

	Power connector - Product Specification	P/N:SPEC-027		Rev: A
		Written	Checked	Approved
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Product Specification

产 品 规 格 书

修 訂 記 錄						
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1.0 Applicable connector: applicable to JCTC Power connector series connector.
(适用于 JCTC 公司 Power connector 系列连接器)

Scope : This specification covers the product performance, test methods and quality requirements of the Power connector series Connector.

(适用范围:此份规格书涵盖了 Power connector 系列连接器的性能及测试方法。)

2.0. MATERIAL 材质

Housing : 塑胶主体	Nylon 热塑性塑料
Contacts : 端子	Copper alloy 铜合金

3.0 RATING(要求)

Voltage Rating 额定电压 250V AC/DC

Current Rating 额定电流(A)

Single row 单排							Dual row 双排						
2	3	4	5	6	7	8	4	6	8	10	12	14	16
6.5	*6.2	*6.0	*5.7	*5.5	*5.2	5.0	6.0	*5.7	*5.5	*5.2	*5.0	*4.7	4.5

3.1. As tested with tinned copper wire and tin or gold plated terminals
(用镀锡铜线和镀锡或镀金端子进行测试)

3.2. * indicates interpolated information. (*表示插值信息)

4.0 Test condition(测试要求)

ALL tests shall be performed as bellow conditions unless otherwise specified.
(所有的测试都在下列条件下完成, 除非另有说明.)

4.1 Temperature range: -40° C ~ +115° C (温度:-40° C ~ +115° C)

4.2 Humidity range:-55% to 85%. (湿度:-55%至 85%)

4.3 Atmospheric Pressure: 860to 1060 mber (大气压力:860 到 1060 兆帕)

5. TEST REQUIREMENTS AND PROCEDURES SUMMARY(测试要求及操作概要)

ELECTRICAL PERFORMANCE(电气特性)			
NO.	TEST ITEM(测试项目)	TEST CONDITION(测试方式/条件)	REQUIREMENT (规格)
5.1	Contact Resistance (LLCR) 接触电阻 	EIA 364-23 Subject mated contacts assembled in housing to 20 mV maximum open circuit at 100 mA maximum. Wire resistance shall be removed from the measured value. * Never cross mate gold plated terminals to tin plated terminals. 在最大开路 100mA 的情况下, 将安装在壳体上的接触接触器安装到 20mv 最大开路。导线电阻应从测量值中去除。 *不要将镀金端子与镀锡端子连接。	10 milliohms Max(initial) 10mΩ 最大

	Power connector - Product Specification	P/N:SPEC-027		Rev: A
		Written	Checked	Approved
		KING	----	Peng

5.2	Insulation Resistance 绝缘电阻	EIA 364-21 After 500 VDC for 1 minute, measure the insulation resistance between the adjacent contacts of mated and unmated connector assemblies. 在 500VDC 后测试 1 分钟, 测量相邻的绝缘电阻。 配对和未配对的连接器组件的接触端子。	1000 Mega ohms MIN 1000 兆欧姆最小
5.3	Glow Wire Test (TBD) 灼热丝测试	IEC 60695-2-12 & IEC 60695-2-13 Test at temperature of 750°C & 850°C 测试温度 750°C & 850°C	Flames or glowing of the test specimen extinguish within 30 s after removal of the glow-wire, and there is no ignition of the wrapping tissue placed underneath the test specimen 在去除荧光线后的 30 秒内, 火焰或发光的试样熄灭, 并且在测试样品下面没有点燃组织的点火装置。
5.4	Dielectric Withstanding Voltage 耐电压	EIA 364-20 Method B Apply 1500 & 1800V DC for 1minute between adjacent terminals. 在相邻端子之间, 应用 1500 - 1800V 直流电压 1 分钟。	No breakdown current leakage <5mA 没有击穿电流 < 5 mA
5.5	Temperature Rise & Voltage drop(via current cycling) 温升和压降	EIA 364-70 Method B 96hr steady state, 240hr current cycling, 96hr steady state using 2ckt with 20awg at rated Current 96hr 稳定状态, 240hr 电流循环, 96hr 稳定状态, 2ckt, 20awg 额定电流。	Temperature rise: 30°C Max. 温度上升:30°C 最大

