

| Description of Revision | Date | Name | Approved | ECN No. |
|-------------------------|------|------|----------|---------|
|                         |      |      |          |         |

NOTE:

1.MATERIAL SPECIFICATION:

- 1.HOUSING:HIGH TEMPERATURE RESISTANT PLASTIC,UL94 V-0.
- 2.CONTACTS:COPPER ALLOY
- 3.MID PLATE: STAINLESS STEEL
- 4.FRONT SHELL: STAINLESS STEEL

2.PLATING SPECIFICATION:

2-1.CONTACTS:

Ni 50u" MIN. UNDER PLATED OVER ALL.  
Au PLATED ON THE FUNCTIONAL AREA OF CONTACT.  
(GOLD PLATING THICKNESS FOLLOW THE P/N)  
PLATING SPECIFICATIONS OF THE SOLDER AREA FOLLOW THE P/N

2-2.FRONT SHELL:

SEE TABLE1.

2-3.SHIELD PLATE&EMI PLATE:  
CLEAR ONLY

3.MECHANICAL PERFORMANCE,

- 3-1.INSERTION FORCE: 0.5~2.0kgf.
- 3-2.REMOVAL FORCE: 0.8kgf~2.0kgf.
- 3-3.DURABILITY: 5000 CYCLES.

4.ELECTRICAL PERFORMANCE,

- 4-1. CURRENT RATING:3.0A  
VOLTAGE RATING: 5V
- 4-2. LLCR:  
VBUS & GND PINS AND OTHER PINS: 40mΩ/PIN MAX.  
SHIELD: 50mΩ/MAX.  
LLCR MAX. CHANGE OF ALL PINS: 10mΩ.
- 4-3.INSULATION RESISTANCE: 100MΩ MIN
- 4-4.DIELECTRIC WITHSTAND VOLTAGE,AC 100V FOR 1 MINUTE.

5. ENVIRONMENTAL PERFORMANCE:

OPERATING TEMPERATURE: -30°C~+80°C.

6.IR REFLOW:

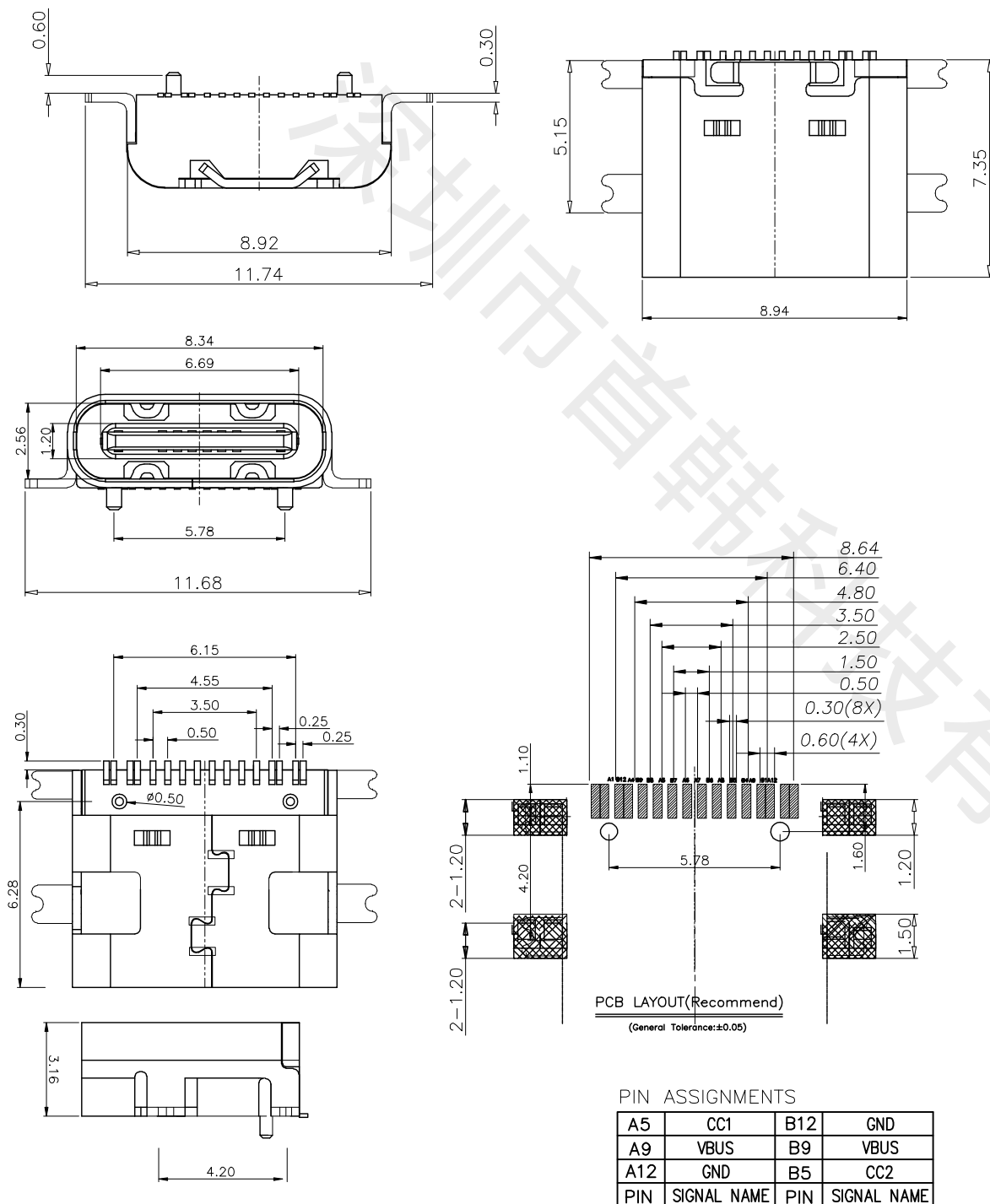
THE PEAK TEMPERATURE ON THE BOARD SHALL  
BE MAINTAINED FOR 10 SECONDS AT 260°C.

