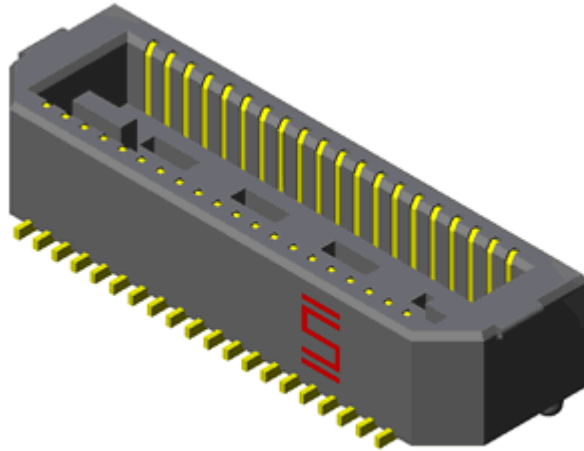




Project Number: NA		Tracking Code: TC0313--0163				
Requested by: Mark Shireman		Date: 3/25/2003		Product Rev: N/A		
Part #: BTE-040-(01,04,08)-L-D-A			Lot #: N/A		Tech: Troy Cook	Eng: John Tozier
Part description: BTE/BSE-040					Qty to test: 30	
Test Start: 04/10/2003		Test Completed: 5/15/2003				



**IR/DWV and CCC summary report on three stack heights**

**PART DESCRIPTION**

**BTE-040-(01,04,08)-L-D-A  
MATED WITH BSE-040-01-L-D-A**

## 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

To perform the following tests: IR/DWV and CCC

### APPLICABLE DOCUMENTS

Standards: EIA Publication 364

### TEST SAMPLES AND PREPARATION

- 1) All materials were manufactured in accordance with the applicable product specification.
- 2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
- 3) After soldering, the parts to be used for LLCR testing were cleaned according to TLWI-0001:
  - a) Sample test boards are to be ultrasonically cleaned after test lead attachment, preparation and/or soldering using the following process.
  - b) Sample test boards are immersed into Branson 3510 cleaner containing Kyzen Ionox HC1 (or equivalent) with the following conditions:
    - i) Temperature: -----55° C +/- 5° C
    - ii) Frequency:-----40 KHz
    - iii) Immersion Time: -----5 to 10 Minutes
    - iv) Sample test boards are removed and placed into the Branson 3510 cleaner containing deionized water with the following conditions:
      - v) Temperature: -----55° C +/- 5° C
      - vi) Frequency:-----40 KHz
      - vii) Immersion Time: -----5 to 10 Minutes
      - viii) Sample test boards are removed and placed in a beaker positioned on a hot plate with a magnetic stirrer containing deionized water warmed to 55° C +/- 5° C for 1/2 to 1 minute
  - c) Upon removal, the sample test boards are rinsed for 1/2 to 1 minute in room temperature free flowing deionized water.
  - d) After the final rinse, the sample test boards are dried in an air-circulating oven for 10 to 15 minutes at 50° C +/- 5° C
  - e) Sample test boards are then allowed to set and recover to room ambient condition prior to testing.
- 4) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
- 5) Any additional preparation will be noted in the individual test procedures.

**FLOWCHARTS**

<b><u>TEST STEP</u></b>	<b>GROUP A 2 Boards  Ambient</b>	<b>GROUP B1 2 Boards  Ambient</b>	<b>GROUP B2 2 Boards  Thermal</b>	<b>GROUP B3 2 Boards  Humidity</b>	<b>GROUP C 1 board min 6 Contacts in series</b>
<b>01</b>	IR	DWV/Working Voltage	Thermal Aging	Humidity	CCC
<b>02</b>	Data Review		DWV/Working Voltage	DWV/Working Voltage	
<b>03</b>	Thermal Aging				
<b>04</b>	IR				
<b>05</b>	Data Review				
<b>06</b>	Humidity				
<b>07</b>	IR				

Thermal Aging = EIA-364-17, Test Condition 4, 105 deg C;

Time Condition 'B' (250 hours)

Humidity =EIA-364-31, Test Condition B (240 Hours)

and Method III (+25 ° C to +65 ° C @ 90%RH to 98% RH)

delete steps 7a and 7b

CCC, Temp rise = EIA-364-70

Tabulate calculated current at RT, 80° C, 95° C and 105° C

after derating 20% and based on 125 ° C

**ATTRIBUTE DEFINITION**

Following is a brief, simplified description of attributes.