6. (MECHANICAL PERFORMANCE) 机械特性

NO.	TEST ITEM(测试项目)	TEST CONDITION(测试方式/条件)	REQUIREMENT (规格)
6.1	Visual and dimensional Inspections 外观检查	EIA-364-18 Visual, dimensional and functional per applicable quality inspection plan. 外观, 尺寸和功能的每个适用的质量检查项目。	Meet product drawing requirements. 符合产品图纸的要求。
6.2	Crimp Terminal Retention Force to housing (Without TPA) 卷线端子保持力 (没有 TPA)	EIA-364-37 Axial pullout force on the terminal in the housing at a rate of 25+/-6 mm per minute. 以 25+/-6mm/分钟的速度在塑胶主体的端子上的轴向拔力。	20 N Min. 20 N 最小
6.3	Crimp Terminal Retention Force (With TPA) 卷线端子保持力 (有 TPA)	EIA-364-37 Axial pullout force on the terminal in the housing at a rate of 25+/-6 mm per minute. (only populate 1 terminal per housing) 以 25+/-6mm/分钟的速度在塑胶主体的端子上的轴向拔力。(每个塑胶主体只插入 1 个终端)	40 N Min 40 N 最小

	Power connector - Product Specification	P/N:SPEC-027		Rev: A
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6.4	Crimp Terminal Insertion Force (into housing) 卷线端子插入力	EIA-364-37 Apply an axial insertion force on the terminal at rate of 25+/-6 mm per Minute 以每分钟 25+/-6mm 的速度在端子上施加轴向插入力。	15 N Max 15 N 最大
6.5	Durability 耐久性	EIA-364-09 Mate connectors at a Max rate of 10 cycles per minute prior to environmental tests. 25 cycles for tin, 50 cycles for gold. 在环境测试前每分钟的最大速度为 10 个循环。镀锡的 25 个周期，镀金 50 个周期。	10 milliohms Max change from initial. Visual : no damage. 10mΩ 最大。外观:没有损伤。
6.6	Vibration (Random) 振动	EIA-364-28 Mate connectors and vibrate per test condition VII-D, 15 minutes per axis for tin, 1.5hrs for gold. 配对连接器和振动每个测试条件，镀锡，每轴 15 分钟，镀金，1.5 小时。	10 milliohms Max change from initial. discontinuity <1 microsecond 10mΩ 最大变化，不连续< 1 微秒
6.7	USCAR Vibration USCAR 振动	USCAR-2 Rev 6, Vibration Test sequence M per section 5.9.6, Classification: V1, S1, T2: Exception: Voltage drop - test with terminals in the housings, do not remove 振动测试序列 M 每节 5.9.6, 分类:V1, S1, T2:例外:电压降-测试与终端在外壳，不移除。	10 milliohms Max change from initial. discontinuity <1 microsecond 10mΩ 最大变化，不连续< 1 微秒。
6.8	Header solder clip Retention Force (in housing) 母座焊接保持力	Apply a PCB perpendicular force on connector with only two clips, until push out the clip. 将一个 PCB 垂直的力压在只有两个夹的连接器的上，直到将其拉出。	50 N Min 50 N 最小。
6.9	Header Terminal Retention Force to housing 母座端子保持力	EIA-364-37 Push from mating side and Push from PCB side per 25+/-6 mm per minute. 从插入侧推入，从 PCB 侧推至每分钟 25+/-6mm。	25 N Min 25 N 最小。
6.10	Wire retention force (wire to crimp terminal, by application tooling) 线保持力(通过应用程序工具来对终端进行卷曲)	EIA-364-37 Apply an axial pullout force on the wire at a rate of 25+/-6 mm per minute 以每分钟 25+/-6mm 的速度在导线上施加轴向拉拔力。	20 AWG, 50 N Min 22 AWG, 40 N Min 24 AWG, 32 N Min 26 AWG, 26 N min
6.11	Connector Mating/Unmating force (receptacle to header W/O latch) 插拔力	EIA 364-13 Insert and withdraw at a rate of 25+/-6mm per minute. 插入并以每分钟 25+/-6mm 的速度拔出。	Mating spec : 1.50Xn N Max for Tin, 1.25Xn Max for gold, 'n' is circuits number. Take tin for example, 1.5X8=12 N Max for 8 circuits product. Unmating spec : 0.6Xn N Min for Tin, 0.5Xn Min for gold. 插入规格:镀金的插入力 1.25Xn Max ,以镀锡为例,对 8 个电路产品, 1.5X8= 12N Max。 拔出规格:镀金的插入力 0.6Xn N Min , 镀金端子为 0.5Xn N Min。

