



Product Specification [产品规格书]:	Document No	PS-2513-01
Subject [主题]:	Date Issued	2020/03/12
2.50mm Pitch 2513 Series Connector Specification	Date Revised	
	Version	A0
This specification is referred to the 2.50mm series wire to board connector 索引【INDEX】 1. 适用范围 【Scope】 2. 规格与料号 【Spec and Part number】 3. 材质与表面处理 【Disposal of Material and surface】 4. 额定等级 【Ratings and applicable wires】 5. 性能 【Performance】 5-1. 电气的性能 【Electrical Performance.】 5-2. 机械的性能 【Mechanical Performance】 5-3. 环境性能及其它 【Environmental Performance and Others】 6. 综合插入力及拔出力 【Insertion/Withdrawal Force】 7. SMT 红外线回流条件 【SMT INFRARED REFLOW CONDITION】		
WRITTEN BY:Yangzhengguo	APPROVED BY:Lvtiansheng	Sheet: 1 of 8

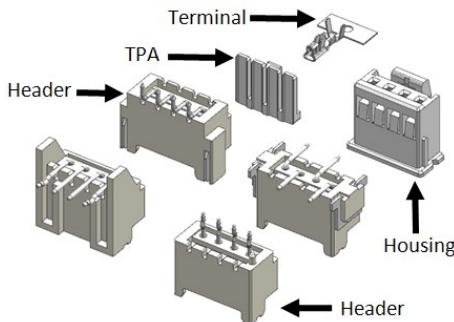


Product Specification [产品规格书]:		Document No	PS-2513-01
Subject [主题]:		Date Issued	2020/03/12
2.50mm Pitch 2513 Series Connector Specification		Date Revised	
		Version	A0

【1.适用范围 Scope】

此规格包括 2.50mm Pitch 2513 Series 连接器规格说明。
This Specification Covers the 2.50mm Pitch 2513 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	2513TX-XSN1	
胶壳/Housing	2513H-XX-XXXX	
二次锁/TPA	C2513-XX-XXXX	
针座/Header	2513WR-XXX-9TXXX 2513WV-XXX-9TXXX 2513WRS-XX-9TSWX 2513WVS-XX-9TSWX	

【3.材质与表面处理 Material and surface treatment】

规格内容 Specification		材 质 Materials	表面处理 Surface treatment
端子/Terminal		磷铜 C5191/Phosphor Bronze C5191 铜合金 C7025/Copper Alloy C7025	Underplate: Ni 1~3um(40~120u") overall Top plating: Sn 2~5um(80~200u") overall
胶壳/Housing		PA66(UL 94V-0)	/
二次锁/TPA		PBT-GF15(UL 94V-0)	/
针座/ Header	Base	PA9T (UL 94V-0)	/
	Pin	黄铜/Brass	Underplate: Ni 1~3um(40~120u") overall Top plating: Sn 2~5um(80~200u") overall
	Solder tab	黄铜/Brass	Underplate: Ni 1~3um(40~120u") overall Top plating: Sn 2~5um(80~200u") overall

(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.)	250V Max	[AC/DC]
额定电流 Rated Current (Max.)	3A Max(AWG#22,20)	
使用温度范围 Ambient temperature Range	C5191:-40℃~+105℃; C7025:-40℃~+125℃	
适用线径 Applicable wire insulation O.D	AWG #26~20(0.13~0.5mm²)/ Insulation O.D. 1.60mm(Max.)	

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

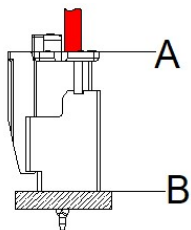
WRITTEN BY:Yangzhengguo	APPROVED BY:Lvtiansheng	Sheet: 2 of 8
-------------------------	-------------------------	---------------



Product Specification [产品规格书]:	Document No	PS-2513-01
Subject [主题]:	Date Issued	2020/03/12
2.50mm Pitch 2513 Series Connector Specification	Date Revised	
	Version	A0

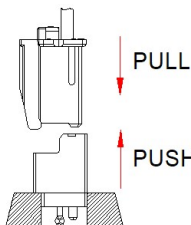
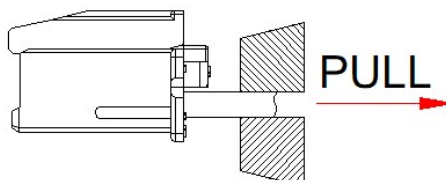
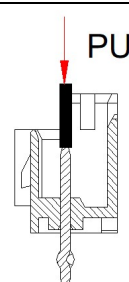
【5.性能 PERFORMANCE】

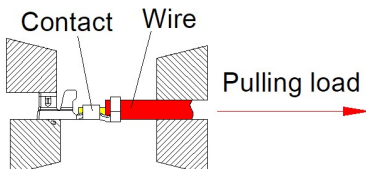
5-1. 电气的性能 Electrical Performance.