UNLESS OTHERWISE  
SPECIFIED TOLERANCES



深圳市首韩科技有限公司

| DECIMALS:   | ANGLES      | TITLE.        | TYPE-C 16P QTWT               |
|-------------|-------------|---------------|-------------------------------|
| X. ±0.20    | X' ±2°      | Drwn. 李春风     | PART NO.                      |
| X.X ±0.15   | X.X' ±1°    | Checked. 钟华华  | SCALE. 1:8 UNIT. mm PROJ.     |
| X.XX ±0.10  | X.XX' ±0.5° | Approved. 罗孝金 | SIZE. A4 SHEET. 1 OF 1 REV. A |
| X.XXX ±0.05 |             | CUSTOMER COPY |                               |





深圳市首韩科技有限公司

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## 承 认 书

### SPECIFICATION FOR APPROVAL

产 品 编 码  
material code:

产品名称 Project:

TYPE-C

规格型号 Part No:

TYPE-C 16P QTWT

贵公司承认印 Approval signatures

| 料 号/Part No. | 签 章/Signatures |
|--------------|----------------|
|              |                |

日期 Date:

|             |     |                                                                                      |
|-------------|-----|--------------------------------------------------------------------------------------|
| 拟制/Drawn    | 李春风 |  |
| 审核/Check    | 钟华华 |                                                                                      |
| 批准/Approved | 罗孝金 |                                                                                      |



