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SPECIFICATION

1. Standard atmospheric condition

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows :

Ambient temperature: 5°C to 35°C

Relative humidity : 45% to 85%

Air pressure : 86kPa to 106kPa

If there is any doubt about the results, measurements shall be made within the following limits :

Ambient temperature: 20±2°C

Relative humidity : 60% to 70%

Air pressure : 86kPa to 106kPa

Operating temperature range: -20°C to 70°C

Storage temperature range : -40°C to 80°C

| ISSUE | DATE | WRN | CHKD | APVD | DESCRIPTIONS |
|-------|------------|-----|------|------|------------------|
| | 2012.05.30 | 李阮龍 | 郭素玲 | 郭遠峰 | New Release |
| △x 1 | 2012.11.01 | 李阮龍 | 郭素玲 | 郭遠峰 | Add the item 2.1 |
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2. Electrical characteristics:

| | Item | Condition | Specifications |
|---|----------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------|
| 1 | Rated voltage △ Rated current | | DC 12V 1A |
| 2 | Contact resistance | Measurement shall be made at with small current 1000 Hz (1A MAX.) | Make contacts 50mΩ MAX. |
| | | | Break contacts 30mΩ MAX. |
| | | | Slide switch contacts 50mΩ MAX. |
| 3 | Insulation resistance | A voltage of 500 V DC shall be applied for 1 minute. After which measurement shall be made. | 100MΩ MIN. |
| 4 | Dielectric strength | A voltage of 500V AC (50 to 60Hz) shall be applied for 1 minute. | Without damage to parts, arcing or breakdown, etc. |

3. Mechanical characteristics

| | Item | Condition | Specifications |
|---|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Operating force | Insertion and withdrawal force shall be measured after inserting and withdrawing 3 times by using a gauge of standard dimensions. (Refer to clause 5) | |
| | | Insertion force | 3.92N~24.5N (0.4Kgf~3.0Kgf) |
| | | Withdrawal force | 3.92N~24.5N (0.4Kgf~3.0Kgf) |
| 2 | Terminal strength | A static load of 4.9N (0.5Kgf) shall be applied to the tip of the terminal for 10 seconds. (x, y, z, direction) | Without cracks or excessive looseness to the terminal. Electrical and mechanical characteristics shall be satisfied. Without play in terminal etc. |
| 3 | Contact pressure | The contact pressure during the break contact shall be measured under the normal conditions. | 1N (102gf) MIN. |

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4. Endurance characteristics

| Item | Condition | Specifications |
|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| 1 Resistance to soldering heat | Reflow Temperature Profile | |
| | Profile Feature | Pb-Free Assembly |
| | Average Ramp-up Rate (T _{Smax} to T _p) | 3 °C/second max |
| | Preheat -Temperature Min(T _{Smin}) -Temperature Max(T _{Smax}) -Time (T _s min to max) | 150 °C 200 °C 60-180 seconds |
| | Time maintained above -Temperature (T _L) -Time (T _L) | 217 °C 60-150 seconds |
| | Peak/Classification Temperature(T _p) | 250 °C |
| | Time within 5°C of actual Temperature (t _p) | 20-40 seconds |
| | Ramp-Down Rate | 6 °C/second max |
| | Time 25°C to Peak Temperature | 8 minutes max |
| | Reflow Temp Profile Temperature Profile are as below About the plastic properties , Please refer to the data sheet of plastic. | |
| | | |
| Soldering Iron Test Temperature of soldering Iron : 380±10 °C Soldering time : 3±1 seconds | | Same as Wave soldering Process |
| Insertion force | | 2.94~24.5N (0.3~3.0kgf) |
| Withdrawal force | | 2.94~24.5N (0.3~3.0kgf) |

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| Item | Condition | Specifications | |
| 2 Solderability | Temperature of solder : $250^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Time of dip : 3 ± 0.5 seconds Length of dip : $2 \pm 0.5\text{mm}$ (from top of terminal) | A new uniform of solder shall cover a minimum of 90% of the surface being immersed. | |
| 3 Humidity test | The jack shall be stored at a temperature of $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and a humidity of 90%~95% for 96 hours. Then the jack shall be maintained at standard atmospheric conditions for 1 to 2 hours after which measurement shall be made. | Dimensional requirements shall be satisfied. Electrical and mechanical characteristics shall be satisfied. | |
| | Insulation resistance | 50M Ω MIN. | |
| 4 Dry heat | The jack shall be stored for 96 hours at a temperature of $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ immediately after which measurement shall be made. | Dimensional requirements shall be satisfied. Electrical and mechanical characteristics shall be satisfied. | |
| | Insulation resistance | 50M Ω MIN. | |
| 5 Cold | The jack shall be stored for 96 hours at a temperature of $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ immediately after which measurement shall be made. | Dimensional requirements shall be satisfied. Electrical and mechanical characteristics shall be satisfied. | |
| | Insulation resistance | 50M Ω MIN. | |
| 6 Composite temperature / humidity cyclic test | The jack shall be subjected to 10 continuous cycles. Then the jack shall be stored at standard atmospheric conditions for 24 hours for recovery, after which measurement shall be made. Temperature shall be reduced from 25°C to -10°C within 30 minutes. Humidity uncontrolled at a temperature less than 25°C . | Electrical and mechanical characteristics shall be satisfied. | |
| | <p>The graph illustrates a temperature cycle for a composite test. The temperature starts at 25°C, rises to 65°C at 3 hours, remains constant until 6 hours, then drops to 25°C at 8 hours. This cycle repeats once more, ending at 25°C at 24 hours. Two periods of 90~96% RH are indicated between 3-6 hours and 11-14 hours.</p> | | |

