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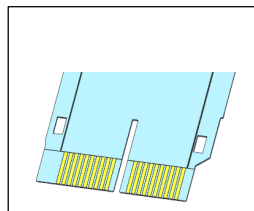
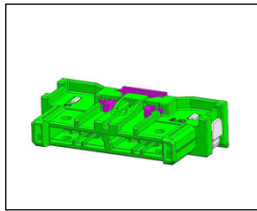
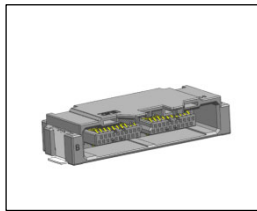
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A0	2023/12/20	初版发行 Initial revision

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2.0 W/B CONN REC · HOUSING 14111 SERIES**1.0 范围/SCOPE**

本规范包含了 1.0mm Pitch 14118 Wire-to- Board Connector System 的性能(包括线端胶壳、TPA、FFC、卧贴针座)，参照汽车连接器标准 L214。

This product specification covers the performance of **1.0mm Pitch 14118 FFC/FPC-to- Board Connector System** (includes Housings,TPA,FFC and SMT Headers -R/A) .according **Automotive Connector Specification LV 214**.

2.0 产品描述/PRODUCT DESCRIPTION**2.1 产品名称和系列号/PRODUCT NAMES AND SERIES NUMBERS**

描述/Description	系列号/Series numbers	备注/Availability & Remarks
线端胶壳/Housing	14118X-024008	40PIN(含 CPA) 颜色:黑色/Color : Black
TPA	241181-094008	40PIN 颜色:白色/Color : White
卧贴针座/R/A Header	14118X-214080	40PIN 颜色:黑色/Color : Black

Check sales drawing or contact BJD for further detailed information

2.2 尺寸、材料、电镀和标记/DIMENSIONS, MATERIALS, PLATING AND MARKINGS

相关尺寸、材料、电镀和标记见业务图纸。

For each part, all dimensions, materials, plating and marking descriptions can be found on the applicable sales drawing.

2.3 产品特点/FEATURES AND BENEFITS

- 车载电池监视回路中使用 FPC/FFC 可以实现轻量化/The use of FPC/FFC in the on-board battery monitoring loop enables lightweight.
- 通过低背构造、监视回路连接基板可以节省空间/Space can be saved by connecting the substrate with a low-back structure and a monitoring loop.
- 确保连接器正确锁合（带 CPA 结构可选择）/Make sure the connector locks properly (optional with CPA structure).
- 不接触 FFC 的 PAD 构造/PAD construction that does not touch FFC.
- 上下接点构造/Upper and lower contact construction.

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3.0 参考文献/References

- LV 214 (2018-10) Motor Vehicle Connectors Test Specification
- VW 60330 (2013-12) Crimp Connections Solderless Electrical Connections SAE/USCAR-21 crimps

4.0 等级/RATINGS

描述/Description	等级/Rating	注解/Comment
额定电压/Rated Voltage	200V max.	AC (rms) / DC
绝缘阻抗/Insulation Resistance	R_{iso} > 100MΩ	U = 500V, t = 60s
插拔次数/Mating cycles	10 min.	/
最大电流/Maximum rating	1A max.	/
操作温度 Operating Temperature	-40°C to +125°C	包括了 FFC 的温升 Includes FFC heating

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5.0 依据 LV214 的性能/PERFORMANCE ACC. LV 214

测试描述/Test description	性能/Properties	备注/Comment
TG 0 接收状态检查 TG 0 Receiving Inspection 外观检查 Visual inspection 接触阻抗 Contact Resistance 绝缘阻抗 Insulation Resistance	符合图要求/Drawing conformity $R_c \text{ init} < 30\text{m}\Omega$ $R_{isol} > 100\text{M}\Omega$ (at $U=500\text{V}$, $t=60\text{s}$)	/
TG 1 尺寸测试 TG 1 Dimensions	符合图要求/Drawing conformity	/
TG 2 端子材料和表面分析 TG 2 Material and surface analysis, Contacts	所有材料符合图要求 All materials are conform to drawing	参考材质证明
TG 3 胶壳和单线密封材料和表面分析 TG 3 Material and surface analysis, Housings	所有材料符合图要求 All materials are conform to drawing	参考材质证明
TG 4 端子接触长度 TG 4 Contact Engagement Length	所有端子接触长度 $> 1,00\text{mm}$ 间隙 $> 0\text{mm}$ Contact Overlap $> 1,00\text{mm}$ Clearance $> 0\text{mm}$	灌胶切面计算 Calculation + cross-section
TG 5 热应力松弛 TG 5 Mechanical and thermal relaxation behaviour	记录端子的正向力，图表推算到 3000h 记录端子开口尺寸 The normal contact force is documented and graphically extrapolated to 3 000h. Contact opening dimensions documented.	/
TG 6 端子与胶壳之间的相互作用 TG 6 Interaction between contact and housing	所有的间隙足够。 滚桶跌落测试 OK。 主锁扣扣合时有声音。 TPA 扣上后用小于 10N 的力后拉。 TPA 被拔出的力：10-50N。 TPA 扣合到位的驱动力： $< 50\text{N}$ All clearances are sufficient. Drop test in rotating drum is OK. The primary lock latches audibly. The secondary lock is closable with with $F < 10\text{N}$ when terminals seated. TPA Opening: 10 N to 50 N. For hinge length $< 50\text{N}$	/

