

产品名称：2.54排针/排母系列规格书

文件编码：ME3-EN-TS0004

版本：A

制作：

审核：MAX

制作部门：工程部

## 1. SCOPE 适用范围

This product specification defines the product performance and the test methods to ascertain the performance of the (2.54PH/FH) Connector, which is designed and manufactured by XGY Electronic Co., Ltd. This product specification is applicable but not only for those part numbers which are shown in the cover page.

本产品规格书规定了由西格益电子有限公司设计生产的（2.54PH/FH）型连接器，产品的特性及测试方法。本产品规格书适用于但不局限于封面所显示的产品料号

## 2. REFERENCE DOCUMENTS 参考文件

MIL-STD-1344	Test method for electrical connector	电子连接器测试方法
MIL-STD-202	Test method for electrical connectors	电子零件测试方法
EIA364	Test method for electrical connectors	电子零件测试方法
JIS C 0051	Test method for electrical connectors	电子零件测试方法
MIL-G-45204C	Specification for gold plating	镀金规格
IEC-512-3	IEC standard for current carrying capacity tests	IEC 电流测试标准
QQ-N-290A	Specification for nickel plating	镀镍规格
MIL-P-81728A	Specification for tin/lead plating	镀锡铅规格
MIL-T-10727B	Specification for tin plating	镀锡规格
UL498	UL standard for safety of attachment plug and receptacle	UL安规要求标准
EN/ISO5961	Determination of total lead & cadmium content	总铅和总镉含量测定
EN1122	Determination of total lead & cadmium content	总铅和总镉含量测定
EN13346	Determination of heavy metals content	重金属含量测定
EPA3052	Determination of total lead & cadmium content	总铅和总镉含量测定

## 3. FEATURE & DIMENSIONS 特征及特性

### 3.1. PRODUCT DIMENSION 产品尺寸

These connectors shall have the dimensions as shown in drawing.

本产品的相关尺寸参见图面

### 3.2. PCB/panel layout 印刷电路板布局

The recommended PCB layout is shown in drawing.

本产品适用的 PCB layout 参见图面。

### 3.3. BILL OF MATERIAL 材料清单

Harmful material controlling follows the requirements of RoHS. The bill of material is described in drawing.

有害物质控制符合RoHS指令要求。本产品适用的材料参见图面。

### 3.4. MECHANICAL & ELECTRICAL CHARACTERISTIC 机械及电器特性

The connector shall have the mechanical and electrical performance as described in drawing.

本产品的机械及电器特性参见下方附表一（测试要求与方法）。

### 3.5. PACKAGING 包装

Products shall be packaged according to requirements specified in purchase order for safe delivery, connector container and the packaging method are shown in package specification.

产品可依照客户指定要求包装，包装材料与包装方式参见产品包装规范。

### 3.6. RATING CURRENT AND RATING VOLTAGE 额定电流与额定电压

Rating current is (3.0)A, rating voltage is (1000)V DC/AC RMS.

额定电流 (3.0) A, 额定电压 (1000) V DC/AC RMS.

### 3.7. STORAGE AND OPERATING TEMPERATURE 存储与使用温度

Temperature range:  $-(40)^{\circ}\text{C} \sim +(105)^{\circ}\text{C}$ , including terminal temperature rise for rating current

温度范围:  $-(40)^{\circ}\text{C} \sim +(105)^{\circ}\text{C}$ , 包含接触端子的额定电流温升

## 4. Environmental 环境温度

### 4.1. SOLDERABILITY 可焊性

Connectors meet solder-ability to MIL-STD-202, and shall be free of contaminants.

产品可焊性符合MIL-STD-202标准规定的相关要求，表面不得有污染物。

### 4.2. RESISTANCE TO SOLDER HEAT 耐焊接热

#### 4.2.1. WAVE SOLDER 波峰焊接

Each cycle consists of three consecutive phases.

每个焊接周期包括三个连续阶段。

##### 4.2.1.1. Preheat 预热

The steady temperature of the preheat zone is  $90 \sim 125^{\circ}\text{C}$

预热区最终温度控制在  $90 \sim 125^{\circ}\text{C}$

##### 4.2.1.2. Soldering 焊接

To avoid the secondary tin-melting, the temperature on PCB upper surface is  $160^{\circ}\text{C}$  Max. for products with lead, or  $200^{\circ}\text{C}$  Max. for lead-free products. The temperature of the PCB bottom surface shall not be exceed  $100^{\circ}\text{C}$  more than the temperature of the PCB upper surface. The peak temperature is during  $230 \sim 250^{\circ}\text{C}$  for products with lead, or  $255 \sim 270^{\circ}\text{C}$  for lead-free products. The tin dip time is duration for 3~10 seconds.

有铅产品板面温度不得超过  $160^{\circ}\text{C}$ ，无铅产品板面温度不的超过  $200^{\circ}\text{C}$ ，以防止贴片零件二次熔锡。板面温度与板底的温度温差不得超过  $100^{\circ}\text{C}$ 。板下温度峰值有铅产品维持在  $230 \sim 250^{\circ}\text{C}$ ，无铅产品控制在  $255 \sim 270^{\circ}\text{C}$ 。浸锡时间控制在 3~10 秒。

#### 4.2.1.3. Cool Down冷却

Cool down shall not exceed 6°C per second.