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| Item | Condition | Specifications | |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------|
| 7 Operating endurance | Inserting and withdrawing shall be made by the following mating plug or standard dimension gauge,(Refer to Clause 5. grease applied)at a speed of 20 to 30 times/min. Without load : 5000 times. | Dimensional requirements shall be satisfied. Electrical and mechanical characteristics shall be satisfied. | |
| | Contact resistance | Make contacts | 100mΩ MAX. |
| | | Break contacts | 60mΩ MAX. |
| | | Slide switch contacts | 100mΩ MAX. |
| | Insertion force | | 2.94N~24.5N (0.3kgf~3.0kgf) |
| | Withdrawal force | | 2.94N~24.5N (0.3kgf~3.0kgf) |
| 8 Torsion strength | The standard dimension gauge (refer item5) shall be fixed to the set in the actual used condition. Following plug shall be inserted. A load specified in condition below shall be applied to horizontal and vertical directions to the jack for 5 times in 5 second, after which measurement shall be made. | | |
| | <p style="text-align: center;">$M (N.m)=P (N) \times L (m)$</p> | | |
| | Size | L (cm) | Condition |
| | Mini (φ3.5) | 2.5 | 20N (2.04kgf) |
| | Contact resistance | Make contacts | 100mΩ MAX. |
| | | Break contacts | 60mΩ MAX. |
| | | Slide switch contacts | 100mΩ MAX. |
| | Insertion force | | 2.94N~24.5N (0.3kgf~3.0kgf) |
| | Withdrawal force | | 2.94N~24.5N (0.3kgf~3.0kgf) |

5. Soldering condition shelf life about 6 months depend on storage condition of humidity, temperature and others factors.

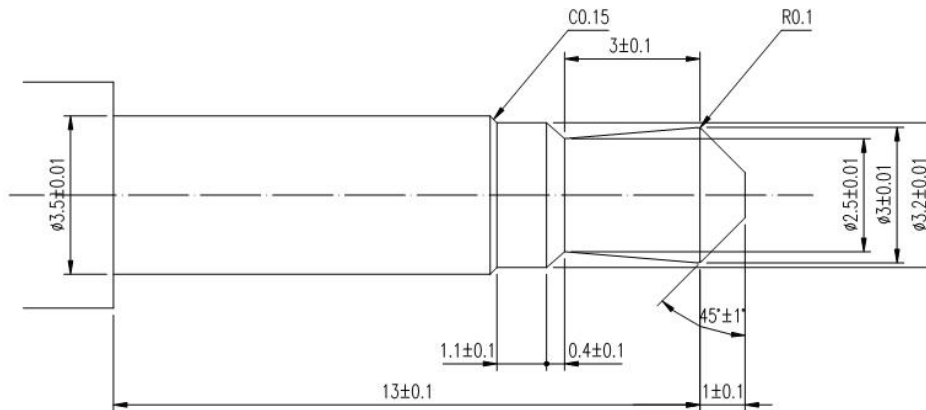
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6. Applicable plug and standard dimensions gauge :

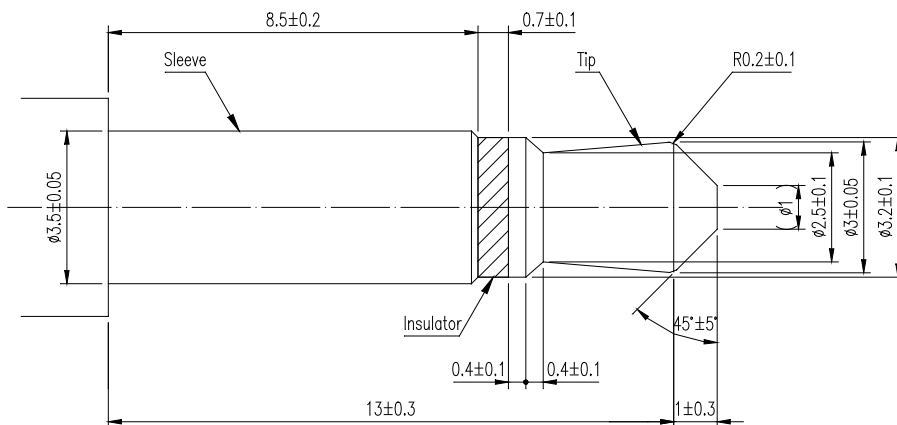
6.1 Standard dimension

Roughness of the surface : $\sqrt{0.8 S} \left(\frac{0.8 S}{\nabla\nabla\nabla\nabla} \right)$