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测试描述/Test description	性能/Properties	备注/Comment
TG 7 胶壳操作和功能的可靠性 TG 7 Handling and functional reliability of the housing	防误插力 $F_{pol} > 80N$ 连接器的插入力: $< 75N$ 连接器对连接器锁扣的保持力: $> 100N$ Polarization efficiency $F_{pol} > 80N$ Connector mating force $F_{mate} : < 75N$ Connector retention force $F_{ret} : > 100N$	/
TG 8 端子插入力和保持力 TG 8 Insertion and retention forces of the contact parts in the housing	FFC 的插入力 $F_{ins} < 10N$ FFC 的保持力 (仅副锁) $F_{sec} > 55N$ Terminal insertion force $F_{ins} < 10N$ Secondary retention force $F_{sec} > 55N$	/
TG 9 防斜插 TG 9 Insertion inclination/misuse safe (scoop-proofing)	所有的 PIN 位满足防斜插要求 All circuit sizes meet inclination/misuse safe (scoop-proofing) requirement.	/
TG 11 端子插拔寿命测试 TG 11 Contacts: Insertion and removal forces, mating cycle frequency	记录端子开口尺寸 插入力变化不超过 25% Terminal mating force (Sn): No change > 25%. Contact opening dimensions documented.	/
TG 12 降额曲线温升测试 TG 12 Current heating, derating (free in air)	降额曲线温升测试, 测试方法依据 DIN EN 60512-5-2, 需表示 0.8 倍电流曲线图, 额定电流为 0.8 倍电流曲线上 80 °C 时的值。 The 80-% characteristic curve of the measured values must be represented in the graph (as per DIN EN 60512-5-2). The nominal current is 6.13 Page 27 VW 75174: 2018-10 the current that can be read from the derating curve at 80 °C ambient temperature.	/

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测试描述/Test description	性能/Properties	备注/Comment
TG 13 降额对 Housing 的影响 TG 13 Housing influence on derating	降额曲线温升测试，测试方法依据 DIN EN 60512-5-2，需表示 0.8 倍电流曲线图，额定电流为 0.8 倍电流曲线上 80℃时的值。 The 80-% characteristic curve of the measured values must be represented in the graph (as per DIN EN 60512-5-2). The nominal current is 6.13 Page 27 VW 75174: 2018-10 the current that can be read from the derating curve at 80 °C ambient temperature.	/
TG 14 热时间常数 TG 14 Thermal time constant	温升测试，额定电流为 TG12 得出来的数值，分别记录 1X, 2X, 3X, 4X, 5X 额定电流下的温升。 开口尺寸和表面检查。 Loading of a contact with 1/2/3/4/5times the nominal current and simultaneous recording of the temperature curve over time until stabilization occurs or until the max. permissible component temperature is reached. Determining the contact opening dimension, surface analysis.	/
TG 15 电应力松弛 TG 15 Electrical stress test	接触阻抗/Contact resistance Rc: < 50mΩ during Test(0.13mm ²). < 40mΩ during Test(0.22mm ²). < 30mΩ during Test(0.35mm ²). 最终的接触阻抗/Final contact resistance Rc final: < 50mΩ during Test(0.13mm ²). < 40mΩ during Test(0.22mm ²). < 30mΩ during Test(0.35mm ²). 降额电流规格变化不超过 20% 端子开口尺寸测量 Derating current reduced by 20%. Gap measurements documented.	/

