

DATA ITEM DESCRIPTION

Form Approved
OMB No. 0704-0188

2. TITLE Thermal Survey Report		1. IDENTIFICATION NUMBER DI-RELI-80247	
3. DESCRIPTION/PURPOSE 3.1 This report covers the results of specified thermal survey tests performed on equipment to determine "hot spots" and temperature time to thermal stabilization. The report will be used by the procuring activity to determine readiness of the equipment for reliability testing.			
4. APPROVAL DATE (YYMMDD) 861017	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR) EC	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE
7. APPLICATION/INTERRELATIONSHIP 7.1 This DID contains the report format and content preparation instructions for the Thermal Survey required by Task 201, paragraph 201.2.1 of MIL-STD-781D. 7.2 This report is applicable when an equipment Thermal Survey is required by contract. It is used by the procuring activity to help determine if the equipment is ready for reliability tests. 7.3 This DID supersedes DI-R-7036.			
8. APPROVAL LIMITATION		9a. APPLICABLE FORMS	9b. AMSC NUMBER N3979
10. PREPARATION INSTRUCTIONS 10.1 <u>Reference documents.</u> The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments and revisions, shall be as reflected in the contract. 10.2 <u>General.</u> The report shall present the techniques and results of the thermal survey required by Task 201 of MIL-STD-781. Format shall be in accordance with 5.0 of MIL-STD-831. 10.3 <u>Content.</u> The Thermal Survey Report shall contain the test data obtained during specified thermal survey tests and shall include: <ul style="list-style-type: none"> a. Description of thermal survey test conditions, including the following: <ul style="list-style-type: none"> . Number and types of probes and measuring devices used. . Locations of probes and instrumentation used to measure temperatures of parts and ambient chamber air. . Temperatures and related time durations to which equipment was subjected. b. Temperature measurements on the parts identified as high power dissipating parts and components, and those representative of part populations. A temperature versus time plot will be included that shows the temperature profile for each measurement point. The plot will also indicate the temperature being commanded by the chamber controller and the actual chamber temperature. c. Temperature-time to reach thermal stabilization for parts or components exhibiting high thermal inertia. (In addition to high temperature measurements, these data shall also include low temperature measurements wherever temperature cycling is 			
11. DISTRIBUTION STATEMENT DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.			

10. PREPARATION INSTRUCTIONS (Cont'd)

required in reliability testing. Provide plots of part temperatures as related to chamber air temperature and time in the chamber).

- d. A comparison between the thermal data taken during thermal tests and the thermal data arrived at analytically and/or the thermal limits recommended by the manufacturer of the part and actual manufacturer thermal ratings and temperatures used for determining failure rates for reliability predictions for all "hot spot" items.
- e. Description/identification of equipment under test, equipment serial number, date of test, and location of test facility.
- f. Methods and test equipment/instrumentation used to perform the survey including manufacturer, model numbers, and accuracies. A diagram of test set-up shall be provided.
- g. Discussion of thermal measurements accuracy.
- h. Identification of any "hot spot" items, i.e., items exhibiting, during the Thermal Survey, temperatures in excess of those permitted by the item specification, or in excess of the derating limit for the item as applicable to the equipment under procurement.
- i. The flow rate(s) of coolant(s) used in the equipment(s) and their inlet and outlet temperatures.