



浙江珠城科技股份有限公司

ZHEJIANG ZUCH TECHNOLOGY CO., LTD

产品系列
Product Series

187 直插系列

文件名称
Document name

产品规格书
Product specification

页码 page

1-8

187 直插系列 (187 Faston Series)

目录

Index

- 1.范围 Scope
- 2.相关标准 Related Standards
- 3.参数范围 Parameter Ratings
- 4.产品性能 Performance Specification
- 5.测试分组 Test Sequences
- 6.插片标准 Tab Standards

文件修订履历(Modify history)

| 标记 Tag | 修订日期 Revision date | 修订内容摘要 Revision content | 修订者 Reviser | 备注 Note |
|-----------|-----------------------|----------------------------|----------------|------------|
| 1 | 2017/4/19 | 版本更新 Version update | 王春生 | |
| 2 | 2019/9/17 | 增加 UL 标准 Add UL Standard | 王春生 | |
| 3 | 2020/9/16 | 版本更新 Version update | 王春生 | |
| 4 | 2022/10/14 | 更新内容 Update Contents | 郭欣 | |
| 5 | 2024/9/02 | 更新内容 Update Contents | 高迪 | |
| | | | | |

| | | | | | |
|-------------------------|--------|---------------------|-----|------------------------|-----------|
| 制定: Prepared by: | 高迪 | 审核: Reviewed by: | 高迪 | 批准: Approved by: | 王春生 |
| 编号: Document Number: | PS-058 | 版本: Revision: | A05 | 发行日期: Release Date: | 2024/9/02 |



1、范围 scope

本规格书规定本公司 187 系列（非自锁）产品。

This specification covers the 187 faston (Not self-locking) series products.

2、相关标准 Related Standards

注：本规格书为系列产品通用，当规格书参数要求与产品图纸发生冲突时，以产品图纸中的要求为准，当规格书参数与参考标准内容冲突时，以本规格书中的要求为准。

Note: This specification is for one full series normal version. If this specification have any conflicting items with products drawings, should take product drawings as right one. If any parameter is this specification conflict with reference standard, should take the parameter in this specification as right one.

参考文件：Reference standard.

GB17196-1997 连接铜导线用的扁形快速连接端头

Connecting devices-Flat quick-connect terminations for electrical copper conductors-Safety requirements

UL 310 快速连接端子

Quick connect terminal

IEC 61210 连接铜导线用的扁形快速连接端头

Connecting devices-Flat quick-connect terminations for electrical copper conductors-Safety requirements

3、参数范围 Parameter Ratings

| | | |
|-------------------------------------|-------------------|---------------------|
| 额定电压 Rated Voltage | 250V AC/DC | |
| 额定电流 Rated Current | 适用电线 Wire Size | 电流 AC Current AC |
| | 26AWG | 1.5A |
| | 24AWG | 2A |
| | 22AWG | 2.5A |
| | 20AWG | 4A |
| | 18AWG | 7A |
| | 16AWG | 10A |
| 14AWG | 15A | |
| 温度范围 Operation temperature range | -40°C ~ 105°C | |



4、产品性能 Performance Specification

产品应满足电气、机械和环境性能要求，测试方法及判断标准如 4.1、4.2、4.3.

所有测试在室温进行,除非另有说明.

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in 4.1,4.2 and 4.3.

All tests shall be performed in the room temperature, unless otherwise specified.

