

DDR4 DIMM SOCKET

1.0 SCOPE

This Product Specification covers the 0.85mm centerline gold plated DDR4 DIMM edge card connector for 1.40 ± 0.10 thick memory modules.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

Series Number
151080

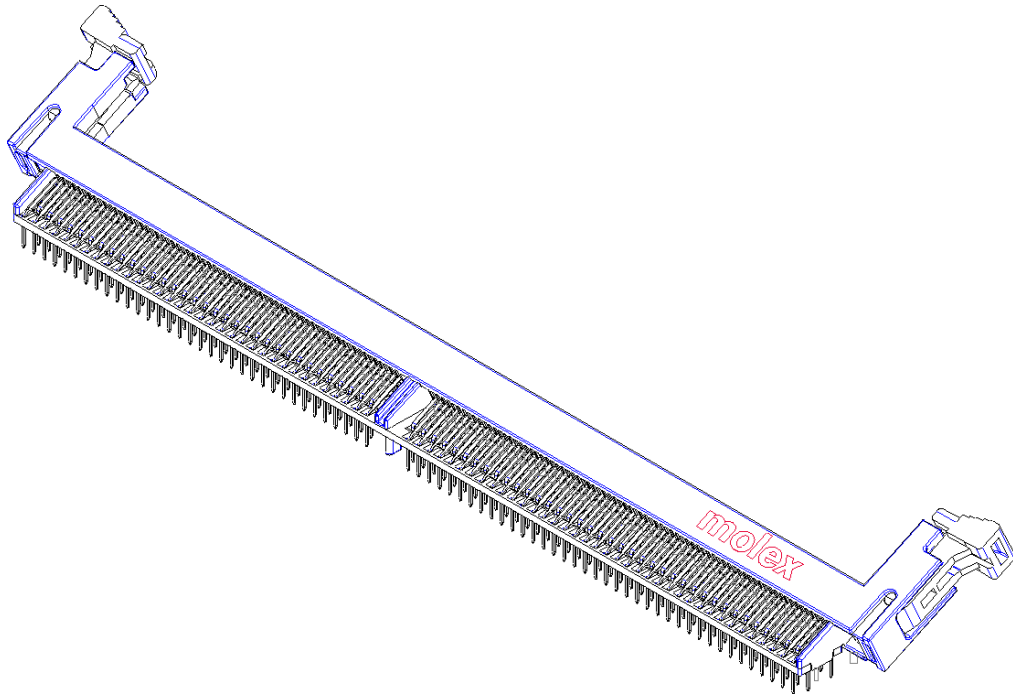
Product Description
DDR4DIMM 25° THROUGH HOLE 0.76Au 288CKT

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate sales drawing(s) for information on dimensions, materials, plating and markings, on recommended module outlines and footprint specifications.

2.3 SAFETY AGENCY APPROVALS

- UL File Number TBA
- CSA File Number TBA



TENTATIVE RELEASE:

THIS SPECIFICATION IS BASED ON DESIGN OBJECTIVES AND IS STRICTLY TENTATIVE. PRELIMINARY TEST DATA MAY EXIST, BUT THIS SPECIFICATION IS SUBJECTED TO CHANGE BASED ON THE RESULTS OF ADDITIONAL TESTING AND EVALUATION

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3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Refer to the appropriate sales drawing(s) and other sections of this specification for the necessary referenced documents and specifications. In the event of conflict between the requirements of this specification and the product drawing(s), the product drawing(s) shall take precedence. In the event of conflict between the requirements of this specification and the reference documents, this specification shall take precedence.

4.0 RATINGS

4.1 VOLTAGE

29 Volts AC (RMS) / DC

4.2 CURRENT

0.75 Amps / pin

4.3 TEMPERATURE

Operating: - 55°C to + 85°C

Nonoperating: - 55°C to + 85°C

4.4 FIELD LIFE AND TEMPERATURE

Field life: 5 Years

Field temperature: 65°C

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Low Level Contact Resistance (LLCR) (Initial)	EIA-364-23 – Option 1 Mate connectors: apply a current of 100 mA maximum and voltage of 20 mV maximum.	20 milliohms MAXIMUM
2	Low Level Contact Resistance (LLCR) (Change from initial)	EIA-364-23 – Option 1 Mate connectors. Apply a current of 100 mA maximum and a voltage of 20 mV maximum.	10 milliohms MAXIMUM
3	Insulation Resistance	EIA-364-21 Unmate and unmount connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1 Megaohms MINIMUM
4	Dielectric Withstanding Voltage	EIA-364-20 – Method B Unmate connectors: apply a voltage of 500 VAC for 1 minute between adjacent terminals.	No breakdown

