

Product Specification 【产品规格书】	Document No.	PS-2039W-01
Product Name 【产品名称】： 2.00mm Pitch 2039 Series Connector	Date Issued	2024/11/29
	Date Revised	2024/11/29
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This specification is only referred to the 2039 series connector

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### 【1.适用范围 Scope】

此规格包括 2.00mm Pitch 2039 Series 连接器规格说明.

This Specification includes the 2.00mm Pitch 2039 Series Connector Specification.

### 【2.产品型号描述 Product Description】

产品名称 Part Name	产品料号 Part No.	产品图示 Picture
母端子 Female Terminal	2039TF-H0500	
母端连接器 Female The connector	2039W-G0809-05H00	
公端连接器 Male The connector	2039AM-2*04B-PTXX	

规格内容 Specification	材 质 Materials	颜色/表面处理 Color/Surface treatment
母端子 Female Terminal	高导电铜/High conductivity copper	Under plate : Ni 30~50u"(0.75~1.25um) overall; plating in contact area: Au 52u"(1.3um ) plating in other area: Gold Flash plating in area: Sn 100~180u"(2.5~4.5um)
母端连接器 Female The connector	母胶壳 Female Housing	PBT+30%G/F(UL 94V-0)
	护套 Jacket	PBT+15%G/F(UL 94V-0)
	小防水圈 Small waterproof ring	硅树脂 Silicone
	大防水圈 Large waterproof ring	硅树脂 Silicone
公端连接器 Male The connector	公胶壳 Male Housing	PBT-15%G/F(UL 94V-0)

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	后盖 Rear cover	PA66(UL 94V-0)
	胶塞 Rubber plug	硅树脂 Silicone

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

(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 Specification	
额定电压 Rated Voltage	100V	[AC/DC]
额定电流 Rated Current	3A (0.35mm <sup>2</sup> )	
使用温度范围 Ambient Temperature Range	-40℃ ~+105℃	
适用线径 Applicable wire insulation O.D	22 AWG (0.35mm <sup>2</sup> ) Insulation O.D. 1.30~1.40mm	

【5.测试方法及要求 Test Methods and Requirements】

5-1. 外观检查 Examination of product.

测试内容 Item		规格要求 Specification requirements	参考标准 Reference standard
5-1-1	产品外观检查 Visual Inspection	借助 10 倍放大镜对每一个试验样品进行检查，详细记录所有制造或材料的瑕疵，如：裂缝、变色、毛刺等。 Inspect each sample with a 10x magnification, recording all defects in all process or material defects such as cracks, discoloration, flash, etc.	USCAR-2 Rev.8 5.1.8

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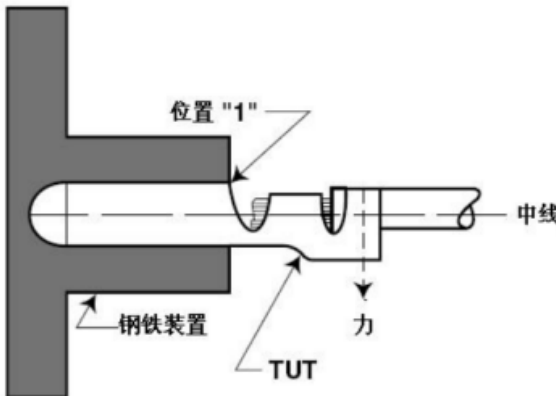
## 5-2. 电气性能 Electrical Performance.