|                                          |                                 |                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                       |
|------------------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RATING（额定值）:                             |                                 | DC 5 V 3A                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                       |
| PRACTICAL TEMPERATURE RANGE<br>使用温度范围    |                                 | -25~85° C<br>在-25° C~+85° C 温度内使用                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                       |
| STANDARD ATMOSPHEIC CONDITIONS<br>测试标准状况 |                                 | UNLESS OTHERWISE SPECIFIED<br>THE STANDARD RANGE OF ATMOSPHERIC CONDITIONS FOR MAKING MEASUREMENTS AND TESTS ARE AS FOLLOWS:<br>(1) BETWEEN BODY AND CONDUCTOR: 5° C TO 35° C<br>(2) BETWEEN CONDUCTORS NOT TO BE CONTACT: 45% TO 85%<br>(3) PRESSURE: 86Kpa TO 106Kpa<br>在没有指定的情况下测试温度、湿度、气压如下:<br>(1) 温度为 5℃~35℃<br>(2) 湿度为 45%~85%<br>(3) 气压为 86 Kpa~106Kpa |                                                                                                                                                                       |
| MECHANICAL（机械性能）                         |                                 |                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                       |
| ITEM 项目                                  |                                 | TEST CONDITIONS 测试条件                                                                                                                                                                                                                                                                                                                                           | PERFORMANCE 规格                                                                                                                                                        |
| 1                                        | CONNECTION FORCE<br>插入力度        | MEASUREMENT SHALL BE MADE AFTER CONNECTING AND DISCONNECTING USING STANDARD PLUG GAUGE 3 TIMES。<br>依据标准的 PLUG GAUGE 做第 3 次拔插后测定                                                                                                                                                                                                                                | 0.5 ~ 2.0Kgf                                                                                                                                                          |
|                                          | DISCONNECTI ON<br>FORCE<br>拔出力度 | MEASUREMENT SHALL BE MADE AFTER CONNECTING AND DISCONNECTING USING STANDARD PLUG GAUGE 3 TIMES。<br>依据标准的 PLUG GAUGE 做第 3 次拔插后测定                                                                                                                                                                                                                                | 0.8 ~ 2.0Kgf                                                                                                                                                          |
| 2                                        | TERMINAL STRENGTH<br>端子强度       | A STATIC LOAD OF 0.1N/m(1kgf/cm)SHALL BE APPLIED TO THE TIP OF THE TERMINAL FOR 1 MIN<br>IN ANY DIRECTION<br>向排脚先端的任意一个方向加 1 分钟 0.1N/m(1kgf/cm)的力度.                                                                                                                                                                                                            | THERE SHALL BE NO DAMAGE TO THE TERMINAL SUCH AS CRACKS, LOOSENESS OR PLAY ELECTRICAL ,AND MECHANICAL CHARACTERISTICS SHALL BE SATISFIED<br>在排脚中没有裂开、松动等异常，满足于机械、电气性能 |
| ELECTRICAL（电气性能）                         |                                 |                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                       |
| ITEM 项目                                  |                                 | TEST CONDITIONS 测试条件                                                                                                                                                                                                                                                                                                                                           | PERFORMANCE 规格                                                                                                                                                        |
| 3.1                                      | CONTACT RESISTANCE<br>接触电阻      | MEASURED AT SMALL CURRENT （100m A OR LESS）<br>1000Hz<br>在微小电流（100 m A）以下测试                                                                                                                                                                                                                                                                                     | 40mΩ MAX                                                                                                                                                              |
| 3.2                                      | INSULATION RESISTANCE<br>绝缘电阻   | APPLY A VOLTAGE OF 100V DC FOR 1 MIN TO FOLLOWING PORTIONS AFTER WHICH MEASUREMENT SHALL BE MADE:<br>(1) BETWEEN BODY AND CONDUCTOR<br>(2) BETWEEN CONDUCTORS NOT TO BE CONTACT<br>(3) BETWEEN CONDUCTORS NOT TO BE WHEN PLUG IS INSERTED DC100V 1 MIN<br>输入 100V DC 电压 1 分钟，按以下接触方法测试：<br>(1) 插座体与排脚之间<br>(2) 不接触的排脚之间<br>(3) 插头插入时不接触排脚之间                    | 100MΩ MIN                                                                                                                                                             |

