Product Specification [产品规格书]:	Document No	PS-HRS-2574-01
Subject [主题]: 2.54mm Pitch Series Connector Specification	Date Issued	2023/06/30
	Date Revised	2023/06/30
	Version	A

This specification is referred to the 2.54mm series Hearer Connector

索引【INDEX】

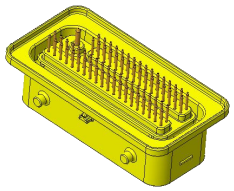
Product Specification [产品规格书]:	Document No	PS-HRS-2574-01
Subject [主题]: 2.54mm Pitch Series Connector Specification	Date Issued	2023/06/30
	Date Revised	2023/06/30
	Version	A

【1.适用范围 Scope】

此种规格包括 2.54mm Pitch Series 板端连接器规格说明.

This Specification Covers the 2.54mm Pitch Series Header 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
板端连接器/Header Connector	HRS-2574WV-73-PTGN15BT	

【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
板端连接器 Header Connector	Base	PBT	UL 94V-0
	1.65mm PIN	C2680	Nickel Plated: 100u" Min, Tin Plated: 100u" Min, Au Plated: 15u" Min
	0.8mm PIN	C2680	Nickel Plated: 40u" Min, Tin Plated: 100u" Min, Au Plated: 3u" Min

（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.)	48V	[AC/DC]
额定电流 Rated Current (Max.)	暂未定义	
使用温度范围 Ambient temperature Range	-40℃~+120℃	

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

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Subject [主题]: 2.54mm Pitch Series Connector Specification	Date Issued	2023/06/30
	Date Revised	2023/06/30
	Version	A

【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	微电流接触电阻 contact resistance	参考 USCAR-2 执行，电压 20mv，电流 100mA，测试接触电阻。 Test contact resistance with reference to USCAR-2, voltage 20mv, current 100mA	接触电阻 10mΩ最大 contact resistance 10mΩ MAX
5-1-2	电压降 Voltage Drop	参考 USCAR-2 执行，调节电源使它能向规定的导线提供每平方毫米 5A 的电流。 With reference to USCAR-2, adjust the power supply so that it can provide a current of 5A per square millimeter to the specified wire	电压降小于 50mv Voltage Drop 50mv Max
5-1-3	绝缘电阻 insulation resistance	参考 USCAR-2 执行，端子和护套表面施加 500V 的直流电压 15s，测量绝缘电阻。 Referring to USCAR-2, apply a DC voltage of 500V to the terminal and sheath surface for 15s to measure the insulation resistance	绝缘电阻 > 100MΩ insulation resistance > 100MΩ
5-1-4	连接器通电温升 Current temperature rise	参考 USCAR-2 执行，温升 < 50℃ For details, see USCAR-2. The temperature rise is less than 50 °C	温升 < 50℃ temperature rise < 50℃
5-1-5	耐高压性 barotolerance	参考 USCAR-2 执行，应用 1000V 的交流电 60s For details, see USCAR-2. Use 1000V AC for 60s	无明显的断裂或击穿 No obvious fracture or breakdown
5-1-6	泄露电流 leakage current	参考 USCAR-2 执行，在相邻端子间施加 14V 的电压，并测量泄漏电流峰值。 Apply a voltage of 14V between adjacent terminals and measure the peak leakage current as per USCAR-2.	防水型≤50uA leakage current≤50uA
5-1-7	电流循环 Current cycle	参考 USCAR-2 执行，接受标准: 温升小于 55℃，接触电阻小于 10mΩ Reference USCAR-2 execution, acceptance criteria: The temperature rise is less than 55℃, and the contact resistance is less than 10mΩ	温升小于 55℃ temperature rise < 50℃

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	Date Revised	2023/06/30
	Version	A

5-2. 机械的性能 Mechanical Performance.

