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**DDR S.O.DIMM Socket 200 Positions**

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**1. Scope :****1.1 Contents**

This specification covers the requirements for product performance, test methods and quality assurance provisions of DDR S.O.DIMM Socket 200 Positions Combine to Gold Plating S.O.DIMM.

Applicable product description and part numbers are as shown in Appendix 1.

**2. Applicable Documents:**

The following documents form a part of this specification to the extent specified herein. 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 AMP Specifications :**

- A. 109-5000 Test Specification, General Requirements for Test Methods
- B. 501-5361 Test Report (Standard profile)
  - 501-5431 Test Report (Standard profile)
  - 501-5435 Test Report (Low profile)
  - 501-5460 Test Report (6.5 Height)
  - 501-5488 Test Report (9.2 Height)

**2.2 Commercial Standards and Specifications :**

- A. MIL-STD-202

**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. Contact :
  - Copper Alloy
  - Finish:
  - Contact area: Gold Plated
  - Tine area :Gold Plated
  - Underplate :Nickel Plated
- B. Housing :
  - Thermo plastic UL94V-0

## C. Latch :

Stainless Steel

## D. Floating Peg

Copper Alloy, Tin Plated

### 3.3 Ratings :

A. Voltage Rating : 25 VAC

B. Current Rating : 0.5 A

C. Temperature Rating : -55 °C to 85 °C

### 3.4 Performance Requirements and Test Descriptions :

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Fig. 1. All tests shall be performed in the room temperature, unless otherwise specified.

### 3.5 Test Requirements and Procedures Summary

Para.	Test Items	Requirements	Procedures
3.5.1	Examination of Product	Meets requirements of product drawing	Visual inspection No physical damage
Electrical Requirements			
3.5.2	Termination Resistance (Low Level)	30 mΩ Max. (Initial) ΔR=20 mΩ Max. (Final)	Subject mated contacts assembled in housing to closed circuit current of 10 mA Max. at open circuit voltage of 20mV Max. obtain resistance value by dividing the measured reading into two. Fig. 3-1,3-2. AMP Spec. 109-5311-1
3.5.3	Dielectric withstanding Voltage	No creeping discharge nor flashover shall occur. Current leakage : 0.5 mA Max.	0.25 kVAC for 1 minute. Test between adjacent circuits of unmated connectors. AMP Spec. 109-5301
3.5.4	Insulation Resistance	250MΩ Min.(Initial) 50MΩ Min.(Final)	Impressed voltage 500 V DC. Test between adjacent circuits of unmated connectors. AMP Spec. 109-5302
Para.	Test Items	Requirements	Procedures
Mechanical Requirements			
3.5.5	Vibration (Low Frequency)	No electrical discontinuity greater than 0.1 μ sec. shall occur. ΔR=20 mΩ Max. (Final)	Subject mated connectors to 10-55-10 Hz traversed in 1 minute at 1.52 mm amplitude 2 hours each of 3 mutually perpendicular planes. 100 mA applied. AMP Spec. 109-5201

3.5.6	Physical Shock	No electrical discontinuity greater than 0.1 $\mu$ sec. shall occur. $\Delta R=20 \text{ m}\Omega$ Max. (Final)	Accelerated Velocity : 490 $\text{m/s}^2$ (50 G) Waveform : Half sine Duration : 11 m sec. Number of Drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops. AMP Spec. 109-5208 Condition A
3.5.7	P.C.Board Mating Force	200 Pos. : 59.8N (6.1 kgf) Max.	Operation Speed : 100 mm/min. Measure the force required to mate connectors.(In this test, the force required to turn PCB before it engages on lacking, is excluded.) AMP Spec. 109-5206 Condition B
Para.	Test Items	Requirements	Procedures
3.5.8	Durability (Repeated Mate/Unmating)	$\Delta R=20 \text{ m}\Omega$ Max. (Final)	Repeated insertion and extraction of P.C.B to and from the connector with the turns to lock it and then unlock it for 25 cycles.
3.5.9	Solder ability	Wet Solder Coverage : 95 % Min.	Solder Temperature : 245 $\pm$ 5 $^{\circ}\text{C}$ Immersion Duration : 5 $\pm$ 0.5 seconds Flux : Alpha 100 AMP Spec. 109-5203
Environmental Requirements			
3.5.10	Resistance to Reflow Soldering Heat	No physical damage shall occur	Test connector on P.C.Board Pre-Heat 150 $^{\circ}\text{C}$ ~ 180 $^{\circ}\text{C}$ : 90 $\pm$ 30 sec. Heat 230 $^{\circ}\text{C}$ Min. : 30 $\pm$ 10 sec. Heat Peak 260 $^{\circ}\text{C}$ Max. See Fig.4-2 OR Apply to JEDEC standard (J-STD-020C)
3.5.11	Thermal Shock	$\Delta R=20 \text{ m}\Omega$ Max. (Final)	Mated connector -55 $^{\circ}\text{C}$ / 30 min., 85 $^{\circ}\text{C}$ / 30 min. Making this a cycle, repeat 5 cycles. AMP Spec. 109-5103 Condition A
Para.	Test Items	Requirements	Procedures
3.5.12	Humidity-Temperature Cycling	Insulation resistance 50 $\text{M}\Omega$ Min. (final) $\Delta R=20 \text{ m}\Omega$ Max. (Final)	Mated connector, 25~65 $^{\circ}\text{C}$ , 90~95 % R. H. 5 cycles Cold shock -10 $^{\circ}\text{C}$ performed AMP Spec. 109-5106
3.5.13	Salt Spray	$\Delta R=20 \text{ m}\Omega$ Max. (Final)	Subject mated connectors to 5 % salt concentration for 24 hours : AMP Spec. 109-5101 Condition A
3.5.14	Industrial Gas (SO <sub>2</sub> )	$\Delta R=20 \text{ m}\Omega$ Max. (Final)	Mated connector SO <sub>2</sub> Gas : 10 ppm, 95 % R. H. 25 $^{\circ}\text{C}$ , 24 hours AMP Spec. 109-5107 Condition A

