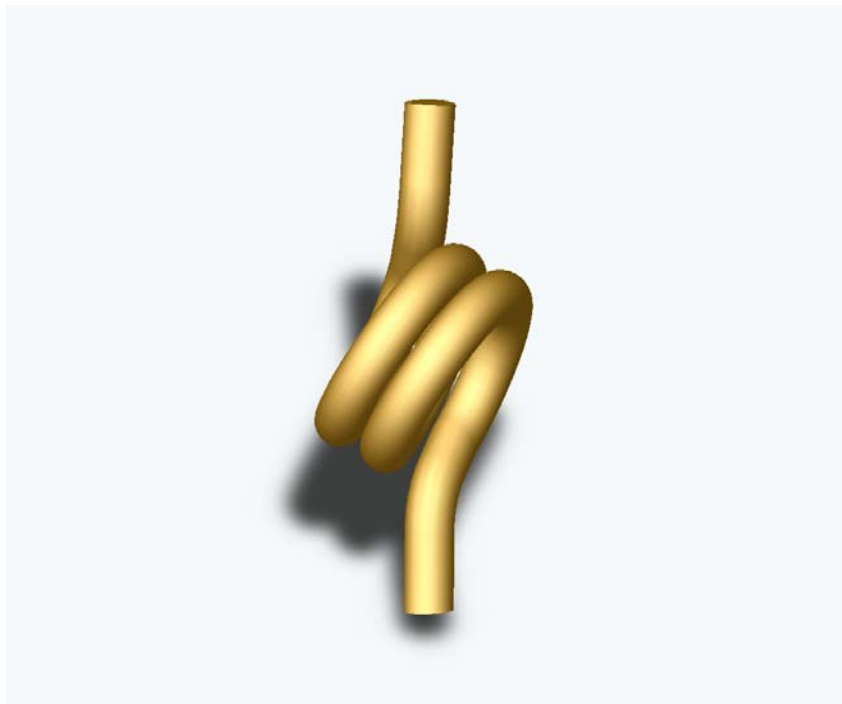


Current Carrying Capacity Report  
For High Speed 1mm and 1.27mm Redundant Contacts™  
(Constant Current Technique)



Data Provided By:

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Rev. 01 Release

**June 1, 2005**



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**Current Carrying Capacity  
High Speed 1mm and 1.27mm Redundant Contacts™**

*CONFIDENTIAL*

**Testing Purpose:**

In preparation for full qualification testing to military/aerospace specifications, Hypertronics, Plastronics and Ardent Concepts have commissioned Contech Research to perform a product analysis on production sample connectors of “1mm” and “1.27mm” configuration to demonstrate the current carrying capacity of the technology in an array. These contacts are for use in Hypertronics Hypergrid™ connectors, Plastronics Burn-in Sockets, and Ardent Concepts sockets, connectors and contactors.

# Revision History

| DATE       | REV. NO. | DESCRIPTION     | ENG. |
|------------|----------|-----------------|------|
| 06/01/2005 | 1.0      | Initial Release | GAV  |

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# Current Carrying Capacity Test Plan

## Purpose

1. The purpose of this test is to determine the durability of the 1mm and 1.27mm RC's after subjecting them to changes in current.
2. The Purpose of this test is to determine the relationship between t-rise and current in an array of RC contacts.

## Part numbers Involved

RC10-04 Contacts in Array  
Insulator material: Ultem 1000  
Test Height: 0.085"  
Contacts: RC10-04 Rev. D

RC10-05 Contacts in Array  
Insulator material: Ultem 1000  
Test Height: 0.075"  
Contacts: RC10-05 Rev. C

RC12-06 Contacts in Array  
Insulator material: Ultem 1000  
Test Height: 0.090"  
Contacts: RC12-06 Rev. C

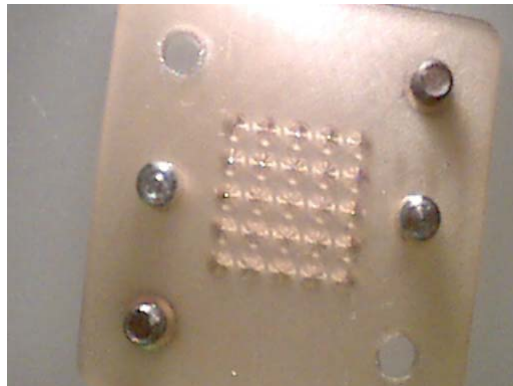
## Test description

Generate a series of temperature rise plots at three current levels. This data is then be used to generate a current carrying characteristic which states that the temperature rise plus the equipment operating ambient should not exceed the temperature rating of the connector. Thus the hotter the equipment ambient, the less current a current can carry with the reverse being true as well.