项 目 【Item】		条 件 【Test Condition】	规 格 【Requirement】
5-2-1	板端插针保持力 Header Pin Retention	参考 USCAR-2 执行, 湿度为 95%～98%和温度为 40℃的环境下保持 6 小时，然后完成拔出试验，端子测试数量至少 10PCS。 In accordance with the "Jinmei Automotive Connector Technical Specification A0" 7.3.6, the humidity is 95% ~ 98% and the temperature is 40 ° C for 6 hours, and then the pull out test is completed, and the test number of terminals is at least 10PCS.	1.65mm 金属端子 > 50N 0.8mm 金属端子 > 15N 1.65mm metal terminal > 50N 0.8mm metal terminal > 15N
5-2-2	端子啮合/分离力 Terminal engagement/separation force	参考 USCAR-2 执行，固定端子的一端，沿轴方向以 50mm/min 的速度插入其对插端子，并测量插入过程中的负载。固定端子的一端，将其对插端子插入至自锁位置，再将其沿轴方向以 50mm/min 的速度拉出，并测量拉出过程中的负载。 In accordance with the "Jinmei Automotive Connector Technical Specification A0" 7.3.1/7.3.2, fix one end of the terminal, insert the connector at a speed of 50mm/min along the axis direction, and measure the load during the insertion process. Fix one end of the terminal, insert the docking terminal into the self-locking position, and then pull it out along the axis at a speed of 50mm/min, and measure the load during the pulling out process.	1.65mm 端子，2.5N-10N 0.8mm 端子，1.5N-5.5N 1.65mm terminal, 2.5N-10N 0.8mm terminal, 1.5N-5.5N
5-2-3	助力机构预装位置的接合力、分离力 The binding force and separating force of the pre-installed position of the assist mechanism	参考 USCAR-2 执行，用力测试仪，以 50mm/min 的均匀速度把连接器装配到预装位置；用力测试仪，以 50mm/min 的均匀速度把连接器从预装位置分离。 Refer to the USCAR-2 execution, force the tester, and assemble the connector to the pre-assembly position at a uniform speed of 50mm/min; The force tester separates the connector from the pre-installed position at a uniform speed of 50mm/min.	预装结合力 75N MAX，预装分离力 15N-75N Preassembled binding force 75N MAX, preassembled separation force 15N-75N
5-2-4	助力机构初始位置保持力 Initial position holding force of the assist mechanism	参考 USCAR-2 执行，用力测试仪，以 50mm/min 的均匀速度沿锁止方向向助力机构施加力，直至助力机构脱离初始位置。 With reference to USCAR-2, apply force to the assist mechanism at a uniform speed of 50mm/min in the locking direction until the assist mechanism is removed from the initial position.	助力机构在初始位置的保持力≥50N The holding force of the assist mechanism at the initial position is ≥50N
5-2-5	连接器锁止装置强度（助力型） Connector locking device strength (power assisted)	参考 USCAR-2 执行，以 50mm/min 的均匀速度分离连接器，记录峰值力（即锁止装置强度）。 With reference to USCAR-2, the connector is separated at a uniform speed of 50mm/min and the peak force (i.e. the locking device strength) is recorded	锁止强度≥110N Locking strength ≥110N
5-2-6	助力型连接器的接合力 The joining force of the power assisted connector	参考 USCAR-2 执行，结合力 75N 最大 Executed with reference to USCAR-2, the binding force is maximum at 75N	结合力 75N 最大 binding force 75N max
5-2-7	助力型连接器的分离力 The separation force of the power assisted connector	参考 USCAR-2 执行，分离力 75N 最大 Refer to USCAR-2, the maximum separation force is 75N	分离力 75N 最大 separation force 75N max

5-2-8	连接器防错 Connector error proofing	参考 USCAR-2 执行，如果正确配合时所需力的 3 倍小于 60N，则施加 60N 的力；如果正确配合时所需力的 3 倍大于 150N，则施加 150N 的力。 As per USCAR-2, if 3 times of the required force is less than 60N, then a force of 60N is applied. If 3 times the force required for a correct fit is greater than 150N, a force of 150N is applied.	保持此力 3S，不能实现对插 If this force is maintained for 3S, it cannot be inserted
5-2-9	重复插拔耐久性 Repeated insertion and removal durability	参考 USCAR-2 执行，连接器插拔 10 次后，产品部件无损坏，端子镀层无严重磨损露铜等现象 For details, see USCAR-2. After inserting and removing the connector for 10 times, the components are not damaged and the terminal coating is not seriously worn and exposed to copper	部件无损坏，镀层无严重磨损露铜 There is no damage to the parts and no serious wear and copper exposure on the coating

Product Specification [产品规格书]:	Document No	PS-HRS-2574-01
Subject [主题]: 2.54mm Pitch Series Connector Specification	Date Issued	2023/06/30
	Date Revised	2023/06/30
	Version	A

