|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 商标字 | | | | | | **文件编号** | **QB/HX27-03-2015** |
| **发布日期** | **2015年03月21日** |
| **PRODUCT SPECIFICATION 产品承认书** | | | | | | **文件版次** | **第A版 第2次修订** |
| **SS-G系列** | | **MICRO SWITCH 微动开关** | | | | **页 码** | **共6页 第1页** |
| **1. General Characteristics一般特性**  **1.1 Application:This specification is applied to the micro switch for general applications.**  **适用范围:该承认书指微动开关的一般使用范围.**  **1.2 Operating Temperature Range: 0℃to+125℃**  **使用温度范围: 0℃～+125℃**  **1.3 Operating Relative Humidity: ≤85℅ RH**  **相对湿度: ≤85℅ RH**  **1.4 Test Conditions: Unless otherwise specified ,the atmospheric conditions for making measurements and testas are as follows:**  **实验条件:若没有特别说明,则实验大气条件如下:**  **Ambient Temperature: 5 to 35℃**  **环境温度: 5～35℃**  **Relative Humidity: 45 to 85%**  **相对湿度 45～85%**  **Air Pressure: 86 to 106Kpa(860～1060mbar)**  **大气压力: 86～106Kpa(860～1060mbar)** | | | | | | | |
| **2. Appearance,Structure and Dimensions 外观﹑ 结构及尺寸**  **2.1 Appearance: The switch shall have good finishing ,and no rust ,crack or plating defects.**  **外观: 产品外观良好,无锈蚀裂纹和镀层缺陷**  **2.2 Structure & Dimensions: Refer to individual product drawing .**  **结构及尺寸 参见产品图纸**  **2.3 Marking; Refer to individual product drawing .**  **标识: 参见产品图纸** | | | | | | | |
| **3. ratings 额定负荷** | | | | | **5(2)A 250VAC** | | |
| **4. Electrical Characteristics 电气特性** | | | | | | | |
| **No** | **Ltem 项目** | | **Criteria 标准** | **Test Method 实验方法** | | | |
| **4.1** | **Contact**  **Resistance**  **接触电阻** | | **50mΩ Max** | **Measured by a voltage drop method at 1A Max,5VDC. Any equipment with error not more than 5% can be used .resistance after test is the average of 5 successive measurements.**  **以1A, DC5V直流电,采用电压降法测量.也可用误差不超过5%的仪表进行测量,试验后的电阻取5次测量的平均值.** | | | |
| **4.2** | **Insulation**  **Resistance**  **绝缘电阻** | | **100MΩ Min** | **500VDC voltage is applied between each pair of terminals and the terminal the metal frame for 60±5S**  **在相互绝缘的所有端子之间及各接线端子与外露的非载流金属零件之间加载500V直流电,持续时间60±5S.** | | | |
| **4.3** | **Dielectric**  **Voltage**  **抗电强度** | | **No dielectric breakdown shall occure**  **无击穿现象发生.** | **500VAC (50-60Hz,cut-off current 2mA) is applied between non-connected terminals and between terminals and the metal frame for 60±5S**  **在相互绝缘的所有端子之间500V(50-60Hz)交流电, 各接线端子与外壳或非载流金属零件之间加载500V(50-60Hz)交流电持续时间60±5S.** | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 商标字 | | | | | **文件编号** | **QB/HX27-03-2015** |
| **发布日期** | **2015年03月21日** |
| **PRODUCT SPECIFICATION 产品承认书** | | | | | **文件版次** | **第A版 第2次修订** |
| **SS-5G系列** | | **MICRO SWITCH 微动开关** | | | **页 码** | **共6页 第2页** |
|  | | | | | | |
| **5. Mechanical Characteristics 机械特性** | | | | | | |
| **No** | **Ltem 项目** | | **Criteria 标准** | **Test Method 实验方法** | | |
| **5.1** | **Operating**  **Force**  **操作力** | | **See product drawing**  **参见产品图纸** | **Apply a tension meter on the midpoint of the actuator (or tip of the shaft)to supply a pressure vertically from its free position to operating position.**  **在操作元件末端沿操作方向均匀施加静载荷,使操作元件转换到动作位置.** | | |
| **5.2** | **Return**  **Force**  **回弹力** | | **The value to which the force in the actuator midpoint(or tip of the shaft)must be reduced to allow the contact to the normal position.**  **在操作元件末端沿操作方向均匀减少静载荷,使操作元件动作位置转换到自由位置.** | | |
| **5.3** | **Operation**  **Position**  **操作位置** | |  | | |
