

CONTACT TECHNOLOGY 车针技术

General Specifications 通用规格

Part Numbers And Product Identification 零件编码及产品标识

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INTRODUCTION 简介

LEYCONN, a leading manufacturer of precision machined contacts and related interconnect components is continuously improving its ability to design innovative contacts. This catalog provides general technical information on LEYCONN contacts. It can help potential customers make the best technical choice for a given application.

作为精密加工车针和相关互连接器件的领先制造商，联益康在持续不断地增进其设计新颖车针的能力。本目录只提供联益康车针的通用技术信息，它能帮助潜在用户对特定的应用作出最好的选择。

TO FIND INDIVIDUAL SPECIFICATIONS OF STANDARD CONTACTS, PLEASE CONSULT OUR SEARCH ENGINE AT WWW.LEYCONN.COM
欲了解标准车针的具体规格，请登录 HTTP://WWW.LEYCONN.COM 查看。

If no adequate solution can be found there, please contact us, only a selected choice of all existing contacts is displayed. Further, LEYCONN will be pleased to offer full support to design and manufacture customer specific contacts.

如果在网页上找不到合适的解决方案，请联系我们，网站上只选择性地列出了部分现有的车针。此外，联益康还可为客户专用车针的设计和制造提供全面的支持。

TWO MAIN GROUPS OF CONTACT PRODUCTS ARE DESCRIBED AND OFFERED

这里介绍和提供两种主要类型的车针

- Socket contacts also called female contacts or pin receptacles 插座车针、圆孔针，也称为母车针或针插孔
- Pin or male contacts and PCB terminals 插针或公车针和PCB端子

All of these can be manufactured with different type of terminations 所有车针的品种都可带如下不同类型的端子：

PCB SOLDER TAIL
PCB 焊尾



WIRING CRIMP
压接孔



SMD TERMINATION
表面贴装端子



SOLDER CUP
焊线杯口



PRESS-FIT FOR PCB
SOLDERLESS CONNECTION
PCB 无焊接用压接端子



WIRING TURRET
接线台



WIRE-WRAP
绕线连接



WIRING SLOT
接线槽



PART NUMBERS AND PRODUCT IDENTIFICATION 零件编码及产品标识

P XXXXX XXX X 00

Contact Code:
车针型号代码:

Plating Code (Contact body):
镀层代码(车针主体):

Plating Code (Clip):
镀层代码(簧爪):

Clip Code 簧爪型号代码:
Please see catalog page 4 请参考产品目录第4页

Plating Code 镀层代码:

- 0 - Tin, 镀锡
- 1 - Gold Flash, 镀闪金1u"
- 3 - 0.075um gold, 镀金3u"
- 5 - 0.125um gold, 镀金5u"
- 6 - 0.25um gold, 镀金10u"
- 7 - 0.375um gold, 镀金15u"
- 8 - 0.75um gold, 镀金30u"
- 9 - Ag, 镀银

GENERAL TECHNICAL SPECIFICATIONS 通用技术规格

The contacts are manufactured by high speed turning process with, if necessary, additional secondary machining operation for example for flats, slots or solder cups. The preferred diameter ranges between 1 and 7 mm and contact length up to 40 mm are standard.

车针由高速车床加工，必要时再附加二次加工，如加工出平面、槽或焊杯。车针的推荐直径在0.8到7mm之间，标准长度可达40mm。

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MATERIALS 材质

CONTACT BODIES 车针主体:

- * Brass CuZn36Pb3, C36000
黄铜CuZn36Pb3, C36000
- * Brass CuZn35Pb2, C34500 for contacts with crimp terminations
黄铜CuZn35Pb2, 带压接端子的车针为C34500
- * Bronze CuSn4Pb4Zn4, C54400 for contacts with compliant press-fit terminations
青铜CuSn4Pb4Zn4, 带柔性针压接端子的车针为C54400

CLIPS 簧爪

- * Beryllium copper alloy C17200
铍铜合金C17200

PLATING 镀层

Contact plating is made up of basis underplating acting as diffusion barrier and of finishing layer.

