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SPECIFICATION

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1. Scope：

This product specification contains the test results that general performances of 41400 connector were examined.

2. Part name&part number：

Part name	Part number
Housing	H41400M-XXP-A/H41400F-XXP-XA
Terminal	H41400TM/H41400TF
Wafer	A41400S/A41400R

3. Construction、dimensions、material&surface finish：

Construction and dimensions shall be in accordance with the referenced drawings.
Material and surface finish shall be as specified below.

Part name		Material	Surface finish
Housing		Nylon 66	UL94V-2（0）
Terminal		Phosphor Bronze	Tin-plated
Wafer (DIP)	Post	Brass	Gold on contact,Matte Tin on Tail
	body	Nylon 66	UL94V-2（0）

4. Characteristics：

Current rating：9A AC/DC
Voltage rating：600V AC/DC
Temperature range：-40°C ~105°C
Storage temperature range：10°C ~ 30°C
Storage humidity range：＜75 %

5. Conditions：

Please refer to the table below for the condition.

Number	Item	Requirement
(1)	Bend up	4°max.
	Bend down	4°max.
	Twisting	3°max.
	Rolling	8°max.
(2)	Bell mouth (flare)	0.2-0.5mm
(3)	Cut-off tab length	0.2mm max.

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Number	Item	Requirement
(4)	Extruded wire length	0-0.3mm
(5)	Seam	Seam shall not be opened and no wire allowed out of crimping area
(6)	Wire strip length	1.2-1.7mm ref.
(7)	Lance height	0.3mm ref.

6. Mechanical test：

6.1 Crimp width、crimp height&crimp strength

According to the external diameter and the type of electric wire, the crimped areas shall be adjusted. Please contact our sales staff for the specific information.

Wire Size (AWG)	Terminal Part Number	Conductor(mm)		Insulation(mm)		Crimp Strength (kgf)
		Crimp Width	Crimp Height	Crimp Width	Crimp Height	
#16	H41400TM H41400TF	2.0±0.05	1.40±0.05	3.05±0.10	3.45±0.10	13.35
#18			1.10±0.05	2.95±0.10	3.10±0.10	8.9
#20			1.05±0.05	2.95±0.10	3.05±0.10	5.79

Note：no distorted after terminal crimped.

6.2 Insertion force (I.F.) &withdrawal force (W.F.)

6.2.1Requirement：

Number of Circuits	At initial		At30th
	I.F.(kgf max)	W.F.(kgf min)	W.F.(kgf min)
Single	0.80	0.10	0.08
2	1.00	0.20	0.10
3	1.20	0.30	0.15
4	1.50	0.40	0.20
5	1.80	0.50	0.25
6	2.00	0.60	0.30
7	2.20	0.70	0.35
8	2.50	0.80	0.40
9	2.80	0.90	0.45
10	3.00	1.00	0.50
11	3.30	1.10	0.55
12	3.50	1.20	0.60
13	3.80	1.30	0.65
14	4.00	1.40	0.70
15	4.30	1.50	0.75

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6.2.2 Test method：Housing with crimped terminal and wafer shall be mated and unmated on the same axis. Initial insertion and withdrawal forces and withdrawal forces at 30th shall be measured for single circuit and multi-circuits. For the measurement of single circuit , housing lock shall be removed. Insertion and withdrawal speed：25 ±3mm/minute.

6.2.3 Test results：Good

6.3 Contact retention force

6.3.1 Requirement：2.0kgf/Pin Min

6.3.2 Test method：Crimped terminal shall be mounted in a housing and pulled in an alignment. The load to pull the terminal out of the housing shall be measured.

6.3.3 Test results：

Max.	Min.	Ave.
2.62	2.10	2.35

6.4 Post retention force

6.4.1 Requirement：1.0kgf/Pin Min

6.4.2 Test method：The end of a post shall be pushed in a perpendicular to wafer. The load to make the post start moving shall be measured.

