

62F4/62F5

POWER CONNECTOR

产 品 规 格 书

PRODUCT SPECIFICATION

1 . SCOPE 适用范围

This product specification defines the product performance and the test methods to ascertain the performance of the Hybrid power Low profile Edge card connector , which is designed and manufactured by solepin Electronic Co. , Ltd. This product specification is applicable but not only for those part numbers which be shown in the cover page.

本产品规格书规定了由硕品电子有限公司设计生产的Hybrid power Low profile Edge card connector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 components 电子零件测试方法
EIA364	Test method for electrical componEnts 电子零件测试方法
JIS C 0051	Test method for electrical components 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- 1 0727B	specification for tin plating 镀锡规格
UL1977	UL Standard for safety of attachment plug and receptacle UL安规要求标准

3. FEATURE&DIMENSIONS 特征及尺寸

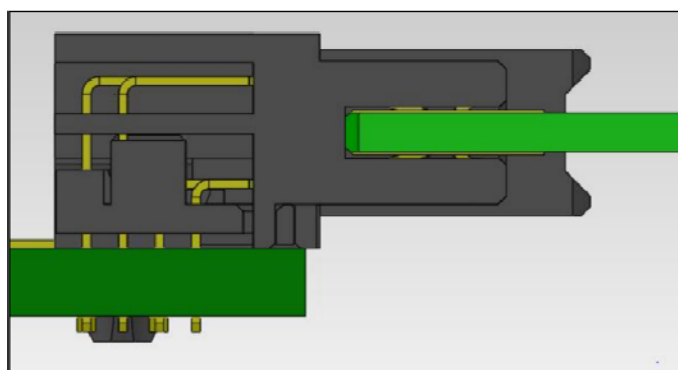
3.1 . PRODUCT DIMENSION 产品尺寸

ThEse connectors shall have the dimensions as shown in drawing.

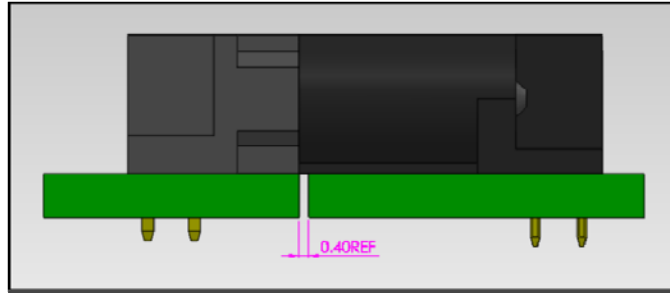
本产品的相关尺寸参见图面 。

3.2.MALE AND FEMALE PRODUCT 公母产品装配

3.2.1 . Male Female assembly dimension 公母产品装配尺寸



If female Type is Edge card , while distance between male's PCB and female's PCB is not accurate requisition 如是插卡类型 , 公母PCB板之间的尺寸不做准确要求

