ASSOCIATION CONNECTING
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Number	
2.6.7.1 **(Supersedes 2.6.7.1 for Conformal Coating Tests)**	
Subject **Thermal Shock - Conformal Coating**	
Date **07/00**	Revision **A**
Originating Task Group **Conformal Coating Task Group (5-33a)**	

IPC-TM-650
TEST METHODS MANUAL

1 Scope This test method is to determine the physical endurance of applied conformal coating to sudden changes of high and low temperature excursions that cause physical fatigue.

2 Applicable Documents

IPC-CC-830 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies

3 Test Specimens Five IPC-B-25A boards (see Figure 1) coated with conformal coating per coating supplier's recommendations.

4 Apparatus Test chamber - automatically controlled dual temperature environmental test equipment or two separate chambers capable of maintaining -65° ± 5°C [-85° ± 9°F] and 250° ± 5°C [482° ± 9°F] respectively. Please note, while most requests state 125° ± 5°C [257° ± 9°F] on the high side, there are cases (such as polyimide board applications) where a higher temperature will be required. Test conditions, if not otherwise stated as below, shall be -65°C [-85°F] and 125°C [257°F].

Class	Low Temperature	High Temperature
1	N/A	N/A
2	-40°C [-40°F]	125°C [257°F]
3	-65°C [-85°F]	125°C [257°F]
4	-65°C [-85°F]	250°C [482°F]

5 Procedure

5.1 Specimen Preparation Operate the chamber(s) to high and low temperatures and stabilize. Clamp or suspend the five conformal coated IPC-B-25A boards in the thermal shock chamber.

5.1.1 Set the cold portion of chamber at -65°C [-85°F] and the hot portion of chamber at 125°C [257°F].

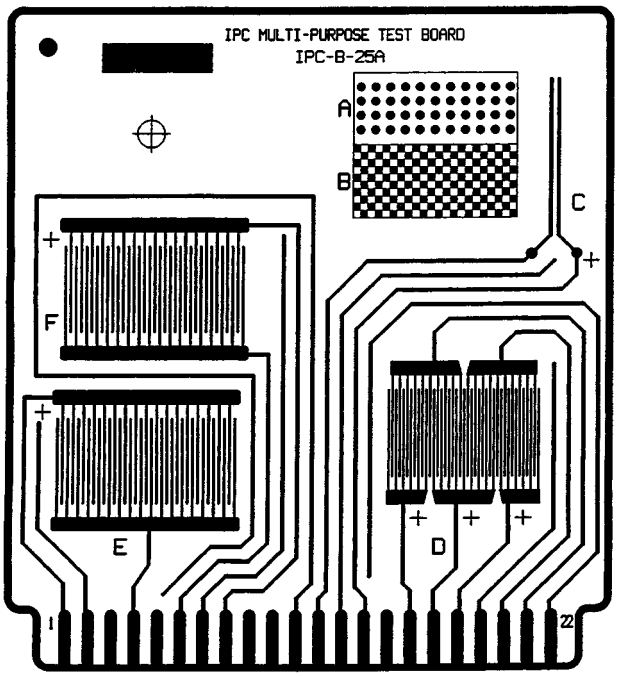

Figure 1 IPC-B-25A Test Board

5.1.2 Set the dwell time for 15 minutes.

5.1.3 Set the temperature recovery time for less than two minutes.

5.1.4 Set the chamber for 100 cycles.

5.1.5 Activate the test chamber and begin testing.

5.2 Evaluation

5.2.1 Upon completion of the thermal shock test, the specimens shall meet the requirements of appearance and dielectric withstanding voltage in accordance with IPC-CC-830.

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