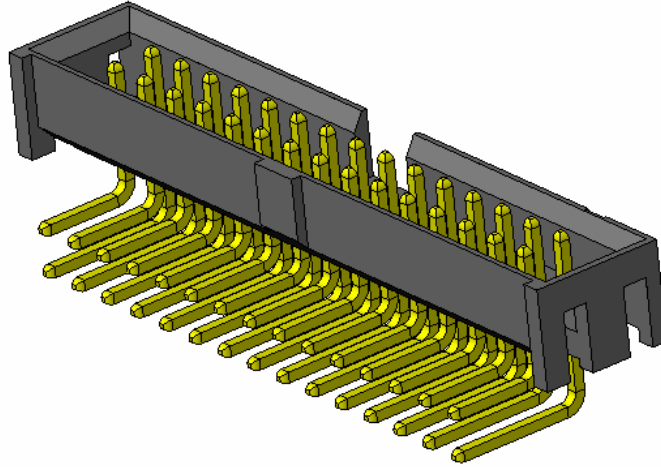




Project Number: Lead Free		Tracking Code: TC0310-Lead Free-0140	
Requested by: John Schmelz		Date: 3/6/2003	Product Rev: AH
Part #: STMM-115-01-S-D-RA		Lot #: NA	Tech: J.S. Eng: J.S.
Part description: STMM			Qty to test: 10
Test Start: 3/4/2003	Test Completed: 3/10/2003		



