

QUALIFICATION TEST REPORT

認定試験報告書

501- 5022

Rev. 0

CHAMP V CONNECTOR

Product specification : 108-5229 Rev. B

Reference Test Report No. : 8634

Date : February 24, 1992

Classification : Unrestricted

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CHAMP V Connector

1. Introduction

1.1 Testing was performed on the CHAMP V Connector to determine if it meets the requirements of AMP Specification, 108-5229, Rev. B.

1.2 Scope

This report covers the electrical, mechanical and environmental performance requirements of the CHAMP V Connector.

The qualification testing was performed between 27th March 1986 and 20th May, 1986.

1.3 Conclusion

The CHAMP V Connector meets the electrical, mechanical and environmental performance requirements of Product Specification, 108-5229, Rev. B.

1.4 Product Description

(a) The receptacle assembly and plug assembly consist of a base housing with molded contacts and a receptacle housing. The connector assembly consists of a receptacle assembly and the appropriate hardware.

(b) These connectors can be mated with all other AMP CHAMP connectors.

1.5 Test Samples

Samples were taken randomly from current production. The following samples were used :

Product Number	Product Name	Specification
<input type="checkbox"/> -174021- <input type="checkbox"/>	Receptacle Assembly, Action Pin Type	PC Board Mounted
<input type="checkbox"/> -174022- <input type="checkbox"/>	Receptacle Assembly, Solder Type	PC Board Mounted
<input type="checkbox"/> -174029- <input type="checkbox"/>	Connector Assembly, Action Pin Type (Ball Locking)	PC Board Mounted
<input type="checkbox"/> -174030- <input type="checkbox"/>	Connector Assembly, Solder Type (Screw Locking)	PC Board Mounted
<input type="checkbox"/> -174031- <input type="checkbox"/>	Connector Assembly, Solder Type (Ball Locking)	PC Board Mounted
<input type="checkbox"/> -174032- <input type="checkbox"/>	Connector Assembly, Solder Type (Screw Latch Locking)	PC Board Mounted
<input type="checkbox"/> -174155- <input type="checkbox"/>	Plug Assembly, Action Type	PC Board Mounted
<input type="checkbox"/> -174158- <input type="checkbox"/>	Plug Assembly, Soldering Type	PC Board Mounted

2. Product Qualification Test Sequence

Test Items	Sample Groups							
	1	2	3	4	5	6	7	8
	Test Sequence							
Confirmation of Product	①	① ⑨	① ⑤		①	①	①	①
Termination Resistance (Low Level)	③ ⑦ ⑨ ⑪	② ⑥ ⑧	② ④		② ⑤	② ⑤		
Dielectric Strength	⑤ ⑬							
Insulation Resistance	④ ⑫							
Vibration	⑧							
Connector Insertion / Extraction Force	②	③ ⑤						
Repeated Insertion / Extraction Force		④						
Insertion Force Action Pin				①				
Retention Force Action Pin					④	④		
Thermal Shock	⑥				③			
Temperature-Humidity Cycling	⑩	⑦						
Solderability							②	
Soldering Heat Resistivity								②
Sulfurous Acid Gas Resistivity			③					
Heat Resistance						③		

NOTES:

- (1) Individual tests are to be carried out in the sequence of the encircled numbers for each group as shown in Fig.
- (2) The tests for Groups 1 through 3 shall apply to the action pin and solder type connectors.
- (3) The test for Group 4 shall apply only to the action pins.
- (4) The action pin retention test for Groups 5 and 6 shall apply to the action pin type connectors.
The tests for Groups 7 and 8 shall apply to the solder type connectors.

3. Test Results

Para. No.	Test Items	Requirements per Product Specification 108-5229	Judge- ment
1	Confirmation of Product	Inspect visually per applicable Quality Inspection Plan (QIP)	Accept- able
Electrical Performance			
2	Termination Resistance (Low Level)	32 mΩ max. R 32 mΩ max.	Accept- able
3	Insulation Resistance	1,000 MΩ min. (Initial) 1,000 MΩ min. (Final)	Accept- able
4	Dielectric Strength	No insulation break-down nor flashover shall occur.	Accept- able
Physical Performance			
5	Vibration, High Frequency	No electrical discontinuity greater than 1μsec. shall occur.	Accept- able
6	Connector Insertion / Extraction Force	Insertion Force : 11.5 kg max. Extraction Force : 1.0 kg min.	Accept- able
7	Repeated Insertion / Extraction	No physical abnormalities shall occur.	Accept- able
8	Insertion Force, ACTION PIN	22.7 kg max.	Accept- able
9	Retention Force, ACTION PIN	2.5 kg min.	Accept- able
10	Thermal Shock	Termination Resistance (Low Level) (Final) 32 mΩ max.	Accept- able
11	Temperature-Humidity Cycling	Termination Resistance (Low Level) (Final) 32 mΩ max.	Accept- able
12	Sulfurous Acid Gas Resistivity	Termination Resistance (Low Level) (Final) 32 mΩ max.	Accept- able
13	Heat Resistance	Termination Resistance (Low Level) (Final) 32 mΩ max.	Accept- able