车针的镀层由作为扩散屏障的底镀层和面镀层构成。

UNDERPLATING 底镀层

- * Nickel (Ni) electro-deposited, acc. to SAE-AMS-QQ-N-290
电镀镍 (Ni), 符合SAE-AMS-QQ-N-290
- * Electroless nickel phosphorus alloy for max. corrosion and wear resistance and for lowest magnetic permeability (plating suffix N)
无电镀的镍磷合金, 具有最大的防腐和耐磨性以及最低的磁穿透性 (镀层后缀N)

FINISH 面镀层

- * Gold (Au) acc. to ASTM B488, type II C, plating codes 1 (gold flash), 5 (0.125um), 6 (0.25 um) and 8 (0.75 um)
金 (Au), 符合ASTM B488, 类型 type II C, 镀层代码1(镀闪金), 5(5uin), 6(10uin), 8(30uin)
- * Tin (pure tin Sn), standard tin plating with excellent solderability, RoHS compliant, plating code 0
锡 (纯锡Sn), 具有极好可焊性的标准锡镀层, 符合RoHS要求, 镀层代码: 0
- * Silver (Ag) acc. to ASTM B700, plating code 9
银 (Ag), 符合ASTM B700, 镀层代码: 9

ENVIRONMENTAL CHARACTERISTICS 环境特性

The contacts withstands following environmental tests without mechanical and electrical defects:

车针经受下列环境试验后不发生机械各电气缺陷:

- * Dry heat steady state IEC 60512-11-9.11i / 60068-2-2.Bb: 125°C, 16 h
IEC 60512-11-9.11i / 60068-2-2.Bb规定的干热稳态试验: 125°C, 16 h
- * Damp heat cyclic IEC 60512-11-12.11m / 60068-2-30.Db: 25/55°C, 90-100 %rH, 1 cycle of 24 h
IEC 60512-11-12.11m / 60068-2-30.Db规定的湿热循环: 25/55°C, 相对湿度90-100 %rH, 24小时的1个循环。
- * Cold steady state IEC 60512-11-10.11j / 60068-2-1.A: -55°C, 2 h
IEC 60512-11-10.11j / 60068-2-1.A规定的冷稳态试验: -55°C, 2小时
- * Thermal shock IEC 60512-11-4.11d / 60068-2-14.Na: -55/125°C, 5 cycles 30 min
IEC 60512-11-4.11d / 60068-2-14.Na规定的热冲击试验: -55/125°C, 5个循环, 30分钟。
- * Sinusoidal vibrations IEC 60512-6-4.6d / 60068-2-6.Fc: 10 to 500 Hz, 10g, 1 octave/min, 10 cycles for each axis
IEC 60512-6-4.6d / 60068-2-6.Fc规定的正弦振动试验: 10到500Hz, 10g加速度, 1个倍频程/分, 每轴10个循环。?
- * Shock IEC 60512-6-3.6c / 60068-2-27.Ea: 50 g, 11 ms, 3 shocks in three axis
IEC 60512-6-3.6c / 60068-2-27.Ea规定的冲击试验: 50g加速度, 11ms, 三个轴上3个冲击。

During the above two tests no contact interruption >50 ns does appear.

在以上两个试验中, 没有发生大于50ns的接触中断。

- * Solderability J-STD-002A, Test A, 245°C, 5 s, solder alloy SnAg3.8Cu0.7
根据J-STD-002A, 测试A进行的可焊性试验: 245°C, 5S, 焊料为合金SnAg3.8Cu0.7
- * Resistance to soldering heat J-STD-020C, 260°C, 20 s
根据J-STD-020C进行的耐焊接热性能试验: 260°C, 20 s
- * Resistance to corrosion 耐腐蚀性:
 - 1) Salt spray test IEC 60068-2-11.Ka: 48 h / IEC 60068-2-11.Ka规定的盐雾试验: 48小时。
 - 2) Sulfur dioxide (SO₂) test IEC 60068-2-42.Kc: 96 h at 25 ppm SO₂, 25 °C, 75 %rH
IEC 60068-2-42.Kc规定的二氧化硫(SO₂)试验: 在浓度为25ppm, 温度为25°C, 相对湿度为75%的SO₂中放置96小时。
 - 3) Hydrogen sulfide (H₂S) test IEC 60068-2-43.Kd: 96 h at 12 ppm H₂S, 25°C, 75 %rH
IEC 60068-2-43.Kd规定的硫化氢(H₂S)试验: 在浓度为12ppm, 温度为25°C, 相对湿度为75%的H₂S中放置96小时。

