



产品规格书

Sample Approval Sheet

敬 呈: To:

客 户 料 号:

Customer P/N:

产 品 名 称:

Description: FAKRA HORIZONTAL TYPE CONNECTOR

规 格 型 号:

Spec: ANY TYPE

钿 威 料 号:

7.03A2.00082X

DIANWEI P/N

客 户 确 认

Customer Approve

承 办
Draft

审 核
Confirm

审 核
Approve

钿 威 科 技

DIANWEI Technology

承 办
Draft

工 程
Engineer

审 核
Approve

东莞市钿威电子科技有限公司

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■ 国家级高新技术企业

■ IATF16949

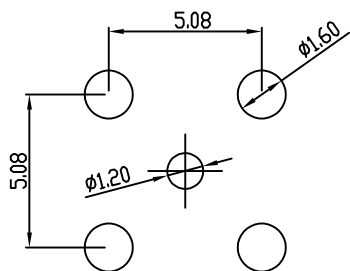
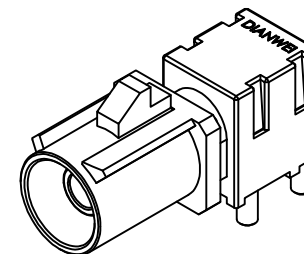
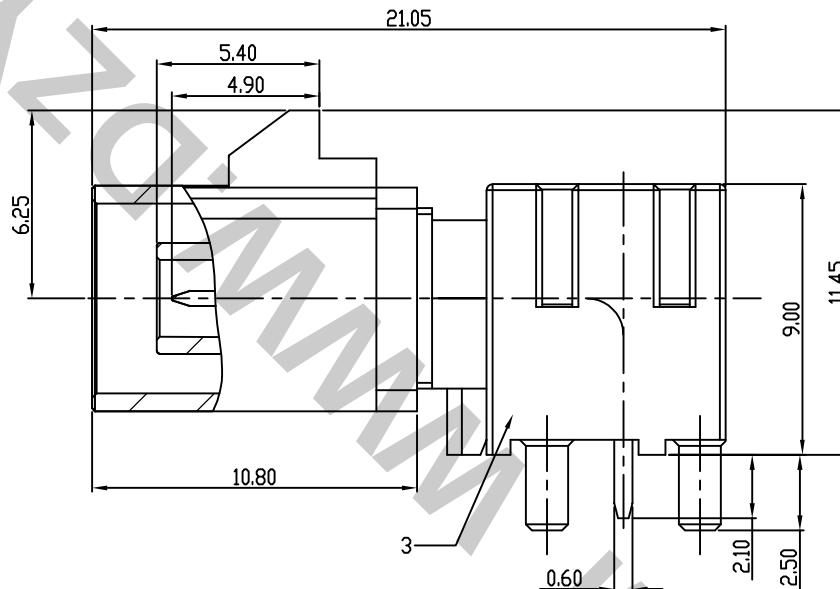
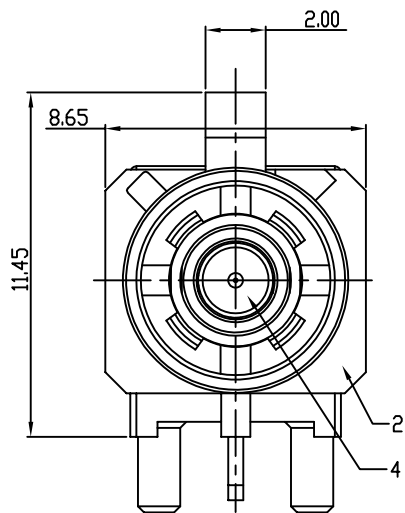
■ ISO9001:2015