	Power connector - Product Specification	P/N:SPEC-027		Rev: A
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6.12	latch mating-unmating force(header to receptacle, W/O TML) 插拔力(无 TML)	EIA 364-13 Insert/withdraw receptacle at a rate of 25+/-6mm per minute. 插入/拔出插座的速度为每分钟 25+/-6mm。	Mating force : 10 N Max. Unmating force : 35N Min. 插入力:10 N 最大。 拔出力:35 N 最小。
6.13	Latch unmating force after durability (header to receptacle, W/O TML) 耐久后拔出力(无 TML)	EIA 364-13 Insert/withdraw receptacle at a rate of 25+/-6mm per minute. 插入/拔出插座的速度为每分钟 25+/-6mm。	200 cycles, without damage and meet the spec :unmating force : 35 N Min after 20 cycles, 30 N Min after 200 cycles 200 次循环, 没有损坏且符合规范。 拔出力:在 20 次循环后 35 N 最小, 200 次后 30 N 最小。
6.14	Reseating 复位测试	Unmate/Mate cnnectors by hand three cycles 三次循环的插入/拔出。	Maximum Change from Initial: 10 mΩ 从最初的最大改变:10 mΩ

7. ENVIRONMENTAL PERFORMANCE AND OTHERS (环境特性及其它性能)

NO.	TEST ITEM(测试项目)	TEST CONDITION(测试方式/条件)	REQUIREMENT (规格)
7.1	Durability with Environment (precondition) 耐久性与环境	Mate connectors 3 cycles for tin plated and 5 cycles for gold plated connectors at a maximum rate of 10 cycles per minute. Per EIA-364-09, test method per Sec. 交配连接器 3 周期镀锡和 5 个周期镀金连接者最多。速率是每分钟 10 个循环。按 EIA-364-09, 每秒钟测试方法。	Visual: No damage 10 milliohms Max change from initial. 外观:没有损坏 10 mΩ 最大。
7.2	Cyclic Temperature and Humidity 循环温度和湿度	EIA-364-31 Mate connectors: expose to 24 cycles from 25 °C/80% RH to 65°C/50% RH. Ramp time: 0.5hr; dwell time: 1.0hr. 交配连接器:放于 24 周期从 25°C/ 80% RH - 65°C/ 50% RH。预热时间:0.5 小时, 停留时间:1.0 小时。	10 milliohms Max c hange from initial. 10mΩ 最大变化。
7.3	Thermal Shock 热冲击	EIA-364-32 Test Condition I. Subject mated connectors to 5 cycles between -55°C and +85°C. 测试条件。在 5 个周期之间, 将匹配的连接器进行匹配。 -55°C+ 85°C。	10 milliohms Max change from initial. Visual: no damage; 10mΩ 最大变化, 外观:没有损坏;
7.4	Thermal Aging (temperature life) 热老化(温度)	EIA-364-17, Method A, mate connectors, expose to 240 hours at 105°C for tin, 115°C for gold. 方法一、交配连接器露出为锡 240 小时在 105°C, 115°C 的金。	10 milliohms Max change from initial. 10mΩ 最大变化。

	Power connector - Product Specification	P/N:SPEC-027		Rev: A
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7.5	Thermal Aging (Precondition) 热老化	EIA-364-17, Method A, mate connectors, expose to 120 hours at 105°C for tin, 115°C for gold. 方法一、交配连接器露出为锡 120 小时在 105°C, 115°C 的金。	10 milliohms Max change from initial. 10mΩ 最大变化。
7.6	Thermal Cycling (tin plated only) 热循环	Cycle mated connector between 15°C+/-3°C and 85°C+/-3°C as measured on the part. Ramps should be minimum of 2°C per minute, and dwell times should insure contacts reach the temperature extremes (minimum of 5 minutes). Humidity is not controlled. Perform 500 cycles. 循环匹配连接器在 15± 3 度之间, 测量的温度为 85±3° , 停留时间应确保触点达到极端温度 (最少 5 分钟)。湿度不 可控。执行 500 个循环。	10 milliohms Max change from initial. 10mΩ 最大变化。
7.7	Solder ability dip test 可焊性浸试验	EIA-364-52 should be tested according to the condition listed below: Soldering Temperature : 245 ± 2° C Soldering Time : 5 seconds 在下列条件下进行测试: 焊接温度: 245±2°C 焊接时间: 5 秒	Solder coverage: 95% Min. 焊料覆盖:95%最小。
7.8	Reflow Solder Resistance 回流焊接电阻	Convection reflow solder process 260°C Max per ES-40000-5013 对流回流焊工艺 260 最高温度, 每 es-40000-5013	Visual: No damage. 外观:没有损伤。
7.9	Resistance to soldering heat test 焊锡耐热性	EIA-364-56 The connector shall be tested resistance, To soldering heat in the following conditions. Soldering time:5sec Solder temperature:260°C±5° C 对产品进行测试, 再在下列条件下检测。 焊接时间:5 秒 焊料温度: 260°C±5° C Temperature (°C) Time(sec.)	Visual: No damage. 外观:没有损伤。

