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EIA STANDARD

Test Standard for Electromechanical Components – Environmental Effects of Machine Soldering Using An Infrared System

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Electronic Components, Assemblies & Materials Association

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(From Standards Proposal No. 4674, formulated under the cognizance of the P-13 Committee on Switches & Interrupting Devices.)

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METHOD 21

TEST STANDARD FOR ELECTROMECHANICAL COMPONENTS

ENVIRONMENTAL EFFECTS OF MACHINE SOLDERING
USING AN INFRARED SYSTEM

(From EIA Standards Proposal No. 4674, formulated under the cognizance of the P-13 Committee on Switches & Interrupting Devices)

1. PURPOSE

The purpose of this standard is to evaluate electromechanical surface mountable components that have been subjected to the environmental effects of machine soldering using an infrared system.

This standard shall not be construed as a production procedure in machine soldering operations.

The solderability determination is made on the basis of an effective bond between the component terminals and the printed wiring board.

The acceptable performance of a component subjected to this test is determined by visual examination and those tests specified to be performed upon completion of the test.

This test deals with vapor soldering and cleaning operations only, and does not consider additional factors in the assembly of surface mounted devices such as oven drying of soldering pastes.

2. DEFINITIONS

2.1 SOLDERABILITY - The property of a metal surface to be readily wetted by molten solder.

2.2 FLUXING - The preconditioning of a metal surface prior to the soldering operation utilizing activated flux.

2.3 PREHEATING - The elevating of the printed wiring board temperature prior to soldering.

2.4 CLEANING - The removal of flux and other residue from the printed wiring board assembly using chemical and/or aqueous solvent systems.

3. EQUIPMENT

3.1 An infrared soldering system of the batch type with provisions for adjustment so that the time/temperature profile is within the shaded area of Figure 1. Use of an in-line system is acceptable provided the time/temperature profile agrees with Figure 1.