测试内容 Item		规格要求 Specification requirements	参考标准 Reference standard
5-2-1	电路连贯性监控 Circuit Continuity Monitoring	电流的连续性监控间断不能超过 1us 不允许任何端子电阻超过 7 欧的时间大于 1us 的情况发生 There must be no loss of electrical continuity for more than 1 microsecond There must be no instance in which the resistance of any terminal pair exceeds 7.0 $\Omega$ for more than 1 microsecond	USCAR-2 Rev.8 5.1.9
5-2-2	干电路电阻 Dry Circuit Resistance	在环境后 $\leq 25\text{m}\Omega$ Final $\leq 25\text{m}\Omega$	USCAR-2 Rev.8 5.3.1
5-2-3	电压降 Voltage Drop	在环境后 $\leq 50\text{mV}$ Final $\leq 50\text{mV}$	USCAR-2 Rev.8 5.3.2
5-2-4	最大试验电流能力 Maximum test current capacity	在无风的封闭场所内搭建一个电路 温度：23 $\pm$ 5 $^{\circ}\text{C}$ (室温) 时间：等待 15 分钟（电流在输出时，电路的温度达到稳定） 温升：55 $^{\circ}\text{C}$ Create a circuit in a draft free environment Temperature :23 $\pm$ 5 $^{\circ}\text{C}$ (room temperature) Time: Wait at least 15 minutes for the circuit temperature to reach Steady State Temperature Rise: 55 $^{\circ}\text{C}$	USCAR-2 Rev.8 5.3.3
5-2-5	电流循环 Current Cycling	1.测试电流为最大试验电流（测试项 5-2-4） 2.完成 1008 个循环 3.任何端子温升不超过 55 $^{\circ}\text{C}$ 4.干电路电阻 $\leq 25\text{m}\Omega$ 1.Test current is maximum test current capacity (Item:5-2-4) 2.Complete 1008 cycles 3.The temperature rise must not exceed 55 $^{\circ}\text{C}$ at any time during the test for any terminal 4.Dry circuit resistance is less than or equal 25m $\Omega$	USCAR-2 Rev.8 5.3.4
5-2-6	绝缘电阻 Insulation Resistance	将试验样品的所有接端交错连接成两组，再施加 500 VDC 电压测量绝缘电阻。绝缘电阻 $>100\text{ M}\Omega$ Apply 500 VDC voltage (desiccation bound) between all contacts connected together and a metal foil surrounding the housing. In addition, apply the voltage a different test sample to every two adjacent contacts. Insulation resistance $>100\text{ M}\Omega$	USCAR-2 Rev.8 5.5.1

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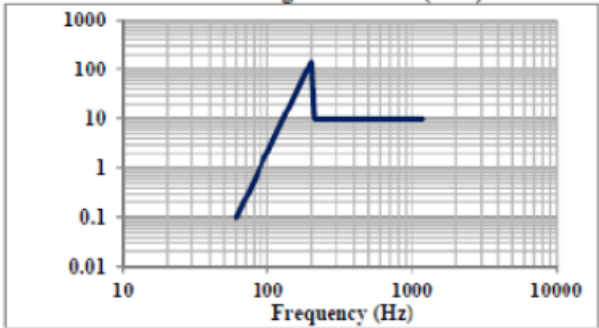
### 5-3. 机械的性能 Mechanical Performance.