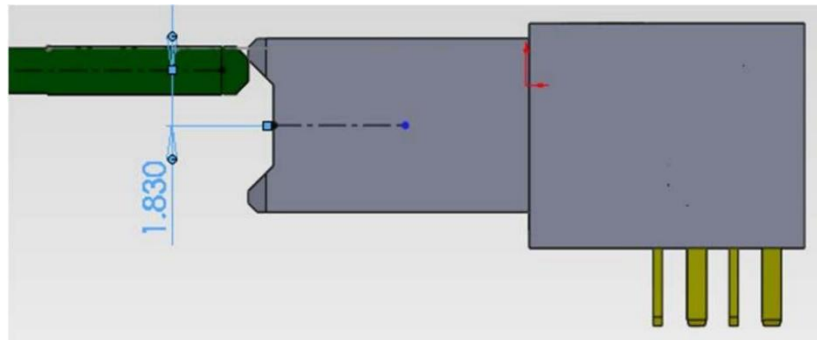


Distance between male's PCB and female's PCB is 0.40REF

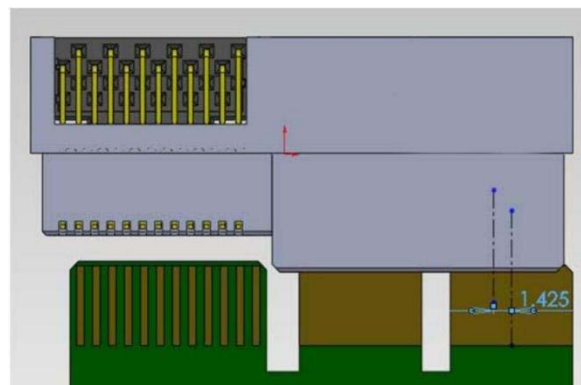
公母PCB板之间的尺寸为0.40REF

3.2.2 perpendicular to engaging direction垂直插入方向

the design of the centering and guiding in the MPc of the free and fixed board connector modules shall accept a misalignment of 1.83mm in transverse and 1.425mm in longitudinal axes of the connector
固定板连接器模件的MPc里，连接器设计中心线横向可接受1.83mm和纵向可接受1.425mm的偏差。



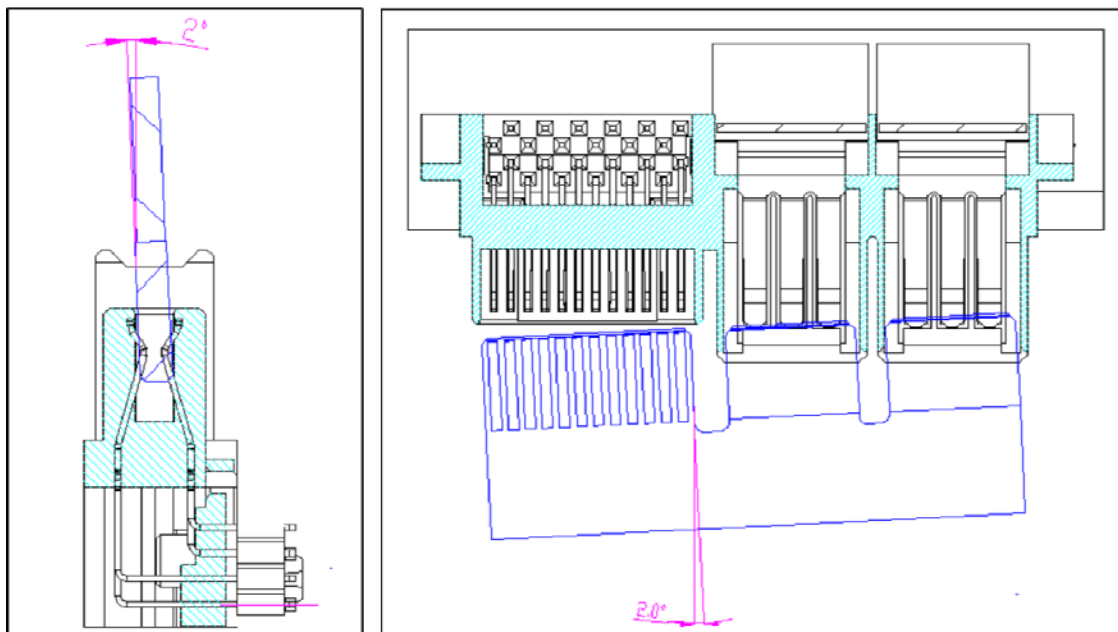
allowed misalignment in transversE axes在横向方向允许对插偏差量



