

# 承 认 书

Approval Sheet

客户 (Customer): /

客户料号 (Cus .P/N): /

华联威料号 (HLW P/N): DS812-5911-G217

品名规格 (PronameSpec): D-SUB 焊线公座14PIN带护套

送样日期 (Delivery Date): 2023/04/06

承认日期 (Acknowledge Date): 2023/04/06

Approved No:		客 户 Customer	
采 购 部 Purchasing Dept	品 质 部 QC Dept	工 程 部 Engineering Dept	确 认 Approved By
深 圳 市 华 联 威 电 子 科 技 有 限 公 司 SHEN ZHEN SHI HUA LIAN WEI ELECTRONICS TECHNOLOGY CO; LTD.			
业 务 部 Sales Dept	品 管 部 QC Dept	工 程 部 Engineering Dept	核 准 Checked By
欧阳小丽	欠必锋	陈依婷	唐竹君

地址: 深圳市龙华区观澜街道桂香社区观澜桂花路 307 号

TEL: 0755-28888886 28888866

邮箱: hua@hlwconn.com

[Http://www.hlwconn.com](http://www.hlwconn.com)

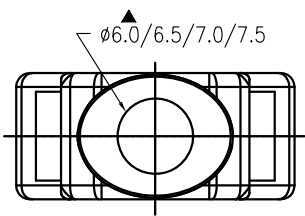
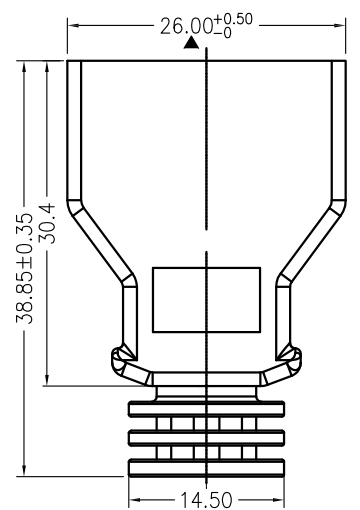
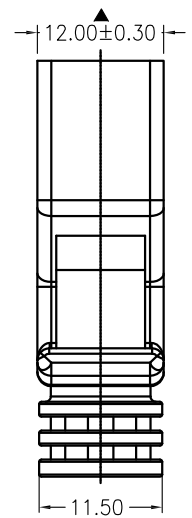
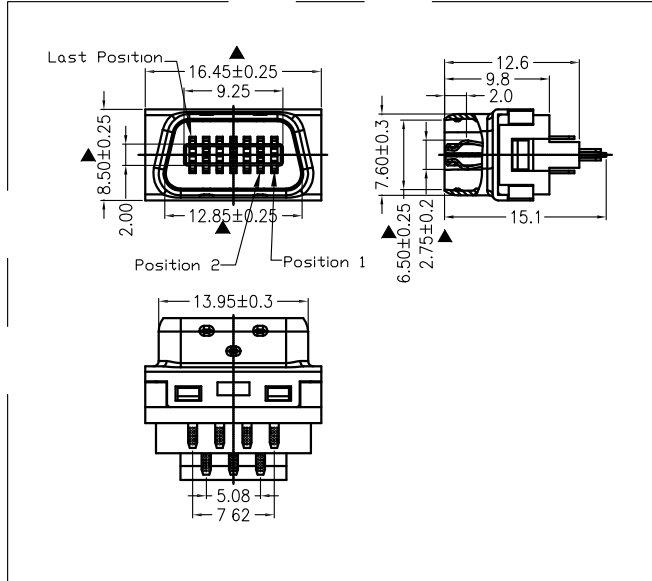
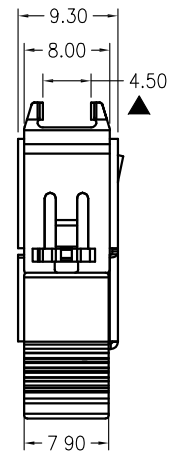
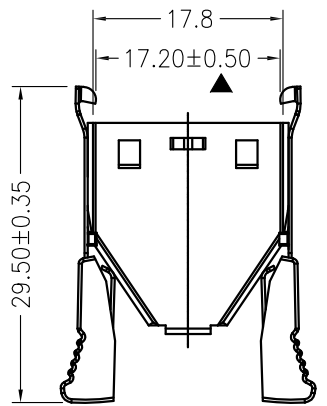
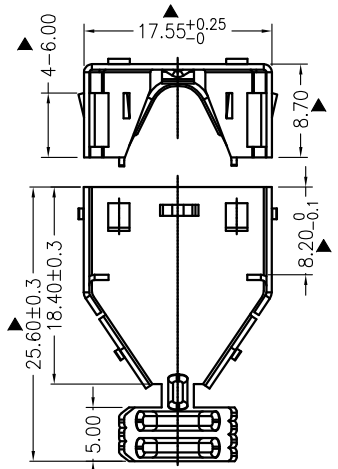