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Insertion Force (Module to connector with latches)	EIA-364-13 – Method B Mate a 1.50 ± 0.01mm thickness gauge (GS-010-1) to the connector at a rate of 25.4mm per minute.	106.8 N MAXIMUM

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5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
6	Retention Force – Terminal	EIA-364-29 – Method C Axial pull-out of terminal in the housing at a maximum rate of 25.4 mm per minute.	300gf MINIMUM per pin
7	Retention Force – Fork lock	EIA-364-29 – Method C Axial pull-out of fork lock in the housing at a maximum rate of 25.4 mm per minute.	13.3 N MINIMUM per fork lock
8	Durability (Preconditioning)	EIA-364-09 Perform 5 plug-and-unplug cycles at a maximum rate of 5 cycles per minute.	No evidence of physical damage
9	Durability	EIA-364-09 Perform 25 plug-and-unplug cycles at a maximum rate of 5 cycles per minute.	No evidence of physical damage
10	Vibration	EIA-364-28 Mated connectors 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 samples Random control limit tolerance is ± 3 dB Module weight 40 ± 2g with center of gravity 18-20mm from module mating edge.	No evidence of physical damage No discontinuities of ≥ 1 microsecond
11	Shock (Mechanical)	Mated Connectors. Profile: Trapezoidal shock 50 g, ± 10% Duration : 11 millisecond Velocity change : 170" per second, $\pm 10\%$ Quantity: Three drops in each of six directions. Total 18 drops per connector Module weight 40 ± 2g with 18.75mm card height with center of gravity 8-10mm from module mating edge.	No evidence of physical damage No discontinuities of ≥ 1 microsecond
12	Reseating	EIA-364-09 Manually mate and unmate the connector with the module card for 3 cycles at a maximum rate of 5 cycles per minute.	No evidence of physical damage
13	Latch Overstress Force	Unmated connectors: apply an actuation force on the latch at a rate of 25.4 ± 6mm per minute in the fully open position.	3.5kgf MINIMUM force held for 10 seconds with no damage
14	Latch Actuation Force	Apply an actuation force on the latch at a rate of 25.4 ± 6mm per minute with the test blade of 1.50 ± 0.01mm (GS-010-1) inserted into the connector.	The force to fully actuate the latch open shall be 3.5kgf MAXIMUM per latch
15	Module Rip-out	Pull up from the center of the test module	9.1kgf MINIMUM

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5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
	Force	1.50 ± 0.01mm thick (GS-010-1) at a rate of 25.4 ± 6mm per minute. with the latches closed.	Retention force of the module in the connector with no damage
16	Insertion Force – Connector to board	EIA-364-05 Unmated connectors: Push connector into applicable PCB at a rate of 12.7 ± 3mm per minute. Fork lock PCB hole size: 2.45 ± 0.05mm	75 N MAXIMUM
17	Retention Force – Connector to board	EIA-364-05 Unmated connectors: Pull or push with a force of 0.45kgf the connector mounted on the PCB at a rate of 12.7 ± 3mm per minute. Fork lock PCB hole size: 2.45 ± 0.05mm	No lifting of connector from applicable PCB
18	Unmating Force (per pin pair)	EIA-364-13 – Method B Pull out 1.30 ± 0.01mm thick (GS-010-2) test blade from connector with latches removed at a rate of 12.7 ± 3mm per minute.	2.02kgf MINIMUM for 288 circuits (14gf per pin pair)

5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT										
19	Shock (Thermal)	EIA-364-32 – Method A, Test Condition I, Duration A-4 Mate connectors: expose to 10 cycles of <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Temperature (°C)</td> <td style="width: 50%;">Duration (min)</td> </tr> <tr> <td style="text-align: center;">-55⁺⁰₋₃</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="text-align: center;">Specimen transfer from cold to hot</td> <td style="text-align: center;">5 MAXIMUM</td> </tr> <tr> <td style="text-align: center;">85⁺³₋₀</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="text-align: center;">Specimen transfer from cold to hot</td> <td style="text-align: center;">5 MAXIMUM</td> </tr> </table>	Temperature (°C)	Duration (min)	-55 ⁺⁰ ₋₃	30	Specimen transfer from cold to hot	5 MAXIMUM	85 ⁺³ ₋₀	30	Specimen transfer from cold to hot	5 MAXIMUM	None
Temperature (°C)	Duration (min)												
-55 ⁺⁰ ₋₃	30												
Specimen transfer from cold to hot	5 MAXIMUM												
85 ⁺³ ₋₀	30												
Specimen transfer from cold to hot	5 MAXIMUM												
20	Temperature Life (Preconditioning)	EIA 365-17 – Method A (without electrical load) Mate connector: expose 72 hours at 105° ± 2°C. Exposure time as per EIA-364-1000, Table 9	None										
21	Temperature Life	EIA 365-17 – Method A (without electrical load) Mate connector: expose 120 hours at 105° ± 2°C. Exposure time as per EIA-364-1000, Table 8	None										
22	Solderability	JESD22-B102 – Condition C Unmated connector: Steam age for 8 hours ± 15 minute. Dip solder tails into solder pot at a temperature of 245 ± 5°C for 5 ± 0.5 seconds.	95% MINIMUM Solder coverage										