4.1 电气特性 Electrical Requirements

| 序号 COD | 项目 Test project | 测试方法及条件 Test methods and conditions | 标准规格 standard |
|-----------|----------------------------|---|--|
| 4.1.1 | 外观 appearance | 目测 Checking by eye 视力: 1.0 以上 Eyesight: > 1.0 照明: (200-300) 1x Lamp: (200-300) 1x 目测距离: 0.3-0.5m Space: 0.3-0.5m | 符合产品图面及产品功能要求 Meets requirements of product Drawing |
| | | 端子公母对插后, 通过 20mV 电压, 10mA 的电流, 测试公母端接触电阻 | 3 毫欧 Max.(初始值) 6 毫欧 Max.(试验后) |
| 4.1.2 | 接触电阻 Contact Resistance | Mate connectors: apply a maximum voltage of 20 mV at rated current of 10 mA | 3mΩ Max.(Initial) 6mΩ Max.(final) |
| 4.1.3 | 温升 Temperature Rise | 将产品串联在额定电压、电流的电路中, 测量端子与导线连接处的温升值. | $\Delta 30^{\circ}\text{C}$ Max. |
| | | Measure temperature rising at wire crimped by applied current to all positions. | $\Delta 30^{\circ}\text{C}$ Max. |
| | | <p>温度及热循环测试的连接及排列</p> <p>典型的测试板</p> <p>双端标准公端子 0.750" (19.05 mm) 铜套管—9/64英寸 (3.6mm), 内径为M3.5的螺丝或等同措施 绝缘材料 沉孔</p> <p>固紧标准公端子详图</p> | |



浙江珠城科技股份有限公司

ZHEJIANG ZUCH TECHNOLOGY CO., LTD

产品系列
Product Series

187 直插系列

文件名称
Document name

产品规格书
Product specification

页码 page

4-8

| | | | | | |
|-------|---------------------------------|---|---|--|--|
| 4.1.4 | 周期性载流 (热循环) thermal cycle | 完成 4.1.3 测试操作后继续进行周期性载流测试, 共测试 500 个循环周期, 每个循环周期包含 45 分钟通电和 15 分钟断电, 测试电流如下: | 第 500 循环的温升应不会比第 24 循环的温升高 15°C, 而且两者的温升都不应高于 85°C | | |
| | | After the testing No.4.1.3 finished, apply periodic current loading testing with total 500 cycles, 45 Minutes loading current and 15 minutes outage for one cycle, Loading current as following table | The temperature of No. 500 cycle can not be higher more than 15°C comparing with No. 24 cycle. The temperature of two cycles can not be higher than 85°C. | | |
| | | 适用电线 Wire Size | 电流 Current | | |
| | | 26AWG | 3A | | |
| | | 24AWG | 4A | | |
| | | 22AWG | 5A | | |
| | | 20AWG | 8A | | |
| | | 18AWG | 14A | | |
| | | 16AWG | 20A | | |
| 14AWG | 30A | | | | |

4.2 机械特性 Mechanical Requirements

| | | | | |
|-------|---|---|---|--------------------------|
| 4.2.1 | 振动 Vibration | 振幅: 1.5mm 振频率: 10-55-10 Hz/1 分钟 持续时间: X-Y-Z 各 2 小时 | 接触电阻: ≤6 毫欧 振动过程中, 电路瞬间时间不超过 1μsec. | |
| | | Amplitude:1.5mm peak to peak Sweep:10-55-10 Hz in one minute Duration:2 hours in each X-Y-Z axis | Contact Resistance: ≤6mΩ No electrical discontinuity greater than 1μsec. | |
| 4.2.2 | 压着抗张强度 Crimp Tensile Strength | 在实验装置夹头上固定实验样品, 以 25±6mm/分钟的速度沿连接的轴线方向施加拉力 The experimental sample is fixed on the chuck of the experimental device, and the tension is applied along the axis direction of 25 + 6mm/minutes | 适用电线 Wire Size | 抗张强度 Tensile Strength |
| | | | 26AWG | 20N Min. |
| | | | 24AWG | 30N Min. |
| | | | 22AWG | 36N Min. |
| | | | 20AWG | 58N Min. |
| | | | 18AWG | 89N Min. |
| | | | 16AWG | 133N Min. |
| 14AWG | 223N Min. | | | |
| 4.2.3 | 插拔力 (通用) Insertion Force Extraction Force (注: 依要求选用 Select according to requirements) | 在实验装置夹头上固定实验样品, 以 25±6mm/分钟的速度沿连接的轴线方向施加插入力和拔出力 The experimental samples are fixed on the chuck of the experimental device, and the insertion force and extraction force were applied along the axis direction of 25 + 6mm/minutes | 插入力 Insertion Force | |
| | | | 45N Max. | |
| | | | 拔出力 Extraction Force | |
| | | | 初次 Initial | 第 6 次 6th Time |
| | | | 50N Min. | 10N Min. |