3.5.15	Temperature Life (Heat Aging)	$\Delta R=20 \text{ m}\Omega \text{ Max. (Final)}$	Mated connector 85°C, Duration :2 days AMP Spec. 109-5104 Condition A
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#### 4. Product Qualification Test Sequence

Test Examination	Test Group											
	1	2(b)	3(b)	4	5	6	7	8	9	10	11	12
	Test Sequence (a)											
Examination of Product	1,7	1,5	1,5	1,3	1,5	1,3	1,3	1,5	1,5	1,5	1,5	1,5
Termination Resistance (Low Level)		2,4	2,4		2,4			2,4	2,4	2,4	2,4	2,4
Dielectric withstanding Voltage	3,6											
Insulation Resistance	2,5											
Vibration (Low Frequency)		3										
Physical Shock			3									
Connector Mating Force				2								
Durability (Repeated Mate/Unmating)					3							
Solderability						2						
Resistance to Reflow Soldering Heat							2					
Thermal Shock								3				
Temperature Humidity Cycling	4											3
Salt Spray									3			
Industrial SO <sub>2</sub> Gas										3		
Temperature Life (Heat Aging)											3	

FIG.2

- (a) Numbers indicate sequence in which the tests are performed.  
(b) Discontinuities shall not take place in this test group, during tests.

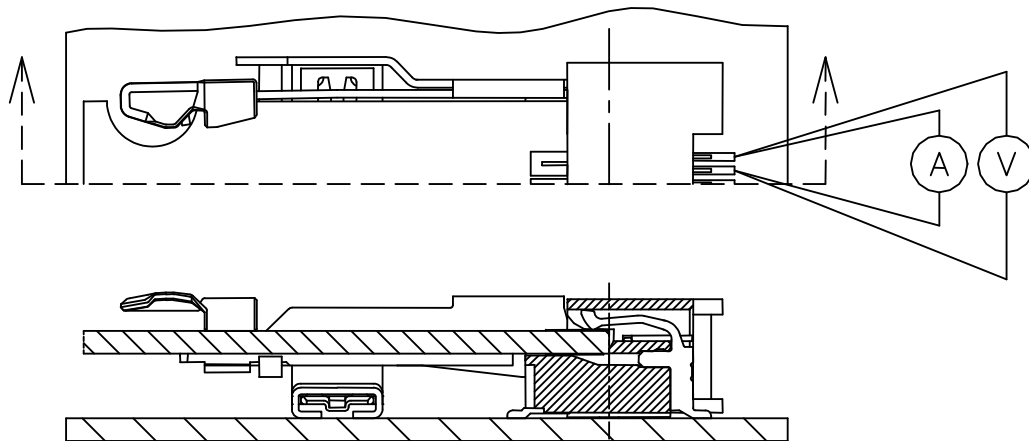


Fig.3-1 Termination Resistance Mesuring Points.

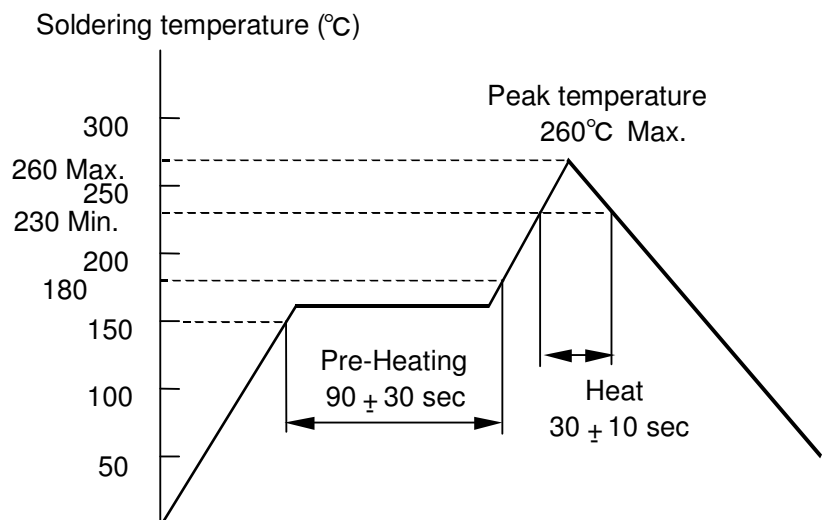


Fig.4 Temperature Profile of Reflow Soldering