**THERMAL AGING:**

- 1) EIA-364-17, *Temperature Life with or without Electrical Load Test Procedure for Electrical Connectors*.
  - a) Test Condition 4 at 105° C.
  - b) Test Time Condition B for 250 hours.
- 2) Connectors are mated.

**CYCLIC HUMIDITY:**

- 1) Reference document: EIA-364-31, *Humidity Test Procedure for Electrical Connectors*.
  - a) Test Condition B, 240 Hours.
  - b) Method III, +25° C to + 65° C, 90% to 98% Relative Humidity excluding sub-cycles 7a and 7b.
- 2) Connectors are mated.

**TEMPERATURE RISE (Current Carrying Capacity, CCC):**

- 1) EIA-364-70, *Temperature Rise versus Current Test Procedure for Electrical Connectors and Sockets*.
- 2) When current passes through a contact, the temperature of the contact increases as a result of  $I^2R$  (resistive) heating.
- 3) The number of contacts being investigated plays a significant part in power dissipation and therefore temperature rise.
- 4) The size of the temperature probe can affect the measured temperature.
- 5) Copper traces on PC boards will contribute to temperature rise:
  - a) Self heating (resistive)
  - b) Reduction in heat sink capacity affecting the heated contacts
- 6) A de-rating curve, usually 20%, is calculated.
- 7) Calculated de-rated currents at three temperature points are reported:
  - a) Ambient
  - b) 85 ° C
  - c) 95 ° C
  - d) 105 ° C
- 8) Typically, neighboring contacts (in close proximity to maximize heat build up) are energized.
- 9) The thermocouple (or temperature measuring probe) will be positioned at a location to sense the MAXIMUM temperature in the vicinity of the heat generation area.
- 10) A computer program, *TR 803.exe*, ensures accurate stability for data acquisition.
- 11) Hook-up wire cross section is larger than the cross section of any connector leads/PC board traces, jumpers, etc.
- 12) Hook-up wire length is longer than the minimum specified in the referencing standard.

**ATTRIBUTE DEFINITION Continued****DIELECTRIC WITHSTANDING VOLTAGE (DWV):**

To determine if the sockets can operate at its rated voltage and withstand momentary over potentials due to switching, surges, and other similar phenomenon. Separate samples are used to evaluate the effect of environmental stresses so not to influence the readings from arcing that occurs during the measurement process.

## 1) PROCEDURE:

- a) Reference document: EIA-364-20, *Withstanding Voltage Test Procedure for Electrical Connectors*.
- b) Test Conditions:
  - i) Between Adjacent Contacts
  - ii) Mated
  - iii) Mounted
  - iv) Rate of Application 500 V/Sec
  - v) Test Voltage (VAC) until breakdown occurs

## 2) MEASUREMENTS/CALCULATIONS

- a) The breakdown voltage shall be measured and recorded.
- b) The dielectric withstanding voltage shall be recorded as 75% of the minimum breakdown voltage.
- c) The working voltage shall be recorded as one-third (1/3) of the dielectric withstanding voltage (one-fourth of the breakdown voltage).

**INSULATION RESISTANCE (IR):**

To determine the resistance of insulation materials to leakage of current through or on the surface of these materials when a DC potential is applied.