6.4.3 Test results

Max.	Min.	Ave.
2.37	1.53	1.92

6.5 Terminal insertion force

6.5.1 Requirement：1.0kgf/Pin Max

6.5.2 Test method：Insert the crimped terminal into the housing.

6.5.3 Test results：

Max.	Min.	Ave.
0.95	0.72	0.87

7. Electrical test：

7.1 Contact resistance

7.1.1 Requirement：Initial:10mΩ(max.);After environmental test:10mΩ(max.)

7.1.2 Condition：Test current:10mA(DC);Open voltage:20mV(max.)

7.1.3 Test result：See items 8.1~8.4

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7.2 Insulation resistance

7.2.1 Requirement：Initial:1000MΩ(min.)
After humidity test：1000MΩ(min.)
After thermal shock test：1000MΩ(min.)

7.2.2 Test method：DC 500V shall be applied between outer surface of housing and terminal and between adjacent terminals to measure insulation resistance. (MIL-STD-202,test method302,condition B)

7.2.3 Test result：See items 8.1&8.3

7.3 Dielectric withstanding voltage

7.3.1 Requirement：There shall be no breakdown nor flashover.

7.3.2 Test method：Initially AC 1500V (rms) and after humidity and thermal shock tests AC 1500V (rms) shall be applied between outer surface of housing and terminal and between adjacent terminals for one minutes.(MIL-STD-202,test method301)
Test current:1mA

7.3.3 Test result：See items 8.1&8.3

8. Environment test：

8.1 Humidity

8.1.1 Requirement：Contact resistance shall be 10milliohms (max.) after the test. Insulation resistance shall be 1000megohms (min.) after the test. There shall be no breakdown nor flashover on dielectric withstanding voltage test.

8.1.2 Test method：Mated connector shall be placed in a humidity chamber of the following conditions. After the test , contact resistance , insulation resistance and dielectric with-standing voltage shall be measured.
(MIL-STD-202,test method103,condition A)
Temperature：40 ±2℃
Humidity：90% ~ 95% (RH)
Period：96 hours continuously

8.1.3 Test results：

Test item	Initial(mΩ)			After test(mΩ)		
Contact resistance	Max.	Min.	Ave.	Max	Min	Ave
	7.31	6.26	6.93	7.62	5.91	6.85

Test item	Housing-Terminal(MΩ)		Terminal-Terminal(MΩ)	
Insulation resistance	Initial	After test	Initial	After test
	1000min.	1000min.	1000min.	1000min.

Test item	Housing-Terminal(V)		Terminal-Terminal(V)	
D.W.V. 1500Vmin	Initial	After test	Initial	After test
	PASS	PASS	PASS	PASS

(D.W.V.：Dielectric withstanding voltage)

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8.2 Salt spray

8.2.1 Requirement：Contact resistance shall be 10milliohms(max.) after the test.

8.2.2 Test method：Mated connector shall be subjected to salt spray test of the following conditions. After the test, specimen shall be washed with running water and dried naturally before the measurement of contact resistance.

Temperature：35 ±2℃

Humidity：90% ~ 95% (RH)

Period：24 or 48 hours（Depending on demand)

8.2.3 Test result：

Test item	Initial(mΩ)			After test (mΩ)		
Contact resistance	Max.	Min.	Ave.	Max.	Min.	Ave.
	7.25	6.28	6.87	7.12	6.45	6.71

8.3 Thermal shock

8.3.1 Requirement：Contact resistance shall be 10milliohms (max.) after the test. Insulation resistance shall be 1000megohms (min.) after the test. There shall be no breakdown nor flashover on dielectric withstanding voltage test.

8.3.2 Test method：Mated connector shall be subjected to thermal shock test of the following conditions. After the test , contact resistance , insulation resistance and dielectric withstanding voltage shall be measured.

1cycle consists of：

-40 ℃ for 30 minutes

+105 ℃ for 30 minutes

Times of cycles：25 cycles

8.3.3 Test results：

Test item	Initial(mΩ)			After test(mΩ)		
Contact resistance	Max.	Min.	Ave.	Max	Min	Ave
	8.73	7.21	8.09	8.56	7.15	7.86

Test item	Housing-Terminal(MΩ)		Terminal-Terminal(MΩ)	
Insulation resistance	Initial	After test	Initial	After test
	1000min.	1000min.	1000min.	1000min.

Test item	Housing-Terminal(V)		Terminal-Terminal(V)	
D.W.V. 1500Vmin	Initial	After test	Initial	After test
	PASS	PASS	PASS	PASS

(D.W.V.：Dielectric withstanding voltage)

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8.4 Vibration

8.4.1 Requirements：Contact resistance shall be 10milliohms (max.) after the test. There shall be no current discontinuity longer than 1 microsecond during the test.

