Customer 客戶名稱：

No 序列號:

Attention 聯繫人： Sunny

Approval Date 承認日期:

Your Part No 客戶料號：TY.2BD10.004 3FU00401310 (F0291)

Sample No 樣品號.：

SPECIFICATION

規 格 說 明 書

Model 型號： USB

Spec No 規格： USB-A1D06F-4N4N-W

Customer Approval Status 客戶承認狀況	HUATAC File Publish Sign 華傑文件發行蓋章處
Dsg'd 設計: Chk'd 審核: App'd 批准: 設計驗證 工程課 2023.09.26 發行	Edition 版本： A
File Publish Sign 文件發行蓋章處	File clerk 文管:

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SUZHOU HUAJIE ELECTRONICS CO.LTD

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技术部 11.03.22 卢红

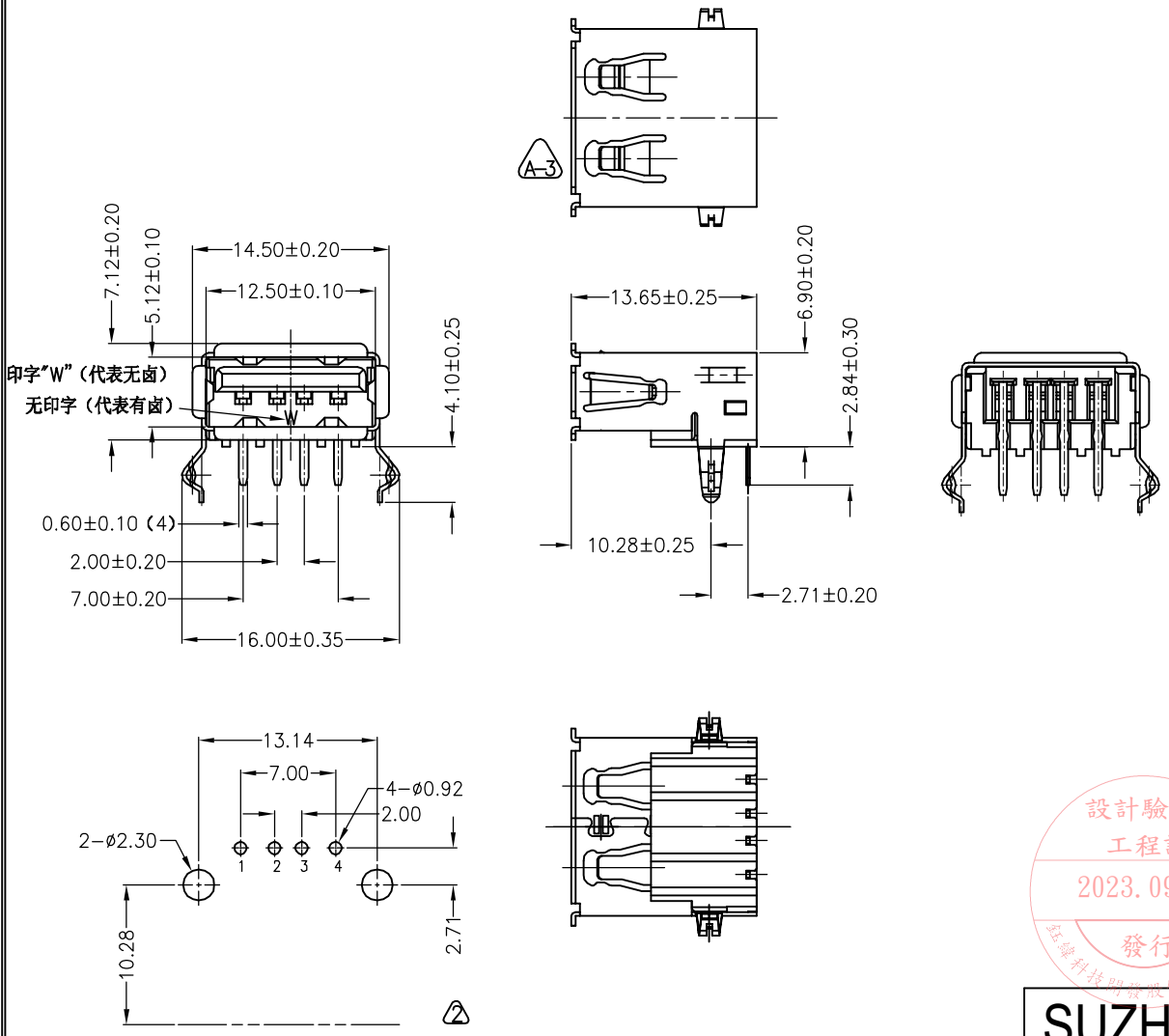
Dsg'd 設計

技术部 11.03.22 陈志方

App'd 批准

Sales 業務員

REV	DESCRIPTION	DATE	ECN NO.	CHANGER
A/1	Modify w logo place	11.05.04	2011095	Sally
A/2	CHANGE PCB LAYOUT	12.11.23	2012221	SALLY
A-3	change shell	14-08-27	20140620122	lhp.liu



