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TÜVRheinland® Precisely Right. E350787

Product Specification [产品规格书]:	Document No	PS-2512-02
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2.50mm Pitch 2512 Series Connector Specification	Date Revised	2021/01/28
	Version	B

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】

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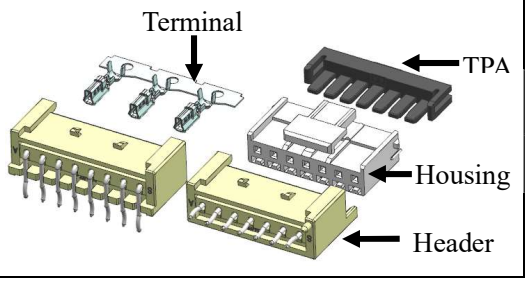
2.50mm Pitch 2512 Series Connector Specification	Date Revised	2021/01/28
	Version	B

【1.适用范围 Scope】

此种规格包括 2.50mm Pitch 2512 Series 连接器规格说明.

This Specification Covers the 2.50mm Pitch 2512 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	2512TX-HXX	
胶壳/Housing	2512H-XX-XXXX	
二次锁/TPA	C2512-XX-XXXX	
针座/Header	2512WV-XXP-9TSW1NX 2512WR-XX-9TSW1NX	

【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		铜合金 C7025/Copper Alloy C7025	1~3um(40~120u") TIN
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

（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】

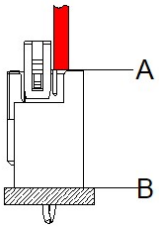
项 目【Item】	规 格【Standard】		
额定电压 Rated Voltage (Max.)	250V Max		[AC/DC]
额定电流 Rated Current (Max.)	2512TH-HXX	AWG #20 3.5A Max	
		AWG #22 3.0A Max	
	2512TL-HXX	AWG #24 2.5A Max	
使用温度范围 Ambient temperature Range	-40℃~+125℃		
适用线径 Applicable wire insulation O.D	AWG #26~20(0.13~0.50mm²)/ Insulation O.D. 1.28~1.80mm		

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

Product Specification [产品规格书]:	Document No	PS-2512-02
Subject [主题]:	Date Issued	2020/11/26
2.50mm Pitch 2512 Series Connector Specification	Date Revised	2021/01/28
	Version	B

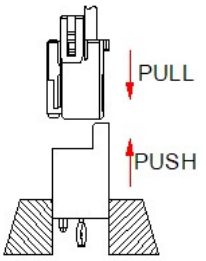
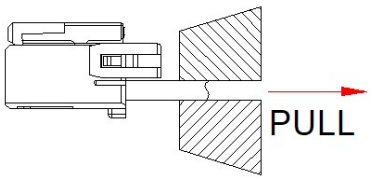
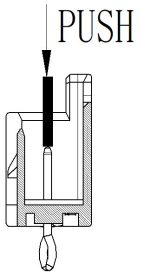
【5.性能 PERFORMANCE】

5-1. 电气的性能 Electrical Performance.

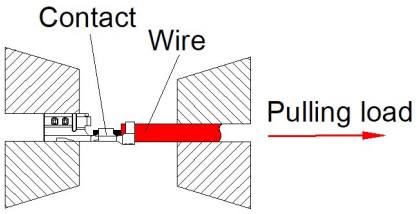
项 目 【Item】		条 件 【Test Condition】	规 格 【Requirement】
5-1-1	接触阻抗 Contact Resistance	公母配合,开放电压 20mV 以下,电流 10mA 检测连接器 A~B 区. Mate connectors, measure by dry circuit, 20mV MAX, 10mA. (Based upon EIA-364-06A). 	Initial: 20 milliohms Max. After Test: 40 milliohms Max.
5-1-2	绝缘阻抗 Insulation Resistance	公母配合,在相邻端子,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)	没有击穿或出现电火花 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.	5 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±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±1V of open circuit and1±0.05A of short circuit at the 75 or100mm 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-2512-02
Subject [主题]:	Date Issued	2020/11/26
2.50mm Pitch 2512 Series Connector Specification	Date Revised	2021/01/28
	Version	B

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±3mm 的速率插入和拔出. Insert and withdraw Connectors at the speed rate of 25±3mm/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±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±3mm/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±3mm 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±3mm/minute. 	20N {2.05kgf} Min.