测试内容 Item		规格要求 Specification requirements	参考标准 Reference standard																											
5-3-1	连接器/端子循环 Connector and/or Terminal Cycling	完成每一对连接器或端子 10 次插拔 Completely mate and un-mate each connector or terminal pair 10 times	USCAR-2 Rev.8 5.1.7																											
5-3-2	端子到端子啮合/分离力 Terminal to Terminal Engage/Disengage Force	以不超过 50mm/min 的均匀速度插入-分离对配端子 注意接触面的任何磨损，不应暴露基材 Engage and disengage the mating terminals at a uniform rate not to exceed 50 mm/min No base material should be exposed	USCAR-2 Rev.8 5.2.1																											
5-3-3	连接器至连接器的配合/分离力（无机械辅助） Connector-Connector Mating/Unmating/ Retention Forces (non-assist)	组装所有适配组件，以 50mm/min 的均匀速度配合连接器，插入力 $\leq 75$ N 以不超过 50mm/min 的均匀速度拔出配合的主锁被完全分离/禁用的连接器，拔出力 $\leq 75$ N Completely assemble all connector halves using all applicable components, mating the connectors at a uniform rate 50mm/min, Mating Force $\leq 75$ N Disengage the mating connectors that primary lock completely disengaged/disabled at a uniform rate not to exceed 50mm/min. Unmating Force $\leq 75$ N 注：组装所有适配组件，以 50mm/min 的均匀速度卡扣保持力（不含端子）不依 5.4.2.4 要求的 $>110$ N 标准。该项标准依 LV214-1 TG7 执行（下表）。 Note: All adaptive components shall be assembled, and the retaining force of the buckle (excluding terminals) shall not comply with 5.4.2.4 at a uniform speed of 50mm/min. 110 n. This standard is implemented according to LV214-1 TG7 (Table below).  <table><caption>Table 5 – Positive-locking contact housing holding forces</caption><thead><tr><th rowspan="2">Contact size in mm</th><th colspan="3">Number of pins</th></tr><tr><th>1 to 2 pins</th><th>3 to 6 pins</th><th>&gt; 6 pins</th></tr></thead><tbody><tr><td>0.5</td><td>&gt; 40 N</td><td>&gt; 50 N</td><td>&gt; 60 N</td></tr><tr><td>0.63 to 1.2</td><td>&gt; 60 N</td><td>&gt; 80 N</td><td>&gt; 100 N</td></tr><tr><td>&gt; 1.2 to 2.8</td><td>&gt; 80 N</td><td>&gt; 100 N</td><td>&gt; 100 N</td></tr><tr><td>&gt; 2.8 to 6.3</td><td>&gt; 100 N</td><td>&gt; 100 N</td><td>&gt; 100 N</td></tr><tr><td>&gt; 6.3</td><td>&gt; 150 N</td><td>&gt; 150 N</td><td>&gt; 150 N</td></tr></tbody></table>	Contact size in mm	Number of pins			1 to 2 pins	3 to 6 pins	> 6 pins	0.5	> 40 N	> 50 N	> 60 N	0.63 to 1.2	> 60 N	> 80 N	> 100 N	> 1.2 to 2.8	> 80 N	> 100 N	> 100 N	> 2.8 to 6.3	> 100 N	> 100 N	> 100 N	> 6.3	> 150 N	> 150 N	> 150 N	USCAR-2 Rev.8 5.4.2  LV214-1 TG7 (Table 5)
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5-3-4	端子至连接器插入/保持力 Terminal-Connector Insertion/Retention Force	端子以不超过 50mm/min 的均匀速度插入连接器 端子插入力≤15N 端子以不超过 50mm/min 的均匀速度拉出连接器 端子保持力≥30N The terminal straight into the connector at a uniform rate not to exceed 50 mm/min Insertion Force≤15N Pull the terminal straight back from the connector at a uniform rate not to exceed 50mm/min, until pullout occurs. Retention Force≥30N		USCAR-2 Rev.8 5.4.1
5-3-5	端子弯曲阻力 Terminal Bend Resistance	<p>如图所示，对样品施加 4N 的力，然后分别测试 180 度、90 度方向，当力作用于端子上时，TUT 一定不能有撕裂现象。如果在试验过程中，TUT 是从原始位置弯曲，当变直后，一定不能有撕裂或开裂现象；</p> <p>As shown in the figure, apply a force of 4N to the sample, and then test the direction of 180 degrees and 90 degrees respectively. When the force is applied to the terminal, the TUT must not be torn.If the TUT is bent from its original position during the test, there must be no tearing or cracking when it becomes straight;</p> 		USCAR-2 Rev.8 5.2.2
5-3-6	极性特征有效性 Polarization Feature Effectiveness	以错误的方向将公连接器插入母连接器,公母端子间不通电 Insert the male connector into the female connector in the wrong direction, and the male and female terminals are not electrical contact		USCAR-2 Rev.8