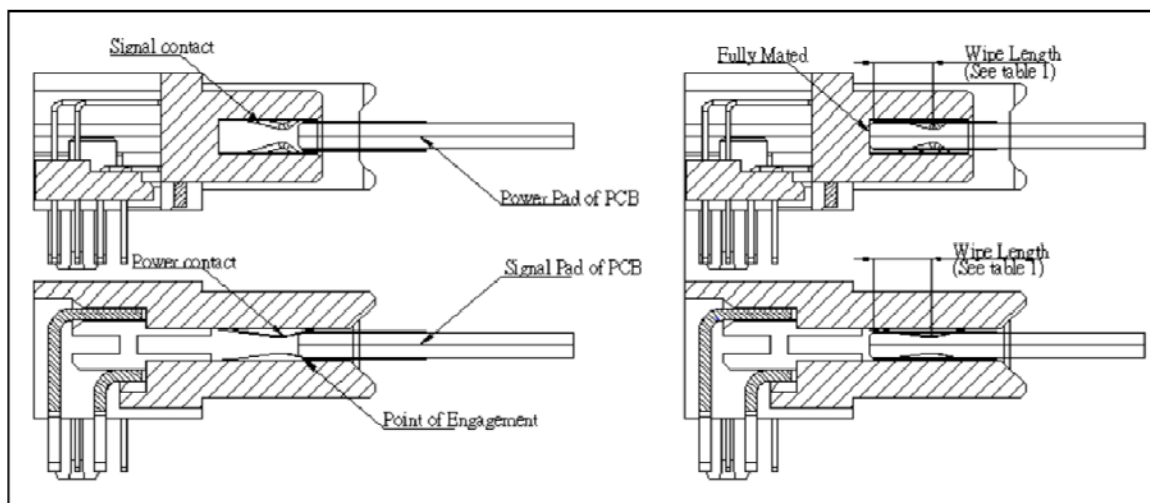
allowEd misalignment in longitudinal axES在纵向方向允许对插偏差量

3.2.2inclination倾向

The center and guiding in the MPc of the free and the fixed board connector modules shall allow an initial angular misalignment of 2° from both the transverse and longitudinal axes
固定板连接器模件的在MPc里,连接器可接受横向和纵向2°的最大倾斜对插角度。



3.2.3 capability for products wipe length 产品接触长度等级



CONTACT	MATING LEVEL	WIPE LENGTH(MIN)
power pin	1	2.97mm
	2	1.47mm
signal pin	1	1.57mm
	2	2.57mm

3.3. PCB/PANEL LAYOUT 印刷电路板饰局

The recommended PCB layout is shown in drawing.
本产品适用的 PCB layout 参见图面。

3.4. 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。本产品使用的材料参见图面。

3.5. MECHANICAL & ELECTRICAL CHARACTERISTic 机械及电气特性

The connector shall have the mechanical and electrical performance as described in drawing.
本产品的机械及电气特性参见图面。

