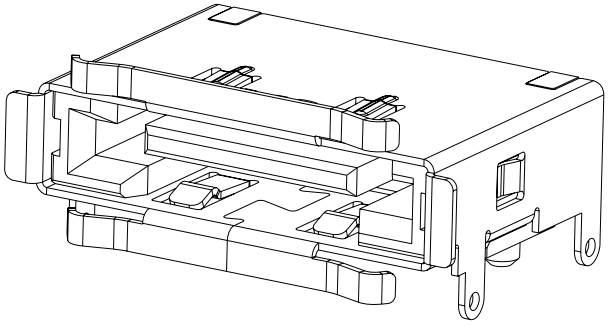
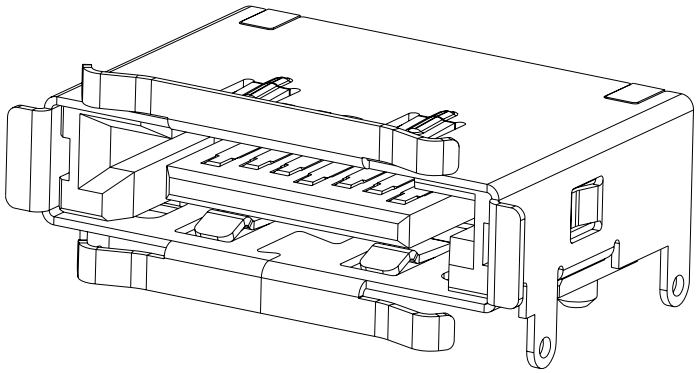
CA	PRODUCT SPECIFICATION		DOCUMENT NO. **H100028**
TITLE: EXTERNAL 7P SATA PLUG CONNECTOR.	Page 1 of 12		REV: C
	PRE.: Steven	APPD: Ray	DATE: 11/12/10’

LIST OF REVISION

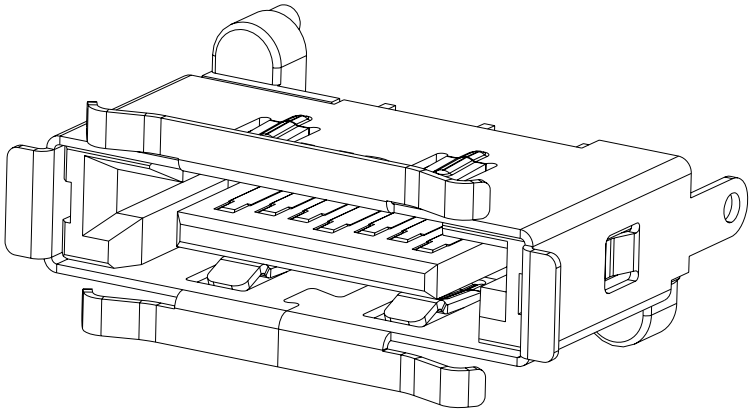
REV	PAGE	DESCRIPTION	DO. NO.	DATE
A	1~11	NEW	H1416	11/22/05’
B	04	ADD ROHS COMPLIANT	H2300	06/26/07’
C	1~12	ADD SOLDER PROFILE	H4398	11/12/10’



EXTERNAL SATA 7P PLUG R/A, REVERSE,SMT



EXTERNAL SATA 7P PLUG R/A, STD,SMT



EXTERNAL SATA 7P PLUG THROUGH HOLE

CONTENTS

1. SCOPE:

1.1Contents

This specification covers performance, tests, and quality requirements for CA-Technologies Co., Ltd. External 7P SATA series connectors.

The applicable product descriptions and part numbers are as shown in table

Product No.	Description
07ESAPR-X-0	EXTERNAL SATA 7P PLUG R/A, STD,SMT WITH TRAY
07ESAPR-X-0-2	EXTERNAL SATA 7P PLUG R/A, STD,SMT WITH TAPE-REEL
07ESAPR-X-0-1	EXTERNAL SATA 7P PLUG R/A, REVERSE,SMT WITH TRAY
07ESAPR-X-0-3	EXTERNAL SATA 7P PLUG R/A, REVERSE,SMT WITH TAPE-REEL
07ESAP-X-1	EXTERNAL 7P SATA PLUG THROUGH HOLE TYPE (PCB T=1.6MM)
07ESAP-X-2	EXTERNAL 7P SATA PLUG MOLDING TYPE
07ESAP-X-3	EXTERNAL 7P SATA PLUG THROUGH HOLE TYPE (PCB T=2.4MM)

