PRODUCT SPECIFICATION PS-7500 Rev. B

ORIGINAL

Title: Micro SD Card Connectors Product Specification

Part Number: GTFP08 SERIES

Description: Micro SD Card Connectors push-push type

Revisions Control

Rev.	ECN Number	Originator	Approval	Issue Date
A	NE-12203	Debby Hung	Arron Lin	11/13/2012
B	NE-18028	Karen Su	Roger Tsai	01/30/2018

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Product Specification Origination

Originator:	Date:	Checked by:	Date:	Approved by:	Date:
Karen Su	01/30/2018	Aqua Chou	01/30/2018	Roger Tsai	01/30/2018

1. SCOPE

This document contains specific electrical and mechanical requirements for Micro SD Card Connectors push-push type to insure functionality and reliability.

2. APPLICABLE DOCUMENT

2.1 EIA-364 Standard Test methods for electrical connectors
2.2 UL-STD-94 Tests for flammability of plastic materials for parts in devices and appliances.

3. REQUIREMENT

3.1 DESIGN AND CONSTRUCTION

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

3.2 Material and Finish

3.2.1 Housing

- High temperature thermoplastic, UL94V-0
- Color: Black

3.2.2 Contact

- Copper Alloy
- Contact area: Selective Gold plating
- Solder area: Tin plating
- Under-plating: Nickel plating

3.2.3 Shell

- Copper Alloy or Stainless steel
- Under-plating: Nickel plating (Stainless steel only)

3.3 Rating

- Current rating: 0.5A max
- Voltage rating: 3.6V Max
- Operating Temperature: -40°C~ +85°C
  Storage temperature: -40°C to +85°C
  Humidity: 95% max. none condensing.

4. Performance and testing

4.1 Test Requirement and Procedures Summary

Test Item		Requirement	Procedure
1	Examination of product	Meets requirements of drawing	EIA-364-18 Visual and dimensional inspection per product drawing.
Electrical:			
2	Low-level Contact Resistance	100mΩ max. initially △R 40 mΩ max. after test	EIA-364-23 Mate connector with dry circuit of 20mV, 10mA Max. Measure and record the resistance of the separate connector contact interface. (See 4.2)
3	Dielectric Withstanding Voltage	No voltage breakdown	EIA-364-20 1. Test Voltage: 500 VAC between adjacent terminals. 2. Duration: 1 minute
4	Insulation Resistance	1000 MΩ min. initially 100MΩ min. after test	EIA-364-21 Unmated to a compatible part 1. Test Voltage: 500 VDC between adjacent terminals. 2. Duration: 1 minute
5	Temperature Rise	△T=30ºC Max.	EIA-364-70 method 1 Mate card and measure the temperature rise of contact, 0.5 A per contact.

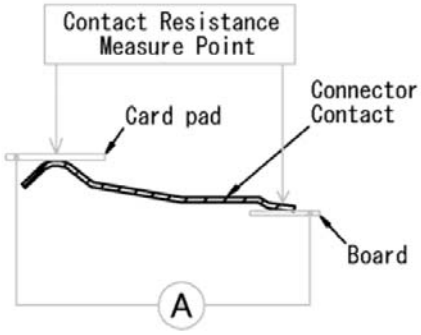
Test Item		Requirement	Procedure
Mechanical:			
6	Durability	No appearance damaged.	EIA-364-09 Cycling: 10000 cycles Cycling rate: 10cycles/minute

7	Mating Force	15 N max.	EIA-364-13 Constant speed: 25 mm/minute
8	Un-mating Force	1~15 N	EIA-364-13 Constant speed: 25 mm/minute
9	Vibration	No appearance damaged.	EIA 364-28 conditions IV Mate card and subjected to the following vibration conditions, for a period of 2 hours in each of 3 mutually perpendicular axes, with passing At DC 5V and 150mA max. during the test. Amplitude : 196.1m/s2{20G} Frequency : 10-2000Hz 5 minutes per 1 cycle, 10 cycles per 1 axis total 30 cycles per 3 axes.
10	Mechanical Shock	No appearance damaged.	EIA 364-27 conditions A Mate card and subjected to the following shock conditions. 3 mutually perpendicular axis, passing DC 5V and 150mA max. during the test. (Total of 18 shocks) Test pulse ： Half Sine (3.44:11.3) Peak value ： 490m/s2{50G} Duration ： 11ms
11	Card Release Force	2N+/-1N	From the state of the card lock, Pull the card at the speed rate 25±3 mm/minute.
12	Push in strength	No Damage	The card is inserted in the opposite direction and the load of 19.6N is added