Product Specification [产品规格书]:	Document No	PS-2512-02
Subject [主题]:	Date Issued	2020/11/26
2.50mm Pitch 2512 Series Connector Specification	Date Revised	2021/01/28
	Version	B

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 (0.50 mm²)	# 22 (0.35 mm²)	# 24 (0.22 mm²)
			Spec Min.	60N (85N)a)	50N (75N)a)	40N (50N)a)
			**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±3㎜ 的速度拔出所需要力量。 Mate connectors and apply pull-out force at the speed rate of 25±3mm/min. This Test should be done with positive lock locked.	2Pin：19.6N(2.0kgf) MIN 3~15Pin：29.4N(3.0kgf) 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	40 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 H_Z in 3minute 持续时间: 每轴向 3 小时 加速度：44m/S^2 开放电压：20mV 以下；开放电流：10mA 以下 Amplitude: 1.5mm P-P Sweep time: 20~200~20 H_Z 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	40 milliohms Max.
			电压降落 Voltage Drop	20mV/A Max
			瞬断 Discontinuity	1 micro-second Max.

Product Specification [产品规格书]:	Document No	PS-2512-02
Subject [主题]:	Date Issued	2020/11/26
2.50mm Pitch 2512 Series Connector Specification	Date Revised	2021/01/28
	Version	B

项 目 【Item】		条 件 【Test Condition】	规 格 【Requirement】	
5-3-4	耐冲击性 Shock	在 X.Y.Z 上 6 个方向上,以 981m/s²(100G 的力量)冲击下各 3 回. 作用时间：6ms 981m/s²{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.
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	40 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	40 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	40 milliohms Max.
			耐电压 Dielectric Strength	Must meet 5-1-3
			绝缘阻抗 Insulation Resistance	1000 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 5-2-4 Must meet 5-2-4
			电压降落 Voltage Drop	20mV/A Max

Product Specification [产品规格书]:	Document No	PS-2512-02
Subject [主题]:	Date Issued	2020/11/26
2.50mm Pitch 2512 Series Connector Specification	Date Revised	2021/01/28
	Version	B

			公母座带卡扣保持力 Housing/Header Retention Force	满足 5-2-5 Must meet 5-2-5
			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 48 小时. 48 hours 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	40 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	40 milliohms Max.
5-3-11	耐氨气腐蚀性 NH_3 gas	将公母对插好的样品暴露于 28%NH_3 溶液蒸发气体的环境下 40 分钟。（浓度：25ml/L） Mated connectors and expose to the conditions of NH3 gas evaporating from 28% NH3 solution for 40 minutes. (Rate is 25ml per 1L)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
5-3-12	焊锡性 Solder- ability	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.
5-3-13	焊锡耐热性 Resistance to Soldering Heat	将恒温铬铁温度调整至 350±5℃，将熔融状态的锡焊料按压在 PIN 脚 3 秒。 Press the solder trowel of 350±5℃ for 3sec	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	20 milliohms Max.

Product Specification [产品规格书]:	Document No	PS-2512-02
Subject [主题]:	Date Issued	2020/11/26
2.50mm Pitch 2512 Series Connector Specification	Date Revised	2021/01/28
	Version	B

【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) 30th 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) 30th Withdrawal (kgf Min.)
02	1.70	0.20	09	6.75	0.90
03	2.25	0.30	10	7.50	1.00
04	3.00	0.40	11	8.25	1.10
05	3.75	0.50	12	9.00	1.20
06	4.50	0.60	13	9.75	1.30
07	5.25	0.70	14	10.5	1.40
08	6.00	0.80	15	11.25	1.50

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