SPECIFICATION

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SPEC. NO.: PS-88881-2DXX **REVISION:** J

PRODUCT NAME: MXM 230pins 0.5 mm pitch Edge Card conn. R/A D/R

PRODUCT NO: 8898x series/8899x series/888xx series/8897x series/889xx series

APPROVED:	CHECKED:	PREPARED:
LIUJINLAN	DAVID	SIMON
DATE: 2014/1/18	DATE: 2014/1/18	DATE: 2014/1/18

1 Revision History

Rev.	ECN #	Revision Description	Approved	Date
O	PDR-PDR940384	NEW Definition(ECN-0511031-RELEASE)	Jason.C	2005.11.18

A	ECN-0608124	加入 REFLOW 2 Times&88980/88979/88989	Jason.C	2006.08.31
B	ECN-‘0610104	調整 PCB 插入力量 7.0Max→5.5Max	Jason.C	2006.10.25
C	ECN-‘0610109	依照 PDR-APD950357/ PDR-APD950417 新增料號	Jason.C	2006.10.26
D	ECN-‘0701120	增加 88890&修正 Salt Spray-48→8 小時	Jason.C	2007.01.24
E	ECN-‘0708125	新增料號 88886/88887/88975/88976/88885/88977	Jason.C	2007.08.15
F	ECN-‘0806207	新增料號 88872 series	Jason.C	20008.06.30
G	ECN-‘0808131	Humidity 增加測試時間/修正 Solder ability 溫度	Jason.C	20008.08.15
H	ECN-0809213	修正 Terminal / Housing Retention Force 0.2→0.12	Jason.C	20008.10.07
J	ECN-1401277	ADD Working Voltage	LIUJINLAN	2014/1/18

2 SCOPE

This specification covers performance, tests and quality requirements for MXM 230pins 0.5 mm pitch connector. These connectors are used to hold graphic card in computer.

Aces's P/N : 88990 series, 88991 series, 88992 series, 88993 series, 88994 series, 88980 series.
Aces's P/N : 88996 series, 88997 series, 88999 series, 88980 series, 88981 series, 88984 series,
Aces's P/N : 88880 series, 88881 series, 88882 series, 88883 series, 88973 series, 88989 series,
Aces's P/N : 88986 series, 88884 series, 88890 series, 88975 series, 88976 series, 88885 series,
Aces's P/N : 88886 series, 88887 series, 88977 series, 88872 series. 88971 series.

3 APPLICABLE DOCUMENTS

CONNECTOR PART SPECIFICATION
EIA-364-1000.01 ELECTRONICS INDUSTRIES ASSOCIATION "ELECTRICAL CONNECTOR TEST PROCEDURE

4 REQUIREMENTS

4.1 Design and Construction

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

4.2 Materials and Finish

4.2.1 Contact: High performance copper alloy (Phosphor Bronze)
Finish: (a) Contact Area: Gold plated based on order information
(b) Under plate: Nickel-plated all over
(c) Solder area: Gold Flash over all plated
4.2.2 Housing: LCP, UL94V-0
4.2.3 Nut or Ear: Copper Alloy, Gold Flash over all pleated.
4.2.4 SCREW NUT: Copper Alloy,

4.3 Ratings

4.3.1 Working Voltage Less than 36 Volts AC (per pin)
4.3.2 Voltage: 100 Volts AC (per pin)
4.3.3 Current: 0.5 Amperes (per pin)
4.3.4 Operating Temperature : -55℃ to +85℃

5 Performance

5.1. Test Requirements and Procedures Summary

Item	Requirement	Standard
Examination of Product	Product shall meet requirements of applicable product drawing and specification.	Visual, dimensional and functional per applicable quality inspection plan.