2. Requirements:

2.1 Design and Construction

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

2.2 Regulatory Requirements

2.2.1 Be an UL,C-UL Recognized Component

2.2.2 Base plastics must be rate UL 94V-0

2.2.3 The connector should be RoHS compliant

2.3.Reference Document

EIA –364,Electrical Connector Test Procedures

3. Product Details

3.1 Materials

3.1.1 Contact: Copper Alloy

3.1.2 Base: Thermoplastic, UL 94V-0 , Color: Black

3.1.3 Shell: Copper Alloy

3.2 Finish

3.2.1 Contact

a. Terminal contact area:15u”(minimum) Gold Plating.
b. The solder tail area: 100u” Tin plating.
c. Under plating: 75u” (minimum) Nickel plating.

3.2.2 Shell

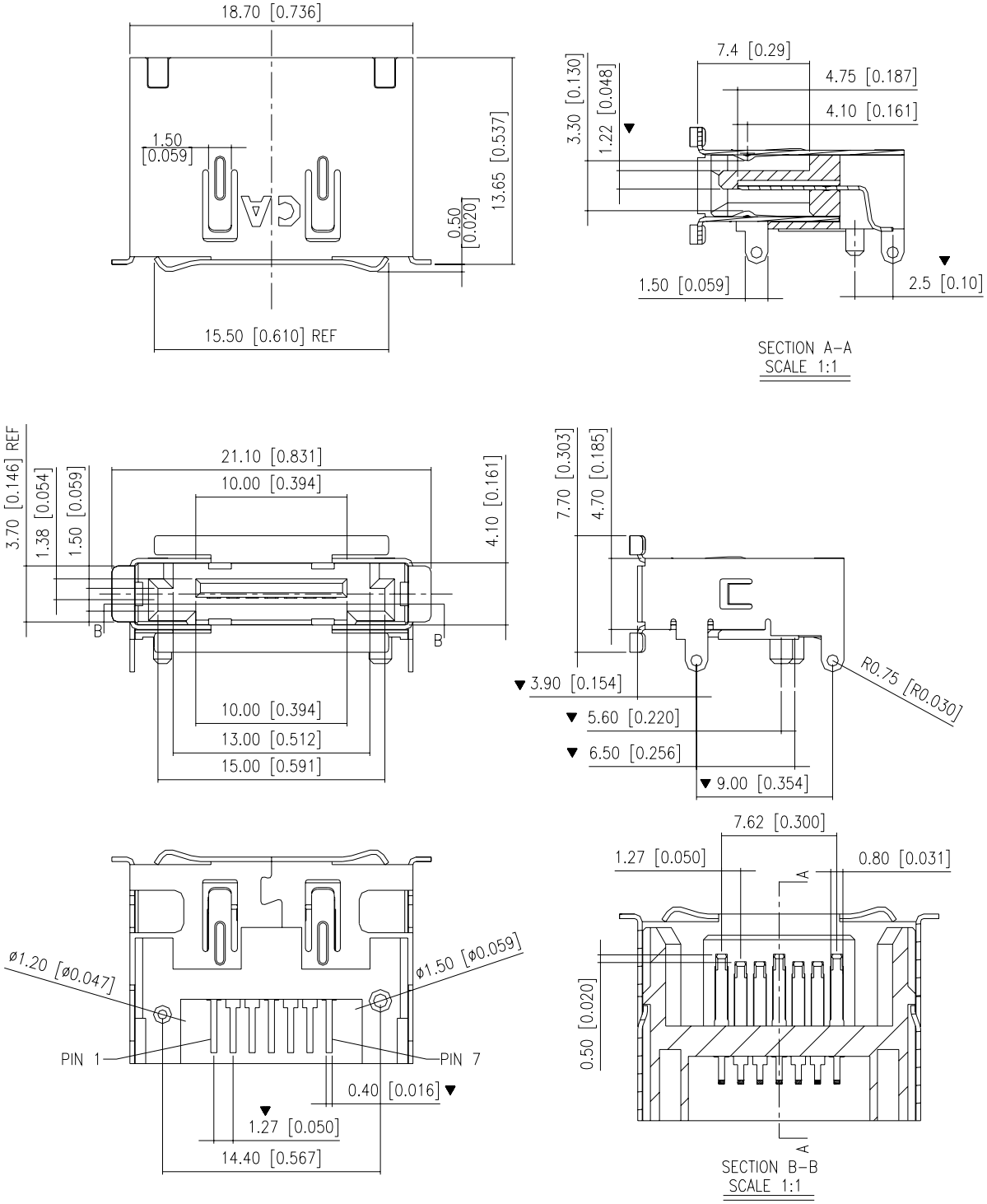
a. All surfaces: 100u” Tin plating.
b. Under plating: 75u” (minimum) Nickel plating.

