switching over of the contacts. (Point A in the figure)	
Return Force	It refers to the returning force of the stem offers its full travel when pushed out. (Point B in the figure)	
Click Tactile Feedback	It refers to the feeling indicated on the inversion portion in the operating force vs. travel diagram shown in the figure. The greater this inversion part is, the clearer it is to the operator that the switch is moved.	
Travel	It refers to the distance of travel of the operating part before the contact is changed over. Generally, it is about 0.3mm in mechanical contact.	
Bounce	This refers to the state of repeating the contact opening or closing momentarily at the time of the change over of the switch to ON or OFF. Longer duration of this state may cause malfunction of the signal.	

P 1103



Dimensions in mm.



Contacts

- | | | |
|-----------------------|---|---------------------|
| 1. Contact | : | Mechanical Contact |
| 2. Rating | : | DC 12v 50mA |
| 3. Travel | : | 0.3 0.15mm |
| 4. Operating Force | : | 160 30gf |
| 5. Contact Resistance | : | 100m Max. |
| 6. Life | : | 100,000 Cycles Min. |

Model No:

P1103

Specifications

1. Rating :50mA 12V DC (Resistive Load)
2. Electrical Performance

5. Solder Heat Resistance & Auto Soldering :255C for 5 Seconds

Item	Test Condition	Performance
Contact Resistance	100mA 5V Dc	100m max
Insulation Resistance	100V DC for 1 minute	100m min. @100/500 VDC.
Withstand Voltage	250V AC for 1 minute	Shall be free Dielectric

3. Mechanical Performance

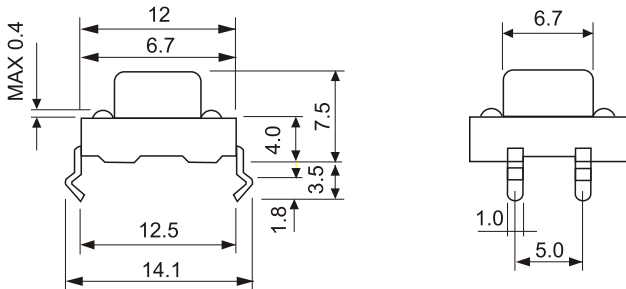
Item	Test Condition	Performance
Operating Force		As per Individual specifications
Stop Strength	3kg for 3 seconds	No Deformation and Mechanical Problem Found
Bounce	The key shall be struck lightly vertically at its center at a uniform Cycling Rate of 3 Operations Per Second	10m sec. Max
Life Test	2-3 Cycles/second with 5V DC 5mA Resistive Load Cycles of operation : As per Individual Specifications	Contact Resistance 200 m max Operating Force : 30% Initial Value Insulation Resistance : 10m min. @100/500VDC
Dry Heat Proof	80 2C for 96Hours After Test , Kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Moisture Resistance	60 2c 90-95% RH for 96 Hours After Test, kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Cold Proof	-30C for 96 Hours After Test, Kept in Normal Condition for 30 minutes	Equality to Initial Specifications

Item	Explanation	Figure
Operating Force	It refers to the Maximum load at the time of after switching over of the contacts. (Point A in the figure)	
Return Force	It refers to the returning force of the stem offers its full travel when pushed out. (Point B in the figure)	
Click Tactile Feedback	It refers to the feeling indicated on the inversion portion in the operating force vs. travel diagram shown in the figure. The greater this inversion part is, the clearer it is to the operator that the switch is moved.	
Travel	It refers to the distance of travel of the operating part before the contact is changed over. Generally, it is about 0.3mm in mechanical contact.	
Bounce	This refers to the state of repeating the contact opening or closing momentarily at the time of the change over of the switch to ON or OFF. Longer duration of this state may cause malfunction of the signal.	



P 1103A

Dimensions in mm.



Contacts

- | | | |
|-----------------------|---|---------------------|
| 1. Contact | : | Mechanical Contact |
| 2. Rating | : | DC 12v 50mA |
| 3. Travel | : | 0.3 0.15mm |
| 4. Operating Force | : | 160 30gf |
| 5. Contact Resistance | : | 100m Max. |
| 6. Life | : | 100,000 Cycles Min. |

Model No:

P1103A

Specifications

1. Rating :50mA 12V DC (Resistive Load)
2. Electrical Performance

5. Solder Heat Resistance & Auto Soldering :255C for 5 Seconds

Item	Test Condition	Performance
Contact Resistance	100mA 5V Dc	100m max
Insulation Resistance	100V DC for 1 minute	100m min. @100/500 VDC.
Withstand Voltage	250V AC for 1 minute	Shall be free Dielectric

