
Ultra-Fast Fully Insulated FASTON* Tab Terminals

1. SCOPE**1.1. Content**

This specification covers the performance, tests and quality requirements for the Ultra-Fast Fully Insulated FASTON* tab terminals. These terminals consist of a FASTON tab body; enclosed in a fully insulated housing. They mate with FASTON receptacles which are on devices used in home entertainment centers, business machines, copying equipment, computer peripheral, appliance and other commercial equipment.

1.2. Qualification

When tests are performed on the subject product line, the procedures specified in AMP 109 series specifications and applicable commercial standards shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENTS

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.

2.1. AMP Specifications

- A. 109-1: General Requirements for Test Specifications
- B. 109 Series: Test Specifications as indicated in Figure 1. (Comply with MIL-STD-202, MIL-STD-1344 and EIA RS-364)
- C. 114-2035: Terminal FASTON, Ultra-Fast Fully Insulated, Application of

2.2. Commercial Standard

UL 310: Quick-Connect Terminals, Standard for

3. REQUIREMENTS

3.1. Design and Construction

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

3.2. Materials

- A. Tab body: Brass, tin plated
- B. Housing: Nylon type 6/6, 94 V-2
- C. Wire (for test purposes): Complies with UL 310, Para 7.3., 600 volt rating

3.3. Ratings

- A. Voltage: 600 vac
- B. Operating Temperature: 105°C maximum

3.4. Performance and Test Description

Terminals shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure				
Examination of Product	Meets requirements of product drawing.	Visual, dimensional and functional per applicable inspection plan.				
ELECTRICAL						
Dielectric Withstand, Test Condition A	No breakdown or flashover when 3400 vac is applied for 1 minute.	Test wired terminals in number 12 lead shot; UL 310, 600V rating.				
Dielectric Withstand, Test Condition C	No breakdown or flashover at rear of terminal when 3000 vac is applied for 1 minute.	Test on a flat metal plate, see Figure 3; UL 310, 600V rating.				
Dielectric Withstand, Tab, Receptacle Entry Portion	<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Terminal Size</td> <td style="text-align: center;">Applied Voltage, vac</td> </tr> <tr> <td style="text-align: center;">250</td> <td style="text-align: center;">1000</td> </tr> </table> No breakdown or flashover when 1000 vac is applied for 1 minute.	Terminal Size	Applied Voltage, vac	250	1000	Test wired terminals on a flat metal plate, see Figure 4; AMP Spec 109-29-1.
Terminal Size	Applied Voltage, vac					
250	1000					

Figure 1 (cont)

Test Description	Requirement	Procedure																				
Heating, (Temperature Rise)	<table border="1"> <thead> <tr> <th rowspan="2">Wire Size, AWG</th> <th colspan="2">Current amperes</th> </tr> <tr> <th>.110</th> <th>others</th> </tr> </thead> <tbody> <tr> <td>22</td> <td>2</td> <td>3</td> </tr> <tr> <td>20</td> <td>3</td> <td>4</td> </tr> <tr> <td>18</td> <td>4</td> <td>7</td> </tr> <tr> <td>16</td> <td>5</td> <td>10</td> </tr> <tr> <td>14</td> <td>-</td> <td>15</td> </tr> </tbody> </table> <p>20°C maximum temperature rise.</p>	Wire Size, AWG	Current amperes		.110	others	22	2	3	20	3	4	18	4	7	16	5	10	14	-	15	Stabilize at specified current and measure T-rise; UL 310.
Wire Size, AWG	Current amperes																					
	.110	others																				
22	2	3																				
20	3	4																				
18	4	7																				
16	5	10																				
14	-	15																				
Heat Cycling, (Current Cycling)	<table border="1"> <thead> <tr> <th rowspan="2">Wire Size, AWG</th> <th colspan="2">Current, amperes</th> </tr> <tr> <th>.110</th> <th>others</th> </tr> </thead> <tbody> <tr> <td>22</td> <td>4</td> <td>6</td> </tr> <tr> <td>20</td> <td>6</td> <td>8</td> </tr> <tr> <td>18</td> <td>8</td> <td>14</td> </tr> <tr> <td>16</td> <td>10</td> <td>20</td> </tr> <tr> <td>14</td> <td>-</td> <td>30</td> </tr> </tbody> </table> <p>65°C maximum T-rise; ΔT-rise between 24 and 500 cycles shall not exceed 15°C on any connector.</p>	Wire Size, AWG	Current, amperes		.110	others	22	4	6	20	6	8	18	8	14	16	10	20	14	-	30	Subject samples to 500 current cycles, 45 minutes on and 15 off; UL 310.
Wire Size, AWG	Current, amperes																					
	.110	others																				
22	4	6																				
20	6	8																				
18	8	14																				
16	10	20																				
14	-	30																				
MECHANICAL																						
Pull Out (Crimp Tensile)	<table border="1"> <thead> <tr> <th>Wire Size, AWG</th> <th>Tensile, pounds minimum</th> </tr> </thead> <tbody> <tr> <td>22 (note 1)</td> <td>10</td> </tr> <tr> <td>20 (note 1)</td> <td>16</td> </tr> <tr> <td>18</td> <td>20</td> </tr> <tr> <td>16</td> <td>30</td> </tr> <tr> <td>14</td> <td>60</td> </tr> </tbody> </table>	Wire Size, AWG	Tensile, pounds minimum	22 (note 1)	10	20 (note 1)	16	18	20	16	30	14	60	Apply a direct and gradual pull at a rate of 1 inch/minute, 1 minute hold at specified load; UL 310.								
Wire Size, AWG	Tensile, pounds minimum																					
22 (note 1)	10																					
20 (note 1)	16																					
18	20																					
16	30																					
14	60																					
Secureness of Insulation (Unassembled)	No separation of the insulation from the terminal body.	Subject unwired terminals to a 3 pound pull between the insulation and terminal for 1 minute; UL 310.																				
Secureness of Insulation (Assembled)	No separation of the insulation from the terminal body.	Subject wired terminals to a 6 pound pull between the insulation and terminal for 1 minute; UL 310.																				