3.3 Ratings

3.3.1 Current rating: 1.5A/Contact

3.3.2 Operating temperature: -20˚C to 65˚C

3.4 Reference Drawing



(EXTERNAL SATA 7P PLUG R/A, REVERSE,SMT)

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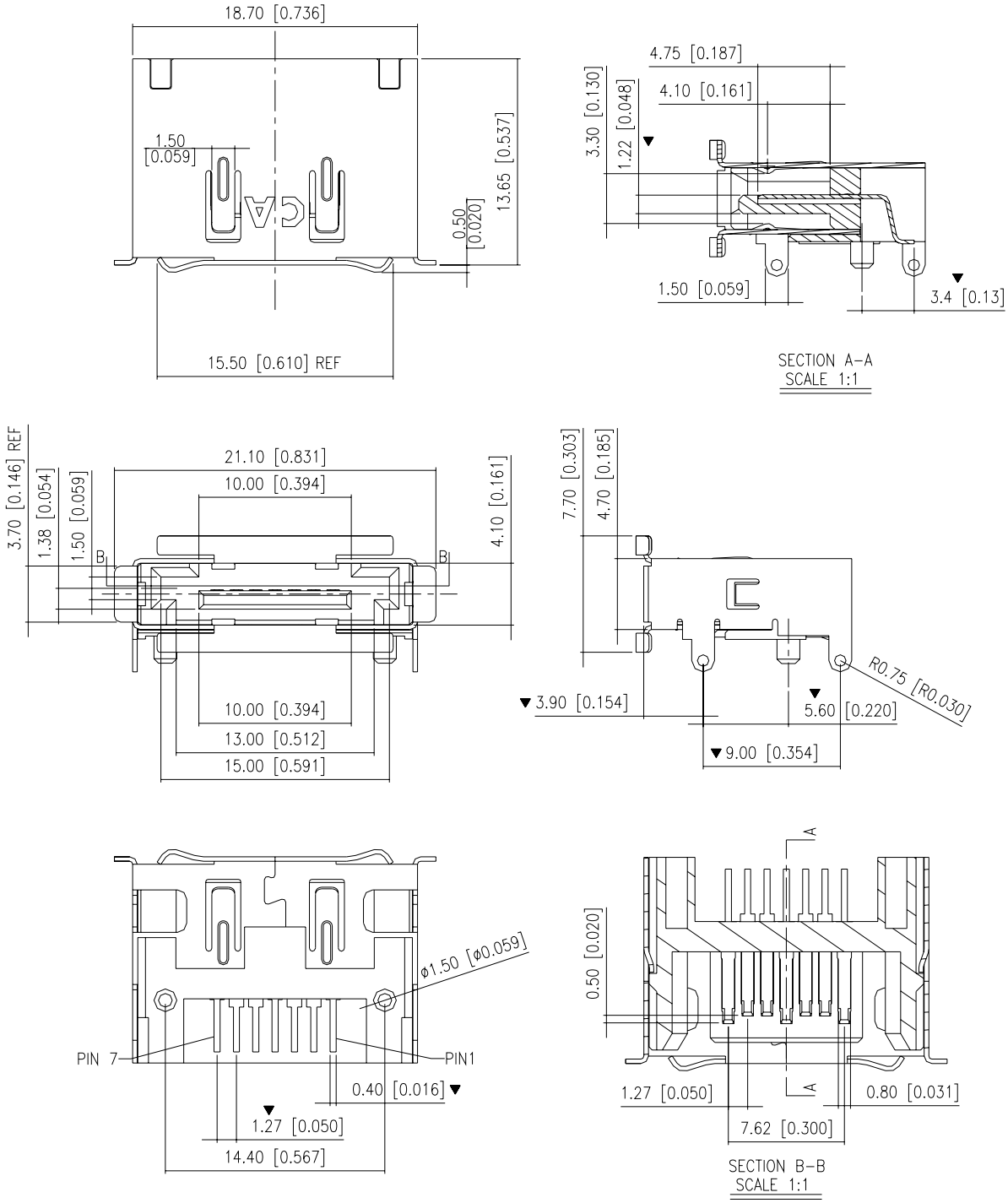