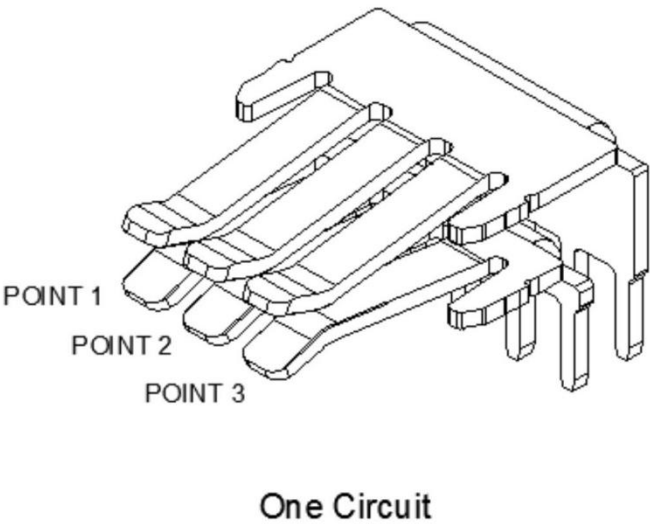
3.6. PACKAGING 包装

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。

3.7. RATING CURRENT, RATING VOLTAGE AND TR 额定电流,额定电压及温升

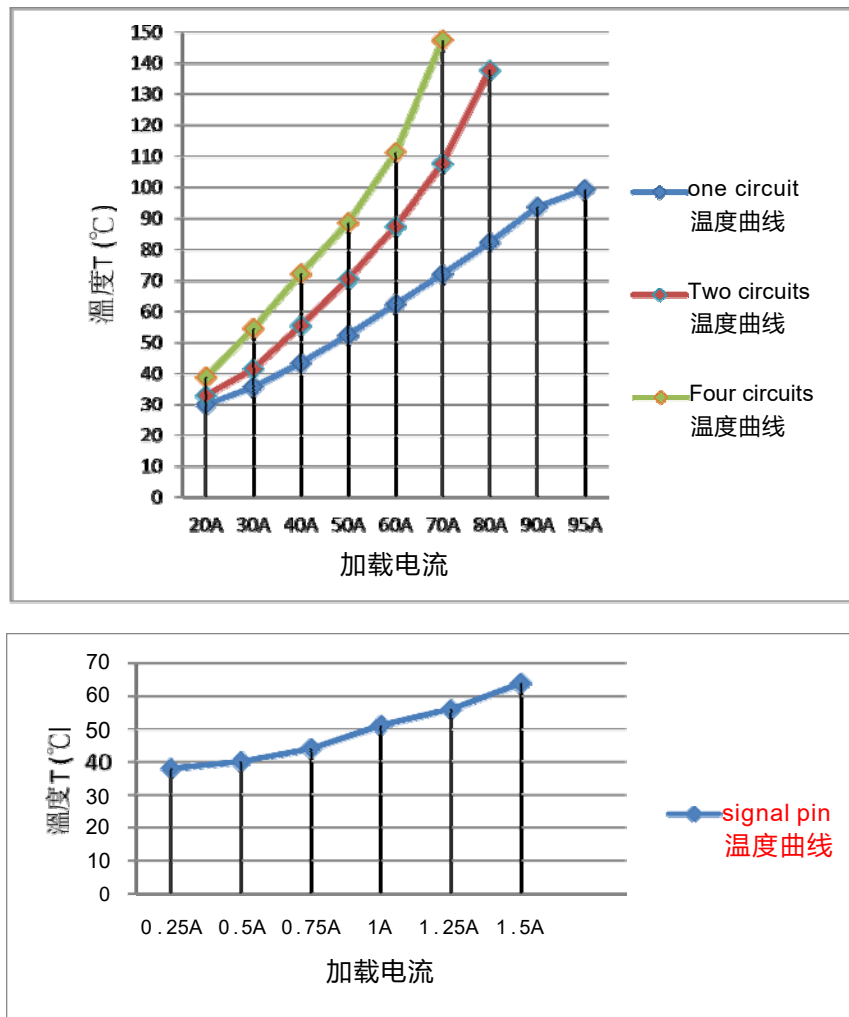
Rating current: 额定电流

	Rating voltage	Rating current
power contacts	250VAC	60A(UL)
signal contacts	30V DC	1A



3.8 TEMPERATURE RISE 温升

1. chart of Temperature vs current(series connection with all contact of spEC)
加载电流对应温度曲线图(相同规格的所有 PIN 串联起来)



3.9 STORAGE AND OPERATING TEMPERATURE 存贮与使用温度

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

storage Temperature : $0^{\circ}\text{C} \sim +40^{\circ}\text{C}$, Humidity: 80%RH Under , Time limit is 12 months the products arE Stored .

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.

储存温度 $0^{\circ}\text{C} \sim +40^{\circ}\text{C}$, 湿度 : 80%RH以下,产品限存时间为12个月 .

4. ENVIRONMENTAL (环境要求)

4.1 . SOLDERABILITY (可焊性)

connectors meet solder ability to EIA-364-52 . Finish shall be free of contaminants.

(产品可焊性符合 EIA-364-52 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 . INFRARED REFLOW 红外线回流焊接

Each cycle consists of three consecutive phases , as shown in Table III.

每个焊接周期包括三个连续的阶段，见附表三。

4.3. WAVE SOLDER 波峰焊接

Each cycle consists of three consecutive phases, as shown in Table IV.

每个焊接周期包括三个连续的阶段,见附表四。

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 性能及测试

5.1. REQUIREMENT 要求

product is designed to meet electrical, mechanical, and environmental performance requirements specified in Table I.

本产品设计符合附表一所列的机械，电气及环境要求。

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，所有测试在室温条件下完成。

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 10cycles of durability. Each group shall be containing 5test 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。样品已预先插拔10次，每组测试至少有5个样品。

5.4. TEST SEQUENCE 测试顺序

product qualification test sequence as shown in Table II.

