



Product Specification [产品规格书]:	Document No	PS-1224-01
Subject [主题]: 1.20mm Pitch 1224 Series Connector Specification	Date Issued	2019/06/09
	Date Revised	2018/05/26
	Version	A0

This specification is referred to the 1.20mm series wire to board connector

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**【1.适用范围 Scope】**

此种规格包括 1.20mm Pitch 1224 Series 连接器规格说明.

This Specification Covers the 1.20mm Pitch 1224 Series Connector Specification.

**【2.规格与料号 Spec and Part number】**

规格内容 Specification	产品料号 Production No.	产品图示 Picture of Product
端子/Terminal	1224T-XV01	
胶壳/Housing	1224H-XXX-LP	
针座/Wafer	1224WRS-XXX-XXV01	

**【3.材质与表面处理 Disposal of Material and surface】**

规格内容 Specification	材质 Materials	表面处理 Disposal of Surface
端子/Terminal	磷铜(C5191)/Phosphor Bronze	Nickel: Over 30μ". Gold Flash
胶壳/Housing	LCP	UL 94V-0
针座/Wafer	Base	PA4T
	PIN	磷铜(C5191)/Phosphor Bronze
	Solder tab	磷铜(C5191)/Phosphor Bronze
		Over Tin 70 μ " Plated Over 30 μ " Nickel

(上述参数请以工程图为准/Please Refer to the Project drawing for the above Specification)

**【4. 额定等级 Ratings and applicable wires】**

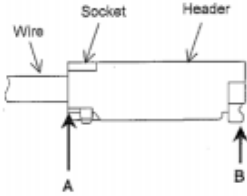
项目【Item】	规格【Standard】	
额定电压 Rated Voltage (Max.)	50V	[AC/DC]
额定电流 Rated Current (Max.)	2A	
使用温度范围 Ambient temperature Range	-25℃~+85℃	
适用线径 Applicable wire insulation O.D	28 AWG~30 AWG(0.08~0.05 mm <sup>2</sup> )Insulation O.D. 0.70mm(Max.)	

【\*升温时含端子.Including terminal temperature rise.

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## 【5.性能 PERFORMANCE】

### 5-1. 电气的性能 Electrical Performance.

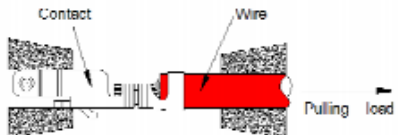
项目 【Item】	条件 【Test Condition】	规格 【Requirement】
5-1-1 接触阻抗 Contact Resistance	<p>公母配合,开放电压 20mV 以下,电流 10mA 检测连接器 A~B 区. Mate connectors, measure by dry circuit, 20mV MAX, 10mA. (Based upon EIA-364-06A).</p> 	<p>Initial: 20 milliohms Max. After Test: 40 milliohms Max.</p>
5-1-2 绝缘阻抗 Insulation Resistance	<p>公母配合,在相邻端子,端子与地片之间,使用 500V 的直流电,检测连接器. Mate connectors, apply 500V DC between adjacent terminal or ground. (Based upon EIA-364-21B / MIL-STD-202 Method 302 Cond.B)</p>	100 Megohms Min.
5-1-3 耐电压 Dielectric Strength	<p>公母配合,在相邻端子,端子与地片之间,使用 500V 的交流电 1 分钟,检测连接器. Mate connectors, apply 500V AC for 1 minute between adjacent terminal or ground. (Based upon EIA-364-20A / MIL-STD-202 Method 301)</p>	不出现中断等情况 No Breakdown and Flashover
5-1-4 铆线后端子接触阻抗 Contact resistance on crimped portion	<p>铆线后之端子,开放电压 20mV 以下,电流 10mA 检测连接器. Crimp the applicable wire on to the terminal measure by dry circuit 20mV MAX, 10mA.</p>	10 milliohms Max.

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### 5-2. 机械的性能 Mechanical Performance.

项目 【Item】	条件 【Test Condition】	规格 【Requirement】
5-2-1 插拔力 Insertion & withdraw Force	<p>以每分钟 25.4±3mm 的速率插入和拔出。 Insert and withdraw Connectors at the speed rate of 25.4±3mm/minute.</p>	参照第 6 项 Refer to paragraph 6
5-2-2 端子保持力 Terminal/ Housing Retention Force	<p>以每分 25.4±3mm 的速率,将端子从 Housing 内轴向拔出的力量。 Apply axial pull out force at the speed rate of 25.4±3mm/minute on the terminal assembled in the housing.</p>	3.92N {0.4kgf} Min.
5-2-3 端子插入力 Terminal Insertion Force	<p>铆线后之端子插入 Housing 所需最大力量。 Insert the crimped terminal into the housing.</p>	9.8N {1.0kgf} Max.
5-2-4 Pin 针保持力 Pin Retention Force	<p>以每分 25.4±3mm 的速率,将 PIN 针从 Wafer 内轴向推出的力量。 Apply axial push force at the speed rate of 25.4±3mm/minute.</p>	0.5N {0.05kgf} Min.
5-2-5 固定片保持力 Fixture Retention Force	<p>以每分 25.4±3mm 的速率,将 PIN 针从 Wafer 内轴向推出的力量。 Apply axial push force at the speed rate of 25.4±3mm/minute.</p>	0.98N {0.1kgf} Min.