项 目 【Item】	条 件 【Test Condition】	规 格 【Requirement】
5-1-1 接触阻抗 Contact Resistance	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). 	Initial: 10 milliohms Max. After Test: 20 milliohms Max.
5-1-2 绝缘阻抗 Insulation Resistance	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)	1000 Megohm Min.
5-1-3 耐电压 Dielectric Strength	公母配合,在相邻端子,端子与地片之间,使用 1000V 的交流电 1 分钟,检测连接器. Mate connectors, apply 1000V AC for 1 minute between adjacent terminal or ground. (Based upon EIA-364-20A / MIL-STD-202 Method 301)	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	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.	10 milliohms Max.
5-1-5 电压降落 Voltage Drop	在 75 或 100 毫米的点上,测量的量测值下降到 $12 \pm 1V$, 在 75 或 100 毫米的短电路中. 从总电阻中减去导线电阻. Measure voltage drop by $12 \pm 1V$ of open circuit and $1 \pm 0.05A$ of short circuit at the 75 or 100mm of point from crimped section. Subtract wire conductor resistance from total resistance.	10mV/A Max

Product Specification [产品规格书]:	Document No	PS-2513-01
Subject [主题]:	Date Issued	2020/03/12
2.50mm Pitch 2513 Series Connector Specification	Date Revised	
	Version	A0

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 & Retention Force	以每分钟 $25.4 \pm 3\text{mm}$ 的速率插入和拔出。 Insert and withdraw Connectors at the speed rate of $25.4 \pm 3\text{mm/minute}$. 	参照第 6 项 Refer to paragraph 6
5-2-2 端子保持力带 TPA Terminal/ Housing Retention Force with TPA	以每分 $25.4 \pm 3\text{mm}$ 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 $25.4 \pm 3\text{mm/minute}$ on the terminal assembled in the housing. 	40N {4.09kgf} Min.
5-2-3 端子插入力 Terminal Insertion Force	铆线后之端子插入 Housing 所需最大力量。 Insert the crimped terminal into the housing.	9.8N {1.0kgf} Max.
5-2-4 Pin 针保持力 Pin Retention Force	以每分 $25.4 \pm 3\text{mm}$ 的速率,将 PIN 针从 Header 内轴向拔出的力量。 Apply axial push force at the speed rate of $25.4 \pm 3\text{mm/minute}$. 	14.7N {1.5kgf} min.

Product Specification [产品规格书]:				Document No		PS-2513-01		
Subject [主题]:				Date Issued		2020/03/12		
2.50mm Pitch 2513 Series Connector Specification				Date Revised				
				Version		A0		
项 目 【Item】		条 件 【Test Condition】		规 格 【Requirement】				
5-2-5	端子压着强度 Tensile strength (Crimped connections)	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 (FLR)	#20 (0.5mm²)	#22 (0.35mm²)	#24 (0.22mm²)	#26 (0.13mm²)
				Spec. Min.	60N (85N) ^{a)}	50N (75N) ^{a)}	50N	30N
				a). If for production reasons, the conductor pull-out strength is measured with insulation crimp, the values in parentheses apply. (Refer to VW60330)				
5-2-6	公母座带卡扣保持力 Male/Female Housing Retention Force	将插好端子的公母座含卡扣以每分钟 25.4±3mm 的速度拔出所需要力量。 Mate connectors and apply pull-out force at the speed rate of 25.4±3mm/min. This Test should be done with positive lock locked.		1、2-circuit product : 20N {2.04kgf} Min 2、3-circuit or more: 30N {3.06kgf} Min				

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 30 次。 When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute.		接触阻抗 Contact Resistance	20 milliohms Max.
5-3-2	温升测试 Temperature Rise	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	耐振动性 Vibration	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/S² 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 axis. (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	20 milliohms Max.
				电压降 Voltage Drop	20mV/A Max
				瞬断 Discontinuity	1 micro-second Max.

WRITTEN BY:Yangzhengguo		APPROVED BY:Lvtiansheng		Sheet: 5 of 8	
-------------------------	--	-------------------------	--	---------------	--