| **5.4** | **Terminal**  **Strength**  **接线强度** | | **Shall be free from terminal looseness damage and insulator breakage the electrical performance requirements specified in section 4 shall be satisfied.**  **端子无松动,损坏及绝缘层的破裂.电气性能符合第4.3条件的要求.** | **A static load of 5N shall be applied to the tip of terminal I a desired in a desired direction for 10±1s the test shall be done once per terminal**  **以5N作用力沿轴向逐渐施加于接线末端,作用力方向为离开客观向外指向,每个接线端子测量一次.** | | |
| **5.5** | **Vibration**  **Proof**  **振动** | | **After test**  **contact resistance :100mΩ Max**  **Insulation resistance:10MΩ Min**  **The electrical performance requirements specified in item 4.3 shall be satisfied.**  **No abnormalities shall be recognized in appearance and construction.**  **试验后:**  **接触电阻: 100mΩ Max**  **绝缘电阻: 10MΩ Min**  **电气性能符合第4.3条件的要求.**  **表面及结构无明显变形.** | **Switch shall be secured to a testing machine by a normal mounting device and method .switch shall be measured after following test.**   1. **Vibration frequency range =10～55Hz** 2. **Total amplitude =1.5mm** 3. **Sweep ratio: 10～55～10Hz approx.1 min** 4. **Method of changing the sweep vibration frequency :logarithmic or linear** 5. **Direction of vibration thee perpendicular directions including actuating direction.** 6. **Duration:2 hour (6 hours in total)**   **开关采用常见的安装方法牢固地安装在实验设备上,并在下述参数条件下进行试验:**  **(1)振频=10～55Hz**  **(2)振幅1.5mm**  **(3) 振动变化速率: 10～55～10Hz大约1分钟**  **（4)变频方法:对数或线性型式**  **(5) 振动方向:三个相互垂直的方向,其中一个方向应是推动元件运动的方向.**  **(6)时间:每个方向2小时(共6小时)** | | |
| 商标字 | | | | | **文件编号** | **QB/HX27-03-2015** |
| **发布日期** | **2015年03月21日** |
| **PRODUCT SPECIFICATION 产品承认书** | | | | | **文件版次** | **第A版 第2次修订** |
| **SS-5G系列** | | **MICRO SWITCH 微动开关** | | | **页 码** | **共6页 第3页** |
|  | | | | | | |
| **No** | **Ltem 项目** | | **Criteria 标准** | **Test Method 实验方法** | | |
| **5.6** | **Mechanical**  **Shock**  **冲击** | | **After test**  **contact resistance : 100mΩ Max**  **Insulation resistance:50MΩ Min**  **The electrical performance requirements specified in item 4.3 shall be satisfied.**  **No abnormalities shall be recognized in appearance and construction.**  **试验后:**  **接触电阻: 100mΩ Max**  **绝缘电阻:50MΩ Min**  **电气性能符合第4.3条件的要求.**  **表面无变形且操作无异常.** | **Switch shall be measured after following test:**  **(1) Mounting Method :Normal**  **(2) Acceleration: 490m/s²(50G)**  **(3) Duration: 11ms**  **(4) Test Direction: 6 directions**    **(5) Number of shocks: 3 times per direction(18times in total)**  **试件在下述参数条件下进行试验:**  **(1)安装方法:常规方法**  **(2)加速度: 490m/s² (50G)**  **(3)时间：11ms**  **(4)实验方向：图示6方向**  **(5) 冲击次数：每个方向3次（共18次）** | | |
| **5.7** | **Solder**  **Ability**  **可焊性** | | **More than 80% of immersed part shall**  **Be covered with solder.**  **超过80%的浸锡面积被焊料所覆盖>** | **Switch shall be checked after following test:**   1. **Solder :H63A(JIS Z3282)** 2. **Flux: Rosin Flux (JIS K 5902) having a nominal composition of 25% solids by mass of water white rosin in methyl alchol (JIS K 1501) solution** 3. **Soldering Temperature: 235±5℃**   **Immersing Time ; 3±0.5s**  **Flux immersing time shall be 5～10s in normal room temperature.**  **(4) Immersion Depth:**  **Immersion depth shall be at copper plating portion lf PCB after mounting.**  **(Thickness of PCB=1.6mm)**  **试件在下述参数条件下进行试验：**   1. **焊料：H63A (JIS Z3282)** 2. **焊剂：焊剂(JIS K 5902)，质量百分比为25%松香，75%甲醇的无色透明溶液。** 3. **焊接温度：235±5℃**   **浸入时间：3±0.5s**  **焊剂浸入时间：5～10s**   1. **浸入深度：**   **接线端子浸到离开关根部1.6mm处。** | | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 商标字 | | | | | | | | **文件编号** | **QB/HX27-03-2015** |
