

NUMBER GS-12-1595	TYPE GENERAL PRODUCT SPECIFICATION	Amphenol ICC	
TITLE 2.50pitch Board-In Crimp type connector		PAGE 1 of 8	REVISION A
		AUTHORIZED BY Jason Wang	DATE 2020.3.23
		CLASSIFICATION UNRESTRICTED	

1.0 Objective

This specification defines the performance, test, quality and reliability requirements of the **2.50pitch Board-In Crimp type connector** product.

2.0 Scope

This specification is applicable to the termination characteristics of the **2.50pitch Board-In Crimp type connector** family of products which provides electrical connectors between parallel mounted boards..

3.0 Ratings

- 3.1 Operating Voltage Rating = $250 V_{DC}/V_{AC}$
- 3.2 Operating Current Rating = 3.0A
- 3.3 Operating Temperature Range = -40~+105 °C
- 3.4 Applicable wire insulation O.D = AWG#22 ~ AWG#26 (0.35~0.13mm²)
Insulation O.D. 1.70mm Max.
* Including terminal temperature rise

4.0 Applicable Documents

- 4.1 AFCI Specifications
 - 4.1.1 Engineering drawings: 10156616&10156617&10156618&10156619
 - 4.1.2 Material specification(s): Meets the European Union directives and other country regulation as described in GS-22-008
- 4.2 Industry or Trade Association standards: N/A

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4.3 National or International Standards

4.3.1 Flammability: UL94V-0 or similar applicable specification

4.3.2 EIA 364: Electrical Connector/Socket Test Procedures Including Environmental Classifications.

4.3.3 IEC 60512: Connectors for Electronic Equipment – Tests and Measurement

5.0 Requirements

5.1 Qualification

Connectors furnished under this specification shall be capable of meeting the qualification test requirements specified herein.

5.2 Material

The material for each component shall be as specified herein or equivalent.

Refer to the drawing (Drawing No.:10156616&10156617&10156618&10156619)

5.3 Finish

The finish for applicable components shall be as specified herein or equivalent.

Refer to the drawing (Drawing No.:10156616&10156617&10156618&10156619)

5.4 Design and Construction

Connectors shall be of the design, construction, and physical dimensions specified on the applicable product drawing. There shall be no cracks, burrs, or other physical defects that may impair performance.

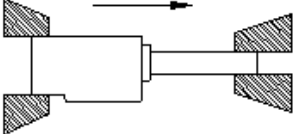
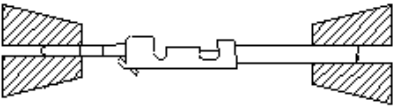
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6.0 Electrical Characteristics

Item		Test Condition	Requirement
6-1	Insulation Resistance	Mate connectors, apply 500V DC between adjacent terminal or ground. (Based upon EIA-364-21B / MIL-STD-202 Method 302 Cond.B)	1000 Megohms Min.
6-2	Dielectric Strength	Mate connectors, apply 800V AC for 1 minute between adjacent terminal or ground. (Based upon EIA-364-20A / MIL-STD-202 Method 301)	No Breakdown and Flashover
6-3	Contact resistance on crimped portion	Crimp the applicable wire on to the terminal measure by dry circuit 20mV MAX, 10mA.	10 milliohms Max.

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7.0 Mechanical Characteristics

Item		Test Condition	Requirement			
7-1	Terminal/ Housing Retention Force	<p>Apply axial pull out force at the speed rate of 25.4±3mm/minute on the terminal assembled in the housing.</p> 	9.8N {1.0kgf} Min.			
7-2	Terminal Insertion Force	Insert the crimped terminal into the housing.	9.8N {1.0kgf} Max.			
7-3	Crimped contact	<p>Fix the crimped terminal, apply axial pull out force on the wire. (Do not crimp insulation part).</p> 	AWG (mm ²)	#22 (0.35 mm ²)	#24 (0.22m m ²)	#26 (0.13 mm ²)
			Spec. kgf Min.	5.0	3.0	2.0
			Note: As for unspecified wire sizes in this specification define values with clients			

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8.0 Environmental Conditions