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5-3-7	震动/机械冲击 Vibration/Mechanical Shock	<p>冲击：1.加速度 35g、脉宽 5~10ms、半正弦 2.每轴 10/次、3 个轴向 振动：三个相互垂直的轴中各进行 8 小时振动测试，使用 60-1200HZ 12.1grms 没有任何端子对的电阻在 1 微秒内超过 7.0Ω的情况发生 Shock： 1. Acceleration 35 g, Duration 5~10 ms, Half Sine Wave 2. Each axis 10/times, 3 axes. Vibration :8 hours of vibration test in each of the three vertical axes, using 60-1200 HZ 12.1grms Does not occur when the resistance of any terminal pair exceeds 7.0Ω within 1 microsecond.</p> <p><b>Vibration Class V2 - On Engine Random (PSD)</b></p> 	USCAR-2 Rev.8 5.4.6
5-3-8	连接器到连接器可听见的 咔嚓声 Connector-to-Connector Audible Click	<p>需要 16 对样本(两组，每组 8 个)。样品是有生产意图的。连接器腔不应是填充终端。如适用，包括所有 tpa、密封件、填充物和辅助件。 1. 测量并记录测试环境中环境声音的 dB (A)级。环境噪声水平必须应在 30 ~ 50 dB (A)之间。 2. 将声音测量设备或麦克风放置在距离连接 600mm±50mm 处。 3.用手配合第 1 组的连接器，测量锁啮合时产生的声音分贝 (A)级。做当连接器接合时，不要将其偏向或远离门锁。 4. 使用 2 组连接器重复步骤 1 到步骤 3，后保湿调理。部分被付诸实践在 40°C 下，将干燥的模塑部件暴露在 95 至 98%的相对湿度下 6 小时，以限制水分含量(最少)，然后在 30 分钟内完成测试。 16 sample pairs are required (two groups of eight). Samples are to be production intent. The connector cavities shall not be populated with terminals. Include all TPAs, seals, stuffers and auxiliary pieces as applicable. 1. Measure and record the dB (A) level of the ambient sound within the test environment. The ambient noise level must be between 30 and 50 dB (A). 2. Locate the sound measuring device or microphone 600 mm ± 50 mm from the connector. 3. Mate the connectors in group 1 by hand and measure the dB (A) level of the sound generated as the lock engages. Do not bias the connectors toward or away from the latch as</p>	USCAR-2 Rev.8 5.4.7

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		they are engaged. 4. Repeat steps 1 through 3 using the group 2 connectors, post moisture conditioning. Parts are brought to their practical limit of moisture content by exposing "dry as molded parts" to 95 to 98% Relative Humidity at 40 °C for 6 hours (minimum), then completing the test within 30 minutes.	
5-3-9	混合部件的啮合/分离力 Miscellaneous Component Engage/Disengage Force	<p>A.啮合力</p> <p>1. 至少需要 10 个样品进行测试在验收标准中发现的每个适用条件。相同的样品可以用于不同的相的测试。</p> <p>2. 所有要测试的部件及其配套部件必须固定,以便在测试过程中保持适当的对准测试。直接啮合和提取是关键,以避免侧向载荷和束缚,这可能会影响力测量。</p> <p>3.以不超过 50 毫米/分钟的速率使每个待测试部件固定到位。测试各适用条件见表 5.4.5.1.4。</p> <p>4. 记录所需的力,以完全啮合的组件与它的配合部分,并使用这个值来验证符合 5.4.5.1.4 验收标准。</p> <p>B.分离力</p> <p>***注意***</p> <p>以下步骤可能导致样品破损。必须采取适当的防护和人员防护措施确保试验场所附近人员和财产的安全。</p> <p>1. 在组件完全安装并正确固定后,以不超过 50mm /min 的速度拆卸组件。</p> <p>该力必须平行于被测构件的中心线,以避免侧向载荷和束缚会影响力的测量。方向必须与元件的正常插入方向相反部分。按表 5.4.5.1.4 测试每种适用条件。</p> <p>记录将组件从其配合部分脱离而不松开任何门锁特征(如果存在)所需的力并使用此值验证是否符合</p> <p>A. ENGAGEMENT FORCE</p> <p>1. Completely identify and number each component to be tested. A minimum of ten samples is required to be tested for each of the applicable conditions found in the acceptance criteria. The same samples may be used for various phases of testing.</p> <p>2. All components to be tested and their mating parts must be fixtured so that proper alignment is maintained during testing. Straight-in engagement and extraction are critical to avoid side loads and binding which can affect force measurements.</p> <p>3. Engage each component to be tested, with its retaining mechanism in place at a rate not to exceed 50 mm/min. Test each applicable condition per Table 5.4.5.1.4.</p> <p>4. Record the force required to completely engage the component with its mating part and use this value to verify conformance to the Acceptance Criteria of 5.4.5.1.4.</p> <p>B. DISENGAGING FORCE</p> <p>*** CAUTION ***</p>	USCAR-2 Rev.8 5.4.5