8.4.2 Test method：Mated connector shall be mounted on a PCB and subjected to a vibration test of the following conditions. During the test , current continuity shall be checked. After the test , contact resistance shall be measured. (MIL-STD-202 , test method 201)

Frequency：10~55~10 Hz/min.

Amplitude：1.5 mm

Direction： 1.Axis of up and down

2. Axis of right and left

3.Axis of front and back

8.4.3 Test result：

Test item	Initial(mΩ)			After test(mΩ)		
Contact resistance	Max.	Min.	Ave.	Max.	Min	Ave.
	8.75	7.74	8.43	8.26	7.33	8.01

Current discontinuity：There shall be no current discontinuity longer than 1 microsecond during the test.

8.5 Solderability

8.5.1 Requirements：Minimum 95% solder-dipping section shall be covered by solder smooth solder.

8.5.2 Test method：Fluxed soldering section of shrouded header shall be dipped in solder of the following conditions.

Solder temperature : 255 ±5℃

Immersion period : 3-5 seconds

8.5.3 Test result：Good.

8.6 Resistance to soldering heat

8.6.1 By soldering iron（Attention：The process is suitable for both high and low temperature plastic materials）

(1)Requirements：There shall be no deformation nor damage which may affect the performance.

(2)Test method：The specimen shall be soldered by soldering iron of the following conditions. No abnormal force such as lateral load shall be applied to the specimen during the test.

Soldering iron temperature：360 ±10℃

Immersion period：1-3 seconds

(3) Test result：Good.

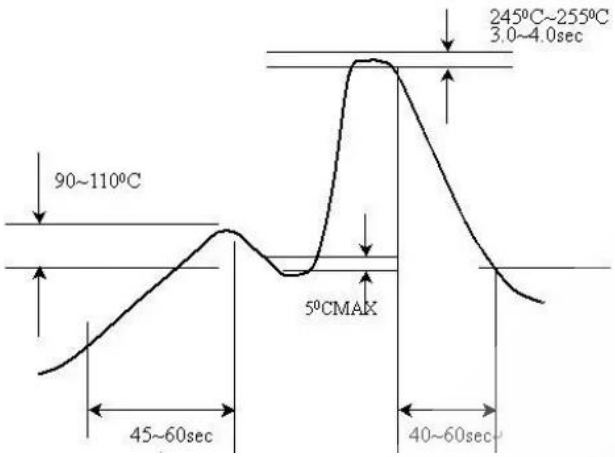
8.6.2 By wave soldering（Attention：The process is suitable for both high and low temperature plastic materials）

(1)Requirements：There shall be no deformation nor damage which may affect the performance.

(2)Test method ： Specimen shall be mounted on a PCB (inserted only) and subjected to resistance to soldering heat test of the following conditions.

Solder temperature：250 ±5℃

Immersion period：3-4 seconds



TEMPERATURE CONDITION GRAPH

(3) Test result：Good.

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Notice：

1. The values specified in this specification are only for reference. The products and their specifications are subject to change without notice.Contact our sales for further information before considering or ordering any of our products.
For purchase, a product specification must be agreed upon.

2. Users are requested to provide protection circuits and redundancy circuits to ensure safety of the equipment, and sufficiently review the suitability of BRIGHT-E's products to the equipment.

3. The products presented in this series are designed for the uses recommended below.
We strongly suggest you contact our sales staff when considering use of any of the products in any other way than the recommended applications or for a specific use that requires an extremely high reliability.

(1) Applications that require consultation:
(i) Please contact us if you are considering use involving a quality assurance program that you specify or that is peculiar to the industry,such as:
Automotive electrical components, train control, telecommunications devices (mainline), traffic light control, electric power, combustion control, fire prevention or security systems, disaster prevention equipment, etc.
(ii) We may separately give you our support with a quality assurance program that you specify, when you think of a use such as:
Aviation or space equipment, submarine repeaters, nuclear power control systems, medical equipment for life support, etc.

(2) Recommended applications include:
Computers, office appliances, telecommunications devices (terminals, mobile units), measuring equipment, audiovisual equipment, home electric appliances, factory automation equipment.etc.

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