冷却速度不超过6°C秒

#### Note:说明

Device temperature measurements are referenced from the top-center of the package outer surface

设备温度测量时以从顶部中间位置测量为准。

### 5. PERFORMANCE AND TEST DESCRIPTION性能测试

#### 5.1. REQUIREMENT 要求

Product is designed to meet electrical, mechanical, and environmental performance requirements specified in **Table 1**

本产品设计符合附表一所述的机械，电器及环境要求

#### 5.2. TEST CONDITION 测试条件

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

除非特别注明，所有测试的室温条件下完成

#### 5.3. SAMPLE SELECTION 样品选择

Test samples shall be selected at random from current production. No test samples shall be reused. Samples are pre-conditioned with 10 cycles of durability. Each group shall be containing 5 test samples at least.

测试样品从现生产的产品中随机抽取，所有测试过的样品不得重复使用。样品以预先插拔10次，每组测试至少有5个样品。

**Table 1: Test Requirements and Methods**

附表一：测试要求与方法

Items	Requirements	Test Methods
项目	要求	测试方法
1 Confirmation of Product 产品确认	Product shall be conforming to the requirements of applicable product drawing 产品必须符合相关产品图面的要求	Visually dimensions and functionally inspected per applicable product drawing. 依照产品相关图面，检查产品的外观 尺寸及功能

<p>2 Contact Resistance 接触抗阻</p>	<p>20 mΩ Max. Initial 初始状态最大20 mΩ</p>	<p>Subject mated contacts assembled in housing to closed circuit of 100 mA max. 20 mV max. 所述固定在外壳里的端子连接到一个封闭回路中测试，电流100mA max, 电压20 mV max.</p>
<p>3 Insulation Resistance 绝缘阻抗</p>	<p>1000 MΩ Min 最小 1000 MΩ</p>	<p>Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector . 测试产品相邻端子间以及端子与接地间的电阻，</p>
<p>4 Dielectric Withstanding Voltage 耐电压</p>	<p>Connector must withstand test potential of 500 VAC RMS for 1 minute, No spark no smoking no breakdown 产品必须承受测试电压500 VAC RMS，时间1分钟，无火花无冒烟无击穿</p>	<p>Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector . 对产品相邻端子间以及端子与接地间加载电压，并测试其漏电流。</p>
<p>5 Durability (Repeated Mating /Un-mating) 耐久性</p>	<p>Contact Resistance: 40 mΩ Max. after testing. 测试后接触电阻抗40 mΩ</p>	<p>重复进行配合产品50次插拔，以每分钟25±3mm的速度来回拉。</p>
<p>6 Connector Pin Mating/Un-mating Force 单支端子插入/拔出力</p>	<p>Mating force: (0.30)kg/Pin Max. Un-mating force: (0.05)kg/Pin Min. 插入了最大 (0.30) kg/Pin 拔出力最小 (0.05) kg/Pin</p>	<p>At a speed of 25±3 mm/minute, apply axial insert the mating part into fully or pull out from the subject product. 以25±3mm/分钟的速度，轴向完全插入对配插件到被测产品中或从被测产品中拔出。</p>
<p>7 Contact Retention Force 端子保持力</p>	<p>Male: (0.70) kg/Pin Min. Female: (0.35) kg/Pin Min. 公座 最小 (0.70) kg/Pin 母座 最小 (0.35) kg/Pin</p>	<p>Apply axial pull out force at a speed of 25±3 mm/minute on the contact assembled in the housing. 以25±3mm/分钟的速度施加轴向拉力从塑胶本体上拔出端子。</p>
<p>8 Solder-ability 可焊性</p>	<p>Appearance of the specimen shall be inspected after the test with the assistance of a magnification of 10 X for any damage such as pinholes, void or rough surface. 产品在测试完成后，在放大倍数为10倍的显微镜下，检查外观损坏如：小孔，空焊，外观粗糙度等。</p>	<p>Soldering time: 4 to 6 seconds. Temperature: 245±5℃ 焊接时间：4-6秒。 温度：245±5℃</p>

<p>9 Sait Spray 盐雾</p>	<p>There is no blue-green corrosionproduct on plating is OK. 实验后镀层无蓝绿色腐蚀物或生锈现象为合格</p>	<p>5±1% salt concentration 12 huors 35±2℃ 盐水浓度5±1%，时间12小时，温度35±2℃.</p>
<p>10 solder after steam aging 蒸气老化后焊锡</p>	<p>testing product isn't falling-off, broken,rust ,oxidation;Tin after, Solder plating is full and brilliance  实验品无脱落、龟裂、生锈、氧化、露出底材等不良现象；沾锡后，实验样品沾锡饱满、光泽、亮泽</p>	<p>Put products into steam aging machine of temperatur 98℃,Test water must be steam water or pure water,24 hours;Parts of samples is to dip soldering  将产品放入蒸气老化机，实验温度保持98℃，实验形成蒸气之用水必须为蒸馏水或纯净水24h;将蒸气老化实验品实验部分沾锡</p>

## 6. 包装存储运输要求

- 1) 物料的包装对物料有一定的保护作用和密封作用，保证物料在运输过程中不会受到损坏。
- 2) 包装箱应满足防潮，防振、防压和防霉等要求。
- 3) 最小包装单元的标识必须有厂家商标、产品型号、名称、物料编码和数量。
- 4) 包装成箱的产品，应在环境温度为-10℃~+40℃，相对湿度在80%以下，周围空气中无酸性，碱性或其它腐蚀性气体的库房里贮存，在上述条件下，自生产日期能够半年贮存期，在这半年内物料仍为合格品。