Testing will be conducted on one of each of the connectors listed above.

One connector assembly will be tested at a time.

At the completion of the testing, a test summary report will be generated to document all findings.



*Production Test Samples*

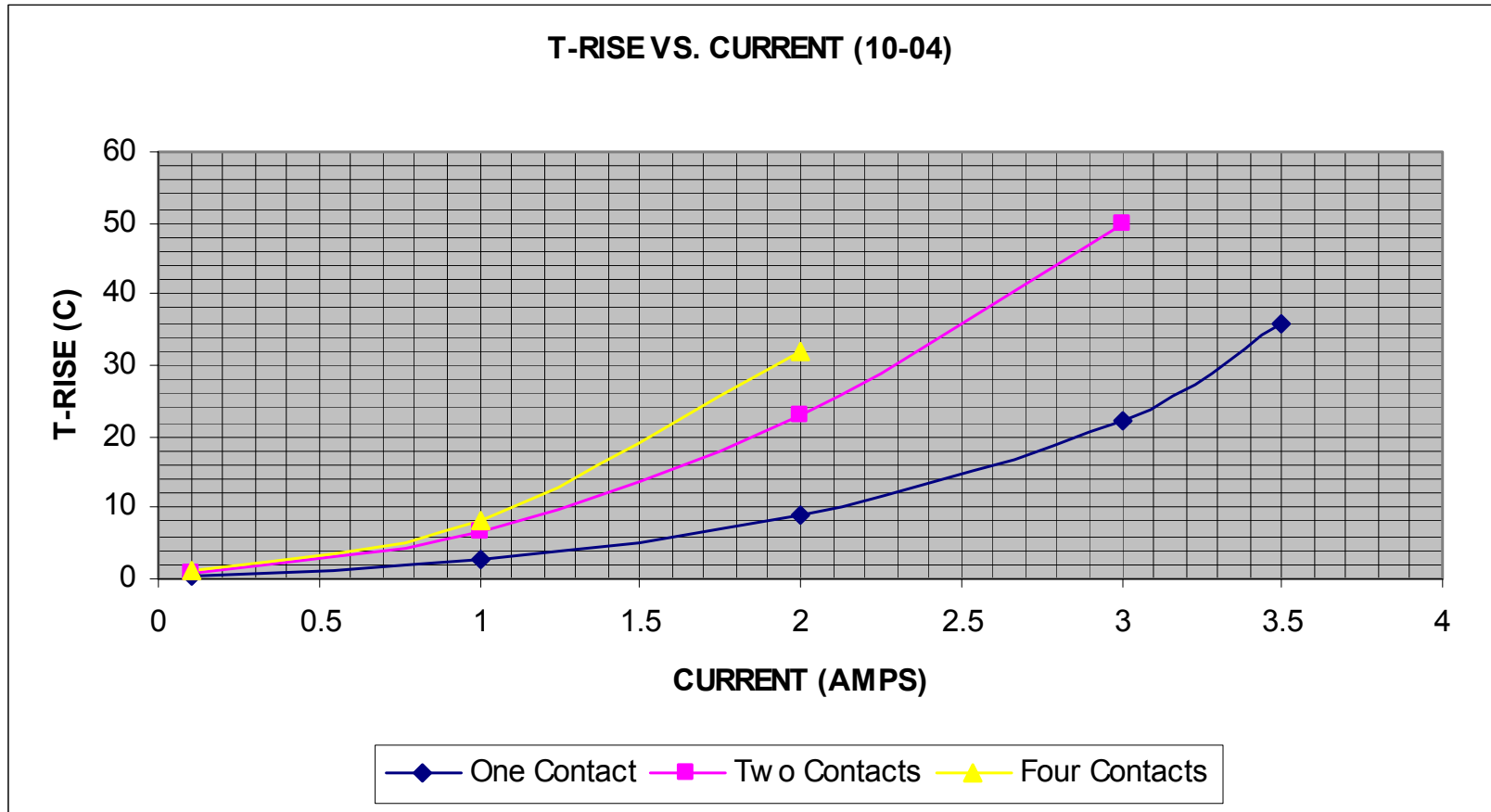
# Redundant Contact™ Current Carrying Capacity Results