## 1) PROCEDURE:

- a) Reference document: EIA-364-21, *Insulation Resistance Test Procedure for Electrical Connectors*.
- b) Test Conditions:
  - i) Between Adjacent Contacts
  - ii) Mated and/or Unmated
  - iii) Mounted
  - iv) Electrification Time 2.0 minutes
  - v) Test Voltage (VDC) corresponding to calibration settings for measuring resistances

## 2) MEASUREMENTS:

- a) When the specified test voltage is applied (VDC), the insulation resistance shall not be less than 5000 megohms.

**RESULTS****Temperature Rise, CCC**

- At 95°C, relative to 125°C at 20% de-rated with 6 adjacent conductors powered
  - -01 Stack Height -----1.5 A
  - -04 Stack Height -----1.8 A
  - -08 Stack Height -----1.6 A

**Dielectric Withstanding Voltage minimums, DWV**

- **Initial**
  - **Breakdown - Mated**
    - -01 Stack Height ----- 1450 VAC
    - -04 Stack Height ----- 1500 VAC
    - -08 Stack Height ----- 1500 VAC
  - **DWV - Mated**
    - -01 Stack Height ----- 1088 VAC
    - -04 Stack Height ----- 1125 VAC
    - -08 Stack Height ----- 1125 VAC
  - **Working voltage - Mated**
    - -01 Stack Height -----363 VAC
    - -04 Stack Height -----375 VAC
    - -08 Stack Height -----375 VAC
- **Thermal**
  - **Breakdown - Mated**
    - -01 Stack Height ----- 1450 VAC
    - -04 Stack Height ----- 1600 VAC
    - -08 Stack Height ----- 1400 VAC
  - **DWV - Mated**
    - -01 Stack Height ----- 1088 VAC
    - -04 Stack Height ----- 1200 VAC
    - -08 Stack Height ----- 1050 VAC
  - **Working voltage - Mated**
    - -01 Stack Height -----363 VAC
    - -04 Stack Height -----400 VAC
    - -08 Stack Height -----350 VAC
- **Humidity**
  - **Breakdown - Mated**
    - -01 Stack Height ----- 1300 VAC
    - -04 Stack Height ----- 1400 VAC
    - -08 Stack Height ----- 1350 VAC
  - **DWV - Mated**
    - -01 Stack Height -----975 VAC
    - -04 Stack Height ----- 1050 VAC
    - -08 Stack Height ----- 1013 VAC
  - **Working voltage - Mated**
    - -01 Stack Height -----325 VAC
    - -04 Stack Height -----350 VAC
    - -08 Stack Height -----338 VAC