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

**PART DESCRIPTION**

**STMM-115-01-S-D-RA**

**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.

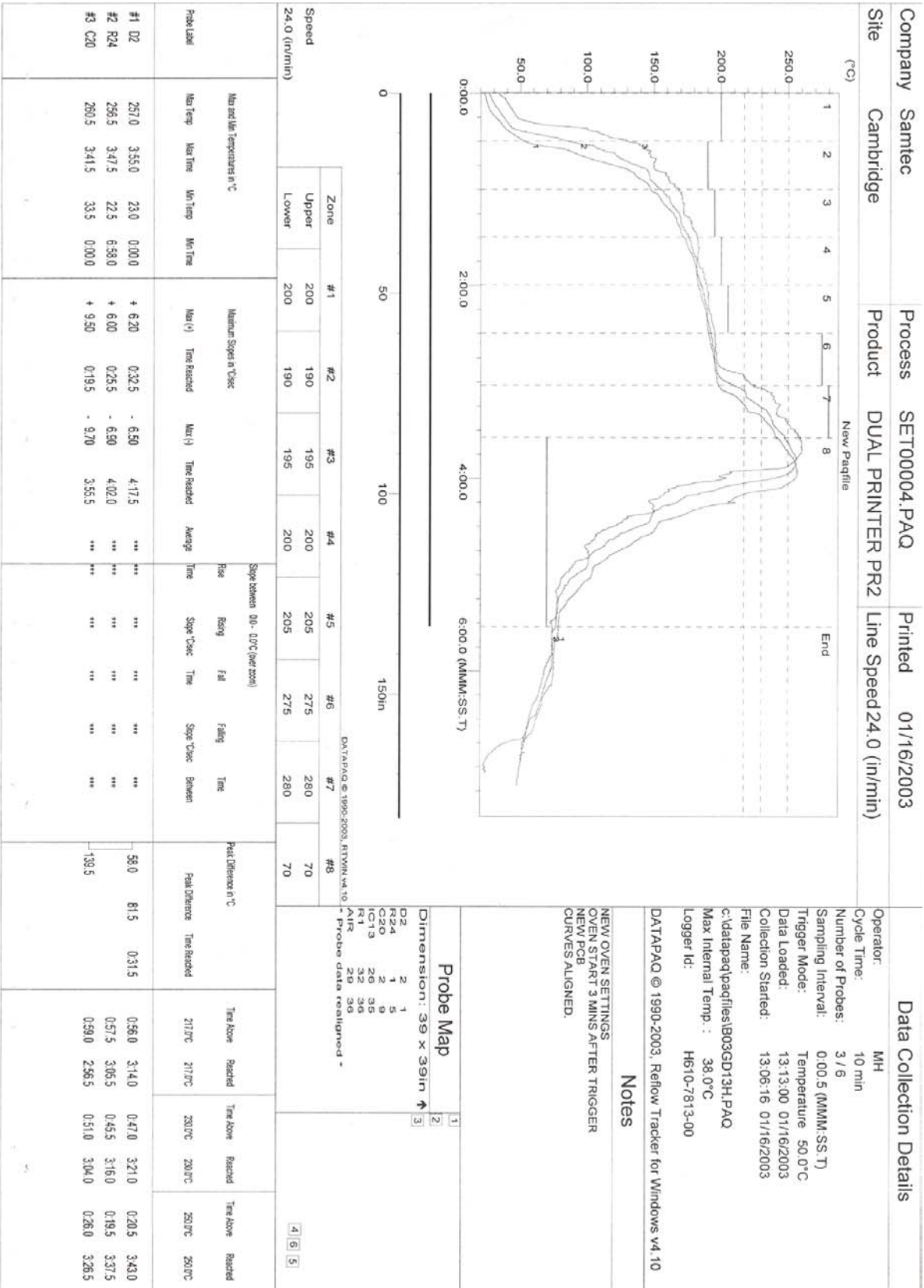
**FLOWCHART**

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

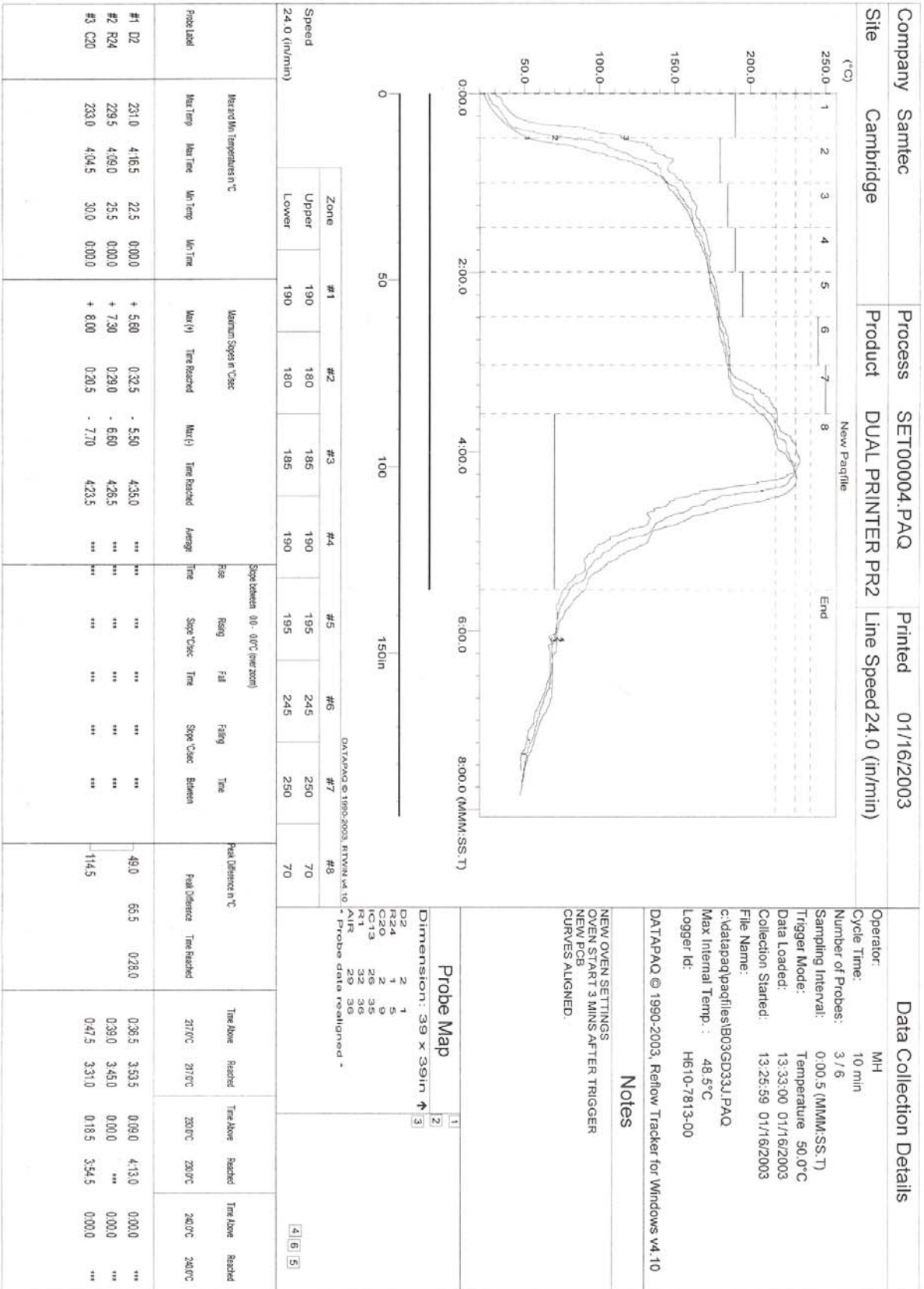
**Solder Heat Resistance (Visual): Blistering, Distortion (Bowed or Twisted), Discoloration**