5.2. Electrical Performance

Item	Requirement	Standard
Low-signal Level Contact Resistance	30 m Ω Max.(initial)per contact 20 m Ω Max. Change allowed	Mate connectors, measure by dry circuit, 30mV Max., 100mA Max. (EIA-364-23)
Insulation Resistance	initial：250 M(Min.) after test：50 M(Min.)	Unmated connectors, apply 500 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	250 VAC Min. at sea level for 1 minute.No discharge, flashover or breakdown.Current leakage: 1 mA max.	Test between adjacent contacts of unmated connectors. (EIA-364-20)
Temperature rise	30℃ Max. Change allowed	Mate connector: measure the temperature rise at rated current after:0.5 A/Power contact. The temperature rise above ambient shall not exceed 30℃ The ambient condition is still air at 25℃(EIA-364-70 METHOD 2)
Impedance	Impedance Requirements: 100 Ohms ±20differential, 50 Ohms ±10 single ended.	A common test fixture for connector characterization shall be used. This is differential Impedance requirement. (EIA-364-108)
Insertion Loss	Insertion Loss Requirements: 0-1.25 GHz <1.0 dB 1.25 GHz-3.75 GHz < 1.6*(F-1.25GHz)+1 dB Reefer to High Frequency Graphic **Figure I**	A common test fixture for connector characterization shall be used. This is differential insertion loss requirement. (EIA-364-101)
Return Loss	Return Loss Requirements: 0-1.3 GHz <-12.0 dB 1.3 GHz-2 GHz <-7.0 dB 2 GHz-3.75 GHz<-4.0 dB Reefer to High Frequency Graphic **Figure II**	A common test fixture for connector characterization shall be used. This is differential Return Loss requirement. (EIA-364-108)
Next Cross-talk	Crosstalk(NEXT) Requirements: 0-1.25 GHz <-32.0 dB1.25 GHz-3.75 GHz <-[32-2.4*(F-1.25)] dB Reefer to High Frequency Graphic **Figure III**	A common test fixture for connector characterization shall be used. This is differential cross-talk requirement. (EIA-364-90)

5.3. Mechanical Performance

Item	Requirement	Standard
Mating / Unmating Forces	Mating Force: 5.5 Kg Max. Unmating Force: 0.4 Kg Min.	Card mating/Unmating sequence: (EIA-364-13) a.) Insert the card at the angle specified by the manufacturer b.) Rotate the card into position. Reverse the installation sequence to unmated
Durability	25 cycles.	The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of 25mm/min. (EIA-364-09)
Terminal / Housing Retention Force	0.12kgf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing.
Fitting Nail /Housing Retention Force	0.1kgf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the fitting nail assembled in the housing.
Screw nut /Housing Retention Force	0.2kgf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the fitting nail assembled in the housing.
PCB Snap down Force	2.0 Kg Max.	1.Test sample must mount on PCB 2.Insert PCB Card with a angle at 20 degree 3.Apply the force on the end of PCB Card edge
Vibration	1 μs Max.	The electrical load condition shall be 100 mA maximum for all contacts. Subject to a simple harmonic motion having amplitude of 0.76mm (1.52mm maximum total excursion) in frequency between the limits of 10 and 55 Hz. The entire frequency range, from 10 to 55 Hz and return to 10 Hz, shall be traversed in approximately 1 minute. This motion shall be applied for 2 hours in each of three mutually perpendicular directions. (EIA-364-28 Condition I)

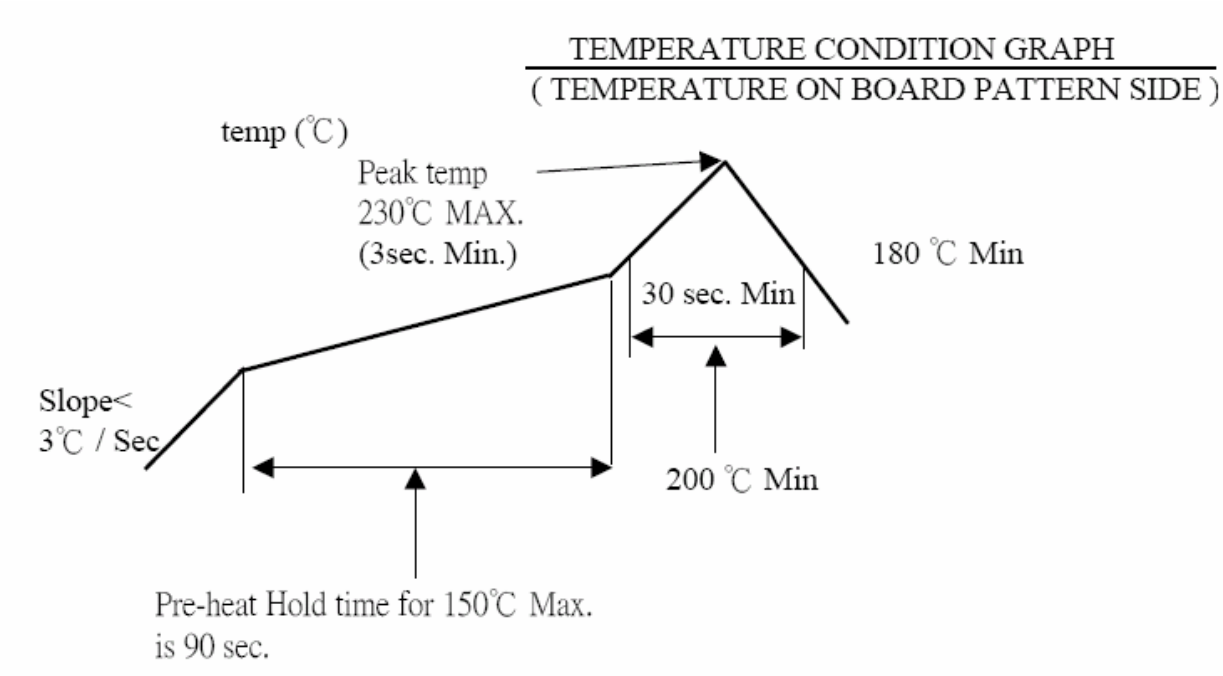
Item	Requirement	Standard
Shock (Mechanical)	Appearance：No damage Discontinuity：1 μs Max. Contact Resistance：20 m Ω Max.	Subject mated connectors to 490m/s2 50 G's (peak value) Half-Sine shock pulses of 11 milliseconds duration. Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks). The electrical load condition shall be 100mA maximum for all contacts. (EIA-364-27, test condition A)

