

REQUIREMENT 24

DETAILED REQUIREMENTS FOR HEATERS

24. General. This section describes detailed requirements for a DPA of commonly used flexible heaters. These requirements supplement the general requirements in section 4. Examples of typical configuration sketches are included. When applicable, specification numbers or type numbers are referenced to assist in identification. Pre-DPA tests, such as functional tests and solderability tests, are assumed to have been satisfied by normal inspection and testing and are therefore not addressed.

24.1 Heaters, flexible strip.

24.1.1 Method.

24.1.1.1 External visual. Perform an external visual examination of the exterior and document any anomalous conditions listed in 24.1.3.

24.1.1.2 Electrical testing. Perform low power input resistance in accordance with method 303 of MIL-STD-202.

24.1.1.3 Terminal strength. Perform terminal strength in accordance with method 209 of MIL-STD-202, condition A. The weight applied along the lead axis shall be three pounds. The duration of the applied load will be 3 minutes minimum. Examine devices for any evidence of loosening or fracturing of the lead attachment. Also look for delaminations in the heater element.

24.1.1.4 Post terminal strength electrical testing. Perform electrical testing in accordance with 24.1.1.2. Results, which fall outside device tolerances, will be unacceptable.

24.1.1.5 Lead attachment verification. Encapsulate 50 percent of the devices in a clear epoxy and cross-section across the lead attachment joints and examine for weld joint integrity. Any evidence of loosening, tearing, corrosion, or contamination at the interface shall be unacceptable.

24.1.2 Data records. DPA findings that deviate from the specified requirements shall be documented as defects.

24.1.3 Evaluation criteria. The following defects will be considered unacceptable,

- a. More than 30 percent reduction in effective conductor.
- b. Less than 0.05 mm (.002 inch) or 25 percent of the average separation between non-common conductors.
- c. Insulating coating not completely shielding the dissipating element.
- d. Conductive particles bridging adjacent non-common conducting elements.