RECOMMENDED P.C.B HOLE LAYOUT
TOP VIEW(TOLERANCE:iÀ0.10)

Specification
1.Current Rating:1.5AMP at 250V AC
Voltage Rating:30V
2.Insulation Resistance:1000M¦, Min
3.Contact Resistance:30m¦, Max
4.Dielectric Withstanding Voltage:500V AC
5.Temperature Range:-20°C to +85°C
Remark:48Hours Guarantee by -30°c
storage temperaturee
6.Mechanical Characteristics:
Insertion Force:35 Newtons maximum
Extraction Force:10 Newtons minimum

P/N NOTE:
USB-A1D06F-XX4X-X
- W=without halogen O=UL94-V0
- Shell plate spec: T=Tin plated, N=Nickel plated
- Housing colour: B=Black, N=Nature, W=White
- Contact plate spec: 0=FU", 1=3U",2=6U", 3=15U",4=30U"

3FU00401310(F0291)

設計驗證
工程課
2023.09.26
發行
鈺緯科技開發股份有限公司

NO.	VARIETY	MATERIAL	QT,Y	REMARK
3	Shell	C2680H	1	T=0.30 Plating nickel/Tin
2	Housing	P.B.T	1	UL94V-0 Nature/Black/White
1	Contact	C2680EH	4	T=0.25 Plating Gold

SUZHOU HUAJIE ELECTRONICS CO.,LTD

X. ±0.38	X.iã±4°	UNIT:	mm	DR:	SALLY	TITLE:	USB A TYPE(FEMALE) DIP 90° L=13.65		
.X ±0.25	.Xiã±2°	3RD:		DE:	JACK				
.XX±0.20	.XXiã	SCALE:	1:1	CHKD:		SHEET:	1/1	P/N:	USB-A1D06F-4N4N-W
.XXX±0.10	.XXXiã								
CUSTOMER DRAWING		REV:	A-3	APPD:		D/N:	1014-0006	M/N:	

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1. material

1.1: Housing: Minimum UL 94-V0 rated, thirty percent (30%) glass-filled polybutylene terephthalate (PBT) or better.
Thermal capability: SMT TYPE >260 oC; DIP TYPE >205 oC; solder TYPE > 350 oC of 5s

1.2: Shell: Substrate Material: 0.30 + 0.05 mm phosphor bronze, nickel silver, or other copper based high strength materials.
Plating: Outside: Optional. Minimum 2.00 micrometers (80 microinches) nickel. In addition,manufacturer may use a copper underplate beneath the nickel.

1.3: Terminal: Substrate Material: 0.25 + 0.05 mm minimum half-hard phosphor bronze or other high strength copper based material;
Plating: 1.3.1.Underplate: Minimum 1.25 micrometers (50 microinches) nickel. Copper over base material is optional.
1.3.2. Mating Area: Minimum 0.05 micrometers (2 microinches) gold.
1.3.3. Solder Tails: Minimum 3.8 micrometers (150 microinches) bright tin over the underplate.

2. Electrical Characteristics

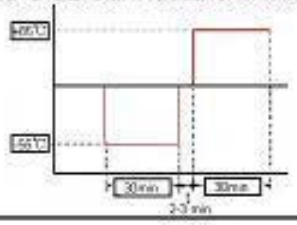
2.1: All electrical characteristics must be measured at or referenced to +20 oC (68 oF).
2.2: Voltage Rating: 30 V rms maximum.
2.3: Contact Current Rating: 1.5 A at 250 V AC minimum. when measured at an ambient temperature of 25 ℃. With power applied to the contacts, the . T must not exceed +30 ℃ at any point in the USB connector under test.

3. Temperature Range:

A. Operating Temperature Range: -55oC to +85oC
B. Storage Temperature Range: -20 oC to +60 oC
C. Nominal Temperature Rating: +20 oC

4. TEST Requirements and Procedures Summary

Item	Test Description	Test requirement	Test procedure
4.1	Insulation Resistance	1,000 MΩ, minimum.	EIA 364-21 Insulation Resistance The object of this test procedure is to detail a standard method to assess the insulation resistance of USB connectors. This test procedure is used to determine the resistance offered by the insulation materials and the various seals of a connector to a DC potential tending to produce a leakage of current through or on the surface of these members.
4.2	Dielectric Withstanding Voltage	The dielectric must Withstand500V AC for one minute at sea level.	EIA 364-20 The object of this test procedure is to detail a test method to prove that a USB connector can operate safely at its rated voltage and withstand momentary over-potentials due to switching,surges, and/or other similar phenomena.
4.3	Low Level Contact Resistance	30mΩ, maximum When measured at 20 mV maximum open circuit at 100 mA. Mated test contacts must be in a connector housing.	EIA 364-23 The object of this test is to detail a standard method to measure the electrical resistance across a pair of mated contacts such that the insulating films, if present, will not be broken or asperity melting will not occur.