## Connectors

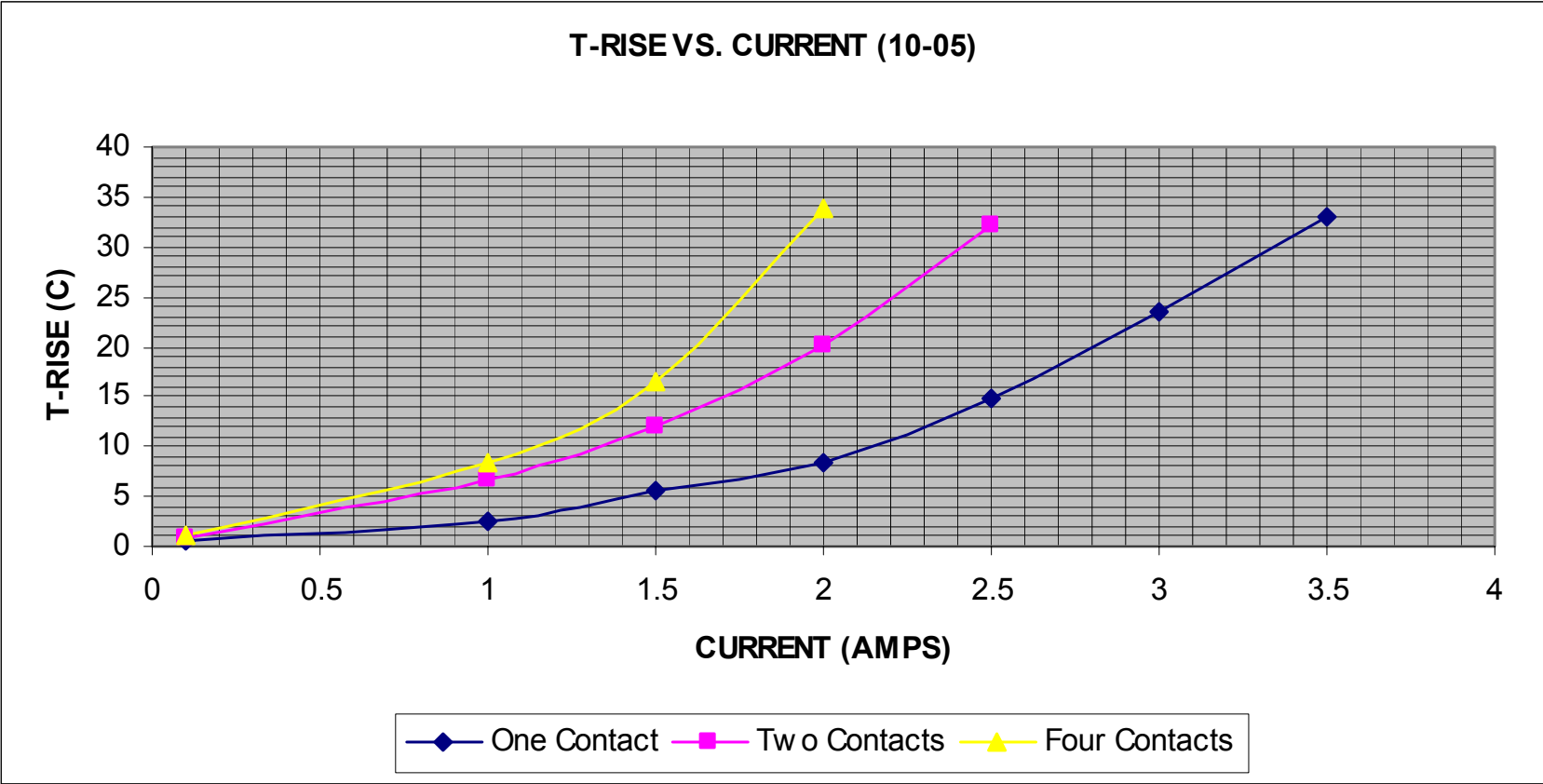
RC10-05 Contacts in Array  
Insulator material: Ultem  
Test Height: 0.075"  
Contacts: RC10-05 Rev. C  
Lot #05-0019

## Scope

1. Current testing:
  - a. Single contact
    - i. Plot of T vs Current
      1. RC10-04 (Plastronics 1mm Burn-In-Contact)
      2. RC10-05 (Standard 1mm Contact)
      3. RC12-06 (Standard 1.27mm Contact)
      4. What is 30C temp rise current rating for all three contacts?
    - ii. Temperature de-rating curves
      1. RC10-04
      2. RC10-05
      3. RC12-06
  - b. 2 contacts in row at specified pitch
    - i. Plot of T vs Current
      1. RC10-04
      2. RC10-05
      3. RC12-06
      4. What is 30C temp rise current rating for all three contacts?
    - ii. Temperature de-rating curves
      1. RC10-04
      2. RC10-05
      3. RC12-06
  - c. 4x4 grid pattern at specified pitch with power to all 16 contacts
    - i. Plot of T vs Current
      1. RC10-04
      2. RC10-05
      3. RC12-06
      4. What is 30C temp rise current rating for all three contacts?
    - ii. Temperature de-rating curves
      1. RC10-04
      2. RC10-05
      3. RC12-06