# 目 录

## Contents

图纸.....	Page03
产品规格书.....	Page04-06
产品检测报告.....	Page07-08
尺寸测试报告.....	Page09
电镀报告.....	Page10-11
盐雾报告.....	Page12
材质证明.....	Page13-15
SGS.....	Page16-67

REV.	ECN.NO.	APPD.
A	EXXXXXXXXXX	chenyiting



1.SPECIFICATION

- 2.1 Current Rate:5 Amps
- 2.2 Insulator Resistance:1000MΩ Min.
- 2.3 Dielectric Strength:500V AC PER MIN
- 2.4 Operation Temperature:-55℃~+105℃
- 2.5 Contact Resistance:30mΩ Max

DS812-5911-G217  
 1:铁壳镀镍  
 G:半金G/Fu  
 2:PBT  
 1:黑色

TOLERANCE UNLESS OTHERWISE SPECIFIED		<b>FLW</b> 深圳市华联威电子科技有限公司			
		HUA LIAN WEI TECHNOLOGY ELECTRONICS CO;LTD.			
.XXX ±0.10	.XX ±0.20	.X ±0.30	.X' ±3'	.XX' ±2'	
APPROVED		PART NAME:	D-SUB 焊线公座14PIN带护套		
CHECKED		PART No:	DS812-5911-G217		C
DRAWN	chenyiting	PROJECTION:	UNIT:	SCALE	SHEET
DATE	2022.04.06		mm	1:1	10F1
					REV. A



# 深圳市华联威电子科技有限公司

## D-SUB系列產品SPEC

TEST ITEM		REQUIREMENT	PROCEDURE
1	Examination of Product	Meets requirements of product drawing. No physical damage.	Visual inspection.
2	Operating Temperature	-55°C ~+85°C	
3	Storage Temperature	-55°C ~+105°C	
4	Storage conditions and valid storage period	If the temperature is lower than 35 ° C, the standard humidity is lower than 75%RH, and the storage period is 1 year	
<b>ELECTRICAL REQUIREMENT</b>			
5	Rating Voltage	300VDC max	on any signal pin with respect to the shield
6	Rating Current	1Amperes DCmax	55°C ,maximum ambient 85°C ,maximum temperature change (ANSI/EIA 364-70,TP-70)
7	Contact Resistance	[30] m Ohm Max(Initial) [50] m Ohm Max(Final)	Subject mated contacts assembled in housing to 20mV Max open circuit at 100mA Max. EIA-364-23.
8	Dielectric withstanding Voltage	No flashover,No sparkover,No excess leakage,No breakdown	[500]VAC for 1minute Test between adjacent circuits of unmated connector. EIA-364-20C
9	Insulation Resistance	[1000 ] M Ohm Min.	Impressed voltage 500 VDC. Test between adjacent circuits of unmated connector. EIA-364-21C.
10	Temperature Rising	30°C Max. Under loaded rating current	Contact series-wired, apply test current of loaded rating current to the circuit, and measure the temperature rising by probing on soldered areas of contacts, after the temperature becomes stabilized deduct ambient temperature from the measured value.
<b>Mechanical Requirement</b>			
11	Connector Mating Force	4.44kgf Max 9pin 7.72kgf Max 15pin 12.71kgf Max 25pin 17.71kgf Max 37pin	Operation Speed : [ 25] mm/min. Measure the force required to mate connector. EIA-364-13

