

USB SERIES, A TYPE, PLUG**1. SCOPE**

This specification covers performance, tests and quality requirements for **USB SERIES, A TYPE, PLUG** connector.

2. APPLICABLE DOCUMENT

The following Tyco documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. 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.

2.1. TYCO SPECIFICATIONS

- A. 109-1: General Requirements for Test Specifications
- B. 109-197 : Tyco Specification vs EIA and IEC Test Methods
- C. Test Report : 501-57334

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 or Thermoplastic High Temp., UL94V-0.
- B. Contact : Copper Alloy ,Gold plating on contact area, Tin or Tin-Lead Plating on solder tails, Nickel underplated all over.
- C. Shield : Copper Alloy, Gold plating on contact area, Tin or Tin-Lead Plating on soldertail over Nickel underplating overall.

3.3. RATINGS

- A. Current Rating : 1.5 A
- B. Voltage Rating : 30 VDC
- C. Operating temperature : -55°C to +85°C.

DR	DATE	APVD	DATE
Oblic Hu	10-Dec-2004	Wei-Jei Ke	10-Dec-2004

FZ00-0279-03

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 AMP Specification.	Visual inspection No physical damage
ELECTRICAL		
Contact Resistance	30mΩ Max.	EIA- 364-23A
Insulation Resistance	1000 MΩ Min.	500V DC rms. for 1 minute applied between adjacent contacts. EIA- 364-21B
Dielectric Withstanding Resistance	No creeping discharge or flashes occur.	500VAC for 1 minute applied between adjacent contacts. EIA- 364-20A
MECHANICAL		
Durability	No mechanical defects after 1,500 cycles.	Mated and unmated connector assemblies for 1500 cycles at maximum rate of 200 cycles per hour. EIA- 364-09
Mating Force	3.57kg Max.	EIA- 364-13 The test speed should be 12.5mm/min.
Unmating Force	1.02kg Min.	EIA- 364-13 The test speed should be 12.5mm/min.
ENVIRONMENTAL		
Humidity-Cycling Test	See note 1.	At a temperature of 25°C~65°C and relative humidity of 90 ~ 95% for 10cycles. EIA- 364-31, condition A, method III
Thermal Shock	See note 1.	Subject mated connectors to 10 cycles between -55°C and 85°C. EIA- 364-32, condition I .
Temperature Life	See note1.	Temperature 85°C for 250 hours. EIA- 364-17, condition 3.
PHYSICAL		
Solderability	See note 1. 95% Min. coverage	MIL-STD-202F Method 208G. Test temperature : 245±5°C. Dip tails into flux for 5 second, drain, and then dip into the solder pot and keep for 5 seconds.
Resistance to Wave Soldering Heat	No physical damage shall occur.	Solder Temp. : 240±5°C, 10±0.5sec. Tyco spec. 109-202, Condition A
Resistance to Wave Soldering Heat	No physical damage shall occur. (Lead-Free)	Solder Temp. : 265±5°C, 10±0.5sec. Tyco spec. 109-202, Condition B
Resistance to Reflow Soldering Heat	No physical damage shall occur.	Pre Heat : 100~150°C, 60 sec Max. Heat : 210°C Min., 30 sec Max. Peak Temp. : 240°C Max., 10±0.5sec.
Resistance to Reflow Soldering Heat	No physical damage shall occur. (Lead-Free)	Pre-soak condition, 85°C/85% RH for 168 hours. Pre Heat : 150~180°C, 90±30sec. Heat : 230°C Min., 30±10sec. Peak Temp. : 260+0/-5°C, 20~40sec. Duration : 3 cycles Tyco spec. 109-201, Condition B

Figure 1

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

3.5. PRODUCT QUALIFICATION AND REQUALIFICATION TEST SEQUENCE

Test or Examination	Test Group				
	A	B	C	D	E
	Test Sequence (a)				
Examination of Product	1,5	1,9	1,3	1,9	1,9
Contact Resistance	2,4	2,6		4,8	4,8
Insulation Resistance				2,6	2,6
Dielectric Withstanding Resistance				3,7	3,7
Durability		5			
Mating Force		3,7			
Unmating Force		4,8			
Humidity-Cycling Test				5	
Thermal Shock					5
High Temperature Life	3				
Solderability			2		

Figure 2

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