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		<p>The following step may result in sample breakage. Adequate shielding and personnel safeguards must be employed to ensure the safety of persons and property in the vicinity of the test.</p> <p>1. With the component fully installed and properly fixtured, disengage the component at a rate not to exceed 50 mm/min.</p> <p>The force must be applied parallel to the centerline of the component being tested to avoid side loads and binding which can affect force measurements. The direction must be opposite to the direction of normal insertion of the component part. Test each applicable condition per Table 5.4.5.1.4.</p> <p>2. Record the force required to disengage the component from its mating part without releasing any latch feature if it exists and use this value to verify conformance to the Acceptance Criteria of 5.4.5.1.4.</p> <p>3. For locator clips only, repeat step 1 above in each of the three directions 90 degrees, 180 degrees, and 270 degrees from the initial insertion direction. Repeat step 1 in a direction orthogonal to the plane of the first four tests. Do not exceed a force of 110 N for any of these subsequent tests. Use fixture identified in Figure 5.4.6.3A.</p> <p><b>TABLE 5.4.5.1.4: MISC. COMPONENT AND LOOSE PIECE TPA/PLR/OR ISL ASSEMBLY FORCES</b></p> <table><tr><th>Device</th><th>Insert to lock Force (N)</th><th>Straight Removal Force (N)</th><th>Removal Force with Offset / Angle (N)</th></tr><tr><td>Locator clip removal from slot</td><td>60 Max.</td><td>110N min. for ≤11mm slot width 165N min. for &gt;11mm slot width</td><td>Confirm 5.4.11 testing has been passed.</td></tr><tr><td>Loose piece TPA/PLR/ or ISL</td><td>60 Max (w/terminals in all cavities)</td><td>25 Min</td><td>No requirement</td></tr></table>	Device	Insert to lock Force (N)	Straight Removal Force (N)	Removal Force with Offset / Angle (N)	Locator clip removal from slot	60 Max.	110N min. for ≤11mm slot width 165N min. for >11mm slot width	Confirm 5.4.11 testing has been passed.	Loose piece TPA/PLR/ or ISL	60 Max (w/terminals in all cavities)	25 Min	No requirement	
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5-3-10	连接器掉落试验 Connector Drop Test	<p>1. 准备 18 个连接器组件，其中包含要在预期应用中使用的 的所有组件（CPA、TPA、PLR、杠杆/滑块等）。 锁定适用于其设计预定预装（装运）位置的组件。对于线 束型连接器，请勿插入引线或端子。</p> <p>2. 将样本分成 6 组，每组 3 个样本，分别测试 X、Y、Z 轴 方向。</p> <p>3. 对于每组，一次将一个样品从至少 1 m 的高度掉落到水 平混凝土表面上，将样品分为六组，对应于矩 形连接器的六个连接器“面”。对显示的每个方向使用一组。</p> <p>4. 记录任何部件的损坏或移动/分离。</p> <p>5. 确认每个样品连接器组件符合 5.4.8.4 的验收标准</p> <p>1. Prepare 18 connector assemblies with all components to be used in the intended application (CPA, TPA, PLR, lever / slide, etc.). Lock components as applicable in their design intended pre-staged (shipping) position. For harness type</p>	USCAR-2 Rev.8 5.4.8												