5.4. Environmental Performance and Others

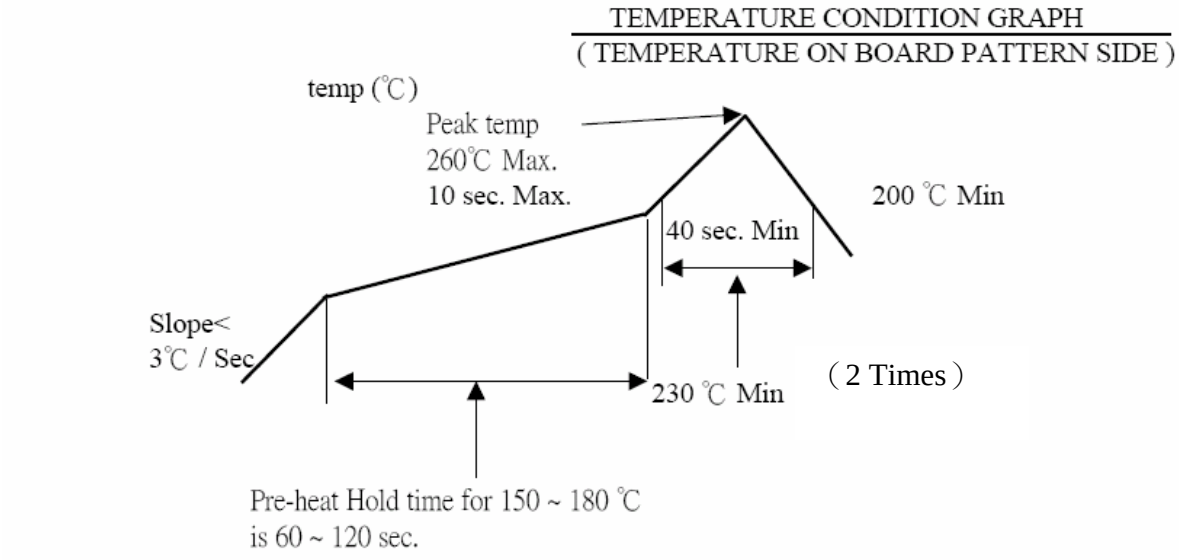
Item	Requirement	Standard
Thermal Shock	See Product Qualification and Test Sequence Group 4	Mate module and subject to follow condition for 5 cycles. 1 cycles: -40 +0/-3 ℃, 30 minutes +85 +3/-0 ℃, 30 minutes (EIA-364-32, test condition A)
Humidity	See Product Qualification and Test Sequence Group 4	Mated Connector 40℃, 90~95% RH, Reefer to Method II. for 96 hours. (EIA-364-31, Test condition A)
Temperature life	See Product Qualification and Test Sequence Group 8	Subject mated connectors to temperature life at 85℃ for 48 hours. Measure Signal. (EIA-364-17, Test condition A)
Salt Spray	See Product Qualification and Test Sequence Group 5	Subject mated/unmated connectors to 5% salt-solution concentration, 35℃ for 8 hours. (EIA-364-26,Test condition B)
Solder ability	Solder able area shall have minimum of 95% solder coverage.	And then into solder bath, Temperature at 245 ±5℃, for 4-5 sec. (EIA-364-52)