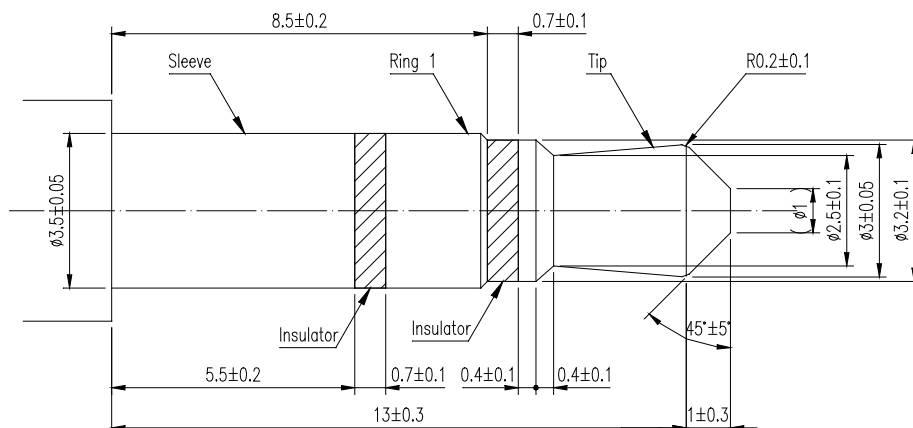
Materials : Stainless steel



6.2 Mate plug : 2 points mini-plug



6.3 Mate plug : 3 points mini-plug



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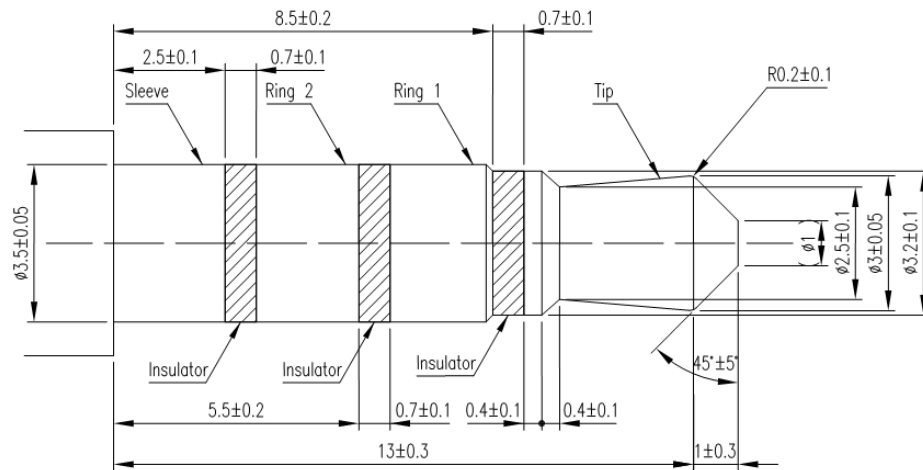
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6.4 Mate Plug : 4 points mini-plug



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7. Endurance test sequence :

| | | Test group | | | | | | | | | |
|---------------|----------------------------------------------|------------|---|-----|---|-----|-----|-----|-----|-----|-----|
| | | A | B | C | D | E | F | G | H | I | |
| Test sequence | | | | | | | | | | | |
| Test Item | | | | | | | | | | | |
| 2.2 | Contact resistance | 1,6 | | 1,6 | | 1,6 | 1,6 | 1,6 | 1,6 | 1 | 1 |
| 2.3 | Insulation resistance | 2,7 | | 2,7 | | 2 | 2 | 2 | 2,7 | 2,6 | 2,6 |
| 2.4 | Dielectric strength | 3,8 | | 3,8 | | 3,7 | 3,7 | 3,7 | 3,8 | 3,7 | 3,7 |
| 3.1 | Operating force | 4,9 | | 4 | | 4,8 | 4,8 | 4,8 | 4,9 | 4 | 4 |
| 3.2 | Terminal strength | 5 | | | | | | | | | |
| 3.3 | Contact pressure | | 1 | | | | | | | | |
| 4.1 | Resistance to soldering heat | | | 5 | | | | | | | |
| 4.2 | Solderability | | | | 1 | | | | | | |
| 4.3 | Humidity test | | | | | 5 | | | | | |
| 4.4 | Dry heat | | | | | | 5 | | | | |
| 4.5 | Cold | | | | | | | 5 | | | |
| 4.6 | Composite temperature / humidity cyclic test | | | | | | | | 5 | | |
| 4.7 | Operating endurance | | | | | | | | | 5 | |
| 4.8 | Torsion strength | | | | | | | | | | 5 |

Test sample quality : 2 pcs min. / group