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5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT	
		Rate: 25.4 ± 6 mm per second Flux type: ROL0		
23	Resistance to Solder Heat	E-364-56 Dip solder tails into solder pot at $260 \pm 5^\circ\text{C}$ for 5 ± 1 seconds. Immerse leads to a depth of 1.00 ± 0.20 mm from connector body.	Visual: No damage or discoloration of connector materials.	
24	Temperature Rise	EIA-364-70 Ten pair contacts in consecutive positions on the same side of the connector are connected in a series circuit (mated condition). A thermocouple is inserted through holes in the socket housing, as close to the contact interface as possible. Supply the rated current.	Maximum Temperature Rise shall not exceed 30°C above ambient	
25	Cyclic Temperature & Humidity	EIA-364-1000 – Test Group 2, Cyclic temperature and humidity Cycle the connector between	None	
		Cycle between temperature and RH		
		Temperature ($^\circ\text{C}$)		RH (%)
		25 ± 3		80 ± 3
		65 ± 3	50 ± 3	
		Ramp times should be 0.5 hour and dwell times should be 1 hour. Dwell times start when the temperature and humidity have stabilized within the specified levels. Perform 24 such cycles		
26	Mixed Flowing Gas	EIA-364-65 – Class IIA, Exposure time: EIA-364-1000 – Table 4.1. Expose unmated connector for 112 hours in MFG chamber. Expose mated (to same test module mated during temp life preconditioning) connector for 56 hours in MFG chamber.	None	
27	Thermal Disturbance	EIA-364-1000 – Table 4. Mated connector. Cycle the connector between $15 \pm 3^\circ\text{C}$ and $85 \pm 3^\circ\text{C}$, as measured on the part. Ramps should be a minimum of 2°C per minute. Dwell times should ensure that contacts reach temperature extreme (for a minimum of 5 minutes). No humidity control. Perform 10 cycles.	None	

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6.0 TEST SEQUENCE

TEST DESCRIPTION SEQUENCE												
	1	2	3	4	5	6	7	8	9	10	11	12
Low level contact resistance (Initial)	1	1	1		1							1
Durability (Preconditioning)	2	2	2									2
Durability					2							
Low level contact resistance (Change from initial)	4,6	4,6,8	3,5,7		3							4,6,8,10,12
Insulation resistance				1, 5								
Dielectric withstanding voltage				2,6								
Temperature life (Preconditioning)												3
Temperature life	3											
Shock (Thermal)		3		3								
Thermal disturbance												9
Cyclic temperature & humidity		5		4								
Mixed flowing gas (Unmated)												5
Mixed flowing gas (Mated)												7
Shock (Mechanical)			6									
Vibration			4									
Reseating	5	7										11
Temperature rise						1						
Solderability							1					
Resistance to solder heat								3				
Insertion Force (Module to connector with latches)									1			
Latch Actuation Force										1		
Latch Overstress Force										2		
Module Rip-out Force									2			
Insertion force – Connector to board											1	
Retention force – Connector to Board											2	
Retention Force - Terminal								1,4				
Retention Force – Fork lock								2,5				
Unmating Force (per pin pair)											3	
Sample Size per Test Group	5	5	5	5	5	5	5	6	5	5	5	5

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PRODUCT SPECIFICATION

7.0 PACKAGING

Parts shall be packed in trays and protected against damage during handling, transportation and storage.

8.0 RECOMMENDED LEAD-FREE REFLOW PROFILES

Connector should be soldered onto PCB using either the wave soldering technique or the reflow soldering technique according to the table shown below.

Process	Peak Temperature	Duration
Wave	265°C MAXIMUM (Solder Batch) 220°C MAXIMUM Connector housing	5 ± 2 second (wave contact)
Reflow	220°C MAXIMUM Peak 220°C MAXIMUM Connector housing	20 to 40 seconds Time within 5°C of peak

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