■ ISO14001

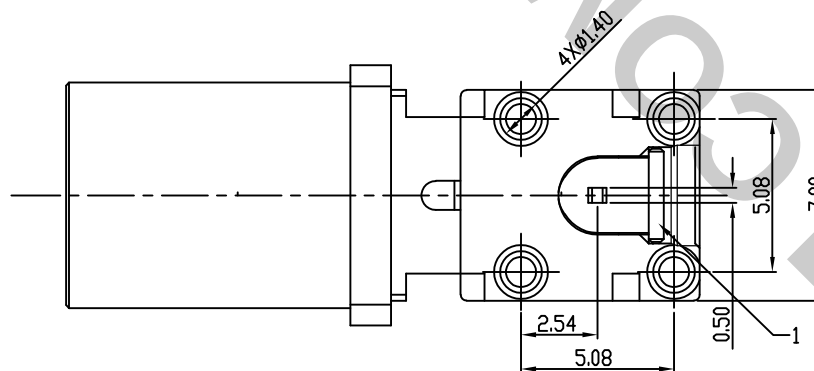
DRAWING TYPE

CUSTOMER DRAWING

MARK	DATE	DESCRIPTION	DESIGN
A	2023.11.13	PROPOSAL	CHEN



P.C.B LAYOUT



1. PART NO. LEGEND:

7.03A2 .000 8 2 X

TYPE
CONTACT AREA PLATING SPEC: GOLD PLATING: 8=30u"
SOLDER AREA PLATING SPEC: Tin PLATING: 8=80u"

2. PERFORMANCE:

- 2.1: CONTACT RESISTANCE: INITIAL VALUE 50mOHM Max,
2.2: FREQUENCY RANGE: DC to 6GHz
2.3 VSWR: 0-6GHz 1.60Max
2.4 VOLTAGE RATING: 50V (AC/DC).
2.5: CURRENT RATING: 1A/PIN.
2.6: INSULATION RESISTANCE: 100MOHM Min.
2.7: MATING CYCLES: 25 TIMES Min.
2.8: OPERATING TEMPERATURE: -40℃~+105℃

4	MOLDING	THERMOPLASTIC+BRASS	BLACK+PLATING GOLD	1
3	BODY	ZINC ALLOY	PLATING Sn	1
2	HOUSING	THERMOPLASTIC UL94V-0	ACCORDANCE WITH THE REQUIREMENTS	1
1	STATOR	BRASS	PLATING Sn	1
NO.	COMPONENTS	MATERIALS	FINISH/COLOR SPECIFICATION	QUANTITY

DIANWEI

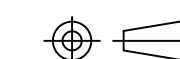
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UNLESS OTHERWISE SPECIFIED TOLERANCE			
ANG	TOL	DIM	TOL
.X	±3.0°	.X	±0.30
.XX	±2.0°	.XX	±0.20
.XXX	±1.0°	.XXX	±0.10



APPROVED

VERIFIED

DRAWING NO

7.03A2-C

PART NAME:

FAKRA HORIZONTAL TYPE CONNECTOR
CUSTOMER DRAWING

PART NO.

7.03A2.00082X

DATE

2023.11.13

UNITS

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SCALE

1:1

PAGE

1/2

REV

A

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DESIGN

CHEN

QP-04-33-B

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	DONGGUAN DIANWEI ELECTRONIC TECHNOLOGY CO., LTD	DOC. #: DIANWEI-3D-159	
	7. 03AX FAKRA CONNECTOR SPEC	Rev.: A	Date: 2019.03.20

Draft Dept. (制订部门): Engineering Dept.

Applicable Dept. (适用部门): QA Dept. (品保部) Eng. Dept. (工程部) MFG Dept. (制造部)

Rev. 版本	Issued Date 发行日期	Revised (制订、修订摘要)
A	2019.03.20	Released 新制定

Approve: Check: Draft: CHEN

This specification contains the design performance requirements that DIANWEI want to achieve, but the product described in this document has not been fully tested to ensure conformance to the requirements outlined below. Further, DIANWEI may change these requirements based on the results of additional testing and evaluation. Contact DIANWEI Engineering for further details.
本规范体现了铤威对所描述产品的设计意图，但具体的技术指标，请参考所描述产品相关的测试报告，铤威保留对此产品规范做更改的权利

未经本公司同意，不得拷贝本数据。
Without agreement in advance, it was forbidden to copy the data in this specification

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1. Scope 文件范围

1.1 Content 内容

This specification covers performance, tests, quality & application requirements of DIANWEI FAKRA printed circuit board (PCB) connectors.

