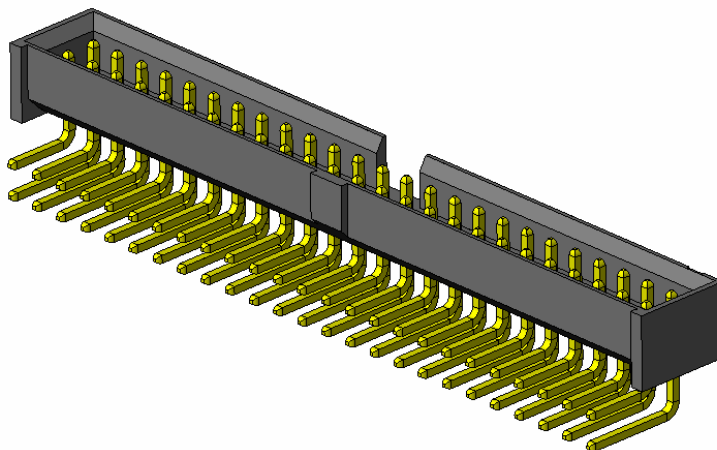




Project Number: Lead Free		Tracking Code: TC0310-Lead Free-0141	
Requested by: John Schmelz		Date: 3/6/2003	Product Rev: Z
Part #: LTMM-125-02-S-D-RA		Lot #: NA	Tech: J.S. Eng: J.S.
Part description: LTMM			Qty to test: 10
Test Start: 3/10/2003	Test Completed: 3/10/2003		



**Perform Solder Heat Resistance using three temperature profiles: 230°C, 260°C and 280°C.  
Summary Report**

**PART DESCRIPTION**

**LTMM-125-02-S-D-RA**



Project Number: Lead Free		Tracking Code: TC0310-Lead Free-0141	
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Part description: LTMM			Qty to test: 10
Test Start: 3/10/2003	Test Completed: 3/10/2003		

### CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to ISO 10012-1 and ANSI/NCSL 2540-1, as applicable.

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## SCOPE

Perform Solder Heat Resistance using three temperature profiles: 230° C, 260° C and 280° C.

## APPLICABLE DOCUMENTS

Standards: EIA Publication 364

## TEST SAMPLES AND PREPARATION.

- 1) Parts are visually inspected for cleanliness.



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## FLOWCHART

TEST STEP	260 °C		280 °C GROUP D	230 °C GROUP E Control
01	1 Pass	Group A	1 Pass	1 Pass
02	Solder Heat Resistance		Solder Heat Resistance	Solder Heat Resistance
03	2nd Pass	Group B		
04	Solder Heat Resistance			
05	3rd Pass	Group C		
06	Solder Heat Resistance			