产品质量测试顺序见附表二。

Table I : Test Requirements and Methods 附表一：测试要求与方法

Items 项目	Requirements 要求	Test Methods 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. 依相关产品图面，检查产品的外观、尺寸及功能。
2 . contact Resistance 接触阻抗	power pin: 5.0mΩ Max initial. signal pin: 20.0mΩ Max initial. power pin 初始状态 5.0mΩ Max signal pin 初始状态 20.0mΩ Max per EIA 364 TP06 适用：EIA364 TP06	subject mated contacts assembled in housing to closed circuit of 20 mA max. 所述固定端子连接到一个封闭回路中测试, 电流 20 mA max, 电压 20mv max。
3 . Insulation Resistance 绝缘阻抗	POWER Pin: 10000 MQ Min. signal pin: 500 MQ Min. power pin: 最小 10000MQ. signal pin: 最小 500 MQ. per EIA364-21 TP06 , condition B 适用：EIA364 -21TPO6, 条件 B	
4 . Dielectric withstanding voltage 耐电压	power pin must withstand test potential of 1500VDc for 1 minute, current leakage must be 1.0 mA Max. signal pin must withstand test potential of 1500VDc for 1 minute, current leakage must be 1.0mA Max. power pin 必须承受测试电压 1500 VDC , 时间 1 分钟 , 漏电流不大于 1 .0 mA signal pin 必须承受测试电压 1500 VDC , 时间 1 分钟 , 漏电流不大于 1 .0 mA PEr EIA-364-20 适用：EIA-364-20.	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。

5. Durability (Repeated Mating/un-mating) 耐久性	After testing :Maximum change: signal contact: 15 milliohm , power contact: 0.75 milliohm 初始状态最大 20 mΩ 。测试后 : 信 号 PIN 最大变化 15mΩ 电 源 PIN 最大变化 0.75mΩ	Repeat mate and unmated for connector 250 cycles, at a speed of 25.4 mm per minutE. 重复进行配合产品 250 次插拔 , 速度 25.4mm/分钟 。
	per EIA-364-09 适用 : EIA-364-09	
6. contact Retention Force 端子保持力	power pin: 1.0kgf/pin. Min. signal pin: 0.3kgf/pin. Min. power pin 每支最小 1.0 kgf signal pin 每支最小 0.3 kgf	Apply axial pull out force at a speed of 25.4±3 mm/minute on the contact assembled in the housing. 以 25.4+3mm/分钟的速度施加轴向拉力塑胶本体上拔出端子。
7. Mating /un-mating Force 插入力/拔出力	power pin: Mating force: 700g/pin Max. un-mating force:150g/pin Min signal pin: Mating force: 110g/pin pair Max. un-mating force:15g/pin pair Min POWER pin: 插入力最大: 700g /pin Max 拔出力最小: 150g/pin Min signal pin: 插入力最大: 110g /pin pair Max 拔出力最小: 15g/pin pair Min	At a speed of25.4±3 mm/minute, apply axial insert the mating part into fully or pull out from the subject product. 以 25.4±3 mm/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 。
8. vibration 机械振动	After testing, no damage. No electrical discontinuity greater than 1μs shall occur, contact Resistance: Maximum change: signal contact: 15.0 milliohm power contact: 0.75 milliohm. 测试后, 产品无损坏.不允许出现超过 1ps 的瞬间断开 , 接触阻抗信号 PIN 最大变化 15mΩ;电源 PIN 最大变化 0.75mΩ 。	subject mated connector to 10-55- 10 Hz traversed in 1 minute at 1.5mm amplitude, 15 minutes each of3 mutually perpendicular planes , 10-55- 10 Hz, 振幅 1.5 mm 条件下, 在互相垂直的三个面上, 每个面 15 分钟下测量, 电流 10 mA。
	per EIA-364-28 . 适用 : EIA-364-TP-28 。	