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项目 【Item】	条件 【Test Condition】	规格 【Requirement】		
5-2-6 端子压着强度 (Crimped contact)	固定铆线后的端子, 使电线与端子分离时所需的最小力量。 Fix the crimped terminal, apply axial pull out force on the wire. (Do not crimp insulation part). 	AWG	28	30
		Spec.kgf. Min.	1.0	0.5
		Note> As for unspecified wire sizes in this specification define values with clients		

### 5-3. 环境性能及其它 Environmental Performance and Others.

项目 【Item】	条件 【Test Condition】	规格 【Requirement】	
5-3-1 重复插拔 Repeated Insertion/ Withdrawal	以每分钟不超过 10 次的速率,将公母插拔 10 次。 When mated up to 10 cycles repeatedly by the rate of 10 cycles per minute.	接触阻抗 Contact Resistance	40 milliohms Max.
5-3-2 温升测试 Temperature Rise	温升测试: 公母连接器配合后, 加载额定电流直到温度上升到稳定状态, 然后再测量温升 (EIA364-70,Method 1) Mating connectors shall be energized at rating current until thermal stability is achieved, and then measured the temperature rise. (EIA364-70,Method 1)	温升测试 Temperature rise	30℃ Max.
5-3-3 振动测试 Vibration test	振幅: 1.5mm P-P 时间: 20~200~20 Hz in 3minute 持续时间: 每轴向 3 小时 加速度: 44m/S <sup>2</sup> 开放电压: 20mV 以下 开放电流: 10mA 以下 Amplitude: 1.5mm P-P Sweep time: 20~200~20 Hz in 3 minute Duration: 3 hours in each X.Y.Z axials. (Based upon EIA-364-28B/MIL-STD-202 Method 213B Cond.A)	外观 Appearance	无异状 No Damage
		接触阻抗 Contact Resistance	40 milliohms Max.
		瞬断 Discontinuity	1 micro-second Max.
5-3-4 冲击测试 Shock test	在 X.Y.Z 上 6 个方向上,以 981m/s <sup>2</sup> (100G 的力量)冲击下各 3 回. 作用时间: 6ms 981m/s <sup>2</sup> {100G}, 3 strokes in each X.Y.Z. axes. Operation time:6ms (Based upon EIA-364-27B/MIL-STD-202 Method 213B Cond. A)	外观 Appearance	无异状 No Damage
		接触阻抗 Contact Resistance	40 milliohms Max.
		瞬断 Discontinuity	1 micro-second Max.



地址: 广东省东莞市长安镇增田村横增路 72 号

Address: 72 Hengzeng Road,Zengtian Village,Chang' an Town,Dongguan city,Guangdong Province

E-Tel: 0769-81769816 传真: 0769-87089563

E-mail: gya1688@gdgya.com

QQ: 316563782 诚信通: gya 旗舰店

网站: www.gdgya.com

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项目 【Item】		条件 【Test Condition】	规格 【Requirement】	
5-3-5	耐热性 Heat Resistance	85±2℃,96 hours. (Based upon MIL-STD-202 Method 108A Cond.A)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
5-3-6	耐寒性 Cold Resistance	-25±5℃, 96 hours. ( Based upon EIA-364-105)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
5-3-7	耐湿性 Humidity	温度: 40±2℃ 湿度: 90~95%(RH) 持续时间: 96 hours Temperature: 40±2℃ Relative Humidity: 90~95% Duration: 96 hours (Based upon EIA-364-31A/MIL-STD-202 Method 103B Cond.B)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
			耐电压 Dielectric Strength	Must meet 5-1-3
			绝缘阻抗 Insulation Resistance	100 Megohms Min.
5-3-8	温度变化 Temperature Cycling	从-25℃持续 30 分钟升至+85℃持续 30 分钟,循环 5 次. 5 cycles of: a) -25℃ 30 minutes. b) +85℃ 30 minutes. (Based upon EIA-364-32B)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
5-3-9	盐水喷雾 Salt Spray	在温度 35±2℃,盐水浓度 5±1%下,盐水喷雾 24±1 小时. 24±1 hours exposure to a salt spray from the 5±1% solution at 35±2℃. (Based upon EIA-364-26B/MIL-STD-202 Method 101D Cond.B).	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
5-3-10	焊锡附着性 Solder-ability	焊接时间: 3~5 秒. 焊接温度: 245±5℃. Soldering Time: 3~5 sec solder Solder Temperature: 245±5℃. (Based upon EIA-364-52)	Solder Wetting	浸渍面积需 95% 以上 95% of immersed area must show no voids, pin holes.