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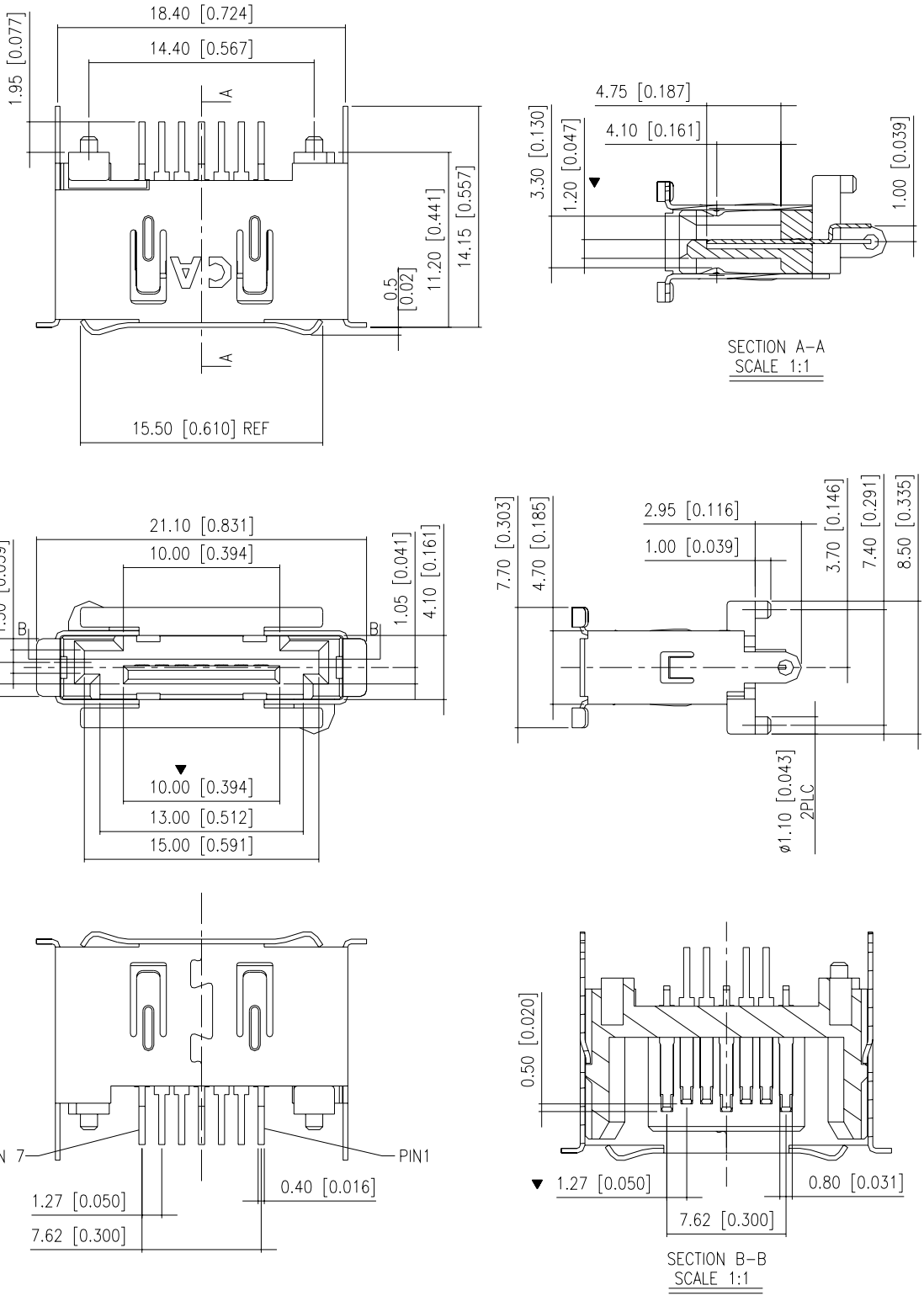


