
Wire To Board Connector

1. SCOPE

This specification covers performance, tests and quality requirements for Wire To Board connector.

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 : 501-57573

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: High temperature thermoplastic, UL 94V-0.
- B. Contact & Tab: Copper Alloy, Matte-tin over nickel underplated all over.

3.3. RATINGS

- A. Current Rating: 1 A for AWG #26 to #30; 0.8 A for AWG #32.
- B. Voltage Rating: 125 VAC/DC.
- C. Operating temperature: -25C to 85°C.

DWN	DATE	APVD	DATE
Angus Wu	15-July-2005	Wei-Jer Ke	15-July-2005

3.4. TEST CONDITION

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

3.5. TEST REQUIREMENTS AND PROCEDURES SUMMARY

TEST DESCRIPTION	REQUIREMENT	PROCEDURED
Examination of product	Meets requirements of product drawing and Specification.	Visual inspection No physical damage
ELECTRICAL		
Insulation resistance	100 MΩ Min.	Impressed voltage 500 VDC Test between adjacent circuits and contact
Dielectric withstanding voltage	No creeping discharge nor flashover shall occur. Current leakage: 3 mA MAX	250 VAC for 1 minute Test between adjacent circuits and contact
Low level contact resistance	20 mΩ Max.	Subject mated contacts assembled in housing to 20mV Max open circuit at 100mA Max.
MECHANICAL		
Connector retention force	4.41 N (0.454 kgf) Min.	Operation Speed: 10 cycle/min. Measure the force required to pin.
Solder ability	Wet solder coverage: 95% Min.	Solder Temperature: 235 ±5 °C Duration: 5 ±0.5 sec
Vibration	No electrical discontinuity greater than 1 microsecond shall occur. Appearance: No damage	Mated samples were subjected to vibration test per axis. Test duration for each axis was 2 hours (total of 6 hours). The test current was 100 mA for all contacts.
Durability	Appearance: No damage	Operation Speed: 10 cycle/min. No. of Cycles: 25 Cycles
Physical shock	No electrical discontinuity greater than 1 microsecond shall occur. Appearance: No damage	Accelerate Velocity: 490 m/s ² 50 G Waveform: Half-sine shock plus Duration: 11msec No. of Drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops, passing DC 1mA current during the test.
ENVIRONMENTAL		
Resistance to Reflow Soldering Heat	No physical damage shall occur.	Pre-soak condition, 40 °C / 95 % R.H. for 48 hours. Pre Heat: 150 ~ 180 °C, 90±30 sec. Heat: 220 °C Min., 30±10 sec. Peak Temp.: 260 +0/-5 °C. Duration: 2 cycles
Temperature life (Heat aging)	Appearance: No damage	Mated Connector 85, 96 hours.

Figure 1 (cont.)

TEST DESCRIPTION	REQUIREMENT	PROCEDURED
ENVIRONMENTAL		
Thermal shock	Appearance: No damage	Mated Connector -55 ±3°C (30 minutes), 85 ±2°C (30 minutes) Making this a cycle, repeat 5 cycles.
Humidity	See note.	Samples were exposed to 40°C, 95% R.H., 240 hours
Salt spray	Appearance: No damage	Subject mated connectors to 35 +1.1/-1.7°C and 5 ±1% salt condition for 48 hours. After the exposure, the samples were washed or dipped in running water of temperature lower than 37.8°C, and then air dried at 38±3°C for 12 hours.

Figure 1 (end)

NOTE: 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, 3	1, 3	1, 5	1, 6	1, 5	1, 9	1, 9	1, 5	1, 3
Insulation Resistance						2, 7	2, 7		
Dielectric withstanding Voltage						3, 8	3, 8		
Low level contact resistance			2, 4	2, 5	2, 4	4, 6	4, 6	2, 4	
Contact retention force	2								
Contact solder ability		2							
Durability			3						
Humidity Temperature Cycling							5		
Physical Shock				4					
Resistance to Reflow Soldering Heat									2
Salt Spray					3				
Temperature Life								3	
Thermal Shock						5			
Vibration				3					

Figure 2

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