| **发布日期** | **2015年03月21日** |
| **PRODUCT SPECIFICATION 产品承认书** | | | | | | | | **文件版次** | **第A版 第2次修订** |
| **SS-5G系列** | | | | **MICRO SWITCH微动开关** | | | | **页 码** | **共6页 第4页** |
|  | | | | | | | | | |
| **No** | | **Ltem 项目** | | | **Criteria 标准** | **Test Method 实验方法** | | | |
| **5.8** | | **Solder Heat**  **Resistance**  **耐焊接热** | | | **No abnormalities shall be observed**  **In appearance and operation.**  **The electrical performance requirements specified in item 4.3 shall be satisfied.**  **无外观及功能损坏。**  **电气性能符合第4.3条件的要求.** | **Switch shall be checked after following test:**   1. **Solder :H63A(JIS Z3282)** 2. **Flux: Rosin Flux (JIS K 5902) having a nominal composition of 25% solids by mass of water white rosin in methyl alchol (JIS K 1501) solution** 3. **Soldering Temperature &lmmersing time**   **Dip soldering 260±5℃ 5±1s**  **Manual soldering 300±5℃ 2～3s**  **（4）Immersion Depth:（For dip soldering）**  **Immersion depth shall be at copper plating portion lf PCB after mounting.**  **(Thickness of PCB=1.6mm)**  **试件在下述参数条件下进行试验：**   1. **焊料：H63A (JIS Z3282)** 2. **焊剂：焊剂(JIS K 5902)，质量百分比为25%松香，75%甲醇的无色透明溶液。** 3. **焊接温度及浸入时间**   **自动焊接：260±5℃ 5±1s**  **手工焊接：300±5℃ 2～3s**  **（4） 浸入深度：( 对于手动焊接)**  **接线端子浸到离开关根部1.6mm处。** | | | |
| **5.9** | | **Resistance**  **To Flux**  **抗焊剂能力** | | | **Flux shall not be risen up to contact .**  **The switch shall be free from abnormalities in operation.**  **焊剂不得上升进入开关内部，影响接触转换。**  **试件在操作过程中不应发生变形。** | **witch shall be checked after following test:**  **(1)Solder :H63A(JIS Z3282)**  **(2)Flux: Rosin Flux (JIS K 5902) having a nominal composition of 25% solids by mass of water white rosin in methyl alc0hol (JIS K 1501) solution**  **(3)Soldering Temperature: 235±5℃**  **Immersing Time ; 3±0.5s**  **(4) Immersion Depth:**  **Immersion depth shall be at copper plating portion lf PCB after mounting.**  **(Thickness of PCB=1.6mm)**  **试件在下述参数条件下进行试验：**  **(1) 焊料：H63A (JIS Z3282)**  **(2) 焊剂：焊剂(JIS K 5902)，质量百分比为25%松香，75%甲醇的无色透明溶液。**  **(3) 焊接温度：235±5℃**  **浸入时间：3±0.5s**  **(4) 浸入深度：**  **接线端子浸到离开关根部1.6mm处。** | | | |
| 商标字 | | | | | | | **文件编号** | | **QB/HX27-03-2015** |
| **发布日期** | | **2015年03月21日** |
| **PRODUCT SPECIFICATION 产品承认书** | | | | | | | **文件版次** | | **第A版 第2次修订** |
| **SS-5G系列** | | | **MICRO SWITCH微动开关** | | | | **页 码** | | **共6页 第5页** |
|  | | | | | | | | | |
| **6.Durability characteristics** | | | | | | | | | |
| **No** | **Ltem 项目** | | | | **Criteria 标准** | **Test Method 实验方法** | | | |
| **6.1** | **electric**  **Life**  **电气寿命** | | | | **After test**  **Insulation resistance:10MΩ Min**  **Tolerance of operating force disintegration shall be within 30% of specified value**  **The electrical performance requirements specified in item 4.3 shall be satisfied.**  **The switch shall be free from abnormalities in appearance construction.**  **试验后:**  **绝缘电阻:10MΩ Min**  **操作力衰变应在±30%以内。**  **电气性能符合第4.3条件的要求.**  **开关外观及结构应无损坏。** | **50,000 cycles of operation shall be performed continuously at a rate of 30cycles per minute with load**  **在带负荷的条件下，速度30次/分，在寿命试验设备上连续转换50，000次。** | | | |
| **7. Weather proof characteristics 耐候性能** | | | | | | | | | |