EXTERNAL 7P SATA PLUG THROUGH HOLE TYPE

4. Performance and Testing

4.1 Test Requirement and Procedures Summary

– Housing and contact electrical parameters, test procedures, and requirements

Parameter	Procedure	Requirement
Insulation resistance	EIA 364-21 After 500 VDC for 1 minute, measure the insulation resistance between the adjacent contacts of mated and unmated connector assemblies.	1000 MΩ minimum
Dielectric withstanding voltage	EIA 364-20 Method B Test between adjacent contacts of mated and unmated connector assemblies.	The dielectric shall withstand 500 VAC for 1 minute at sea level.
Low level contact resistance (LLCR)	EIA 364-23 Subject mated contacts assembled in housing to 20 mV maximum open circuit at 100 mA maximum	• Initially 30 mΩ maximum. • Resistance increase 15 mΩ maximum after stress

– Mechanical test procedures, and requirements

Test description	Procedure	Requirement
Visual and dimensional inspections	EIA 364-18 Visual, dimensional and functional per applicable quality inspection plan.	Meets product drawing requirements.
Cable pull-out	EIA 364-38 Condition A Subject a Serial ATA cable assembly to a 40 N axial load for a min of one minute while clamping one end of the cable plug.	No physical damage
Cable flexing	For round cable: EIA 364-41 Condition I Dimension x=3.7 x cable diameter, 100 cycles in each of two planes. For flat cable: EIA 364-41 Condition II 250 cycles using either Method 1 or 2.	No physical damage. No discontinuity over 1 μs during flexing.
Insertion force	EIA 364-13 Measure the force necessary to mate the connector assemblies at a max. rate of 12.5 mm (0.492") per minute.	45 N maximum
Removal force	EIA 364-13 Measure the force necessary to unmate the connector assemblies at maximum rate of 12.5 mm (0.492") per minute.	10 N minimum
Durability	**EIA 364-09** **2500 cycles for test application. Test done at a maximum rate of 200**	No physical damage. Meet requirements of additional tests as specified in the test sequence in section 6.3.9.5
Solder ability	Solder Time: 3±0.5 seconds Solder Temperature: 260±5℃	Dipped portion should have 95% continuous solder coating coverage
Resistance to Soldering Heat(Only for SMT type)	Refer to section 5.0 for soldering profile	No damage in appearance of connector

– Environmental parameters, test procedures, and requirements

Parameter	Procedure	Requirement
Physical shock	EIA 364-27 Condition H Subject mated connectors to 30 g's half-sine shock pulses of 11 msec duration. Three shocks in each direction applied along three mutually perpendicular planes for a total of 18 shocks. See NOTE 2.	No discontinuities of 1 μs or longer duration. No physical damage.
Random vibration	EIA 364-28 Condition V Test letter A Subject mated connectors to 5.35 g's RMS. 30 minutes in each of three mutually perpendicular planes. See NOTE 2.	No discontinuities of 1 μs longer duration.
Humidity	EIA 364-31 Method II Test Condition A. Subject mated connectors to 96 hours at 40° C with 90% to 95% RH.	See NOTE 1
Temperature life	EIA 364-17 Test Condition III Method A. Subject mated connectors to temperature life at +85°C for 500 hours.	See NOTE 1.
Thermal shock	EIA 364-32 Test Condition I. Subject mated connectors to 10 cycles between –55° C and +85° C.	See NOTE 1.
Mixed Flowing Gas	EIA 364-65, Class 2A Half of the samples are exposed unmated for seven days, then mated for remaining seven days. Other half of the samples are mated during entire testing.	See NOTE 1.

NOTE –

1. Shall meet EIA 364-18 Visual Examination requirements, show no physical damage, and shall meet requirements of additional tests as specified in the test sequence in section 6.3.9.5.
2. Shock and vibration test fixture is to be determined by each user with connector vendors.