3. Mechanical Performance

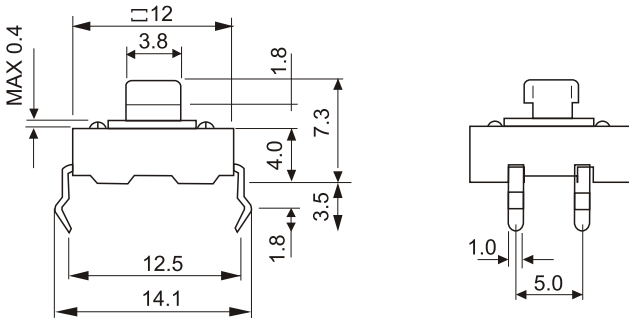
Item	Test Condition	Performance
Operating Force		As per Individual specifications
Stop Strength	3kg for 3 seconds	No Deformation and Mechanical Problem Found
Bounce	The key shall be struck lightly vertically at its center at a uniform Cycling Rate of 3 Operations Per Second	10m sec. Max
Life Test	2-3 Cycles/second with 5V DC 5mA Resistive Load Cycles of operation : As per Individual Specifications	Contact Resistance 200 m max Operating Force : 30% Initial Value Insulation Resistance : 10m min. @100/500VDC
Dry Heat Proof	80 2C for 96Hours After Test , Kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Moisture Resistance	60 2c 90-95% RH for 96 Hours After Test, kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Cold Proof	-30C for 96 Hours After Test, Kept in Normal Condition for 30 minutes	Equality to Initial Specifications

Item	Explanation	Figure
Operating Force	It refers to the Maximum load at the time of after switching over of the contacts. (Point A in the figure)	
Return Force	It refers to the returning force of the stem offers its full travel when pushed out. (Point B in the figure)	
Click Tactile Feedback	It refers to the feeling indicated on the inversion portion in the operating force vs. travel diagram shown in the figure. The greater this inversion part is, the clearer it is to the operator that the switch is moved.	
Travel	It refers to the distance of travel of the operating part before the contact is changed over. Generally, it is about 0.3mm in mechanical contact.	
Bounce	This refers to the state of repeating the contact opening or closing momentarily at the time of the change over of the switch to ON or OFF. Longer duration of this state may cause malfunction of the signal.	



P 1103C

Dimensions in mm.



Contacts

- | | | |
|-----------------------|---|---------------------|
| 1. Contact | : | Mechanical Contact |
| 2. Rating | : | DC 12v 50mA |
| 3. Travel | : | 0.3 0.15mm |
| 4. Operating Force | : | 160 30gf |
| 5. Contact Resistance | : | 100m Max. |
| 6. Life | : | 100,000 Cycles Min. |

Model No:

P1103C

Specifications

1. Rating :50mA 12V DC (Resistive Load)
2. Electrical Performance

5. Solder Heat Resistance & Auto Soldering :255C for 5 Seconds

Item	Test Condition	Performance
Contact Resistance	100mA 5V Dc	100m max
Insulation Resistance	100V DC for 1 minute	100m min. @100/500 VDC.
Withstand Voltage	250V AC for 1 minute	Shall be free Dielectric

3. Mechanical Performance

Item	Test Condition	Performance
Operating Force		As per Individual specifications
Stop Strength	3kg for 3 seconds	No Deformation and Mechanical Problem Found
Bounce	The key shall be struck lightly vertically at its center at a uniform Cycling Rate of 3 Operations Per Second	10m sec. Max

3. Mechanical Performance

Item	Test Condition	Performance
Life Test	2-3 Cycles/second with 5V DC 5mA Resistive Load Cycles of operation : As per Individual Specifications	Contact Resistance 200 m max Operating Force : 30% Initial Value Insulation Resistance : 10m min. @100/500VDC
Dry Heat Proof	80 2C for 96Hours After Test , Kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Moisture Resistance	60 2c 90-95% RH for 96 Hours After Test, kept in Normal Condition for 30 minutes	Equality to Initial Specifications
Cold Proof	-30C for 96 Hours After Test, Kept in Normal Condition for 30 minutes	Equality to Initial Specifications

Item	Explanation	Figure
Operating Force	It refers to the Maximum load at the time of after switching over of the contacts. (Point A in the figure)	
Return Force	It refers to the returning force of the stem offers its full travel when pushed out. (Point B in the figure)	
Click Tactile Feedback	It refers to the feeling indicated on the inversion portion in the operating force vs. travel diagram shown in the figure. The greater this inversion part is, the clearer it is to the operator that the switch is moved.	
Travel	It refers to the distance of travel of the operating part before the contact is changed over. Generally, it is about 0.3mm in mechanical contact.	
Bounce	This refers to the state of repeating the contact opening or closing momentarily at the time of the change over of the switch to ON or OFF. Longer duration of this state may cause malfunction of the signal.	

PARAMOUNT

EXPECT MORE...

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