
HDD CONNECTOR SERIES

1. SCOPE

This specification covers performance, tests and quality requirements for **HDD CONNECTOR SERIES**.

2. APPLICABLE DOCUMENT

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.

Test Report : 501-57715

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. Housing: Thermoplastic, UL94V-0.
- B. Contact: Copper Alloy, Gold plating on contact area, Tin plated on Solder-tails, Nickel underplated all over.
- C. Nuts: Brass, Nickel plated over Cu underplated all over.

3.3. RATINGS

- A. Current Rating: 1 A
- B. Voltage Rating: 30 VDC
- C. Operating temperature: -55°C to +85°C.

3.4. TEST CONDITION

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1.

DR	DATE	CHK	DATE
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3.5. TEST REQUIREMENTS AND PROCEDURES SUMMARY

TEST DESCRIPTION	REQUIREMENT	PROCEDURED
Examination of product	Meets requirements of product drawing and AMP Specification.	Visual inspection No physical damage
ELECTRICAL REQUIREMENTS		
Contact Resistance	50m Ω Max. Initial 70m Ω Max. Final	EIA- 364-23A
Insulation Resistance	10 M Ω Min.	EIA- 364-21B
Dielectric Withstanding Voltage	No creeping discharge or flashes occur.	EIA- 364-20A 500VAC for 1 minute applied between adjacent contacts.
MECHANICAL REQUIREMENTS		
Durability	No mechanical defects after 100 cycles.	EIA- 364-09 Mated and unmated connector assemblies for 100 cycles at maximum rate of 20 cycles per minutes.
Mating Force	120gMax per Pin.	EIA- 364-13A The test speed should be 20mm/min.
Unmating Force	20g Min per Pin.	EIA- 364-13A The test speed should be 20mm/min.
Contact Retention Force	Per pin shall meet 500g Min	The test speed should be 20mm/min.
Vibration	10~55 Hz no current interruption greater than 1 microsecond discontinuity.	MIL-STD-202, Method 201A, condition II.
Mechanical Shock	No current interruption greater than 1 microsecond discontinuity	MIL-STD-202, Method 21311 ms half-sine, 3 shocks in each direction along three orthogonal axes.
ENVIRONMENTAL REQUIREMENTS		
Humidity-Cycling Test	See note 1.	EIA- 364-31, condition B, method III for 240 hours
Thermal Shock	See note 1.	EIA- 364-32, condition I . Subject mated connectors to 10 cycles between -55°C and 85°C .
Temperature Life	See note1.	EIA- 364-17, condition 3. Temperature 85°C for 96 hours.
Salt Spray	See note1.	MIL-STD-202F, Method 101D, Test Condition B , 24 hours at 35°C
PHYSICAL REQUIREMENTS		
Solderability	The inspected area of each lead must have 95% solder coverage minimum.	Steam Aging Preconditioning : (1) Tin 、 Tin-Cu Coating: 93+3/-5°C 、 100% HR 、 8hrs. <J-STD-002 category 3 aging> (2) Other Coating: 93+3/-5°C 、 100% HR 、 1hrs. <J-STD-002 category 2 aging> Solder pot temperature: 245±5°C , 5sec

TEST DESCRIPTION	REQUIREMENT	PROCEDURED
Resistance to Wave Soldering Heat	No physical damage shall occur.	Solder Temp. : $240\pm 5^{\circ}\text{C}$, $10\pm 0.5\text{sec}$. Tyco spec. 109-202, Condition A
Resistance to Wave Soldering Heat	No physical damage shall occur.	Solder Temp. : $265\pm 5^{\circ}\text{C}$, $10\pm 0.5\text{sec}$. Tyco spec. 109-202, Condition B
Resistance to Wave Soldering Heat	No physical damage shall occur.	Solder Temp. : $260\pm 5^{\circ}\text{C}$, $10\pm 0.5\text{sec}$. Tyco spec. 109-202, Condition C
Resistance to Reflow Soldering Heat	No physical damage shall occur.	Pre-soak condition, $85^{\circ}\text{C}/85\%$ RH for 168 hours. Pre Heat: $150\sim 180^{\circ}\text{C}$, $90\pm 30\text{sec}$. Heat: 230°C Min., $30\pm 10\text{sec}$. Peak Temp. : $245+0/-5^{\circ}\text{C}$, $10\sim 30\text{sec}$. Duration: 3 cycles Tyco spec. 109-201, Condition A
Resistance to Reflow Soldering Heat	No physical damage shall occur.	Pre-soak condition, $85^{\circ}\text{C}/85\%$ RH for 168 hours. Pre Heat: $150\sim 180^{\circ}\text{C}$, $90\pm 30\text{sec}$. Heat: 230°C Min., $30\pm 10\text{sec}$. Peak Temp. : $260+0/-5^{\circ}\text{C}$, $20\sim 40\text{sec}$. Duration: 3 cycles Tyco spec. 109-201, Condition B

Figure 1

NOTE1: Shall meet visual requirements, show no physical damages.

3.6. PRODUCT QUALIFICATION AND REQUALIFICATION TEST SEQUENCE

Test or Examination	Test Group								
	A	B	C	D	E	F	G	H	I
	Test Sequence (a)								
Examination of Product	1, 9	1, 9	1, 5	1, 9	1, 4	1, 5	1, 3	1, 4	1, 4
Contact Resistance	2, 6	2, 6	2, 4	2, 6		2, 4			
Insulation Resistance	3, 7	3, 7							
Dielectric Withstanding Voltage	4, 8	4, 8							
Durability				5					
Mating Force				3, 7					
Unmating Force				4, 8					
Contact Retention Force								3	3
Vibration					2				
Mechanical Shock					3				
Humidity	5								
Thermal Shock		5							
High Temperature Life			3						
Salt Spray						3			
Solderability							2		
Resistance to Wave Soldering Heat								2	
Resistance to Reflow Soldering Heat									2

Figure 2

NOTE : (a) Numbers indicate sequence in which tests are performed.