**OVEN THERMAL PROFILE (Control):**

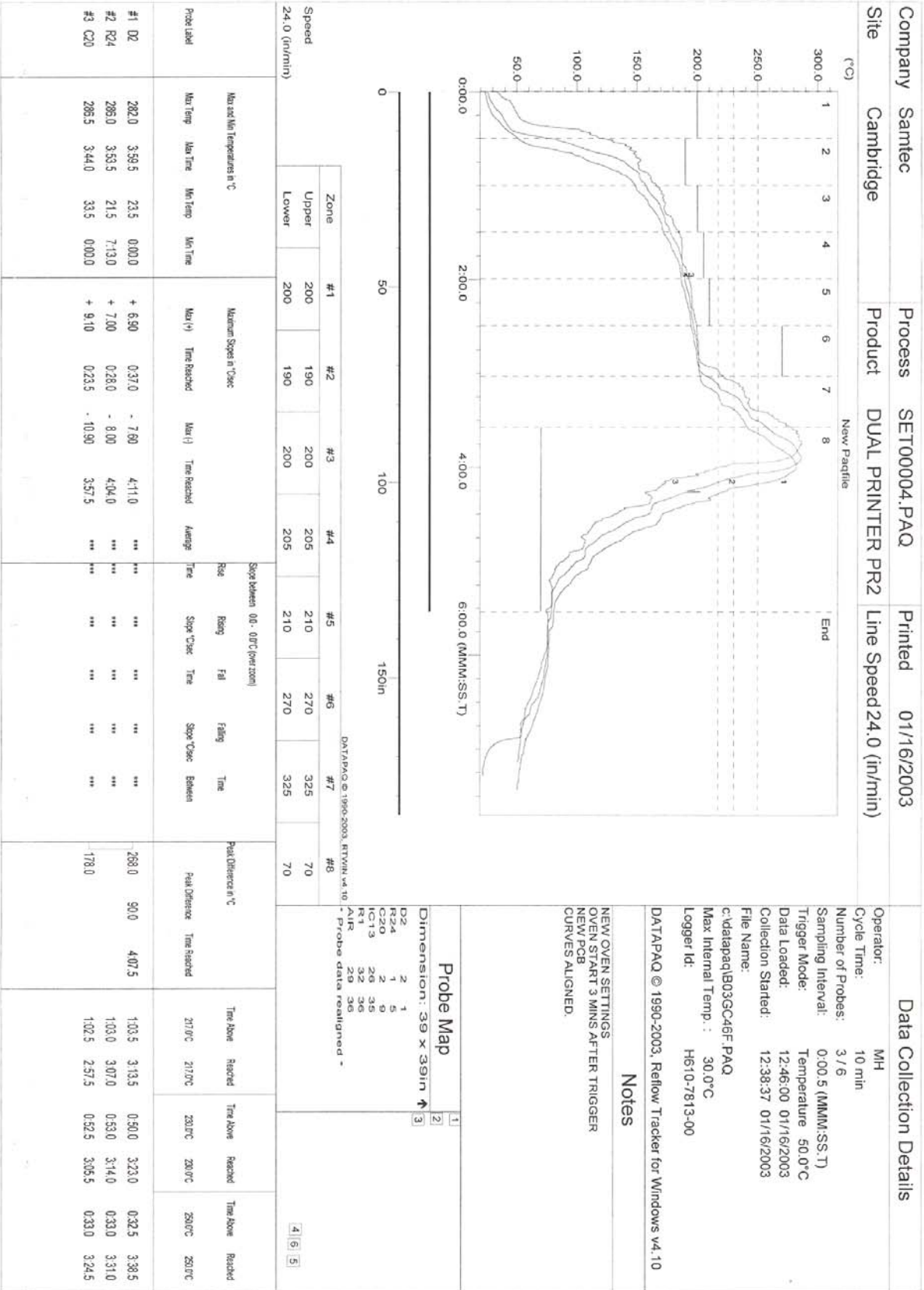
1) The Following Thermal Profiles were used to stress the parts.



**OVEN THERMAL PROFILE, SUPPLEMENTAL TEST:  
Solder Heat Resistance (Visual) at 230 °C**



**OVEN THERMAL PROFILE, SUPPLEMENTAL TEST Continued:  
Solder Heat Resistance (Visual) at 280 °C**



**ATTRIBUTE DEFINITION****SOLDER HEAT RESISTANCE (Visual):**

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

## 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

### 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

**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° C