本规范涵盖钿威 FAKRA 印刷电路板(PCB)连接器的性能、测试、质量和应用要求

1.2 Qualification 认证

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

当进行测试验证时，请按照图表 1 的内容进行测试验证

2. Applicable documents适用标准

2.1 Industry Documents 行业标准

SAE/USCAR-2 Rev 6	Automotive testing specification
SAE/USCAR-17 Rev 4	FAKRA testing specification
JEDEC JESD22-B102E	Test Methods and Procedures for Solid State Devices Used in transportation/Automotive Applications

3. Requirements 具体要求

3.1 Design and construction 产品结构

Product shall be of the design, construction, materials and physical dimensions specified on the applicable product drawing.

在产品对应的图纸中定义产品的设计、结构、材料及物理尺寸等

3.2 Ratings 等级

Voltage耐压	Current电流	Temperature使用温度
800V AC	1A max	-40 to 105℃

	DONGGUAN DIANWEI ELECTRONIC TECHNOLOGY CO., LTD		DOC. #: DIANWEI-3D-159	
	7. 03AX FAKRA CONNECTOR SPEC		Rev.: A	Date: 2019.03.20

4. Test Requirements and Procedures Summary 测试要求及规程:

一、Visual Inspection 产品检查			
Item 项目	TEST DESCRIPTION 测试项目	REQUIREMENT 设计要求	PROCEDURE 参考规程
1	Visual Inspection 外观检查	Inspected using 10X scope and should be without crack,oxidation,pollution and burrs during previous processes 使用 10X 放大镜，检查产品在材料、加工、组装、后续存放等环节是否存在开裂、氧化、脏污、毛刺等不良	SAE/USCAR-2 Rev 6, 5.1.8.3
二.Electrical 电性能			
Item 项目	TEST DESCRIPTION 测试项目	REQUIREMENT 设计要求	PROCEDURE 参考规程
1	Contact Resistance 接触阻抗	40m Ω maximum for signal and ground contacts. 信号及接地接触阻抗≤40m Ω	SAE/USCAR-17 Rev 4, 4.3.1.2
2	Circuit Continuity Monitoring 瞬断	No loss of electrical continuity for >1us 无大于 1 微秒的瞬断	SAE/USCAR-2 Rev 6, 5.1.9.3
3	Dielectric Withstanding Voltage 耐压	≥800VAC	SAE/USCAR-17 Rev 4, 4.3.2.2
4	VSWR 驻波比	SWR≤1.5 0 to 3 GHZ SWR≤1.6 6 to 6 GHZ	SAE/USCAR-17 Rev 4, 4.4.2.2
三. MECHANICAL 机械性能			
Item 项目	TEST DESCRIPTION 测试项目	REQUIREMENT 设计要求	PROCEDURE 参考规程
1	Solderability Dip Test 沾锡测试	Examined at 8X with 95% solder coverage 8X 放大镜下观察，95%以上面积吃锡	JEDEC JESD22-B102E,Method 1
2	Polarization Effectiveness 极化特征效果	Force to achieve center contact continuity≥80N 中心导体导通前配合力≥80N	SAE/USCAR-2 Rev 6, 5.4.4.3
3	Connector Engagement Force 公母端插入力	Mating Force≤45N 插入力≤45N	SAE/USCAR-2 Rev 6, 5.4.2.3-A
4	Connector Disengage with Lock enabled 公母端分离力（卡扣发挥作用）	Force to disengage≥110N 分离力≥110N	SAE/USCAR-2 Rev 6, 5.4.2.3-B
5	Force to Disengage Lock 卡扣释放力	Force to Disengage Lock≥6N and ≤51N 6N ≤分离力≤ 51N	SAE/USCAR-2 Rev 6, 5.4.2.3-C

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6	Connector Disengage Force with Lock Disabled 公母端分离力 (卡扣不发挥作用)	Force $\leq 75\text{N}$ 分离力 $\leq 75\text{N}$	SAE/USCAR-2 Rev 6, 5.4.2.3-B
7	Drop Test 跌落测试	Meets visual requirements 满足外观要求	SAE/USCAR-2 Rev 6, 5.4.8.3
8	Mechanical Pull and Sideload 抗拉	Force $\geq 110\text{N}$ Axial Force $\geq 75\text{N}$ Sideload	SAE/USCAR-17 Rev 4, 4.2.1.2