|                 |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                               |
|-----------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 3.3             | DIELECTRIC STRENGTH<br>耐电压                 | <p>AC 100V 50~60Hz)FOR 1 MIN TRIP CURRENT:0.5mA</p> <p>(1) BETWEEN BODY AND CONDUCTOR</p> <p>(2) BETWEEN CONDUCTORS NOT TO BE CONTACT</p> <p>(3) BETWEEN CONDUCTORS NOT TO BE WHEN PLUG IS INSERTED DC 100V 1 MIN</p> <p>输入 AC 100V (50Hz) /min 电压 1 分钟感度电流为 0.5mA, 按以下接触方法测试:</p> <p>(1) 插座体与排脚之间</p> <p>(2) 不接触的排脚之间</p> <p>(3) 插头插入时不接触排脚之间</p>                                                                                                                                                                                            | <p>WITHOUT DAMAGE TO PARTS ARCING OR BREAKDOWN ETC</p> <p>没有绝缘破坏等异常</p>                                                                       |
| URABILITY (耐久性) |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                               |
|                 | ITEM 项目                                    | TEST CONDITIONS 测试条件                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | PERFORMANCE 规格                                                                                                                                |
| 4. 1            | SOLDERABILITY TEST<br>可焊性试验                | <p>THE TOP OF THE TERMINALS SHALL BE DIPPED 1mm IN THE SOLDER BATH OF <math>250 \pm 5^{\circ}\text{C}</math> FOR <math>5 \pm 0.5</math> SECONDS</p> <p>端子顶部被浸入锡池中 1mm 深,温度为 <math>250 \pm 5^{\circ}\text{C}</math>,时间为 <math>5 \pm 0.5</math> 秒</p>                                                                                                                                                                                                                                                                                           | <p>(1) SOLDER WETTING TIME SHALL BE 3 SEC OR LESS<br/>焊接时间应少于 3 秒</p> <p>(2) THE AREA OF SOLDERING SHOULD BE OVER 75%<br/>焊接面积应有 75%以上</p>    |
| 4.2             | RESISTANCE TO SOLDERING HEAT TEST<br>耐焊性试验 | <p>REFLOW SOLDERING CONDITIONS:</p> <p>PREHEAT:TEMPERATURE ON THE COPPER FOIL SURFACE SHOULD REACH <math>180 \pm 120\text{s}</math> AFTER THE P.C.B ENTERED INTO THE SOLDERING EQUIPMENT.</p> <p>TALLEST TEMPERATURE:TEMPERATURE ON THE COPPER FOIL SURFACE SHOULD REACH THE PEAK TEMPERATURE OF <math>260 \pm 5</math> WITH IN 20 SECONDS.</p> <p>过回流焊条件:</p> <p>预热:电镀层表面的温度应达到 <math>180^{\circ}\text{C}</math>,120s 后电路板进入回流焊设备。</p> <p>最高温度:电镀层表面温度最高为 <math>260 \pm 5^{\circ}\text{C}</math> 且停留不超过 20 秒。</p> <p>Temperature Profile</p> | <p>WITHOUT DEFORMATION OF CASE OR EXCESSIVE LOOSENESS OF TERMINALS ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED</p> <p>本体无变形, 满足于机械、电气性能</p> |

|      |                                            |                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                               |
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| 4. 2 | RESISTANCE TO SOLDERING HEAT TEST<br>耐焊性试验 | SOLDERING IRON METHOD:<br>BIT TEMPERATURE $330 \pm 5^{\circ}\text{C}$ APPLICATION TIME OF SOLDERING IRON $3 \pm 0.5 \text{ SEC}$<br>HOWEVER EXCESSIVE PRESSURE SHALL NOT BE APPLIED TO THE TERMINAL<br>手焊接的时候温度需控制在 $330 \pm 5^{\circ}\text{C}$ , 时间为 $3 \pm 0.5$ 秒, 但不能在排脚上施加异常压力。                                                                                                                           | WITHOUT DEFORMATION OF CASE OR EXCESSIVE LOOSENESS OF TEMINALS ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED<br>本体无变形, 满足于机械、电气性能                                                                                                             |
| 4. 3 | HUMIDITY TEST<br>潮湿试验                      | THE JACK SHALL BE STORED AT A TEMPERATURE OF $40 \pm 2^{\circ}\text{C}$ AND A HUMIDITY OF 90%TO 96% FOR 96 Hr, THEN THE JACK SHALL BE MAINTAINED AT STANDARD ATMOSPHERIC CONDITION FOR 1 Hr FOR OTHER PROCEDURES<br>放置 $40 \pm 2^{\circ}\text{C}$ 的相应湿度为 90~96% Hr 环境中 96 小时后, 再将样板放在正常环境中 1 小时后进行测试                                                                                                          | THERE SHALL BE NO DAMAGE ON APPEARANCE.<br>MECHANICAL AND ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED<br>外观无异常, 满足于机械、电气性能。                                                                                                                 |
| 4.4  | HEAT TEST<br>耐热试验                          | THE JACK SHALL BE STORED AT A TEMPERATURE OF $70 \pm 2^{\circ}\text{C}$ FOR 96 HOURS, AND THEN IT SHALL BE SUBJECTED TO THE CONTROLLED RECOVERY MBASURBM<br>放置在温度 $70 \pm 2^{\circ}\text{C}$ 中测试 96 小时后, 再放置正常室温中 1 小时来测定                                                                                                                                                                                     |                                                                                                                                                                                                                                               |
| 4. 5 | COLD TEST<br>耐寒试验                          | THE JACK SHALL BE STORED AT A TEMPERATURE OF $-25 \pm 3^{\circ}\text{C}$ FOR 96 HOURS AND THEN IT SHALL BE SUBJECTED TO THE CONTROLLED RECOVERY CONDITIONS FOR 1 HOUR AFTER WHICH<br>放置在温度 $-25 \pm 3^{\circ}\text{C}$ 中 96 小时后, 再放置常温常湿中 1 小时来测定                                                                                                                                                             | THERE SHALL BE NO DAMAGE ON APPEARANCE<br>MECHANICAL AND ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED<br>外观无异常, 满足于机械、电气性能                                                                                                                   |
| 4. 6 | LIFE TEST<br>寿命试验                          | WITHOUT LOAD<br>CONNECTION AND DISCONNECTION SHALL BE MADE WITH THE MATING PLUGS AND JACKS FOR 5000 CYCLES AT A SPEED OF 10 TO 25 CYCLES/MIN<br>无负荷<br>将结合了的标准Plug(尽量要近于中心的)在1分钟内以10-25的速度, 进行 5000次插入, 拔出<br>LOAD:<br>AT RATING CONDITION (NON-INDUCTIVE LOAD)<br>CONNECTION AND DISCONNECTION SHALL BE MADE 5000 CYCLES AT A SPEED 10 TO 20 CYCLES / MIN<br>负荷<br>以定格状态(无诱导负荷)在1 分钟内以10-20次的速度进行 5000次插入、拔出 | (1) CONTACT RESISTANCE SHALL BE $\leq 0.1 \Omega$<br>(2) DISCONNECTION FORCE SHALL BE 0.8 TO 2.0N<br>(3) MECHANICAL AND ELECTRICAL CHARACTERISTICS SHALL BE SATISFIED<br>(1) 接触电阻 $\leq 0.1 \Omega$<br>(2) 拔出力是 0.8~2.0N<br>(3) 其它:满足于机械、电气性能 |