Figure 1 (cont)

Test Requirement	Requirement	Procedure
ENVIRONMENTAL		
Heat Age, 136°C	Meet dielectric withstand, test condition A.	Subject wired terminals to 136°C for 7 days; UL 310.
Heat Age/Humidity	Meet dielectric withstand, test condition A.	Subject unwired terminals to 100°C for 7 days followed by 85% RH at 30°C for 24 hours; UL 310.

Note:

1. Pull-Out values for 20 and 22 AWG wires are less than maximum withdrawal force of the mated receptacle.

Figure 1 (end)

3.6. Terminal Tests and Sequences

Test or Examination	Test Group (a)										
	1	2	3	4	5	6	7	8	9	10	11
	Test Sequence (b)										
Examination of Product	1	1	1	1	1	1	1	1	1	1	1
Dielectric Withstand, Test Condition A		2	3	3(c)							
Dielectric Withstand, Test Condition C					2						
Dielectric Withstand, Tab Receptacle Entry Portion						2					
Heating (T-Rise)	2										
Heating Cycling (Current Cycle)	3										
Pull Out (Crimp Tensile)		3									
Secureness of Insulation (Unassembled)							2		3		
Secureness of Insulation (Assembled)								2		3	3(c)
Heat Age, 136°C			2							2	
Heat Age/Humidity				2					2		2

- (a) See Para 4.1.A.
- (b) Number indicates sequence in which tests are performed.
- (c) Uncrimped terminals and wires in test groups 4 and 11 shall be conditioned in the environments indicated. After conditioning each sample is crimped to appropriate wire and the electrical or mechanical test is performed.

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Section

Connector housings and contacts shall be prepared in accordance with applicable Instruction Sheets. They shall be selected at random from current production. Test groups 1 through 4 shall consist of 20 samples of each wire size and terminal type per group. Test groups 5 through 11 shall consist of 20 samples of each terminal type per group. All terminals shall be crimped to appropriate tin plated test conductors.

B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 2.

C. Acceptance

- (1) Requirements put on test samples, as indicated in the requirements portion of Figure 1, exist as either the upper or lower statistical tolerance limit (95% confidence, 99% reliability). All samples tested in accordance with this specification shall meet the stated tolerance limit.
- (2) Failures attributed to equipment, test setup, or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification.

4.2. Quality Conformance Inspection

The applicable AMP inspection plan will specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.

4.3. Certification

This product has been Recognized under the Component Recognition Program of Underwriters Laboratories Inc., Electrical File Number E-66717, and Certified by Canadian Standards Association, File Number LR-42168.

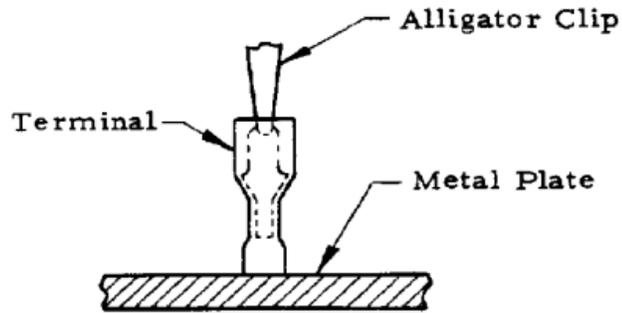


Figure 3

Metal Plate Test Figure

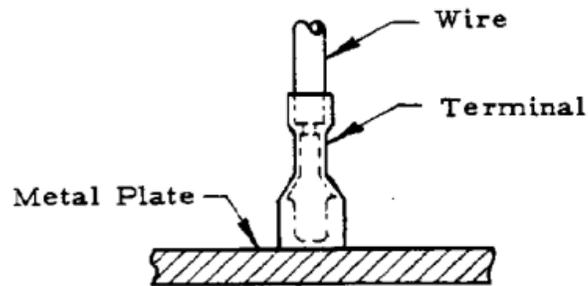


Figure 4

Tab, Receptacle Entry Portion