四. ENVIRONMENTAL 环境性能

Item 项目	TEST DESCRIPTION 测试项目	REQUIREMENT 设计要求	PROCEDURE 参考规程
1	Vibration/Mechanical Shock 振动测试&机械冲击测试	No loss of electrical continuity VSWR check before and after 无大于 1 微秒的瞬断，测试前后驻波比测试符合要求	SAE/USCAR-2 Rev 6, 5.4.6.3
2	Thermal Shock 冷热冲击	Group test compliance 符合群组测试要求	SAE/USCAR-17 Rev 4, 4.5.1.4 Cycle from -40℃ to +105℃
3	Temperature/Humidity Cycling 温湿度循环	Group test compliance 符合群组测试要求	SAE/USCAR-2 Rev 6, 5.6.2.3 Cycle from -40℃ to +85℃
4	High Temperature Exposure 高温寿命	Group test compliance 符合群组测试要求	SAE/USCAR-2 Rev 6, 5.6.3.3 Hold at +105℃

5. Group Test

产品认证及再认证顺序:

A. Sampling 样品选择:

Sampling requested by below table shall be applicable to the principle of randomness

样品选择应按照结构栏要求符合随意性原则

B. Sequence 测试顺序:

Below is test sequence

下列是群组检测顺序:

Test Content/sequence 测试认证顺序		Test Group 测试项目									
		B	F	G	H	K	N	O	Q	R	S
1	Visual Inspection 外观检查	Step1 Step4	Step1 Step3	Step1 Step4	Step1 Step3	Step1 Step3	Step1 Step5	Step1 Step7	Step1 Step7	Step1 Step7	Step1 Step7
2	Pin insert and withdraw force 端子与 Housing 的装入力及拔出保持力										
2.1	Inserting force $\leq 30\text{N}$ 端子装入 Housing, 插入力 $\leq 30\text{N}$	Step2									
2.2	Withdraw force $\geq 10\text{N}$ 端子拔出 Housing, 保持力 $\geq 10\text{N}$	Step3									

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3	Withdraw force $\geq 10N$ Humidity conditioned 端子拔出 Housing, 保持力 $\geq 10N$ (温湿度预处理)		Step2								
4	Male and female engage and disengage force 连接器公母互配插入力&拔出力										
4.1	Male and female engage force $\leq 45N$ 公母互配插入力 $\leq 45N$			Step2							
4.2	Male and female engage and disengage force $\geq 110N$ (With lock enabled) 公母互配分离力 (卡扣发挥作用) $\geq 110N$			Step3							
5	Lock arm released force $6N \leq F \leq 51N$ 卡扣释放力 $6N \leq F \leq 51N$			Step3							
6	Male and female engage and disengage force $\leq 75N$ (With lock disabled) 公母互配分离力 (卡扣不发挥作用) $\leq 75N$			Step3							
7	Polarization Effectiveness 极化特性效果				Step2						
8	Circuit Continuity Monitoring 电路导通监控				Step2		Step3	Step4	Step4		
9	Drop test 跌落测试					Step2					
10	VSWR&IR 驻波比及插损测试						Step2 Step4	Step2 Step5	Step2 Step5	Step2 Step5	Step2 Step5
11	Mechanical Pull 抗拉测试						Step3				
12	Durability 插拔寿命							Step3	Step3	Step3	Step3
13	Contact resistance 接触阻抗 初始值: $LLCR \leq 25m\Omega$ 测试后: $LLCR \leq 40m\Omega$							Step2 Step5	Step2 Step5	Step2 Step5	
14	Isolation resistance $> 100M\Omega$ 绝缘电阻 $> 100M\Omega$									Step2 Step5	
15	Thermal shock 冷热冲击								Step4		
16	Temperature/Humidity Cycling 温湿度循环									Step4	
17	High Temperature Exposure 高温曝露										Step4
18	Dielectric Withstanding Voltage 耐压							Step6	Step6	Step6	Step6
19	Vibration/Mechanical Shock 振动/机械冲击							Step4			