Item		Test Condition	Requirement	
8-1	Temperature Rise	Carrying rated current load. (UL 1977)	Temperature rise	30oC Max.
8-2	Vibration test	Amplitude: 1.5mm P-P Sweep time: 20~200~20 HZ in 3 minute Duration: 3 hours in each X.Y.Z axials. (Based upon EIA-364-28B/MIL-STD-202 Method 213B Cond.A)	Appearance	No Damage
			Discontinuity	1 micro-second Max.
8-3	Shock test	981m/s ² {100G}, 3 strokes in each X.Y.Z. axes. Operation time:6ms (Based upon EIA-364-27B/MIL-STD-202 Method 213B Cond. A)	Appearance	No Damage
			Discontinuity	1 micro-second Max.
8-4	Cold Resistance	-40±5°C,96 hours. (Based upon EIA-364-105)	Appearance	No Damage
8-5	Heat Resistance	105±2°C,96 hours. (Based upon MIL-STD-202 Method 108A Cond.A)	Appearance	No Damage
8-6	Humidity	Temperature: 40±2°C Relative Humidity: 90~95% Duration: 96 hours (Based upon EIA-364-31A/MIL-STD-202 Method 103B Cond.B)	Appearance	No Damage
			Dielectric Strength	Must meet 6-2
8-7	Salt Spray	48±1 hours exposure to a salt spray from the 5±1% solution at 35±2°C. (Based upon EIA-364-26B/MIL-STD-202 Method 101D Cond.B).	Appearance	No Damage
8-8	Solder-ability	Soldering Time: 3~5second. Solder Temperature: 245±5°C. (Based upon EIA-364-52)	Solder Wetting	95% of immersed area must show no voids, pin holes.

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9.0 QUALITY ASSURANCE PROVISIONS

9.1 Equipment Calibration

All test equipment and inspection facilities used in the performance of any test shall be maintained in a calibration system in accordance with ANSI Z-540 and ISO 9000.

9.2 Inspection Conditions

Unless otherwise specified herein, all inspections shall be performed under the following ambient conditions:

- a. Temperature: 25 +/- 5 deg C
- b. Relative Humidity: 30% to 60%
- c. Barometric Pressure: Local ambient

9.3 Sample Quantity And Description

Connector shall be prepared according to applicable instruction sheets. Samples shall be selected at random from current production.

9.4 Acceptance

9.4.1 Electrical and mechanical requirements placed on test samples as indicated in paragraphs 6.0 and 7.0 shall be established from test data using appropriate statistical techniques or shall otherwise be customer specified, and all samples tested in accordance with this product specification shall meet the stated requirements.

9.4.2 Failures attributed to equipment, test setup, or operator error shall not disqualify the product. If product failure occurs, corrective action shall be taken and samples resubmitted for qualification.

9.5 Qualification Testing

Qualification testing shall be performed on sample units produced with equipment and procedures normally used in production. The test sequences shall be as shown in the qualification test table. Data shall be provided with the samples noting production history: production lot codes for components and assemblies, components and assemblies produced to print revision __, verification of plating composition and thickness, etc.

9.6 Re-Qualification Testing

If any of the following conditions occur, the responsible product engineer shall initiate requalification testing consisting of all applicable parts of the qualification test matrix.

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- a. A significant design change is made to the existing product which impacts the product form, fit or function. Examples of significant changes shall include, but not be limited to, changes in the plating material composition or thickness, contact force, contact surface geometry, insulator design, contact base material, or contact lubrication requirements.
- b. A significant change is made to the manufacturing process which impacts the product form, fit or function.
- c. A significant event occurs during production or end use requiring corrective action to be taken relative to the product design or manufacturing process.

9.7 Qualification Test Table

Test Table

Item	DESCRIPTION	SEQUENCE										
		A	B	C	D	E	F	G	H	I	J	K
1	Examination of product	1,3	1,4	1	1	1	1,7	1,7	1,7	1,3	1,3	1,3
2	Insulation resistance						2,5	2,5	2,5			
3	Dielectric withstanding Voltage						3,6	3,6	3,6			
4	Contact resistance on crimped portion										2	
5	Terminal/Housing Retention Force			2								
6	Terminal Insertion Force				2							
7	Crimped contact					2						
8	Temperature rising	2										
9	Vibration		2									
10	Shock test		3									
11	Heat Resistance						4					
12	Cold Resistance							4				
13	Humidity								4			
14	Salt spray									2		
15	Solderability											2

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REVISION RECORD

Rev	Page	Description	EC#	Date
A		New release	/	2020/3/23