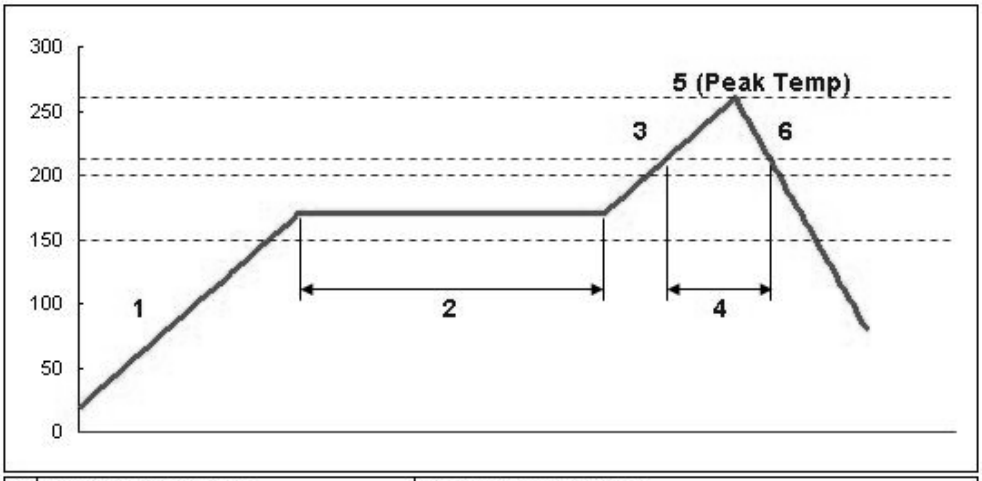
Environmental:			
13	Thermal Shock	No appearance damaged.	EIA 364-32C The card shall be mated and exposed to the following condition for 5 cycles. 1 cycle: a) -55±3℃ for 30 minutes b) +85±2℃ for 30 minutes Transit time shall be within 3 minutes, Recovery time 1~2 hours
14	Low Temperature Exposure	No appearance damaged.	The card shall be mated and exposed to the condition of -40±3℃ for 96 hours. Recovery time 1~2 hours
15	High Temperature Exposure	No appearance damaged.	The card shall be mated and exposed to the condition of +85±2℃for 96 hours, less than 25% relative humidity. Recovery time 1~2 hours
16	Humidity	No appearance damaged.	EIA 364-31 Method II Test Condition A. Subject mated connectors: Temperature: 40±2°C Relative humidity: 90-95% RH Duration time: 96 hours. Recovery time 1~2 hours
17	Salt Spray Test	No appearance damaged.	EIA-364-26 condition A 5±1% salt solutions, at 35±2ºC duration 48 hours. Connectors detached
18	Solderability	95%of immersed area must show no voids , pin holes.	Contact solder tails into the molten solder (held at 245±5℃) up to 0.5mm from the tip of tails for 3±0.5 seconds.

19	Resistance to Soldering reflow Heat	No damage After 2 times of reflow	(refer to 4.3 Recommended IR reflow profile) Test condition: Peak temperature: 260+0 / -10 ℃ Preheating temperature: 150 – 200 ℃, 60 to 120 sec.

4.2 Contact Resistance Measurement Method



4.3 Recommended IR Reflow Profile(Lead-free)



1	Average ramp rate	3°C per second max.
2	Pre-heat temp.(minimum)	150°C
	Pre-heat temp.(maximum)	200°C
	Pre-heat time	60 to 120 seconds
3	Ramp to peak	3°C per second max.
4	Time over liquidus(217°C)	60 to 150 seconds
5	Peak temp.	260 +0/-10°C
	Time within 5°C of peak	10 seconds max.
6	Ramp- cool down	6°C per second max.
	Time 25°C to peak	8 minutes max.

5.0 TEST PROCEDURE

Test or Examination		Test Groups								
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
1	Examination of product	1,11	1,7	1,3	1,11	1,7	1,5	1,3	1,3	1,4
2	Low-level Contact Resistance	2,10	2,4,6		2,6,10	2,4,6	2,4			
3	Insulation Resistance				3,8					
4	Dielectric Withstanding Voltage	3,9			4,9					
5	Temperature Rise			2						
6	Mating Force	4,7								
7	Un-mating Force	5,8								
8	Durability	6								
9	Vibration		3							
10	Mechanical Shock		5							
11	Card Release Force									2
12	Push in strength									3
13	Low Temperature Exposure					3				
14	High Temperature Exposure					5				
15	Thermal Shock				5					
16	Salt Spray Test						3			
17	Solderability							2		
18	Humidity				7					
19	Resistance to Soldering reflow Heat								2	

Notes:

1. Test specimens: 5pcs/group

List of Appendix

☐ Product Drawing

☐ Qualification Test Report