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		<p>connectors, do not insert leads or terminals.</p> <p>2. Divide samples into six groups of three samples each for testing X, Y, and Z axis orientation.</p> <p>3. For each group, drop one sample at a time once and only once onto a horizontal concrete surface from a height of at least 1 m, orienting the samples in six groups corresponding to the six connector “faces” of a rectangular connector. Use one group for each orientation shown.</p> <p>4. Record any damage or movement/separation of components.</p> <p>5. Verify conformance of each sample connector assembly to the Acceptance Criteria of 5.4.8.4.</p>	
5-3-11	板端插针保持力 Header Pin Retention	<p>1. 在 40 °C 下将“干燥的模制部件”暴露在 95 至 98% 的相对湿度下 6 小时，然后立即完成保持测试。</p> <p>2. 如果可能，应在两个方向上进行测量，即用力将插针纵向推过连接器，然后将其拉出。</p> <p>3. 将连接器主体固定到适当的固定装置上。</p> <p>4. 使用测力器，对端子引脚施加斜坡压力。注意并记录所需的最大力在塑料外壳或板附件内最多移动 0.2 毫米的引脚。对每个引脚位置重复。如果连接器外壳的损坏会影响相邻空腔的读数，请移至未损坏的位置针或使用新的连接器。</p> <p>5.根据需要使用新样品，反向施力并重复步骤 3 和 4。</p> <p>1. Moisture condition samples by exposing “dry as molded parts” to 95 to 98% relative humidity at 40 °C for 6 hours, then immediately complete the retention test.</p> <p>2. Measurements shall be taken in both directions if possible, i.e., force to push the pin longitudinally through the connector, and to pull it out . Depending on individual design,</p> <p>3. Secure the connector body to the appropriate fixture.</p> <p>4. Using the force tester, apply a ramping pressure to the terminal pin. Note and record the maximum force required to displace the pin a maximum of 0.2 mm, within the plastic housing or board attachment. Repeat for each pin location. Where resultant damage to the connector housing would affect readings on adjacent cavities, move to an undamaged pin or use a fresh connector.</p> <p>5. Using fresh samples as needed, reverse force direction and repeat steps 3 and 4.</p>	USCAR-2 Rev.8 5.7.1

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5-3-12	连接器固定结构机械强度 Connector Mounting Feature Mechanical Strength	<p>准备 30 个连接器组件器（每个方向五个），用探针（以不超过 50mm/min 的速率）沿每个方向向未安装的配合连接器施加向下的力，直到安装特征断裂或达到 5.4.11.4 的验收标准中的力。该力应从距连接器的后部和侧面 5 毫米处施加，以影响最大力矩臂</p> <p>Prepare 30 connector assemblies (five in each direction) and apply a downward force along each direction using probes (at a rate not exceeding 50mm/min) to the uninstalled mating connectors until the installation features break or the force meets the acceptance criteria of 5.4.11.4. The force should be applied from a distance of 5 millimeters from the rear and side of the connector to affect the maximum moment arm.</p> <p style="text-align: center;"><b>TABLE 5.4.11.4: CLIP SLOT ACCEPTANCE CRITERIA</b></p> <table><tr><th>Direction of Force Per Fig. 5.4.11.3 B/C</th><th>Clip Slot Width ≤11 mm (N)</th><th>Clip Slot Width &gt;11 mm (N)</th></tr><tr><td>F1</td><td>50</td><td>50</td></tr><tr><td>F2</td><td>50</td><td>50</td></tr><tr><td>F3</td><td>50</td><td>50</td></tr><tr><td>F4</td><td>50</td><td>50</td></tr><tr><td>F5 *</td><td>110</td><td>165</td></tr><tr><td>F6</td><td>50</td><td>50</td></tr></table> <p>* Typically not tested based on successful pass of 5.4.5.1.</p>	Direction of Force Per Fig. 5.4.11.3 B/C	Clip Slot Width ≤11 mm (N)	Clip Slot Width >11 mm (N)	F1	50	50	F2	50	50	F3	50	50	F4	50	50	F5 *	110	165	F6	50	50	USCAR-2 Rev.8 5.4.11
Direction of Force Per Fig. 5.4.11.3 B/C	Clip Slot Width ≤11 mm (N)	Clip Slot Width >11 mm (N)																						
F1	50	50																						
F2	50	50																						
F3	50	50																						
F4	50	50																						
F5 *	110	165																						
F6	50	50																						
5-3-13	密封件的保持力（未配合的连接器） Conn. Seal Retention - Unmated	<p>准备 10 个连接器样品（不需要端子和电线）以 R=100mm 转速为 1337 RPM 进行测试。</p> <p>Prepare 10 connector samples (without terminals and wires) for testing at R=100mm and 1337 RPM.</p>	USCAR-2 Rev.8 5.4.13																					