|     |                                               |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                   |
|-----|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.7 | <p>TEMPERATURE CYCLING TEST</p> <p>温度循环测试</p> | <p>THE JACK SHALL BE SUB JECTED TO 5 CYCLES OF THE FOLLOWING CONDITIONS SHOWED IN THE FIGURE,AND THEN SHALL RETURNED ALLOWED TO REMAIN IN ROOM AMBIENT CONDITION FOR 30 MINUTES</p> <p>将插座以下列条件作 5 个循环，然后放回室内环境 30 分钟</p> <p>Temp(°C)</p>  <p>(Hours)</p>       | <p>THERE SHALL BE NO DEFORMATION OR CRACKS IN MOLDED PART.</p> <p>INSERTION &amp; EXTRACTION FORCE:3 TO 20N</p> <p>CONTACT RESISTANCE:MAX.30MΩ</p> <p>INSULATION RESISTANCE: MIN.100 MΩ</p> <p>DIELECTRIC WITHSTANDING VOLTAGE: 100VAC/MIN(BETWEEN TERMINALS)</p> <p>产品不能变形与破裂</p> <p>插拔力: 3N 至 20N</p> <p>接触电阻: 最大 30mΩ</p> <p>绝缘电阻: 最小 100 MΩ</p> <p>绝缘耐压: 最小 100VAC (端子之间)</p> |
| 4.8 | <p>COLD&amp;HEAT SHOCK TEST</p> <p>冷热冲击测试</p> | <p>THE JACK SHALL BE SUBJECTED TO 5 CYCLES OF THE FOLLOWING CONDITIONS SHOWED IN THE FIGURE,AND THEN SHALL RETURNED AND ALLOWED TO REMAIN IN ROOM AMBIENT CONDITION FOR 30 MINUTES</p> <p>将插座以下列条件作 5 个循环，然后放回室内环境 30 分钟</p> <p>TEMP (°C)</p>  <p>(Hours)</p> | <p>THERE SHALL BE NO DEFORMATION OR CRACKS IN MOLDED PART.</p> <p>INSERTION &amp; EXTRACTION FORCE:3 TO 25N</p> <p>CONTACT RESISTANCE:MAX.30MΩ</p> <p>INSULATION RESISTANCE: MIN.100 MΩ</p> <p>DIELECTRIC WITHSTANDING VOLTAGE: 500VAC/MIN(BETWEEN TERMINALS)</p> <p>产品不能变形与破裂</p> <p>插拔力: 3N 至 25N</p> <p>接触电阻: 最大 30mΩ</p> <p>绝缘电阻: 最小 100 MΩ</p> <p>绝缘耐压: 最小 500VAC (端子之间)</p> |