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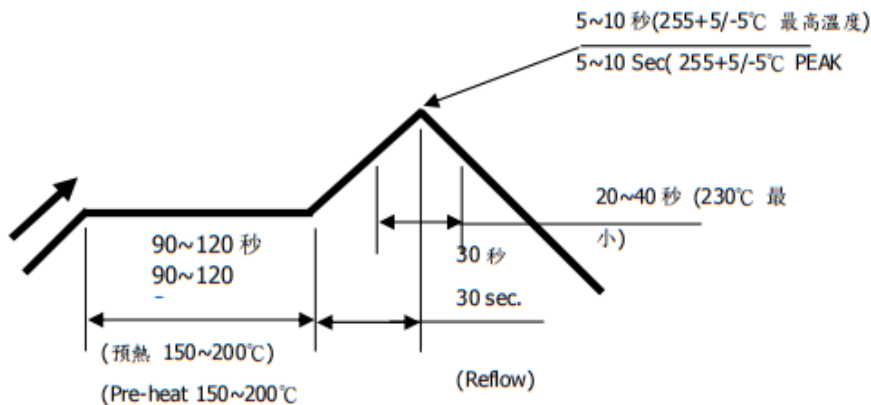
项目 【Item】	条件 【Test Condition】	规格 【Requirement】	
5-3-11 焊锡耐热性 Solder- Resistance	焊接时间: 5~10 秒. 焊接温度: 255+5/-5℃. Soldering time:5~10 sec solder. Temperature:255+5/-5℃. (Based upon EIA-364-56A)	外观 Appearance	无异状 No Damage

**【6.综合插入力及拔出力 INSERTION/WITHDRAWAL FORCE】 <Connector mating force>**

PIN 数 No. of CKT	初次插入力(最大值) First Insertion (kgf Max.)	10 次拔出力(最小值) 10 <sup>th</sup> Withdrawal (kgf Min.)	PIN 数 No. of CKT	初次插入力(最大值) First Insertion (kgf Max.)	10 次拔出力(最小值) 10 <sup>th</sup> Withdrawal (kgf Min.)
02	1.84	0.12	07	3.30	0.12
03	2.14	0.12	08	3.60	0.12
04	2.45	0.12	09	3.90	0.12
05	2.76	0.12	10	4.20	0.12
06	3.00	0.12			

注: 以上插拔次数为 10 次 Note: Insertion and Withdrawal for 10Cycles

**【7. SMT 回流条件 SMT REFLOW CONDITION】**



温度条件曲线图/ 基板上温度

TEMPERATURE CONDITION GRAPH/ (TEMPERATURE ON BOARD PATTERN SIDE)

注记: 由于 P.C 板等焊接装置改变条件,所以请预先用自己的装置检查回流焊的条件。

Notes: Please check the reflow soldering condition by your own devices beforehand. Because the condition changes by the soldering devices, P.C. boards, and so on.



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Address: 72 Hengzeng Road,Zengtian Village,Chang'an Town,Dongguan city,Guangdong Province

E-Tel: 0769-81769816 传真: 0769-87089563

E-mail: gya1688@gdgya.com

QQ: 316563782 诚信通: gya 旗舰店

网站: www.gdgya.com

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### 8.测试顺序 QUALIFICATION TEST SEQUENCE

Item 项目	DESCRIPTION 叙述	SEQUENCE 顺序																	METHOD 方法
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
1	Examination of product 外观检验	1,3	1,4	1	1	1	1	1	1,4	1,5	1,9	1,9	1,9	1,9	1,5	1,2	1,3	1,3	
2	Contact resistance 接触阻抗									2,4	2,8	2,8	2,8	2,8	2,4				5-1-1
3	Insulation resistance 绝缘阻抗										3,6	3,6	3,6	3,6					5-1-2
4	Dielectric withstanding Voltage 耐电压										4,7	4,7	4,7	4,7					5-1-3
5	锡线后端子接触阻抗 Contact resistance on crimped portion																3		5-1-4
6	Mating force 插入力								2										5-2-1
7	Unmating force 拔出力								3										5-2-1
8	端子保持力 Terminal/Housing Retention Force			2															5-2-2
9	端子插入力 Terminal Insertion Force				2														5-2-3
10	Pin 针保持力 Pin Retention Force					2													5-2-4
11	固定片保持力 Fixture Retention Force						2												5-2-5
12	端子压着强度 (Crimped contact)							2											5-2-6
13	重复插拔 Repeated Insertion/ Withdrawal									3									5-3-1
14	TEMPERATURE RISING 温升	2																	5-3-2
15	振动 Vibration		2																5-3-3
16	冲击测试 Shock test		3																5-3-4
17	耐热性 Heat Resistance										5								5-3-5
18	耐寒性 Cold Resistance											5							5-3-6
19	热湿性测试 Humidity												5						5-3-7
20	温度变化 Temperature Cycling													5					5-3-8
21	Salt spray 盐水喷雾														3				5-3-9
22	Solderability 沾锡性																2		5-3-10
23	焊锡耐热性 Solder- Resistance																	2	5-3-11