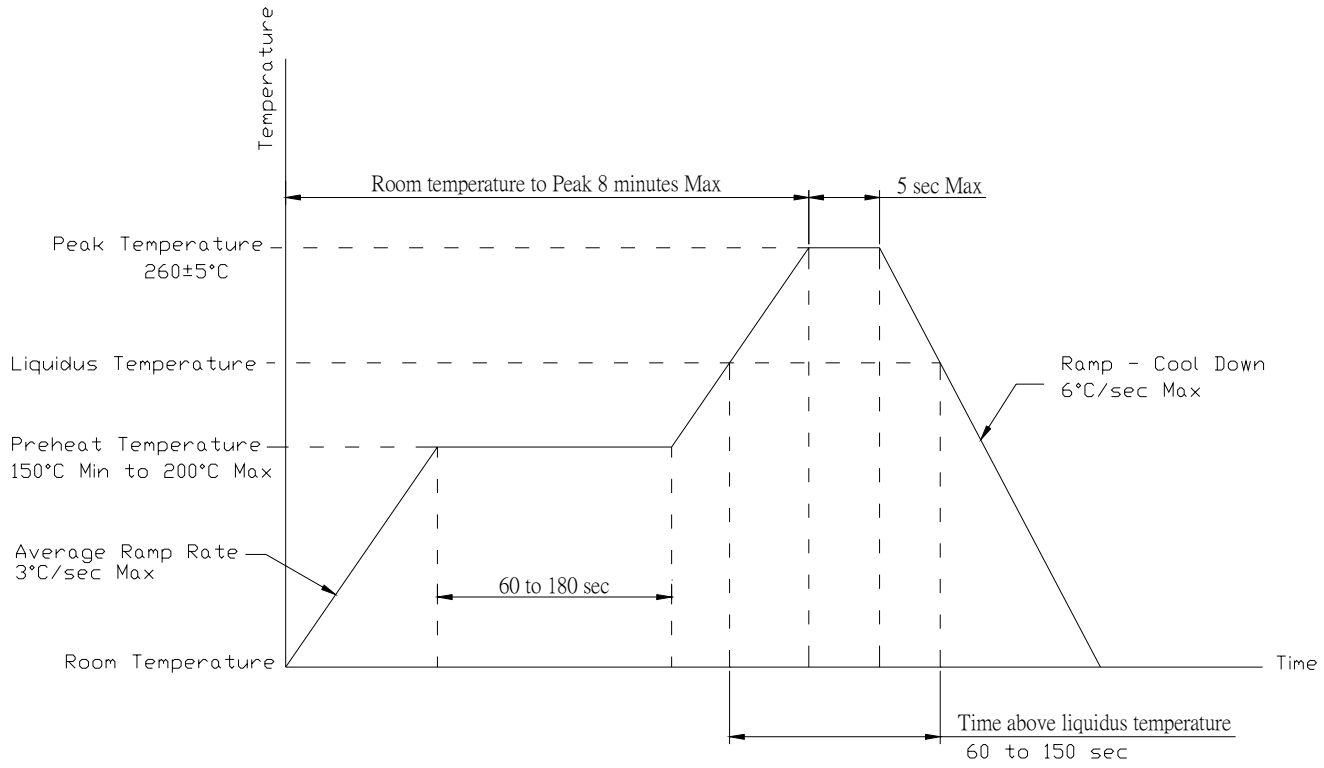
4.2 Test Sequence

TEST GROUP →	A	B	C	D	E	F	G
Test or examination ↓							
Examination of the connectors	1,5	1,9	1,7	1,8	1,7	1	1,3
Low-Level Contact Resistance(LLCR)	2,4	3,7	2,4,6		4,6		
Insulation resistance				2,6			
Dielectric withstanding voltage				3,7			
Insertion force		2					
Removal force		8					
Durability	3	4			2		
Physical shock		6					
Vibration		5					
Humidity				5			
Temperature life			3				
Reseating (manually unplug/plug three times)			5		5		
Mix Flowing Gas					3		
Thermal shock				4			
Solder ability						2	
Resistance to Soldering Heat							2

(a) Preconditioning, 20 cycles for the durability cycle requirement,50 cycles for the 500 durability cycle requirement. The mating and unmating cycle is at the maximum rate of 200 cycles per hour.

(b) Samples prepared in accordance with applicable manufacture’s instructions and shall be selected at random form current production. Each test group shall provide 100 data point for a good statistical representation of the test result. For a connector with greater than 20 pins, a test group shall consist of a five connector pairs. From these connector pairs, a minimum of 20 contact pairs per mated connector shall be selected and identified. For connectors with less than 20 pins, choose the number of connectors sufficient to provide 100 data point.

5. SOLDER PROFILE



NOTE: Please check the reflow soldering condition by your own devices beforehand.

Because the condition changes by soldering devices, P.C. boards, and so on.