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	耐热性 Heat resistance test	参考 USCAR-2 执行,高温箱中试验 120h/120℃。 According to USCAR-2, the test was carried out in a high temperature chamber at 120h/120℃	环境后电性测试合格 Environmental post-electrical test passed
5-3-2	耐寒性 cold endurance	参考 USCAR-2 执行，将连接器在温度为-40℃的恒温厢中放置 120h，将样品从低温箱中取出后重复插入/拔出动作 5 次，立即测量低压电流阻抗。 According to USCAR-2, the connector is placed in a constant temperature chamber at -40 ℃ for 120h, and the insertion/withdrawal action is repeated 5 times after the sample is removed from the low temperature chamber, and the low voltage current impedance is immediately measured	环境后电性测试合格 Environmental post-electrical test passed
5-3-3	振动/机械冲击 Vibration/mechanical shock	参考 USCAR-2 执行，密封连接器用 V2 振动等级进行试验，连接器的每个孔位都应被监控到。 As per USCAR-2, the sealed connector is tested with the V2 vibration level and each hole position of the connector should be monitored	端子连接电阻连续大于 7Ω 的时间不应超过 1μs 7Ω&1μs
5-3-4	冷热冲击 Thermal shock	参考 USCAR-2 执行，端子连接电阻连续大于 7Ω 的时间不应超过 1μs For details, see USCAR-2 The terminal connection resistance should not exceed 1μs for a continuous period greater than 7 OhMs	端子连接电阻连续大于 7Ω 的时间不应超过 1μs 7Ω&1μs
5-3-5	温度/湿度循环 Temperature/humidity cycle	参考 USCAR-2 执行，按照下图所示的测试条件对连接器应用 10 个循环，试验期间，测量低压电流阻抗。 With reference to USCAR-2, apply 10 cycles to the connector according to the test conditions shown in the following figure, during which the low-voltage current impedance is measured	环境后电性测试合格 Environmental post-electrical test passedx

5-3-6	耐盐雾测试 Salt Spray Test	按照如下条件执行，以(68.6～176.5)kPa 的压强将对应规格的盐水喷射在连接器上，其中防水型连接器保持 96h，非防水型连接器保持 48h，盐水要求温度为（35±5）℃，浓度为（5±1）%，比重为 1.0268～1.0413，pH 为 6.5～7.2。然后将连接器在温度(80±3)℃，湿度（90～95）%的条件下放置相同的时间。最后取出调节至常温。试验过程中测量泄漏电流。 According to the following conditions, spray the corresponding specifications of salt water on the connector at the pressure of (68.6 ~ 176.5)kPa. The waterproof connector is kept for 96h, and the non-waterproof connector is kept for 48h. The required temperature of salt water is (35±5) ℃, the concentration is (5±1) %, and the specific weight is 1.0268 ~ 1.0413. The pH ranges from 6.5 to 7.2. The connector is then placed at a temperature of (80±3) ℃ and humidity of (90 to 95) % for the same time. Finally remove and adjust to room temperature. Leakage current is measured during the test.	泄漏电流≤50uA leakage current≤50uA
5-3-7	防水性 （耐高压水洗） Water repellency (high pressure washing resistance)	按照如下条件执行，将连接器在恒温厢中加热 1h/120℃。5 min 后，从各个方位（4 个方向）向其注射自来水，速度为（14～16）L/min，压强为（8000～10000）kPa，时间为 2min。测试样品应水平放置，并以（5±1）r/min 的速度在安装位置旋转。试验期间，测量泄漏电流。 According to the following conditions, the connector is heated in the constant temperature chamber for 1h/120℃. After 5 min, tap water was injected into them from all directions (4 directions) at a speed of (14 ~ 16) L/min, a pressure of (8000 ~ 10000) kPa, and a time of 2min. The test sample should be placed horizontally and rotated at the installation position at a speed of (5 ± 1) r/min. During the test, the leakage current is measured.	泄漏电流≤50uA leakage current≤50uA

5-3-8	防尘实验 Dustproof experiment	参考 USCAR-2 执行，将对接好的连接器放在一个长、宽、高分别为 1000mm 封闭容器中，容器中不均匀地散放大约 1.5kg 的水泥灰。间隔 15min 用风扇鼓吹容器中空气，持续时间 10s。将以上操作视为一个循环，并重复操作 8 个循环。每完成 2 个循环应该有一次插入和拔出连接器的动作。 As per USCAR-2, place the jointed connector in a 1000mm long, wide and high closed container with approximately 1.5kg of cement ash unevenly scattered in the container. Use a fan to blow the air in the container every 15 minutes for 10s. Treat the above operation as one cycle and repeat the operation for 8 cycles. There should be an insertion and removal of the connector once every 2 cycles.	环境后电性测试合格 Environmental post-electrical test passed
5-3-9	耐化学试剂 chemical reagent resistance	参考 USCAR-2 执行，将连接器浸入表列出的每种液体中保持 1 小时。在室温环境下保存 24H。 As per USCAR-2, immerse the connector in each of the liquids listed in the table for 1 hour. Store at room temperature for 24 hours.	环境后电性测试合格 Environmental post-electrical test passed
5-3-10	可焊性测试 Weldability test	产品置入助焊剂中 5～10s，再浸入温度 255℃±5℃锡炉中 5±1s，在 10 倍放大镜下观测，端子焊接区域吃锡面积大于等于 95% The product is placed into the flux for 5 ~ 10s, and then immersed in the tin furnace at 255℃±5℃ for 5±1s, and observed under a 10x magnifying glass, the tin eating area of the welding area of the terminal is greater than or equal to 95%	吃锡面积大于等于 95% The tin eating area is greater than or equal to 95%
5-3-11	膜厚测试 Film thickness test	检测端子膜厚，符合图纸要求 Check the thickness of the terminal film and meet the requirements of the drawing	符合图纸要求 conform to requirement of the drawing
5-3-12	环保测试 environmental protection test	相关组件符合 ROHS 环保要求 Related components comply with rohs environmental requirements	ROHS