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#### 5-4. 环境性能及特殊要求 Environmental Performance and Special Requirments.

测试内容 Item		规格要求 Specification requirements	参考标准 Reference standard
5-4-1	热冲击 Thermal Shock	低温-40℃, 高温+105℃ 低温保持 30 分钟, 高温保持 30 分钟, 高低温转换小于 30 秒, 100 次循环, 不能有任何端子电阻超过 7 欧的时间大于 1us 的情况发生 干电路电阻 $\leq 25\text{m}\Omega$ ; 电压降 $\leq 50\text{mV}$ Min.temperature:-40℃,Max.temperature:+105℃ Cold soak for 30 min,Heat soak for 30 min,Transfer time<30s, Cycles 100 times,There must be no instance in which the resistance of any terminal pair exceeds 7.0 $\Omega$ for more than 1 microsecond Dry Circuit Resistance $\leq 25\text{m}\Omega$ ; Voltage Drop $\leq 50\text{mV}$	USCAR-2 Rev.8 5.6.1
5-4-2	温度/湿度循环 Temperature/Humidity Cycling	温度变化幅度: -40℃ to 105℃ 时间: 温室内 5 小时内不能进行泄漏 湿度: (80-100)% 干电路电阻 $\leq 25\text{m}\Omega$ ;电压降 $\leq 50\text{mV}$ 绝缘电阻 $>100\text{ M}\Omega$ 端子插入力 $\leq 15\text{N}$ 端子保持力 $\geq 30\text{N}$ Time: No leakage within 5 hours of greenhouse Temperature range :-40℃ to 105℃ Humidity :(80-100)% Dry Circuit Resistance $\leq 25\text{m}\Omega$ ; Voltage Drop $\leq 50\text{mV}$ Insulation resistance $>100\text{ M}\Omega$ Insertion Force $\leq 15\text{N}$ Retention Force $\geq 30\text{N}$	USCAR-2 Rev.8 5.6.2
5-4-3	高温暴露 High Temperature Exposure	时间: 1008H, 温度: 125℃ 干电路电阻 $\leq 25\text{m}\Omega$ ;电压降 $\leq 50\text{mV}$ 端子插入力 $\leq 15\text{N}$ 端子保持力 $\geq 30\text{N}$ Time: 1008H, Temperature :125℃ Dry Circuit Resistance $\leq 25\text{m}\Omega$ ; Voltage Drop $\leq 50\text{mV}$ Insertion Force $\leq 15\text{N}$ Retention Force $\geq 30\text{N}$	USCAR-2 Rev.8 5.6.3
5-4-4	浸泡 Submersion	密封连接器系统中“呼吸”的加速模拟, 当它被加热和突然冷却 浸泡在一个较冷的液体。使用盐水作为液体, 以便于检测连 接器的任何泄漏。 This test is an accelerated simulation of the "breathing" that may occur in a sealed connector system when it is heated	USCAR-2 Rev.8 5.6.5

