1.0 General:

This specification defines the performance, test, quality and reliability requirement of the DDR5 SO-DIMM socket.

2.0 Product description:

Table 1-Product Number List

Description	Type	Power
DDR5 SODIMM	RA	1.1V

3.0 MATERIALS AND FINISH

Table 2-Material List

Component	Material	Finish
Housing	Heat resistant resin	BLACK (UL94V – 0)
Terminal	Copper alloy	1. Au all over Ni under plating in contact area Au all over Ni under plating in solder tail area
Hold down	Stainless Steel	Sn all over Ni under plating

4.0 Requirements:

4.1 Rating current:

Power supply	Rating current
1.1V	0.5A Min per contact

4.2 Rating voltage: 29V

4.3 Temperature rise : 30℃ MAX

4.4 Operating temperature range：-40℃～+85℃

4.5 Storage temperature range：-40℃～+85℃

Unless otherwise specified, the performance of connectors given in the attached list shall satisfy the values specified in Table3～6, under the environmental conditions listed below.

Temperature：15～35℃ Relative

Humidity：25～85% Atmospheric

Pressure：86～106Kpa

.Table 3-Electrical Performance

Test Items	Procedures	Requirements
Low Level Contact Resistance	EIA364-23C 20 mV maximum 100 mA maximum current	Initial: Record only After: ΔR≤10mΩ
Dielectric Withstanding Voltage	EIA-364-20F, 250V AC at sea level, 1 minutes.	No breakdown or flashover.
Insulation Resistance	Refer to EIA-364-21E Apply 500 VDC between conductors for 2 minutes, Unmated	1MΩ Min. before and after test
Temperature rise	Refer to EIA-364-70C， Method 2. Measured at maximum rated current with series all contacts.	30℃ maximum temperature rise at 0.5A rated current.

Table 4-Mechanical Performance

Test Items	Procedures	Requirements
Insertion force	Refer to EIA-364-13E Axial Tension/Compression machine such as an Instron Tensile Tester. Rate: 25.4 mm/min	Insertion force 59.8N Max. before and after durability (with 1.3 mm maximum steel card thickness)
Extraction force	Refer to EIA-364-13E Method A The connectors shall be fully inserted then extracted at a rate of 12.5mm per minute; the peak force required for extracted shall be recorded. Test with 1.10mm minimum steel card thickness.	Extraction force 20N Max. before and after durability
Contact retention force	Refer to EIA-364-29D The bridge with holding contacts pulls out contacts along with the direction against assembly, and record extraction force. Test Speed: 5mm/min	1N Min. maximum movement of contact of 0.38 mm
Durability	Refer to EIA-364-09D，Perform 25 cycles plug and unplug cycles at a rate of 25.4 mm/minute	LLCR and no nickel plating exposed
Durability(precondition)	Refer to EIA-364-09D，Perform 5 cycles plug and unplug cycles at a rate of 25.4 mm/minute	No nickel plating exposed
Mechanical Shock	EIA-364 -27C **Half-sine** shock 50 g, Duration 11 ms 3times/axis/direction, 18shocks total	No discontinuities>1us
Vibration	EIA-364 -28 Random profile: 5 Hz @ 0.01 g2/Hz to 20 Hz @ 0.02 g2/Hz (slope up) 20 Hz to 500 Hz @ 0.02 g2/Hz (flat) Input acceleration is 3.13 g RMS 10 minutes per axis for all 3 axes on all	No discontinuities>1us
Reseating	Manually unplug/plug the connector. Perform 3 cycles	No evidence of physical damage

Table 5-Environmental Perform

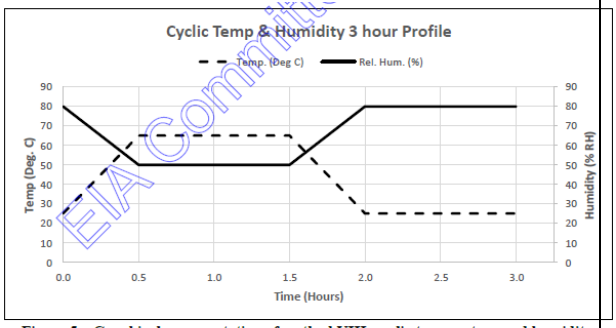
Test Items	Procedures	Requirements
Temperature life	EIA-364-17C, Method A (without electrical load) (60°C,7 years field) Perform 105℃, 79 hours	electrical, mechanical and environmental criteria
Temperature life (Precondition)	EIA-364-17C, Method A (without electrical load) (60°C,7 years field) Perform 105℃, 49 hours	electrical, mechanical and environmental criteria
Cyclic Temperature & Humidity	EIA-364-31F, Method VIII, 3h/cycles, 24Cycles  Figure 5 – Graphical representation of method VIII, cyclic temperature and humidity, 3 hour cycle	electrical, mechanical and environmental criteria
Thermal Shock	EIA-364-32G, Method A, Table2, Test Condition I, -55°C to 85°C, 1H/cycle, perform 5 cycles in mated condition	electrical, mechanical and environmental criteria
Thermal Disturbance	EIA-364-110, 15°±3°C to 85°±3°C, Ramps should be a minimum of 2°C/minute. Dwell times should ensure that the contacts reach the temperature extremes (a minimum of 5 minutes), humidity is not controlled, perform 10 cycles in mated condition	electrical, mechanical and environmental criteria
Mixed Flowing Gas	EIA-364-65B, class IIA, Expose all specimens in the mated condition for the total mixed flowing gas exposure duration 10 days.	electrical, mechanical and environmental criteria

Table 6-Other Performance

Solderability – Lead Free	JESD22-B102E; Precondition Condition C, 8 hours ± 15minutes steam, Method 2 (Surface Mount Process Simulation Test). Peak Temp: 230 – 245 °C, 50~70s	95% coverage minimum
Resistance to Reflow Soldering Heat	Refer to EIA-364-56E Procedure 6: Test level 6. There shall be no evidence of physical or mechanical damage	The functional and electrical requirements still fulfilled. No deformation of component after reflow on any side of the component.

5.0 Test Sequence

Table 7-Test Sequence

Items	Test /Group	A Temp. Life	B Humidity Cycling	C MFG	D Vib&S hock	E Durability	F Contact retention	G T-rise	H Solder ability	I Resistance to Reflow Soldering Heat
1	Visual inspection	1,8	1,14	1,12	1,8	1,6,10	1	1	1,3	1,3
2	Insertion force					2,7				
3	Extraction force					3,8				
4	Normal force									
4	Contact retention force						2			
5	Durability(Precondition)	3	3	3	3					
	Durability					5				
6	Reseating	6	12	10						
7	Vibration				4					
8	Mechanical Shock				6					
9	LLCR	2,5, 7	2,5, 9,13	2,5,7, 9,11	2,5,7,	4,9				
10	Insulation resistance		6,10							
11	Dielectric with standing voltage		7,11							
12	Temperature rise							2		
13	Temperature life	4								
	Temperature life (precondition)			4						
14	Humidity- Temperature Cycling		8							
15	Thermal shock		4							
16	Thermal disturbance			8						
17	Mix Flowing gas			6						
18	Solder-ability								2	
19	Resistance to Reflow Soldering Heat									2
	Sample size (pcs)	5	5	5	5	5	5	5	5	5

REVISION RECORD

REV	PAGE	DESCRIPTION	EC #	DATE
1		Initial release		10/16/2020