Product Specification [产品规格书]:	Document No	PS-HRS-2574-01
Subject [主题]: 2.54mm Pitch Series Connector Specification	Date Issued	2023/06/30
	Date Revised	2023/06/30
	Version	A

5-3-13	气密性测试 air tightness test	参考 USCAR-2 执行，±49KPA 压力/60S，无连续气泡产生,无浸水 Refer to USCAR-2，±49KPA pressure /60S, no continuous bubble generation, no water immersion	无连续气泡产生,无浸水 No continuous bubble generation, no flooding
5-3-14	外观检查 appearance inspection	外观：没有明显的变形，刮擦，毛边，生锈或结构损坏等问题 Appearance: No obvious deformations, scratches, frills, rusting or structural damage	无外观异常 No appearance anomaly

Product Specification [产品规格书]:	Document No	PS-HRS-2574-01
Subject [主题]: 2.54mm Pitch Series Connector Specification	Date Issued	2023/06/30
	Date Revised	2023/06/30
	Version	A

【6.测试组 Test Group】

流程图		连接器群组测试										
参考标准	测试序列	端子结合力	连接器至连接器的配合/分离力	连接器防错	通电温升/电流循环/防尘	气密性测试/冷热冲击	耐热性/振动/机械冲击	耐热性/防水性	耐寒性/气密性	耐热性/盐雾测试	耐化学试剂	温度/湿度循环
金美汽车连接器技术规范 A0	序列 ID	a	b‘	C	A	B	C	D	E	F	G	H
	测试样品	3	10	3	10	3	3	3	3	3	8	3
5-3-14	外观检查	1、3	1	1	1、10	1、12	1、7	1、12	1、7	1、10	1、8	1、9
5-2-1	板端插针保持力		12			11		11	6	9		8
5-2-2	端子啮合/分离力	2										
5-2-3	助力机构预装位置的接合力、分离力		2									
5-2-4	助力机构初始位置保持力		3									
5-2-5	连接器锁止装置强度（助力型）		13									
5-2-6	助力型连接器的接合力		4			2						
5-2-7	助力型连接器的分离力		11									
5-2-8	连接器防错			2								
5-2-9	重复插拔耐久性					4						
5-1-1	微电流接触电阻		5		2、4、8	3、5、8	2、5	3	3	5	2、4	3
5-1-2	电压降		6		5、9	6、9	6	4	4	6	5	4
5-1-3	绝缘电阻		8					9		7	6	5
5-1-4	连接器通电温升		7		6			5				
5-1-5	耐高压性		9					10		8		6
5-1-6	泄露电流							8		4		
5-3-13	气密性测试		10			10		6	5		7	7

Product Specification [产品规格书]:	Document No	PS-HRS-2574-01
Subject [主题]: 2.54mm Pitch Series Connector Specification	Date Issued	2023/06/30
	Date Revised	2023/06/30
	Version	A

5-3-1	耐热性						3	2		2		
5-3-2	耐寒性								2			
5-3-3	振动/机械冲击						4					
5-3-4	冷热冲击					7						
5-3-5	温度/湿度循环											2
5-3-6	耐盐雾测试									3		
5-3-7	防水性（耐高压水洗）							7				
5-3-8	防尘实验				7							
5-3-9	耐化学试剂										3	
5-1-7	电流循环				3							

流程图		连接器群组测试			
参考标准	测试序列	膜厚测试	可焊性测试	环保测试	全尺寸
金美汽车连接器技术规范 A0	序列 ID	I	J	K	L
	测试样品	3	3	3	5
5-3-14	外观检查	1	1、3	1	1
5-3-11	膜厚测试	2			
5-3-12	环保测试			2	
5-3-14	端子可焊性测试		2		
NA	尺寸测量				2