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		and suddenly cooled by submersion in a cooler liquid。Salt water is used as the liquid to facilitate detection of any akage into the connector.	
5-4-5	耐化学试液 Fluid Resistance	密封连接器系统浸入道路车辆内部和周围常见的各种流体时，其密封性能和材料的兼容性 This test evaluates the sealing capability and material compatibility of a sealed connector system when immersed in various fluids commonly found in and around road vehicles.	USCAR-2 Rev.8 5.6.4
5-4-6	压力/真空泄漏 Pressure/Vacuum Leak	密封连接器系统在承受密封区域内外的规定压差下的密封能力 This test evaluates the sealing capability of sealed connector systems when subjected to a specified pressure differential between the inside and outside of the sealed area.	USCAR-2 Rev.8 5.6.6
5-4-7	高压水喷射 High Pressure Spray	确定密封连接系统承受高压喷雾的能力，以 S3 等级进行测试 The purpose of this test is to determine the ability of sealed connection systems to withstand high pressure spray, tested at S3 level	USCAR-2 Rev.8 5.6.7



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【7.测试组 Test Group】

项目	测试组	A	B	C	D	E	F	G	H	I	J	K	L	Y	M	N	O	P	Q	R	S	A A	T	U	A B
	测试样品	1 0	1 5	1 0	3 3	2 0	1 6	3 0	2 2	1 8	5 5	4 4	3 0	1 0	1 0	1 0	1 0	1 0	9 0	1 0	1 0	1 0	1 0	1 0	1 0
5.1.1	外观检查	1. 3	1. 3	1. 5	1. 8	1. 3	1. 3	1. 3	1. 3	1. 3	1. 3	1. 3	1. 3	1. 3	1. 8	1. 7	1. 8	1. 7	1. 7	1. 7	1. 8	1. 9	1. 7	1. 8	1. 8
5.2.1	电路连贯性 监控														4. 5	4 4									
5.2.2	干电路电阻				3. 5										3. 6	3. 5	3. 6	3. 5							
5.2.3	电压降				6										7	6	5	6	6						
5.2.4	最大试验电 流能力			3																					
5.2.5	电流循环			4																					
5.2.6	绝缘电阻				7														3. 5	3. 5	3. 6	3. 5	3. 5	3. 7	3. 7
5.3.1	连接器/端子 循环			2	2										2	2	2	2	2	2	2	2	2	2	2
5.3.2	端子到端子 啮合/分离力	2																							
5.3.3	连接器至连 接器的配合/ 分离力（无机 械辅助）							2																	
5.3.4	端子至连接 器插入/保持 力				9												9	8		8	1 0	1 0	8	9	1 0
5.3.5	端子弯曲阻 力		2						2																
5.3.6	极性特征有 效性																								
5.3.7	震动/机械冲 击														4. 5										
5.3.8	连接器到连 接器可听见 的咔嚓声						2																		
5.3.9	混合部件的 啮合/分离力					2																			
5.3.10	连接器掉落 试验									2															
5.3.11	板端插针保											2													

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	持力																						
5.3.12	连接器固定 结构机械强度										2												
5.3.13	密封件的保持力（未配合的连接器）											2											
5.4.1	热冲击																						
5.4.2	温度/湿度循环													4			4	5	4				
5.4.3	高温暴露														4					4	5	4	
5.4.4	浸泡																6			6			
5.4.5	耐化学试液															4							
5.4.6	压力/真空泄漏																	4, 7			4, 7		
5.4.7	高压水喷射																		6				6

说明:

准备的样品应与适用于生产的说明一致，应随机从当前生产中选取

注释：

- (1) 环境温度等级 T2: -40°C to 105°C。
- (2) 密封等级 S2
- (3) 振动等级 V2
- (4) 本产品适用于线缆选用 AWG 22 (0.35mm<sup>2</sup>)。