| | | | | |
|-------|---|--|-----------------------------|-------------------|
| 4.2.4 | 插拔力 (UL 标准) Insertion Force Extraction Force (注: 依要求选用 Select according to requirements) | 在实验装置夹头上固定实验样品, 以 25±6mm/分钟的速度沿连接的轴线方向施加插入力和拔出力 | 插入力 Insertion Force | |
| | | The experimental samples are fixed on the chuck of the experimental device, and the insertion force and extraction force were applied along the axis direction of 25 + 6mm/minutes | 50N Max. | |
| | | | 拔出力 Extraction Force | |
| | | | 初次 Initial | 第 6 次 6th Time |
| | | | 89N Max. | 13N Min. |

4.3 环境特性 Environmental Requirements

| | | | | | |
|-------|-------------------|--|---|---|--|
| 4.3.1 | 热冲击 Heat Shock | 端子公母端插接后置于实验装置中进行循环测试, 共进行 5 次循环, 单次循环条件如下: | 接触电阻: ≤6 毫欧 外观: 无损伤 | | |
| | | The male and female terminals of the terminal are inserted into the experimental device to be tested in circulation, and 5 cycles are carried out | Contact Resistance: ≤6mΩ Appearance: No Damage | | |
| | | 单次循环参数 Single cycle parameter | | / | |
| | | 温度 Temperature | 时间 Time | | |
| | | +105+3/-0°C | 30 分钟 30 minute | | |
| | | 室温 room temperature | 5 分钟 5 minute | | |
| | | -40+0/-3°C | 30 分钟 30 minute | | |
| | | 室温 room temperature | 5 分钟 5 minute | | |
| 4.3.2 | 耐湿性 Humidity | 端子公母端插接后置于实验装置中进行测试 温度: 40°C 湿度: 90-95% 持续时间: 96 小时 | 接触电阻: ≤6 毫欧 外观: 无损伤 | | |
| | | The male and female terminals are inserted into the experimental device to be tested Temperature: 40°C Humidity: 90-95% Duration: 96 hour | Contact Resistance: ≤6mΩ Appearance: No Damage | | |



| | | | |
|-------|--------------------|---|--------------------------|
| 4.3.3 | 盐水喷雾 Salt spray | 端子公母端插接后置于实验装置中进行测试 盐水浓度: 5% 温度: 35+1/-2°C 持续时间: 48 小时 | 接触电阻: ≤6 毫欧 |
| | | The male and female terminals are inserted into the experimental device to be tested Salt concentration:5% Temperature: 40°C Duration: 48 hour | Contact Resistance: ≤6mΩ |

5、测试分组 Test Sequences

| NO. | 项目 Item | 实验顺序 Sequence of Test | | | | | | | | |
|-------|--|--------------------------|-----|---|---|-----|-----|---|---|---|
| | | A | B | C | D | E | F | G | H | I |
| 4.1.1 | 外观 appearance | 1 | 1 | 1 | 1 | 1,4 | 1,4 | 1 | | |
| 4.1.2 | 接触电阻 Contact Resistance | | 2,4 | | | 3 | 3 | 3 | | |
| 4.1.3 | 温升 Temperature Rise | 2 | | | | | | | | |
| 4.1.4 | 周期性载流 (热循环) thermal cycle | 3 | | | | | | | | |
| 4.2.1 | 振动 Vibration | | 3 | | | | | | | |
| 4.2.2 | 压着抗张强度 Crimp Tensile Strength | | | | 2 | | | | | |
| 4.2.3 | 插拔力 Insertion Force Extraction Force | | | 2 | | | | | | |
| 4.3.1 | 热冲击 Heat Shock | | | | | 2 | | | | |
| 4.3.2 | 耐湿性 Humidity | | | | | | 2 | | | |
| 4.3.3 | 盐水喷雾 Salt spray | | | | | | | 2 | | |

