

BOX HEADER, 2.00MM PITCH SERIES.**1. SCOPE****1.1. CONTENTS**

This specification covers the performance, tests and quality requirements for the **BOX HEADER, 2.00MM PITCH SERIES** Connector.

1.2. QUALIFICATION

When tests are performed on the subject product line, the procedures specified in Tyco 109 series specifications shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENT

The following Tyco documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1. TYCO SPECIFICATIONS

- A. 109-1: General Requirements for Test Specifications
- B. 109-197 : Tyco Specification vs EIA and IEC Test Methods
- C. 501-57599, 57600 : Test Report

3. REQUIREMENTS**3.1. DESIGN AND CONSTRUCTION**

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

3.2. MATERIALS

- A. Housing: High Temperature Thermoplastic, UL94V-0.
- B. Contact: Copper Alloy, Gold plating on contact area, Tin or Tin-Lead Plating on soldertail over Nickel underplating overall.

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3.3. RATINGS

- A. Current Rating: 1 A Max.
- B. Voltage Rating: 500 VAC Max.
- C. Operating temperature: -40°C to +105°C.

3.4. TEST CONDITION

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1.

3.5. TEST REQUIREMENTS AND PROCEDURES SUMMARY

TEST DESCRIPTION	REQUIREMENT	PROCEDURED
Examination of product	Meets requirements of product drawing and AMP Specification.	Visual inspection No physical damage
ELECTRICAL		
Contact Resistance	20mΩ Max Initial 30mΩ Max Final	EIA-364-23A It should be tested in accordance.
Insulation Resistance	5000MΩ Min.	EIA-364-21B. Apply 1000VDC for 1 minute.
Dielectric Withstanding Voltage	No evidence of break-down and flashes	EIA-364-20A.Method B. 1000V AC rms, for 1 minute applied between adjacent contacts.
MECHANICAL		
Insertion Force	200g Max. per pin.	EIA- 364-13
Unmating Force	20g Min. per pin.	EIA- 364-13
Durability	See Note , 30mΩ Max .Final	Connector shall be subjected to 100 cycles of Insertion and withdrawal. EIA-364-09.
Contact Retention Force	350g Min./Per Contact	Pull connectors at maximum rate of 25mm/per minute
Vibration	No electrical discontinuity greater Than 1 microseconds shall occur	EIA-364-28 Test condition I, 10-55-10 Hz/min. Amplitude: 1.52mm,Period: 2 hours for each direction X.Y.Z axis.
ENVIRONMENTAL		
Humidity-Cycling Test	See Note , 30mΩ Max .Final	EIA-364-31A, method II, condition A. At a temperature of 40°C±2°C and relative humidity of 90~95% for 96 hours.
Salt Spray	See Note , 30mΩ Max .Final	EIA-364-26A, condition A. Exposing in a heat chamber at a temperature of 35°C±2°C for 24 hours.
Thermal Shock	See Note	5 cycles between +85°C/30minutes and -55°C /30minutes. EIA-364-32B, condition I.
Temperature Life	See Note , 30mΩ Max .Final	EIA-364-17A, method A, condition 4. Temperature 105±3°C for 250 hours.

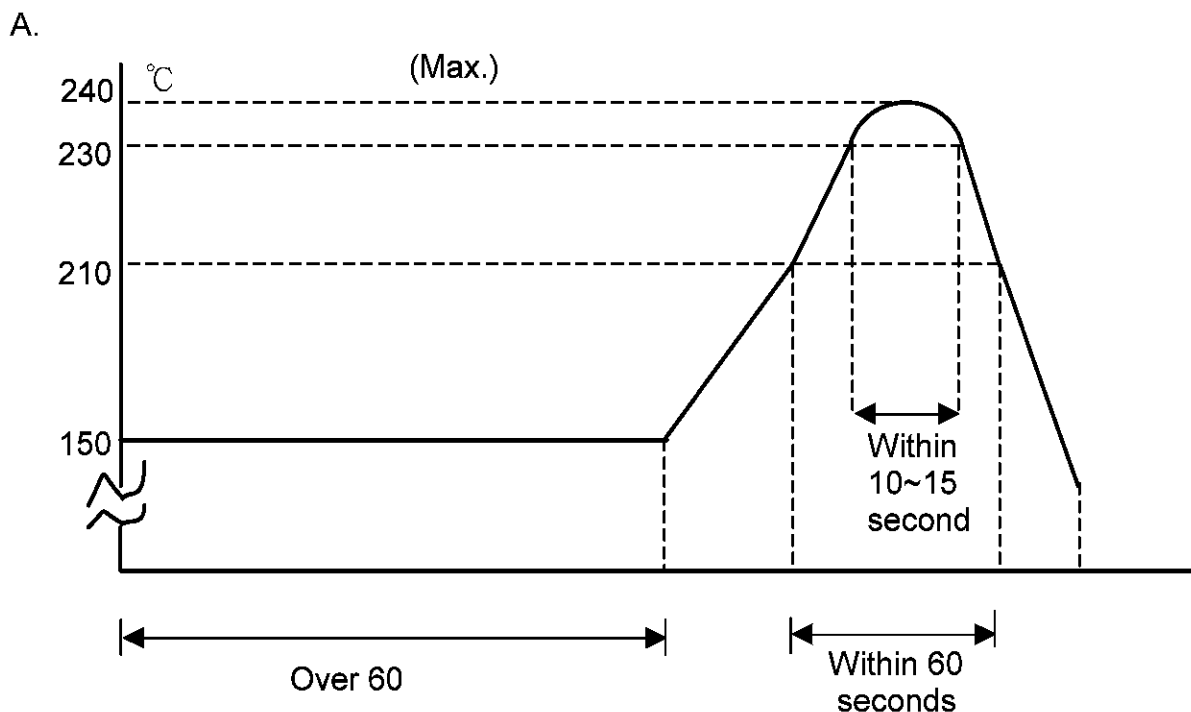
PHYSICAL		
Solderability	95% Min. See Note	EIA-364-52 Temperature 245±5°C, 4~5sec.
Resistance to Wave Soldering Heat	No physical damage shall occur.	Solder Temp. : 240±5°C, 10±0.5sec. Tyco spec. 109-202, Condition A
Resistance to Reflow Soldering Heat	No physical damage shall occur.	Pre Heat : 100~150°C, 60 sec Max. Heat : 210°C Min., 30 sec Max. Peak Temp. : 240°C Max., 10±0.5sec.

Figure 1

NOTE: Shall meet visual requirements, show no physical damages.

3.6. EXAMPLE OF RE-FLOW SOLDERING CONDITION

- A. Heating method: Double heating method with infrared heater.
- B. Temperature measurement: Thermocouple at soldering portion.
- C. Temperature profile: Twice, however it shall be going back to normal room temperature between each test based on IEC-68.



3.7. PRODUCT QUALIFICATION AND REQUALIFICATION TEST SEQUENCE

Test or Examination	Test Group								
	A	B	C	D	E	F	G	H	I
	Test Sequence (a)								
Examination of Product	1,5	1,3	1,5	1,5	1,5	1,7	1,5	1,3	1,3
Contact Resistance			2,4	2,4	2,4		2,4		
Insulation Resistance						2,5			
Dielectric Withstanding Voltage						3,6			
Insertion Force	2								
Withdrawal Force	3								
Durability	4								
Contact Retention Force		2							
Vibration			3						
Humidity-Cycling Test				3					
Salt Spray					3				
Thermal Shock						4			
Temperature Life							3		
Solder ability								2	
Resistance to soldering heat									2

Figure 2

NOTE : (a) Numbers indicate sequence in which tests are performed.