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

Product Specification [产品规格书]:				Document No	PS-2513-01
Subject [主题]:				Date Issued	2020/03/12
2.50mm Pitch 2513 Series Connector Specification				Date Revised	
				Version	A0
5-3-4	耐冲击性 Shock	在 X.Y.Z 上 6 个方向上,以 981m/s ² (100G 的力量)冲击下各 3 回. 作用时间: 6ms 981m/s ² {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	
			瞬断 Discontinuity	1 micro-second Max.	
项 目 【Item】		条 件 【Test Condition】	规 格 【Requirement】		
5-3-5	耐热性 Heat Resistance	125±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	20 milliohms Max.	
5-3-6	耐寒性 Cold Resistance	-40±3℃,96 hours. (Based upon EIA-364-105)	外观 Appearance	无异状 No Damage	
			接触阻抗 Contact Resistance	20 milliohms Max.	
5-3-7	耐湿性 Humidity	温度: 60±2℃ 湿度: 90~95%(RH) 持续时间: 96 hours Temperature: 60±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	20 milliohms Max.	
			耐电压 Dielectric Strength	Must meet 5-1-3	
			绝缘阻抗 Insulation Resistance	500 Meg ohm Min.	
5-3-8	温度变化 Temperature Cycling	从-40℃持续 30 分钟升至+125℃持续 30 分钟,循环 1000 次. 1000 cycles of: a) -40℃ 30 minutes. b) +125℃ 30 minutes. (Based upon EIA-364-32B)	外观 Appearance	无异状 No Damage	
			端子与 HSG 保持力 Terminal/Housing Retention Force	满足 5-2-2 Must meet 5-2-2	
			端子压着拉力测试 Crimping Pull Out Force	满足 5-2-5 Must meet 5-2-5	
			电压降落 Voltage Drop	20mV/A Max	
WRITTEN BY:Yangzhengguo		APPROVED BY:Lvtiansheng			Sheet: 6 of 8



Product Specification [产品规格书]:				Document No	PS-2513-01
Subject [主题]:				Date Issued	2020/03/12
2.50mm Pitch 2513 Series Connector Specification				Date Revised	
				Version	A0
				公母座带卡扣保持 力 Housing/Header Retention Force	满足 5-2-6 Must meet 5-2-6
				接触阻抗 Contact Resistance	20 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 48 小时. 48hours exposure to a salt spray from the 5±1% solution at 35±2℃. (Based upon EIA-364-26A/MIL-STD-202 Method 101D Cond. B).		外观 Appearance	无异状 No Damage
				接触阻抗 Contact Resistance	20 milliohms Max.
5-3-10	耐亚硫酸腐蚀性 SO ₂ gas	将公母对插好的样品放入温度 40±2℃，亚硫酸浓度在 50±5ppm 环境中放置 24 小时。 24 Hours exposure to 50±5ppm SO ₂ gas at 40±2℃		外观 Appearance	无异状 No Damage
				接触阻抗 Contact Resistance	20 milliohms Max.
5-3-11	焊锡性 Solder- Resistance	焊接时间: 3±0.5 秒. 焊接温度: 245±5℃. Soldering time: 3±0.5sec solder. Temperature: 245±5℃.		浸锡性 Solder Wetting	浸渍面积需 95%以 上 95% of immersed area must show no voids, pin holes.
5-3-12	焊锡耐热性 Resistance to Soldering Heat	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
				接触阻抗 Contact Resistance	20 milliohms Max.
WRITTEN BY:Yangzhengguo			APPROVED BY:Lvtiansheng		Sheet: 7 of 8



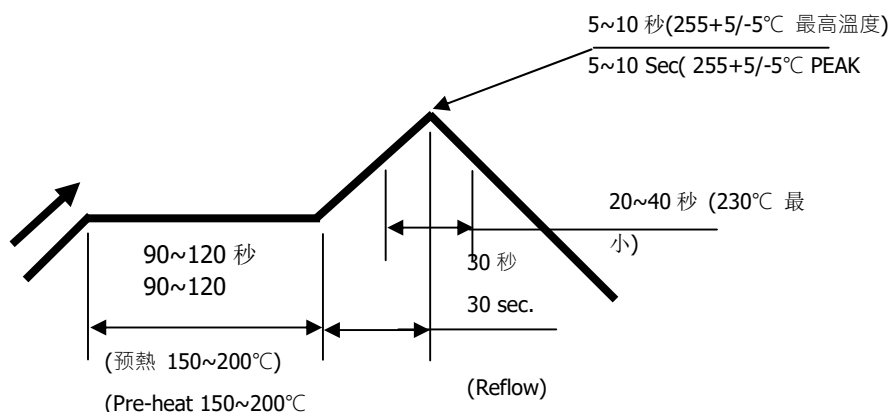
Product Specification [产品规格书]:	Document No	PS-2513-01
Subject [主题]:	Date Issued	2020/03/12
2.50mm Pitch 2513 Series Connector Specification	Date Revised	
	Version	A0

【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.)	30 次拔出力(最小值) 30 th Withdrawal (kgf Min.)	PIN 数 No. of CKT	初次插入力(最大值) First Insertion (kgf Max.)	30 次拔出力(最小值) 30 th Withdrawal (kgf Min.)
Single	/	/	09	6.75	0.90
02	1.70	0.20	10	7.50	1.00
03	2.25	0.30	11	8.25	1.10
04	3.00	0.40	12	9.00	1.20
05	3.75	0.50	13	9.75	1.30
06	4.50	0.60	14	10.50	1.40
07	5.25	0.70	15	11.25	1.50
08	6.00	0.80	18	13.50	1.80

注: 以上插拔次数为 30 次 Note: Insertion and Withdrawal for 30Cycles

【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.