6 INFRARED REFLOW CONDITION

6.1. General Process



6.2. Lead-free Process



7 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group											
	1	2	3	4	5	6	7	8	9	10	11	10
	Test Sequence											
Examination of Product				1、7	1、6	1、4	1、3					
Low-signal Level Contact Resistance		1、5	1、4	2、10	2、9	2、5						
Insulation Resistance				3、9	3、8							
Dielectric Withstanding Voltage				4、8	4、7							
Temperature rise	1											
Mating / Unmating Forces		2、4										
Durability		3										
Vibration			2									
Shock (Mechanical)			3									
Thermal Shock				5								
Humidity				6								
Temperature life					5							
Salt Spray						3						
Screw nut /Housing Retention Force							2					
PCB Snap down Force								1				
Terminal / Housing Retention Force									1			
Fitting Nail /Housing Retention Force									2			
Insertion Loss										1		
Return Loss											1	
Next Cross-talk												1
Sample Size	2	4	4	4	4	4	2	2	4	4	4	4

HIGH FREQUENCY GRAPIC

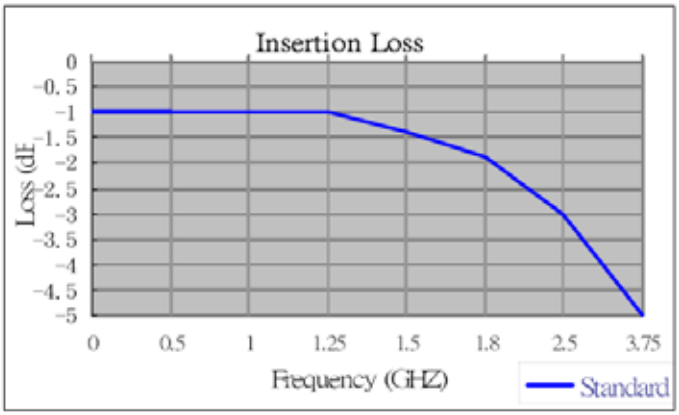


Figure I

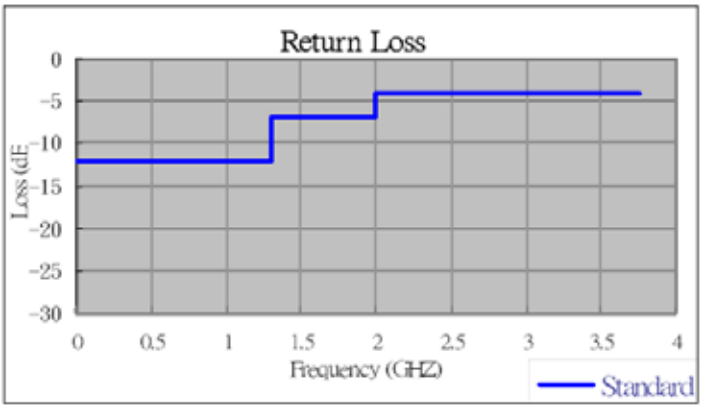


Figure II

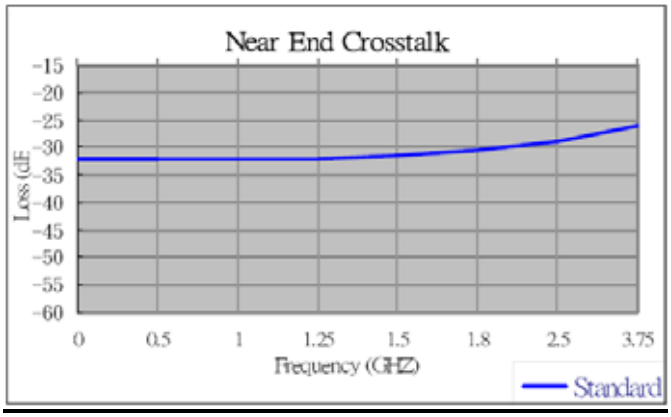


Figure III