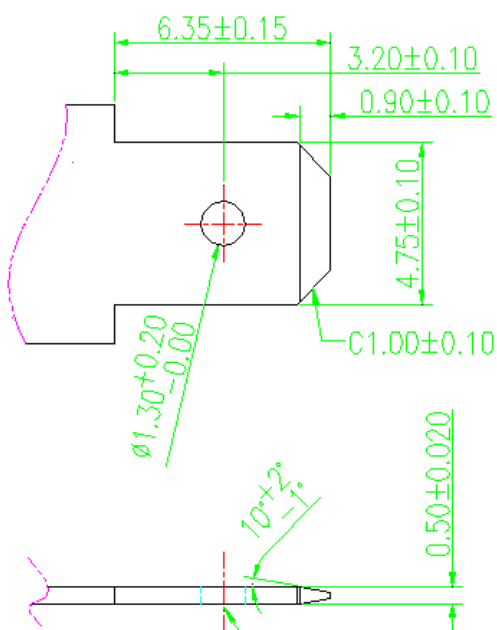


6、插片标准 Tab Standards 参考 for reference only)

6.1 187 系列 0.50mm 厚 (187 Series T=0.50mm)

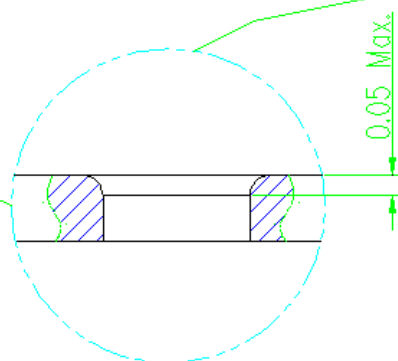
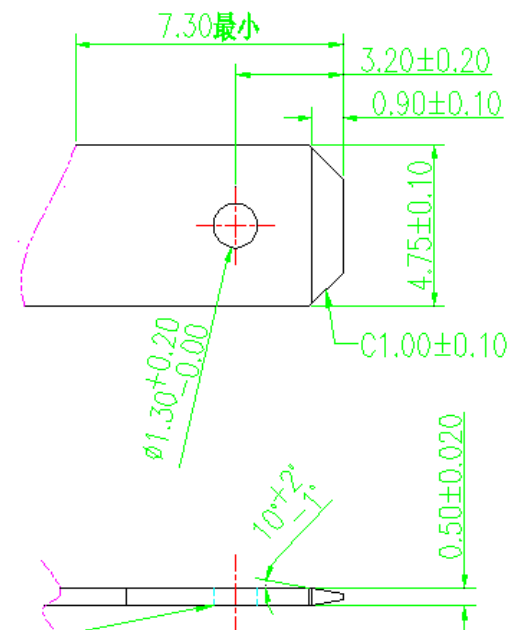
带限位系列

With over-insertion protection



无限位系列

Without over-insertion protection

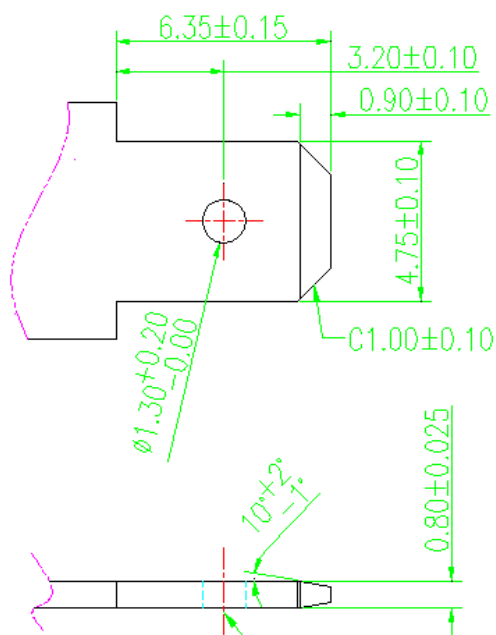




6.2 187 系列 0.80mm 厚 (187 Series T=0.80mm)

带限位系列

With over-insertion protection



无限位系列

Without over-insertion protection