**Solder Heat Resistance (Visual): Blistering, Distortion  
(Bowed or Twisted), Discoloration**



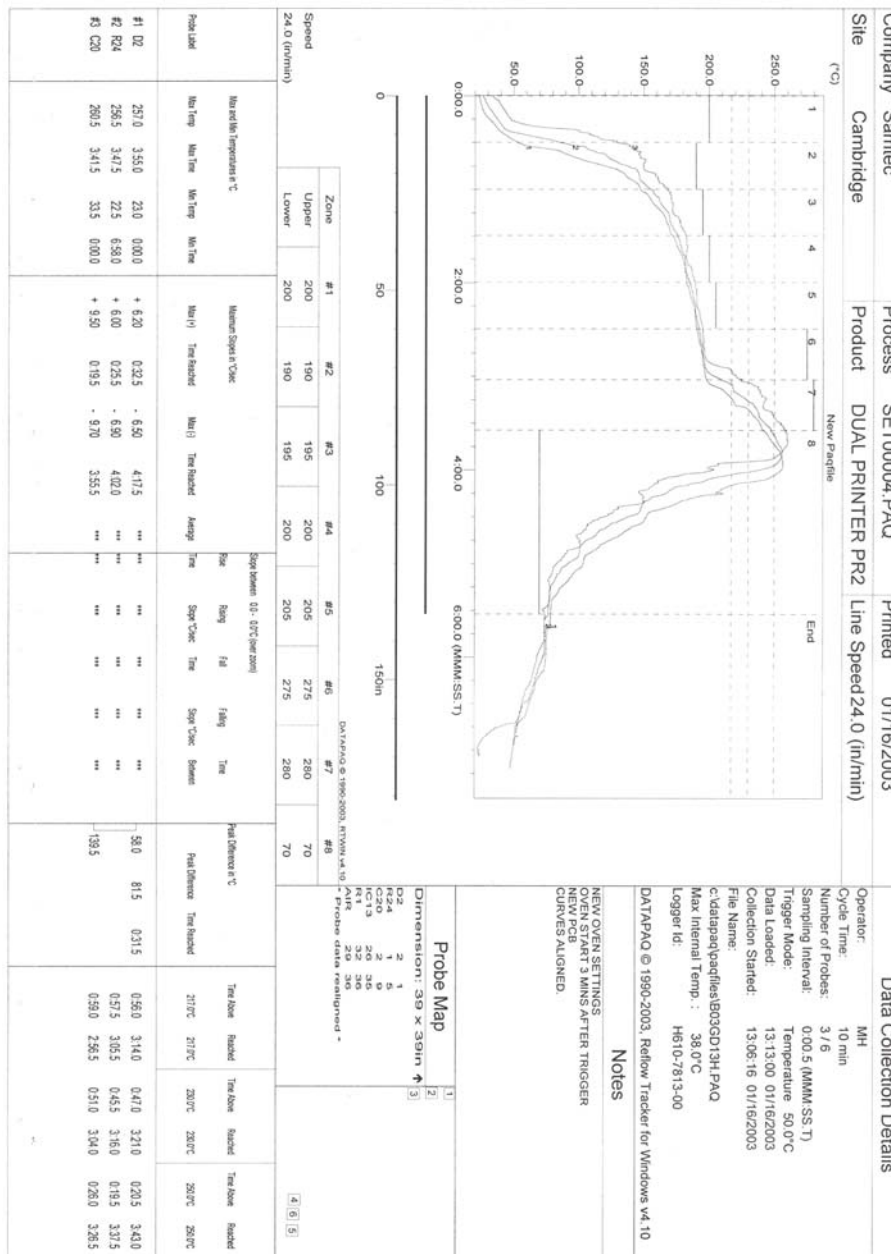
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Part description: LTMM		Eng: J.S.	
Test Start: 3/10/2003			Qty to test: 10
Test Completed: 3/10/2003			

## ATTRIBUTE DEFINITIONS

Following is a brief, simplified description of attributes.

### THERMAL PROFILE:

- 1) The Following Thermal Profile was used to stress the parts.





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Part description: LTMM			Qty to test: 10
Test Start: 3/10/2003	Test Completed: 3/10/2003		

### ATTRIBUTE DEFINITIONS Continued

#### **SOLDER HEAT RESISTANCE (Visual):**

- 1) Blistering
  - a) Pass/Fail
- 2) Distortion
  - a) Bowed or Twisted
- 3) Discoloration
  - a) Pass/Fail









Project Number: Lead Free		Tracking Code: TC0310-Lead Free-0141	
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Part description: LTMM			Qty to test: 10
Test Start: 3/10/2003	Test Completed: 3/10/2003		

## RESULTS

### Solder Heat Resistance, 260 °C Thermal Stressing

- **Blistering**
  - One Thermal Stress-----Pass
  - Two Thermal Stresses-----Pass
  - Three Thermal Stresses-----Pass
- **Distortion**
  - One Thermal Stress-----Pass
  - Two Thermal Stresses-----Pass
  - Three Thermal Stresses-----Pass
- **Discoloration**
  - One Thermal Stress-----Pass
  - Two Thermal Stresses-----Pass
  - Three Thermal Stresses-----Pass



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Part description: LTMM			Qty to test: 10
Test Start: 3/10/2003	Test Completed: 3/10/2003		

### RESULTS Continued Supplemental Tests

#### Solder Heat Resistance, 230°C Thermal Stressing

- **Blistering**
  - One Thermal Stress-----Pass
- **Distortion**
  - One Thermal Stress-----Pass
- **Discoloration**
  - One Thermal Stress-----Pass

#### Solder Heat Resistance, 280 °C Thermal Stressing

- **Blistering**
  - One Thermal Stress-----Pass
- **Distortion**
  - One Thermal Stress-----Pass
- **Discoloration**
  - One Thermal Stress-----Pass



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Part description: LTMM			Qty to test: 10
Test Start: 3/10/2003	Test Completed: 3/10/2003		

## EQUIPMENT AND CALIBRATION SCHEDULES

**Equipment #:** THL-01

**Description:** Temperature/Humidity Chart Recorder

**Manufacturer:** Dickson

**Model:** THDX

**Serial #:** 9316255

**Accuracy:** Temp: +/- 1C; Humidity: +/-2% RH (0 - 60%) +/- 3% RH (61 - 95%).

... Last Cal: 7/15/02, Next Cal: 7/15/03

**Equipment #:** OV-5

**Description:** Nitrogen Purge IR Reflow

**Manufacturer:** Vitronics Soltec

**Model:** XPM-730

**Serial #:** XN 70328

**Accuracy:** + / - 5