12	Connector Unmating Force	0.33kgf Max 9pin 15pin 0.79kgf Max 25pin 37pin 0.45kgf Max 1.14kgf Max	Operation Speed : [25] mm/min. Measure the force required to unmate connector. EIA-364-13
13	Durability	Contact Resistance Shall be less than 40 mohms after 1000 cycles for 30 $\mu$ in gold plated,750 cycles for gold flash plated	Operation Speed : [ 25] mm/minute. EIA-364-09C
14	Vibration	No discontinuity at 1 $\mu$ s or longer(each contact) when continuity is tested per ANSI/EIA-364-46	Condition III,Method 5A,15 minute/axis ANSI/EIA-364-28
15	Mechanical Shock	No discontinuity at 1 $\mu$ s or longer(each contact) when continuity is tested per ANSI/EIA-364-46	Subject mated connector to 50g half sine in 11 msec from shocks in the X,Y,Z axis(9 shocks total)
16	Solder ability	At least 95% of the immersed area shall be covered with new solder	1)Temperature of fused solder: 260+5 $^{\circ}$ C. 2)Dipping time:5+0.5s EIA 364-52
<b>Environmental Requirements</b>			
17	Resistance to Solder Heat	Forming resin shall not be distorted, and terminations shall not be separated.	1) Depth of dipping termination: the distance between the mounting surface and solder surface shall be 1 mm to 2mm. 2)Temperature:260+5 $^{\circ}$ C . 3) Dipping time: 5+0.5s Socket EIA 364-56
18	Thermal Shock	No physical damage to the samples and LLCR-50 m $\Omega$ max per contact	Mated connectors exposed to 10 cycles between -55 $^{\circ}$ C to 85 $^{\circ}$ C , 30 minutes duration at both temperature extremes EIA 364-32
19	Steady State Humidity	No physical damage to the samples and can pass the Dielectric Withstanding Voltage & Insulation Resistance	Expose mated connectors to a temperature of 40 $\pm$ 2 $^{\circ}$ C with relative humidity of 90-95% for 168 hours Min(seven complete cycles). Remove surface moisture and air dry for 24 hours. prior to measurement. EIA 364-31
20	Temperature Life (Heat Aging)	Contact Resistance shall be less than 40 ohms	Mated Connector 85 $^{\circ}$ C , 250 hours, EIA-364-17B.
21	Salt Spray	Visual Inspection-No physical damageLLCR-50 m $\Omega$ max per contact	Mated connector expose to 5% salt concentration for 12 hours at temperature 35+2 $^{\circ}$ C .After the test specimens shall be washed with running water and dried naturally EIA 364-26
<b>Product Qualification and Requalification test</b>			

Test or Examination	Test Group									
	A	B	C	D	E	F	G	H	I	J
	Test Sequence (a)									
Examination of Product	1, 7	1, 9	1, 6	1, 5	1, 5	1, 5	1, 5	1, 3	1, 3	1, 3
Contact Resistance		2, 8	2, 5	2, 4	2, 4	2, 4	2, 4			
Dielectric withstanding Voltage	3, 6									
Insulation Resistance	2, 5									
Temperature Rising								2		
Mating Force		3, 7								
Unmating Force		4, 6								
Durability		5								
Vibration			3							
Mechanical Shock			4							
Solderability										2
Resistance to Soldering Heat									2	
Thermal Shock				3						
Humidity Temperature Cycling	4				3					
Temperature Life						3				
Salt Spray							3			
備注	無客戶指定增加測試項目外，依照此標準進行產品可靠性評估。									