4. Test Result

GR. NO.	TEST ITEMS	CONDITION	TEST CONCLUSION				REQUIREMENT	JUDGEMENT
			MAX.	MIN.	AVE.	SIGMA.		
1	LOW LEVEL TERMINATION RESISTANCE	AFTER CONNECTOR INSERTION / EXTRACTION FORCE	8.24	6.35	7.32	0.503	32 max.	OK
		AFTER THERMAL SHOCK	8.56	6.57	7.50	0.528		OK
		AFTER VIBRATION*	8.34	6.26	7.32	0.528		OK
		AFTER TEMPERATURE-HUMIDITY CYCLING	8.66	6.43	7.59	0.596		OK
	INSULATION RESISTANCE	AFTER REPEATED INSERTION / EXTRACTION FORCE	> 1E13	0.2 E13	==	==	1.0 E9 min.	OK
		AFTER TEMPERATURE HUMIDITY CYCLING	4.49 E12	3.84 E10	9.78 E11	==		OK
	DIELECTRIC STRENGTH	AFTER REPEATED INSERTION / EXTRACTION FORCE	==	==	==	==	NOTE (1)	OK
		AFTER TEMPERATURE HUMIDITY CYCLING	==	==	==	==		OK
	CONNECTOR INSERTION FORCE	INITIAL	10.50	9.70	10.05	0.370	11.5 max.	OK
	CONNECTOR EXTRACTION FORCE	INITIAL	3.70	2.60	3.08	0.486	1.0 min.	OK
	VIBRATION	AFTER THERMAL SHOCK	==	==	==	==	NOTE (2)	OK
2	LOW LEVEL TERMINATION RESISTANCE	INITIAL	7.83	6.10	6.88	0.547	32 max.	OK
		AFTER REPEATED INSERTION / EXTRACTION FORCE	8.43	6.41	7.34	0.548		OK
		AFTER TEMPERATURE HUMIDITY CYCLING	8.88	6.44	7.38	0.613		OK
	CONNECTOR INSERTION FORCE	INITIAL	6.80	6.50	6.60	0.141	11.5 max.	OK
		AFTER REPEATED INSERTION / EXTRACTION FORCE	7.00	6.50	6.75	0.208		OK
	CONNECTOR EXTRACTION FORCE	INITIAL	3.50	3.10	3.30	0.163	1.0 min.	OK
		AFTER REPEATED INSERTION / EXTRACTION FORCE	4.20	3.50	3.93	0.299		OK

(TO BE CONTINUED)

GR. NO.	TEST ITEMS	CONDITION	TEST CONCLUSION				REQUIREMENT	JUDGEMENT
			MAX.	MIN.	AVE.	SIGMA.		
3	LOW LEVEL TERMINATION RESISTANCE	INITIAL	8.55	6.22	7.32	0.561	32 max.	OK
		AFTER SULFUROUS ACID GAS RESISTIVITY	9.38	6.53	7.60	0.632		OK
4	INSERTION FORCE ACTION PIN	INITIAL	6.70	5.20	5.85	0.277	22.7 max.	OK
5	LOW LEVEL TERMINATION RESISTANCE	INITIAL	8.26	6.18	7.23	0.492	32 max.	OK
		AFTER THERMAL SHOCK	9.13	6.19	7.63	0.700		OK
	INSERTION FORCE ACTION PIN	AFTER THERMAL SHOCK	6.20	5.40	5.74	0.229	2.5 min.	OK
6	LOW LEVEL TERMINATION RESISTANCE	INITIAL	8.07	6.27	7.20	0.467	32 max.	OK
		AFTER HEAT RESISTANCE	9.10	6.68	7.85	0.595		OK
	RETENTION FORCE ACTION PIN	AFTER HEAT RESISTANCE	7.20	5.70	6.59	0.385	2.5 min.	OK

NOTE

- (1) ; No evidence of flashover or insulation breakdown.
(2) ; No electrical discontinuity greater than 1 microsecond (s) shall occur.