ATX POWER CONNECTOR

1. SCOPE

1.1. Contents

This specification covers the performance, tests and quality requirements for the ATX POWER connector.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENT

The following 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 Electronics Documents

- 109-202: Component Heat Resistance to Wave Soldering.
- 501-57652: Qualification Test Report.
- 501-78586: Qualification Test Report.

2.2. Commercial Standard

- EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications.
- JESD22-B102D: Solderability Test Method.

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

Materials used in the construction of this product shall be as specified on the applicable product drawing.

3.3. Ratings

A. Current: 9 amperes.

B. Voltage: 250 VAC.

C. Operating Temperature: -25 to 85°C.

3.4. Performance Requirement and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per EIA-364.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing.	EIA-364-18 Visual and dimensional inspection per product drawing.
ELECTRICAL		
Low level contact resistance.	20 mΩ maximum. (Initial) 30 mΩ maximum. (Final)	EIA-364-23 Measure by dry circuit, 20 mV max open circuit at 100 mA max.
Dielectric withstanding voltage.	1 minute hold with no breakdown or flashover.	EIA 364-20C Method B Test between adjacent contacts of unmated connector assemblies. Voltage: 1500 VAC, Current leakage: 0.5 mA max.
Insulation resistance.	1000 MΩ minimum.	EIA-364-21 After 500 V DC for 1 minute, measure the insulation resistance between the adjacent contacts of unmated connector assemblies.
MECHANICAL		
Mating force.	4.41N (0.45 Kgf) per contact maximum.	EIA-364-13 Measure force necessary to mate the connector assemblies at a max of 25 mm/minute.
Unmating force.	1.47N (0.15 Kgf) per contact minimum.	EIA-364-13 Measure force necessary to unmate the connector assemblies at a max of 25 mm/minute.
Durability.	See Note	EIA-364-09 Mate and unmated connector assemblies for 50 cycles at a maximum rate of 500 cycles/hour.
Retention Force	11.76N (1.2 kgf) minimum	Measure the contact retention force with Tensile strength tester.
ENVIRONMENTAL		
Thermal Shock	See Note	EIA-364-32C Subject mated connectors to 5 cycles between -55°C and 85°C in 30 minutes each
Humidity	See Note	EIA-364-31B Subject mated connectors to between 25°C and 65°C at 90~95% RH for 96hours
Salt Spray	See Note	EIA-364-26B Subject mated samples to 5% salt spray at 35°C for 48 hours
Solderability.	See Note	Soldering time: 5±0.5sec. Solder Temperature: 230 ±5°C, 0.5mm from terminal tip and fitting nail tip.
Temperature Life	See Note	EIA-364-17B Subject mated samples to 105°C for 96 hours
Resistance to wave soldering heat.	See Note	TE spec. 109-202, Condition B Solder Temp.: 265 ±5°C, 10 +-0.5 s.

Note Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 2.

Figure 1 (end)

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group							
	A	B	C	D	E	F		
	Test Sequence (a)							
Examination of Product	1, 9	1, 5	1, 8	1, 4	1, 7	1, 3		
Contact Resistance	3,7	2, 4						
Insulation Resistance			2, 6		2, 5			
Dielectric withstanding Voltage			3, 7		3, 6			
Mating Force	2,6							
Unmating Force	4,8							
Contact Retention Force				3				
Durability	5							
Solderability				2				
Thermal Shock			4					
Humidity Temp. Cycling			5					
Temperature Life					4			
Salt Spray		3						
Resistance to Soldering Heat						2		

Note (a) Numbers indicate sequence in which test are performed.

Figure 2