核准：唐竹君

制作人：魏紅

## 測試報告

## TEST REPORT

產品名稱 Part Name	D-SUB 焊线公座 14PIN 带护套	測試日期 Date of Testing	2023.04.04- 2023.04.06	報告編號 Report NO.	MD20230406-01						
產品型號 Part Name	DS812-5911-G217	樣品數量 Quantity	5PCS	測試環境 Measuring Environment	濕度 Temp:18~21°C 相對濕度 R.H.:49%~57%						
一.電性測試 ELECTRICAL TEST											
序號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	測試記錄 Testing Result					判定 Judge	
					1	2	3	4	5	Pass	Fail
1	Contact resistance	Test current:100mA max	DIGITAL MICROOHMMETER	30mΩ Max	13.75 mΩ	15.21 mΩ	14.46 mΩ	16.72 mΩ	16.02 mΩ	P	
2	Insulation resistance	Test voltage:500VDC Operation stated:1min	ULTRA HIGH RESISTANCE METER	1000 MΩ Min	Pass	Pass	Pass	Pass	Pass	P	
3	Dielectric withstand voltage	Test voltage:500VAC Cut-off current:0.5mA Operation stated:1 min	BREAKDOWN TESTER	No discharge or flashover occur	Pass	Pass	Pass	Pass	Pass	P	
二.機械特性測試 MECHANICAL TEST											
序號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	測試記錄 Testing Result					判定 Judge	
					2	3	4	5	Pass	Fail	
1	Durability test	Rate:300cycles/hour Total:750 cycles	LIFE TESTER FOR CONNECTOR	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
三.環境特性測試 ENVIRONMENTAL TEST											
序號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	測試記錄 Testing Result					判定 Judge	
					2	3	4	5	Pass	Fail	
1	Humidity-Temperature cycle	Temperature: 40 ± 2°C Humidity: 90~95% Duration:168H	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
2	Heat test	Temperature: 70 ± 2°C Duration: 168H	OVEN	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
3	Cold test	Temperature: -25 ± 3°C Duration: 168H	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	P	

4	Temperature cycling test	Temperature: 70—25 °C Duration:5 cycle	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
---	--------------------------	-------------------------------------------	--------------------------------------------	--------------------	------	------	------	------	------	---	--

四.物理測試 PHYSICAL TEST

序號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	測試記錄 Testing Result					判定 Judge	
					1	2	3	4	5	Pass	Fail
1	Salt spray test	Temperature: 35 ± 2°C Concentration: 5±1 % Duration :12H	SALT SPRAY TESTER	No Oxidation	Pass	Pass	Pass	Pass	Pass	P	
2	Resistance to soldering heat test	Temperature: 260±5°C Duration :10±1sec	OVEN	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
3	Solder ability test	Temperature: 260±5°C Duration:5±0.5 sec	CONTROLLED CONSTANT-TEMP SOLDER POT	Soldering area 95%	Pass	Pass	Pass	Pass	Pass	P	

判定 Result

合格(ACCEPT)

不合格(REJECT)