9 . Thermal shock 温度冲击	After testing, no damage, MaximumChange: Signal Contact:15 milliohm Power Contact:0.75 milliohm.Dielectric Strengthshould be Ok, insulationResistance Power Pin should be1000 MQ Min ,Signal Pin should be500 MQ Min. 测试后产品无损坏, 接触阻抗:接触阻抗信号PIN最大变化15.0MΩ; 电源PIN最大变化0.75MΩ; 耐电压测试OK, 绝缘阻抗电源PIN最小1000 MΩ, 信号PIN最小500 MΩ	Temperature range from -55°C to +105°C. Startfrom -55°C, after 30 minutes, change to +105°Cchange time is no more than 5 minutes, total 5cycles 温度化范围:-55°C~+105°C·从 -55°C开始, 30 分钟后 换到+105°C, 转换时间不超过 5分钟, 共5 个循环
	per EIA-364-32 适用 : EIA-364-32	
10 . Humidity- Temperature cycle 温湿度循环	After testing, no damage, MaximumChange: Signal Contact: 15milliohm Power Contact: 0.75milliohm.Dielectric Strengthshould be Ok, insulationResistance Power Pin should be1000 MΩ Min Signal Pin should be500 MΩ Min. 测试后产品无损坏, 接触阻抗:接触阻抗信号PIN 最大变化 15mΩ; 电源PIN 最大变化 0.75mΩ; 耐电压测试OK, 绝缘阻抗源 PIN 最小1000 MΩ, 信号 PIN 最小 500 MΩ。	Subject product to 25~65°C, 50-80%.R.H24Cycles 产品置于 25~65°C,相对湿度:50-80%,循 24次,
	per EIA-364-31 B 适用 : EIA-364-31B	
11 . Test temperature rise for rating current 温升测试	The tEst temperature above ambient shall not exceed RTI(130℃) for UL. 测试温度不能超过 UL 标准的 RTI(130℃)值. Ambient conditions - still air 25℃ 。 周围环境温度 25℃ 。	subject mated contacts assembled in housing to closed circuit of power pin: 60A max, 250v max , Test specification 所述固定在外壳包的端子连结到一个封闭回路中测试 , power pin:60A max, 250vmax o
	per EIA-364-70 适用 : EIA-364-70	

12. salt spray 盐雾	After testing, no damage, Maximum change: signal contact: 15 milliohm power contact: 0.75 milliohm. Dielectric strength should be Ok, Insulation Resistance power pin should be 1000 mΩ Min , signal pin should be 500 mΩ Min. 测试后产品无损坏, 接触阻抗: 接触阻抗信号 PIN 最大变化 15.0mΩ;电源 PIN 最大变化 0.75mΩ;耐电压测试 OK, 绝缘阻抗电源 PIN 最小 1000mΩ, 信号 PIN 最小 500 MΩ。 per EIA-364-26 适用: EIA-364-26	5±1% salt concentration(PH=7.0) ,48 hours 35±2℃ :. 盐水浓度5±1%(PH=7.0),时间48 小时, 温度 35±2℃。
13. High Temperature Life 高温老化	After tEsting, no damage, Maximum change: signal contact: 15 milliohm power contact: 0.75 milliohm. Dielectric strength should be Ok, Insulation Resistance power pin should be 1000 mΩ Min , signal pin should be 500 mΩ Min. 测试后产品无损坏, 接触阻抗: 接触阻抗信号 PIN 最大变化 15mΩ; 电源 PIN 最大变0.75mΩ;耐电压测试 OK, 绝缘阻抗电源 PIN 最小 1000 mΩ, 信号 PIN 最小 500 mΩ。 per EIA-364- 17 MEthod A 适用: EIA-364- 17, 条件A。	subject product to 105℃ for 180 hours continuously. 产品置于 105℃ 连续 180 小时。
14. solder-ability 可焊性	Appearance of the specimen shall be inspected after the test with the assistance of a magnifier capable of giving a magnification of 10 X for any damage such as pinholes, void or rough surface. 5% maximum dewetting.- 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。 未沾锡区不大于5% per EIA-364-52 适用: EIA-364-52	solder-bath temperature 245±5℃ , duration 5 sec. 锡炉温度爲 245±5℃, 沾锡时间 5秒