| **No** | **Ltem 项目** | | | | **Criteria 标准** | **Test Method 实验方法** | | | |
| **7.1** | **Cold proof**  **低温** | | | | **After test**  **contact resistance :100mΩ Max**  **Insulation resistance:10MΩ Min**  **Tolerance of operating force disintegration shall be within 30% of specified value**  **The electrical performance requirements specified in item 4.3 shall be satisfied.**  **The switch shall be free from abnormalities in appearance construction.**  **试验后:**  **接触电阻: 100mΩ Max**  **绝缘电阻:10MΩ Min**  **操作力衰变应在±30%以内。**  **电气性能符合第4.3条件的要求.**  **开关外观及结构应无损坏。** | **After testing at -20±2℃ for 96hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that .water drops shall be eliminated .**  **试件在-20±2℃的温控箱内保持96小时，然后在正常温度和湿度下恢复1小时，并在此后1小时内对试品进行测量，水滴应消失** | | | |
| **7.2** | **Hot proof**  **高温** | | | | **After testing at 85±2℃for 96hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that . .water drops shall be eliminated .**  **试件在85±2℃的温控箱内保持96小时，然后在正常温度和湿度下恢复1小时，并在此后1小时内对试品进行测量，水滴应消失** | | | |
| **7.3** | **Moisture**  **Resistance**  **恒定湿热** | | | | **After testing at 40±2℃ 90～95% RH for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that . .water drops shall be eliminated .**  **试件在40±2℃ 90～95% RH的温控箱内保持96小时，然后在正常温度和湿度下恢复1小时，并在此后1小时内对试品进行测量，水滴应消失** | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 商标字 | | | | | **文件编号** | **QB/HX27-03-2015** |
| **发布日期** | **2015年03月21日** |
| **PRODUCT SPECIFICATION 产品承认书** | | | | | **文件版次** | **第A版 第2次修订** |
| **SS-5G系列** | | **MICRO SWITCH微动开关** | | | **页 码** | **共6页 第6页** |
|  | | | | | | |
| **No** | **Ltem 项目** | | **Criteria 标准** | **Test Method 实验方法** | | |
| **7.4** | **Temperature**  **Cycling**  **温度转换** | | **After test**  **contact resistance : 100mΩMax**  **Insulation resistance:10MΩ Min**  **The electrical performance requirements specified in item 4.3 shall be satisfied.**  **The switch shall be free from abnormalities in appearance construction.**  **试验后:**  **接触电阻: 100mΩ Max**  **绝缘电阻:10MΩ Min**  **电气性能符合第4.3条件的要求.**  **开关外观及结构应无损坏。** | **After 5 cycles of following conditions, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that .water drops shall be eliminated .**  **试件按下述实验条件试验5次，然后在正常温度和湿度下恢复1小时，并在此后1小时内对试品进行测量，水滴应消失** | | |
| **7.5** | **Salt mist**  **盐雾试验** | | **No remarkable corrosion shall be recognized in metal part.**  **在金属件上没有腐蚀斑点。** | **The switch shall be checked after after following test :**  **(1) Temperature: 35±2℃**  **(2) Salt solution: 5±1%(Solids by mass)**  **(3) Duration: 24±1hour**  **After test, salt deposit shall be removed by running water.**  **试件在下述实验后测量：**  **(1)温度: 35±2℃**  **(2)盐溶液浓度: 5±1%(Solids by mass)**  **(3) 时间: 24±1hour**  **实验后的盐沉积物用水冲掉。** | | |
| **7.6** | **Damp heat**  **With load**  **湿热负载** | | **Insulation resistance.(50VDC):**  **10MΩ Min.**  **Dielectric voltage:**  **Apply 100VAC for 1 minute.**  **No dielectric breakdown shall occur.**  **绝缘电阻 (50VDC):1 0MΩ Min.**  **抗电强度：**  **100V交流电作用1分钟，无击穿和飞弧现象发生。** | **DC Voltage 1.5 times as much as rated voltage shall be applied continuously between adjacent terminals at 60±2℃ and 90～95% RH for 500 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that . .water drops shall be eliminated .**  **试件每个相邻端子之间连续加载1.5倍于额定电压的直流电压60±2℃ 90～95% RH的温控箱内保持96小时，然后在正常温度和湿度下恢复1小时，并在此后1小时内对试品进行测量，水滴应消失** | | |