核准(Approver): 欠必鋒

測試(Tester): 但芬



# 深圳市华联威电子科技有限公司

## 检验报告

首件检验 
 入库检验 
 出货检验 
 客退检验 
 退料检验 
 其他

2023年04月06日 版次:A1

料号	DS812-5911-G217	制令单号	/					送检单位	工程部	首件制作者	装配		
品名	D-SUB 焊线公座14PIN带护套	客户代号	/					批 量	/	送检时间	/		
								数 量	5PCS	确认时间	/		
抽样标准		<input checked="" type="checkbox"/> 单次 <input type="checkbox"/> 双次					抽样数	AQL	CRI:0	MAJ:0.40	MIN:0.65		
MIL-STD-105E(II)		<input checked="" type="checkbox"/> 正常 <input type="checkbox"/> 加严 <input type="checkbox"/> 减量					( 5PCS )	ACC/REJ	0	/	/		
不良数:		CRI ( / ) MAJ ( / ) MIN ( / )							不良率(%)		/		
NO.	检验项目	检测仪器	检 验 记 录					品管判定		CRI	MAJ	MIN	备注
	单位:MM/G		1	2	3	4	5	AC	RE				
	17.55±0.25/-0	D	17.56	17.56	17.58	17.57	17.54	√					
	4-6.00±0.20	D	6.01	6.01	6.02	6.03	6.02	√					
	8.70±0.20	D	8.72	8.73	8.73	8.72	8.71	√					
	25.60±0.30	D	25.65	25.64	25.65	25.62	25.65	√					
	8.20+0/-0.1	D	8.21	8.20	8.21	8.22	8.20	√					
	17.20±0.50	D	17.30	17.33	17.32	17.34	17.33	√					
	4.50±0.20	D	4.53	4.52	4.53	4.51	4.52	√					
	12.00±0.30	D	12.03	12.06	12.05	12.04	12.06	√					
	26.00+0.50/-0	D	26.25	26.23	26.24	26.26	26.23	√					
	16.45±0.25	D	16.46	16.47	16.48	16.48	16.50	√					
	8.50±0.25	D	8.51	8.53	8.52	8.52	8.53	√					
	12.85±0.25	D	12.84	12.86	12.87	12.85	12.85	√					
	6.50±0.25	D	6.52	6.53	6.53	6.51	6.51	√					
	2.75±0.20	D	2.75	2.78	2.78	2.75	2.77	√					
检验依据: <input checked="" type="checkbox"/> 《工程图纸》 <input type="checkbox"/> 《检验规范》 <input type="checkbox"/> 《承认书》 <input type="checkbox"/> 样品 <input type="checkbox"/> 其它													
检测仪器:A游标卡尺 B千分尺 C厚薄仪 D投影镜 E放大镜 F显微镜 G锡炉 H插拔力器 I间位尺 J其它													
品保判定:													
核 准 APP		欠必锋			审 核 CHK		/		检 验 员 INSPBY		但 芬		

保存期限:三年

保存部门:品保部

QR-M-003

## 电镀报告表

品名:D-SUB 焊线公座14PIN带护套		版次:A.0																														
电镀规格:Cu:40u",Ni:30u"	日期:2023/03/04	页次:1/1																														
厂商:同华																																
测试设备:CMI X-射线膜厚测试仪																																
1、表层电镀测试 (Ni)																																
<table border="1"><thead><tr><th>数据</th><th>测试标准</th><th>实测值</th><th>判定</th><th>测试日期</th><th>测试时间</th></tr></thead><tbody><tr><td>1</td><td>30u"min</td><td>46.6u"</td><td>OK</td><td>2023/3/4</td><td>11:35:05</td></tr><tr><td>2</td><td>30u"min</td><td>39.3u"</td><td>OK</td><td>2023/3/4</td><td>11:35:07</td></tr><tr><td>3</td><td>30u"min</td><td>52.8u"</td><td>OK</td><td>2023/3/4</td><td>11:35:09</td></tr><tr><td>4</td><td>30u"min</td><td>46.9u"</td><td>OK</td><td>2023/3/4</td><td>11:35:11</td></tr></tbody></table>			数据	测试标准	实测值	判定	测试日期	测试时间	1	30u"min	46.6u"	OK	2023/3/4	11:35:05	2	30u"min	39.3u"	OK	2023/3/4	11:35:07	3	30u"min	52.8u"	OK	2023/3/4	11:35:09	4	30u"min	46.9u"	OK	2023/3/4	11:35:11
数据	测试标准	实测值	判定	测试日期	测试时间																											
1	30u"min	46.6u"	OK	2023/3/4	11:35:05																											
2	30u"min	39.3u"	OK	2023/3/4	11:35:07																											
3	30u"min	52.8u"	OK	2023/3/4	11:35:09																											
4	30u"min	46.9u"	OK	2023/3/4	11:35:11																											
2、底层电镀测试 (Cu)																																
<table border="1"><thead><tr><th>数据</th><th>测试标准</th><th>实测值</th><th>判定</th><th>测试日期</th><th>测试时间</th></tr></thead><tbody><tr><td>1</td><td>40u"min</td><td>55.5u"</td><td>OK</td><td>2023/3/4</td><td>11:40:22</td></tr><tr><td>2</td><td>40u"min</td><td>52.3u"</td><td>OK</td><td>2023/3/4</td><td>11:40:24</td></tr><tr><td>3</td><td>40u"min</td><td>60.7u"</td><td>OK</td><td>2023/3/4</td><td>11:40:26</td></tr><tr><td>4</td><td>40u"min</td><td>58.1u"</td><td>OK</td><td>2023/3/4</td><td>11:40:28</td></tr></tbody></table>			数据	测试标准	实测值	判定	测试日期	测试时间	1	40u"min	55.5u"	OK	2023/3/4	11:40:22	2	40u"min	52.3u"	OK	2023/3/4	11:40:24	3	40u"min	60.7u"	OK	2023/3/4	11:40:26	4	40u"min	58.1u"	OK	2023/3/4	11:40:28
数据	测试标准	实测值	判定	测试日期	测试时间																											
1	40u"min	55.5u"	OK	2023/3/4	11:40:22																											
2	40u"min	52.3u"	OK	2023/3/4	11:40:24																											
3	40u"min	60.7u"	OK	2023/3/4	11:40:26																											
4	40u"min	58.1u"	OK	2023/3/4	11:40:28																											