4.4	Contact Current Rating	1.5 A at 250 V AC minimum when measured at an ambient temperature of 25 ℃. With power applied to the contacts, the . T must not exceed +30 ℃ at any point in the USB connector under test.	EIA 364-70 — Method B The object of this test procedure is to detail a standard method to assess the current carrying capacity of mated USB connector contacts.
4.5	Contact Capacitance	2 pF maximum unmated per contact.	EIA 364-30 The object of this test is to detail a standard method to determine the capacitance between conductive elements of a USB connector.
4.6	Insertion Force	35 Newtons maximum at amaximum rate of 12.5 mm(0.492") per minute.	EIA 364-13 The object of this test is to detail a standard method for determining the mechanical forces required for inserting a USB connector.
4.7	Extraction Force	10 Newtons minimum at a maximum rate of 12.5 mm(0.492") per minute.	EIA 364-13 The object of this test is to detail a standard method for determining the mechanical forces required for extracting a USB connector.
4.8	Durability	1,500 insertion/extraction cycles at a maximum rate of 200 cycles per hour. (Insertion force : 35N(3.57kgf) maximum Withdraw force : 10N minimum. 35N maximum.)	EIA 364-09 The object of this test procedure is to detail a uniform test method for determining the effects caused by subjecting a USB connector to the conditioning action of insertion and extraction, simulating the expected life of the connectors. Durability cycling with a gauge is intended only to produce mechanical stress. Durability performed with mating components is intended to produce both mechanical and wear stress.
4.9	Random Vibration	No discontinuities of 1 ∫s or longer duration when mated USB connectors are subjected to 5.35 Gs RMS. 15 minutes in each of three mutually perpendicular planes.	EIA 364-28 Test Condition V Test Letter A This test procedure is applicable to USB connectors that may, in service, be subjected to conditions involving vibration. Whether a USB connector has to function during vibration or merely to survive conditions of vibration should be clearly stated by the detailed product specification. In either case, the relevant specification should always prescribe the acceptable performance tolerances.
4.10	Thermal Shock	10 cycles –55 °C and +85 °C. The USB connectors under test 	EIA 364-32 Test Condition I The object of this test is to determine the resistance of a USB connector to exposure at extremes of high and low temperatures and to the shock of alternate exposures to these extremes, simulating the worst case conditions for storage, transportation, and application.

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4.11	Humidity Life	168 hours minimum (seven complete cycles).The USB connectors under test must be tested in accordance with EIA 364-31 . Temperature: [+40°c] Relative Humidity: 80% to 95% Duration : 168 hours	EIA 364-31 Test Condition A Method III The object of this test procedure is to detail a standard test method for the evaluation of the properties of materials used in USB connectors as they are influenced by the effects of high humidity and heat.
4.12	Solderability	USB contact soleer tails must pass 95% coverage after one hour steam aging as specified in Category 2 . Soldering time:3 +/-0.5 Sec, Solder temperature:235+/-5℃ Max,1 mm from Terminal tip and fitting nail tip	EIA 364-52 The object of this test procedure is To detail a uniform test method for determining USB connector solderability. The test procedure contained herein utilizes the solder dip technique. It is not intended to test or evaluate solder cup, solder eyelet, other hand-soldered type, or SMT type terminations.
4.13	Flammability	The manufacturer will require its therm oplastic resin vendor to supply a detail C of C with each resin shipment . The C of C shall clearly the resin's UL listing nember ,lot number ,date code ,etc .	UL 94 V-0 This procedure is to ensure thermoplastic resin commpliance to UL flammability standards.
4.14	Thermal Aging	ANSI/EIA-364-17,Condition 3, Method A Mate connectors and expose to +85° ± 2°c,250hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after shich the specified measurements	Appearance:No physical damage Contact Resistance: Should meet spec. specified
4.15	Resistance to Soldering heat	By wave soldering:260+/-5C Soldering time: 10±1 Sec, By soldering iron: Solder Temperature: 390± 10 ℃.	Appearance: no damage Contact Resistance: Should meet spec. specified

5.Protocol Overhead	(Based on 480Mb/s and 8 bit interpacket gap, 88 bit min bus turnaround, 32 bit sync, 8 bit EOP: (3x4 SYNC bytes, 3 PID bytes, 2 EP/ADDR+CRC bytes, 2 CRC16 and a 3x(1+11) byte interpacket delay(EOP, etc.))				
Data	**Payload**	**Max**	**Bandwidth**	**(bytes/second)**	**Microframe**
1	1064000	1%	133	52	133
2	2096000	1%	131	33	262
4	4064000	1%	127	7	508
8	7616000	1%	119	3	952
16	13440000	1%	105	45	1680
32	22016000	1%	86	18	2752
64	32256000	2%	63	3	4032
128	40960000	2%	40	180	5120
256	49152000	4%	24	36	6144
512	53248000	8%	13	129	6656
1024	49152000	14%	6	1026	6144
2048	49152000	28%	3	1191	6144
3072	49152000	42%	2	1246	6144
MAX	60000000				7500