	Power connector - Product Specification	P/N:SPEC-027		Rev: A
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		KING	----	Peng

8. Test Sequence. 测试顺序

NO.	Group A	Group B	Group C	Group D	Group E	Group F
01	Initial Contact Resistance(5.1) 初始接触电阻	Initial Contact Resistance(5.1) 初始接触电阻	Initial Contact Resistance(5.1) 初始接触电阻	Initial Contact Resistance(5.1) 初始接触电阻	Dielectric Withstanding Voltage(5.4) 耐电压	Initial Contact Resistance(5.1) 初始接触电阻
02	Durability(7.1) 耐久性	Durability(7.1) 耐久性	Durability(7.1) 耐久性	Durability(7.1) 耐久性	Durability(6.5) 耐久性	Durability(6.5) 耐久性
03	Contact Resistance(5.1) 接触电阻	Contact Resistance(5.1) 接触电阻	Contact Resistance(5.1) 接触电阻	Contact Resistance(5.1) 接触电阻	Insulation Resistance(5.2) 绝缘电阻	Contact Resistance(5.1) 接触电阻
04	Thermal Aging(7.4) 热老化	Thermal Shock(7.3) 热冲击	Thermal Aging(7.5) 热老化	Thermal Aging(7.5) 热老化	Dielectric Withstanding Voltage(5.4) 耐电压	
05	Contact Resistance(5.1) 接触电阻	Contact Resistance(5.1) 接触电阻	Contact Resistance(5.1) 接触电阻	Contact Resistance(5.1) 接触电阻		
06	Reseating(6.14) 复位测试	Cyclic Temperature and Humidity(7.2) 循环温度和湿度	Vibration(6.6) 振动	Thermal Cycling 热循环(7.6)		
07	Contact Resistance(5.1) 接触电阻	Contact Resistance(5.1) 接触电阻	Contact Resistance(5.1) 接触电阻	Contact Resistance(5.1) 接触电阻		
08		Reseating(6.14) 复位测试		Reseating(6.14) 复位测试		
09		Contact Resistance(5.1) 接触电阻		Contact Resistance(5.1) 接触电阻		

9. Individual Tests: 单项测试

01	02	03	04	05	06	07	08
Connector Mating/Unmating force 插拔力(6.11)	Temperature Rise 温升(5.5)	Wire retention force(6.10) 线保持力	Header pin Retention force 母座端子保持力(6.9)	Crimped Terminal Retention force 卷线端子保持力(6.2)	Reflow Solder Resistance 回流焊接电阻(7.8)	Resistance to soldering heat test 焊锡耐热性(7.9)	USCAR Vibration 振动(6.7)
09		10		11	12	13	14
latch mating-unmating force(header to receptacle, W/O TML) 插拔力(无 TML)(6.12)		Latch unmating force after durability (header to receptacle, W/O TML)(6.13) 耐久后拔出(无 TML)		Glow wire test(5.3) 灼热丝测试	Crimped Terminal Retention force(with TPA) 卷线端子保持力(6.3)	Crimp terminal insertion force 卷线端子插入力(6.4)	Header solder clip retention force(6.8) 母座焊接保持力

Note:

- Samples shall be prepared in accordance with applicable manufacturer's Instructions and shall be selected at random from current production
Each test group shall consist of a minimum of five connectors
样品应按照适用的生产准备的指示, 将随机从当前生产的产品中选择样品, 每个测试组应至少五个连接器。
- The numbers in the table indicate sequence in which tests are performed
表中的数字表示测试的执行顺序。