核准: 欠必锋

审核: 李娟

检验员: 但芬

品名: D-SUB 焊线公座14PIN带护套		版次:A.0			
电镀规格: Ni30u", Sn100u", Au G/Fu"		日期: 2023/03/04			
页次: 1/1					
厂商: 同华					
测试设备: CMI X-射线膜厚测试仪					
1、底层电镀测试 (Ni)					
数据	测试标准	实测值	判定	测试日期	测试时间
1	30u"MIN	53.5u"	OK	2023/3/4	10:20:15
2	30u"MIN	52.3u"	OK	2023/3/4	10:20:17
3	30u"MIN	60.5u"	OK	2023/3/4	10:20:19
4	30u"MIN	63.4u"	OK	2023/3/4	10:20:21
2、表层电镀测试 (Sn)					
数据	测试标准	实测值	判定	测试日期	测试时间
1	100u"MIN	107.3u"	OK	2023/3/4	10:25:10
2	100u"MIN	104.7u"	OK	2023/3/4	10:25:12
3	100u"MIN	106.9u"	OK	2023/3/4	10:25:14
4	100u"MIN	103.4u"	OK	2023/3/4	10:25:16
3、表层电镀测试 (Au)					
数据	测试标准	实测值	判定	测试日期	测试时间
1	0.5u"MIN	0.65u"	OK	2023/3/4	10:30:32
2	0.5u"MIN	0.54u"	OK	2023/3/4	10:30:34
3	0.5u"MIN	0.56u"	OK	2023/3/4	10:30:36
4	0.5u"MIN	0.54u"	OK	2023/3/4	10:30:38

核准: 欠必锋

审核: 李娟

检验员: 但芬

## 盐水喷雾实验报告

试验方法	盐水喷雾腐蚀试验法	参考资料	MIL-STD-1345
METHOD	NEUTRL SALT SPRAY CORROSION TEST	REF	
客户		试验起始日期	2023年04月05日 20:00 时起
		DATE	2023年04月06日 08:00 时止
样品名称	D-SUB 焊线公座14PIN带护套	试验数量	5PCS
P/N	DS812-5911-G217	QTY	
试验条件 (TEST CONDITION)			
1、盐水溶解 (SALT SOLUTION: 浓度 $50 \pm 10$ g/L, PH值6.5-7.2).			
2、试验室温度 (TEMP. IN THE SPRAY CHAMBER): $35 \pm 1$ °C.			
3、盐水桶温度 (TEMP. OF SALT SOLUTION TANK): $35 \pm 1$ °C.			
4、压力桶温度 (TEMP. OF AIR SUPPLY): $47 \pm 1$ °C.			
5、试验室相对湿度 (R.H IN THE CHAMBER) 85%.			
6、压缩空气压力 (COMPRESSED AIR PRESSURE): $1.00 \pm 0.01$ Kg/cm <sup>2</sup> .			
7、样品放置位置 (SPECIMEN SUPPORTED ANGLE): 尼龙绳吊挂70° -90° .			
8、喷雾收集量 (COLLECT RATE OF SALT SOLUTION) 1-2mL/(8 cm <sup>2</sup> hr).			
9、盐雾测试时间: 12小时 (H)			
判定方法 (ADJUDICATION METHOD)			
试验后以20倍放大镜观察、无蓝、绿色腐蚀物之现象 (不包含折弯处), 即判定合格. (Inspect the specimen at 20 magnification no blue or green corrosion products are acceptable)			
样品序号	试验后现象		判定
	PHENOMENON AFTER TEST		COMMENT
1	无蓝、绿色腐蚀物之现象		OK
2	无蓝、绿色腐蚀物之现象		OK
3	无蓝、绿色腐蚀物之现象		OK
4	无蓝、绿色腐蚀物之现象		OK
5	无蓝、绿色腐蚀物之现象		OK