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测试描述/Test description	性能/Properties	备注/Comment
TG 16 微动腐蚀 TG 16 Friction corrosion	摩擦循环（至少）一直到接触阻抗达到 300mΩ. Min. 2000 friction cycles to reach Rc=300mΩ.	/
TG 17 动力加载（振动测试） TG 17 Dynamic load Severity 1 Body sealed	振动等级 1。 初始接触阻抗 $R_{c\text{ init}} < 30\text{ m}\Omega$ 测试过程中接触阻抗 Rc: < 60mΩ during Test 测试后接触阻抗 Rc final: < 60mΩ during Test 在测试过程中没有断开（电阻 > 7Ω）> 1 ps。 Severity 1. Initial contact resistance $R_{c\text{ init}} < 30\text{ m}\Omega$. Contact resistance Rc: < 60mΩ during Test Final contact resistance $R_{c\text{ final}}$: < 60mΩ during Tes No micro-cuts ($R > 7\Omega$) during $t > 1\text{ ps}$.	/
TG 18A 盐海气候加载 TG 18A Coastal climate load Severity 3	初始接触阻抗 $R_{c\text{ init}} < 30\text{ m}\Omega$ 。 测试后接触阻抗 Rc final: < 50mΩ during Test 在没铆压区和接触区没有损伤 Initial contact resistance $R_{c\text{ init}} < 30\text{ m}\Omega$. Final contact resistance $R_{c\text{ final}}$: < 60mΩ during Test No damage in crimp and contact area.	/

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测试描述/Test description	性能/Properties	备注/Comment
TG 18 C 除冰盐雾加载 TG 18 C Deicing salt load	初始接触阻抗 $R_{c \text{ init}} < 30 \text{ m}\Omega$ 。 测试后接触阻抗 $R_{c \text{ final}}$: < 60m Ω during Test 在没铆压区和接触区没有损伤 Initial contact resistance $R_{c \text{ init}} < 30 \text{ m}\Omega$. Final contact resistance $R_{c \text{ final}}$: < 60m Ω during Test No damage in crimp and contact area.	/
TG 19 环境模拟 TG 19 Environmental simulation	3 组测试: 初始接触阻抗 $R_{c \text{ init}} < 30 \text{ m}\Omega$ 测试过程中接触阻抗 $R_{c \text{ final}}$: < 60m Ω during Test 测试后接触阻抗 $R_{c \text{ final}}$: < 60m Ω during Test 在接触区没有明显的磨损。 For all 3 test groups: Initial contact resistance $R_{c \text{ init}} < 30 \text{ m}\Omega$. Contact resistance $R_{c \text{ final}}$: < 60m Ω during Test Final contact resistance $R_{c \text{ final}}$: < 60m Ω during Test No visible corrosion or rubbing through in contact area.	/
TG 20 胶壳的气候加载 TG 20 Climate load of the housing	在-20°C 下插拔没有功能性问题出现。 在跌落测试中没有损坏或脱扣的现象。 No functional deviation occurred. Mate / Un-mate at -20°C without issue. No broken part or unlocked retainer were found after drop test acc. LV 214 (200410).	/

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测试描述/Test description	性能/Properties	备注/Comment
TG 21 长期温度老化 TG 21 Long-term temperature aging	(FFC/FPC) 125℃; 初始接触阻抗 $R_{c\text{ init}} < 30\text{ m}\Omega$ 。 测试过程中接触阻抗 R_c : < 60m Ω during Test 测试后接触阻抗 $R_{c\text{ final}}$: < 60m Ω during Test 在跌落测试中没有损坏或脱扣的现象。 端子保持力 (带 TPA) > 55 N Initial contact resistance $R_{c\text{ init}} < 30\text{ m}\Omega$. Contact resistance R_c : < 60m Ω during Test. Final contact resistance $R_{c\text{ final}}$: < 60m Ω during Test No broken part or unlocked retainer were found after drop test acc. LV 214 (200410) Retention force after test $F_{\text{ret}} > 55\text{ N}$.	/
TG 22A 耐化学化性 TG 22A Chemical resistance	测试后测试和外观 OK。 所有样品绝缘电阻 > 100 M Ω Dimensions and visual OK after test. All samples passed $R_{\text{isol}} > 100\text{ M}\Omega$.	/
TG 28 锁扣声音 TG 28 Locking noise	锁扣声音: Locking noise: LA peak > 67,4 dB(A) LA peak > 70 dB(A) in average	/
TG 31 Pin 针保持力 TG 31 Holding forces for contact pins and contact blades in plastic contact housings	Pin 针保持力, $F > 5\text{ N}$ For R/A and STR header, $F > 5\text{ N}$ (VW 80106 无 FFC PIN 针标准)	/

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