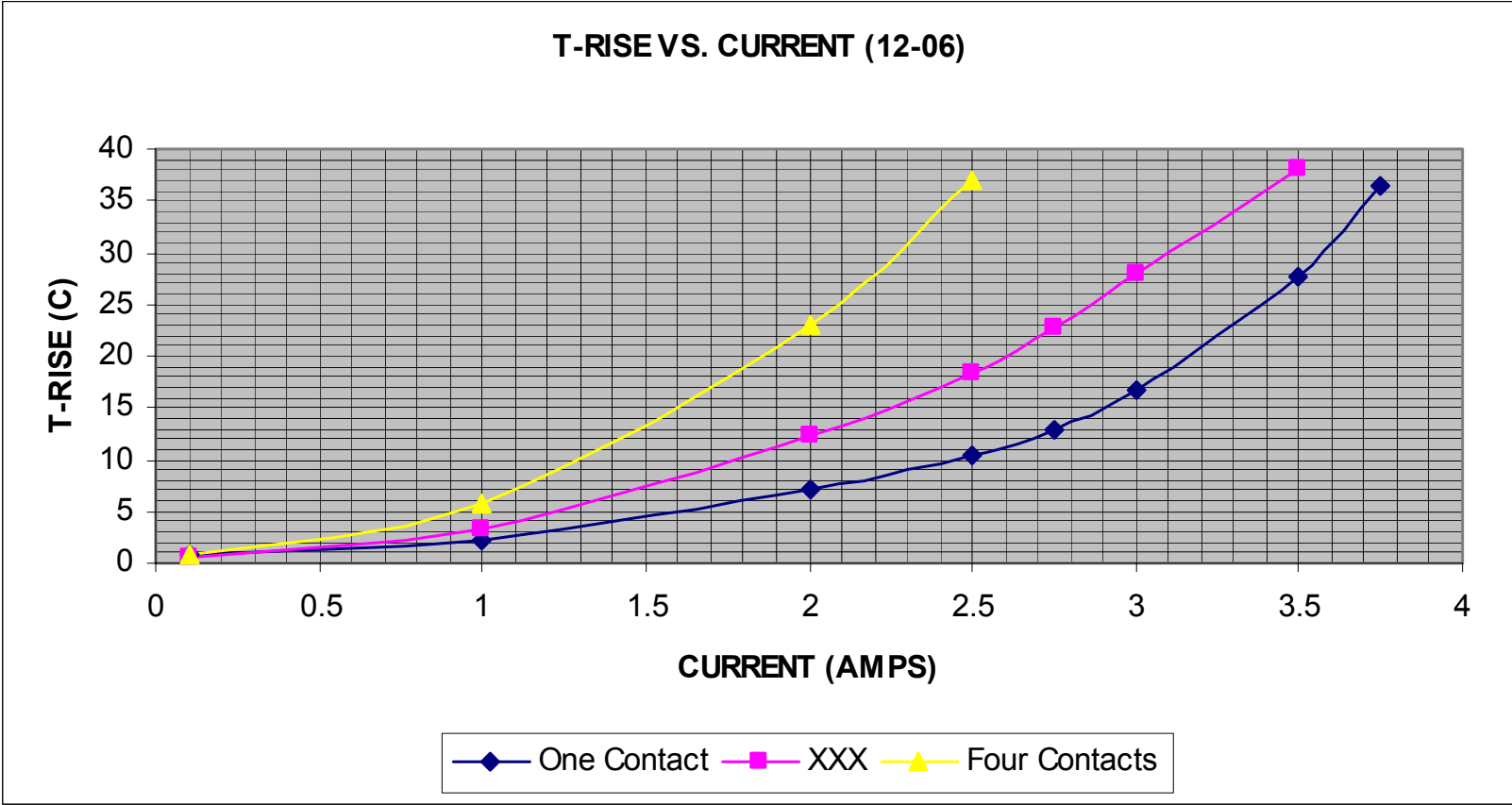


**RC10-04 Redundant Contact™ Current Carrying Capacity Results**



**RC10-05 Redundant Contact™ Current Carrying Capacity Results**





**RC12-06 Redundant Contact™ Current Carrying Capacity Results**

## Summary

1. For the RC10-04, 30° temperature rise measured
  - a. 1 contact = 3.30 AMPS
  - b. 2 contacts = 2.40 AMPS
  - c. 4 contacts = 1.90 AMPS
  
2. For the RC10-05, 30° temperature rise measured
  - a. 1 contact = 3.30 AMPS
  - b. 2 contacts = 2.40 AMPS
  - c. 4 contacts = 1.90 AMPS
  
3. For the RC12-06, 30° temperature rise measured
  - a. 1 contact = 3.55 AMPS
  - b. 2 contacts = 3.10 AMPS
  - c. 4 contacts = 2.25 AMPS