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SOCKET CONTACTS 插座车针 / 插孔 / 圆孔针

The LEYCONN technology for socket contacts is based on a two-parts design:

联益康的插座车针基于两部分结构设计:

* Contact body 车针主体

* Multi-finger contactspring called clip 多爪式车针爪子, 称为簧爪

These socket contacts with clip are compatible with all existing machined and stamped mating pin contacts of same size

这些插座车针与相同尺寸的所有车床针和冲压插针相互匹配兼容。

CONTACT BODIES AND CLIPS ARE MANUFACTURED AND PLATED SEPARATELY

车针主体和簧爪分别加工和电镀

The contact bodies are manufactured by high speed turning process with additional secondary machining operation if required.

车针主体由高速车床加工, 必要时再附加二次加工。

The clip are stamped and formed from sheet material. Depending on size and characteristics, the clips are designed with 3 to 6 contact finger. The choice of heat treated beryllium copper alloy gives the best possible combination of mechanical and electrical properties for use in electrical contacts. More than 40 clips are pre-tooled, covering a mating pin diameter ranges from 0.25 to 2.6 mm. They can accept square or rectangular pin.

簧爪由板材经冲压制成, 根据尺寸和特性不同, 簧爪设计有3到6个接触爪。选择热处理铍铜合金, 在用作电气接触时, 可获得机械和电气性能的最佳结合。现有40多种簧爪, 可匹配的针直径从0.20到2.60mm, 还可使用方形针。The clip is assembled into the contact body by press-fit on automatic equipment including on-line inspections.

簧爪在带有在线检验功能的自动设备上压接组装到车针主体中。



MECHANICAL CHARACTERISTICS 机械特性

* Insertion characteristics 插入特性

Insertion and withdrawal force for standard clips are displayed on the corresponding data sheets. The values are measured with polished steel gauges with spherical tip and are typical average measurements. These data are for general information and selection of best suited clip for a given application.

标准簧爪的插拔力列在相应的数据表上, 那些值是用带球形端的抛光钢量规测得的, 是典型平均值, 这些数据为通用信息, 供客户为给定的应用场合选择最适宜的簧爪。

* Clip retention 簧爪保持力

This is the force needed to pull-out the press-fitted clip from its contact body. Clip retention is greater than 25 N.

是指将簧爪从其车针主体内拔出所需要的力, 簧爪保持力大于25N。

* Mechanical life 机械寿命

The mechanical life expectancy is dependent on the surface smoothness and diameter of the mating pin and on the plating.

For some applications, more than 1000 mating cycles are possible.

机械寿命的期望值受匹配插针的表面光滑程度、直径和镀层的影响。在某些应用场合可达到1000次以上的插拔循环。

ELECTRICAL CHARACTERISTICS 电气特性

Current rating: The given currents are for one mated combination of socket and pin contact, in free air and for 10°C temperature rise.

额定电流: 所给出的电流是暴露在空气中温升为10摄氏度时插针与插孔匹配结合时的电流。

PIN CONTACTS 插针 车针

Precision screw-machined pin contacts are the best choice for many applications:

精密车床插针是下列许多应用场合的最佳选择:

* High quality, low dimensional tolerances 高质量要求、低尺寸公差

* Best surface of the mating end for applications requiring high mating cycle count
最佳匹配端表面, 适合要求插拔循环次数高的应用场合

* Wide range of dimensions and geometry 插针的尺寸和几何结构范围

- Length from 3 to 50 mm 长度从2mm到50mm

- Diameter from 0.25 to 7 mm 直径从0.25mm到7mm

* Low initial (tooling) costs and attractive prices for medium and high volume production due to manufacturing on high speed automatic lathes
由于在高速自动车床上加工, 对于中批量和大批量生产来说, 加工成本低, 有价格吸引力。