核准: 欠必锋

审核: 李娟

试验员: 但芬

# 佛山市顺德区天硕贸易有限公司

Foshan Shunde Tianshuo Trade Company Limited

日期: 2021-10-19

编号: FB2110136

收货单位PURCHASER: _____ 检验标准SPECIFICATION: <u>JIS G 3141</u>				产品名称: <u>SPCC-SD</u> 检验情况: <u>合格</u>											
产品规格 SPECIFICATION MM	钢卷号 COIL. NO	材质牌号 SYMBOL OF QUALITY	净重 WEIGHT KG	化学成份CHEMICAL COMPOSITION							力学性能MECHANICAL PROPERTIES				
				Fe %	C %	Mn %	Si %	P %	S %	Al %	抗拉强度T.S Mpa	延伸率EL (%)	屈服强度Y.S Mpa	杯突 (mm)	硬度 (HV)
0.30x1250	DL45657	SPCC-SD	7835	99	0.031	0.17	0.07	0.22	0.24		361	29	259		143
0.30x1250	DL45658	SPCC-SD	7690	99	0.032	0.16	0.07	0.21	0.22		362	30	256		141

质量控制中心:

审核: 谢和钢

制表人: 胡万银



# 材 质 证 明

兹有我司邦奇塑料科技有限公司为贵司所提供的产品不防火增加级原料 PBT 不防火加纤 20%黑色，由以下物质组成：

物品名称：PBT 不防火加纤黑色 20%

组成物质：PBT 环保树脂	60-70%
玻纤	20-25%
增韧剂	7-9%
润滑剂	0.1%
抗氧化剂	0.1%
偶联剂	0.5%
其它	0.3%
黑色母	1-2%

建议成型：

1. 烘干温度 120-140℃
2. 烘干时间 2-4 小时
3. 成型温度 240-260℃

特此证明！

东莞市邦奇塑料科技有限公司





# 鉅鼎銅材廠檢驗報告單

公司名稱 Customer	鉅鼎銅材廠檢驗報告單				重量 Weight(kg)	1078	出貨日期 Date	2021/11/23		
品名 Article	標準 Standard No				尺寸 Dimension		狀態 Temper	銅卷編號 Coil No		
C2680	JISH3100:2017				0.18*400		EH	1021-C-08		
化學成分Chemical Compositions(%)										
元素 Element	Cu %	Zn%	Pb%	Fe%	\	\	\	\	化學成分	雜質
規範 Spec	64.0-68.0	餘量	<0.05	<0.05	\	\	\	\	合格	合格
實測 Actual	64.32	餘量	0.0036	0.0136	\	\	\	\	合格	合格
機械性質Mechanical Properties										
項目 Item	結晶粒度 Grain Size Mm	硬度 Hardness Hv	抗拉強度 TensionStrength Mpa	伸長度 Elongation %	導電率 Electrical Conduc %IACS	彎曲試驗 Bending Test 180	表面粗度 Surface Roughness Ra(u m)	彎曲度 Camber mm/n		
規範MAX Spec	\	170-190	490-610	\	\	\	\	\		
實測 Actual	\	178	574	5	\	\	\	\		

品質部