Table II: Product Qualification Test Sequence**附表二：產品測試順序**

Test Description 測試描述	Test Group 測試分組									
	A	B	C	D	E	F	G	H	I	J
1. Conformation of Product 產品確認	1,7	1,3	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,3
2. Contact Resistance 接觸阻抗	2,6		2,6	2,6	2,6	2,6	2,6	2,6	2,6	
3. Insulation Resistance 絕緣阻抗	3		3,7	3,7	3,7	3,7	3,7	3,7	3,7	
4. Dielectric Withstanding Voltage 耐電壓	4		4,8	4,8	4,8	4,8	4,8	4,8	4,8	
5. Durability 耐久性	5									
6. Contact Retention Force 端子保持力		2								
7. Mating/Un-mating Force 插入/拔出力			5							
8. Vibration Sinusoidal Low Frequency 低頻正弦振動				5						
9. Thermal Shock 溫度衝擊					5					
10. Humidity-Temperature Cycle 溫濕度循環						5				
11. Current rating 溫升測試							5			
12. Salt Spray 鹽霧								5		
13. High Temperature Life 高溫老化									5	
14. Solder-ability 可焊性										2

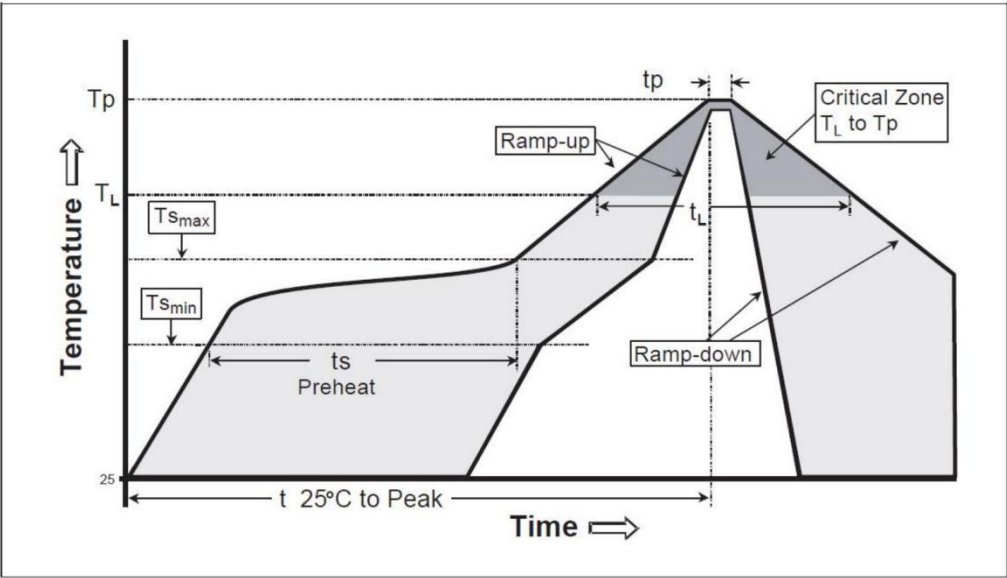
Table III: Reflow soldering profile

附表三：回流焊接曲线图

Lead-free reflow profile requirements:

无铅回流焊接曲线

paramEtEr 参数	REfErEncE 参考	SPEcification 规格
升温区 Ramp-up	25 °C ~ 150 °C	3 °C / S Max
预热区 (pre- heating) Temperature Min(Tsmin) Temperature Max(Tsmax) Time(Tsmin to tsmax)	150 °C ~ 200 °C	60 ~ 180sec
Time maintained above(保持时间) Temperature(T) Time(tu)	217 °C	60 ~ 150sec
Time within 5. °C of actual peak Temperature(tp)	260 -/+ 5 °C	20 ~ 40sec
冷却区 cooling	Ramp-Down Rate	6 °C / S (Max)
Time 25. °C to peak Temperature	25 °C ~ peak Temp.	8 minutes maximum



This profile is the minimum requirement for evaluating soldering heat resistance of components . Heat transfer method used for reflow soldering is hot air convection . The actual air temperatures used to achieve the specified profile largely dependent on the reflow equipmEnt.

这个曲线图是评估元件器件焊接抗热的基本要求 。应用在对焊接中的热传递方式是热气对流 。达到特定曲线图地实际温度主要依赖奥回流焊接设备 。

Table **IV** : weld the curve graph in crest

附表四：波峰焊曲线图