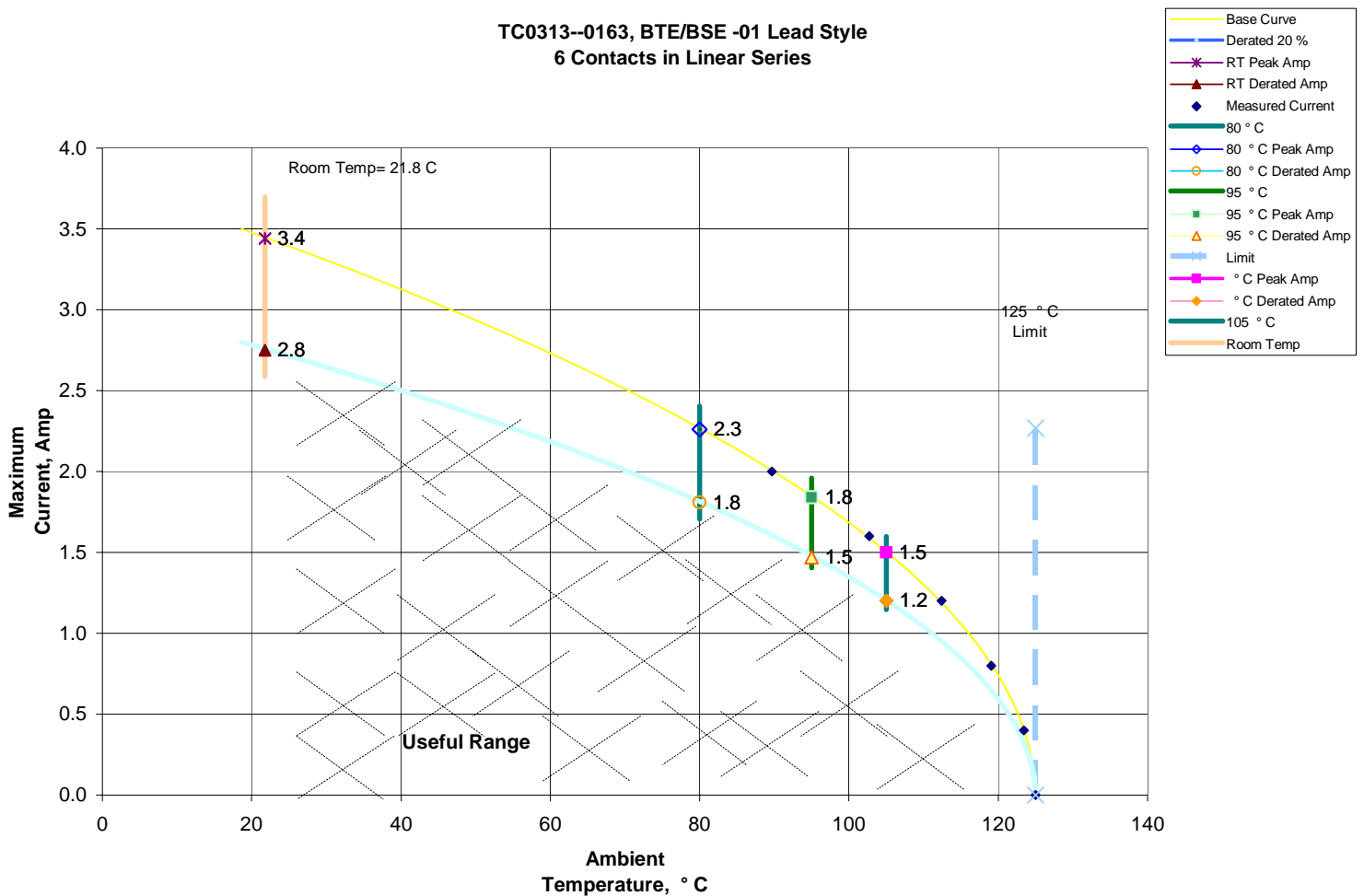
**RESULTS Continued****Insulation Resistance minimums, IR**

- **Initial - Mated**
  - 01 Stack Height----- 50,000 Meg  $\Omega$  ----- Pass
  - 04 Stack Height----- 6,000 Meg  $\Omega$  ----- Pass
  - 08 Stack Height----- 7,000 Meg  $\Omega$  ----- Pass
- **Initial - Un-Mated, BSE only**
  - 01 Stack Height----- 100,000 Meg  $\Omega$  ----- Pass
  - 04 Stack Height----- 100,000 Meg  $\Omega$  ----- Pass
- **Thermal - Mated**
  - 01 Stack Height-----100,000 Meg  $\Omega$
  - 04 Stack Height-----100,000 Meg  $\Omega$
  - 08 Stack Height-----100,000 Meg  $\Omega$
- **Thermal - Un-Mated, BSE only**
  - 01 Stack Height-----100,000 Meg  $\Omega$
  - 04 Stack Height-----100,000 Meg  $\Omega$
- **Humidity - Mated**
  - 01 Stack Height-----100,000 Meg  $\Omega$
  - 04 Stack Height-----100,000 Meg  $\Omega$
  - 08 Stack Height-----100,000 Meg  $\Omega$
- **Humidity - Un-Mated, BSE only**
  - 01 Stack Height-----100,000 Meg  $\Omega$
  - 04 Stack Height-----100,000 Meg  $\Omega$

**DATA SUMMARIES****TEMPERATURE RISE (Current Carrying Capacity, CCC):**

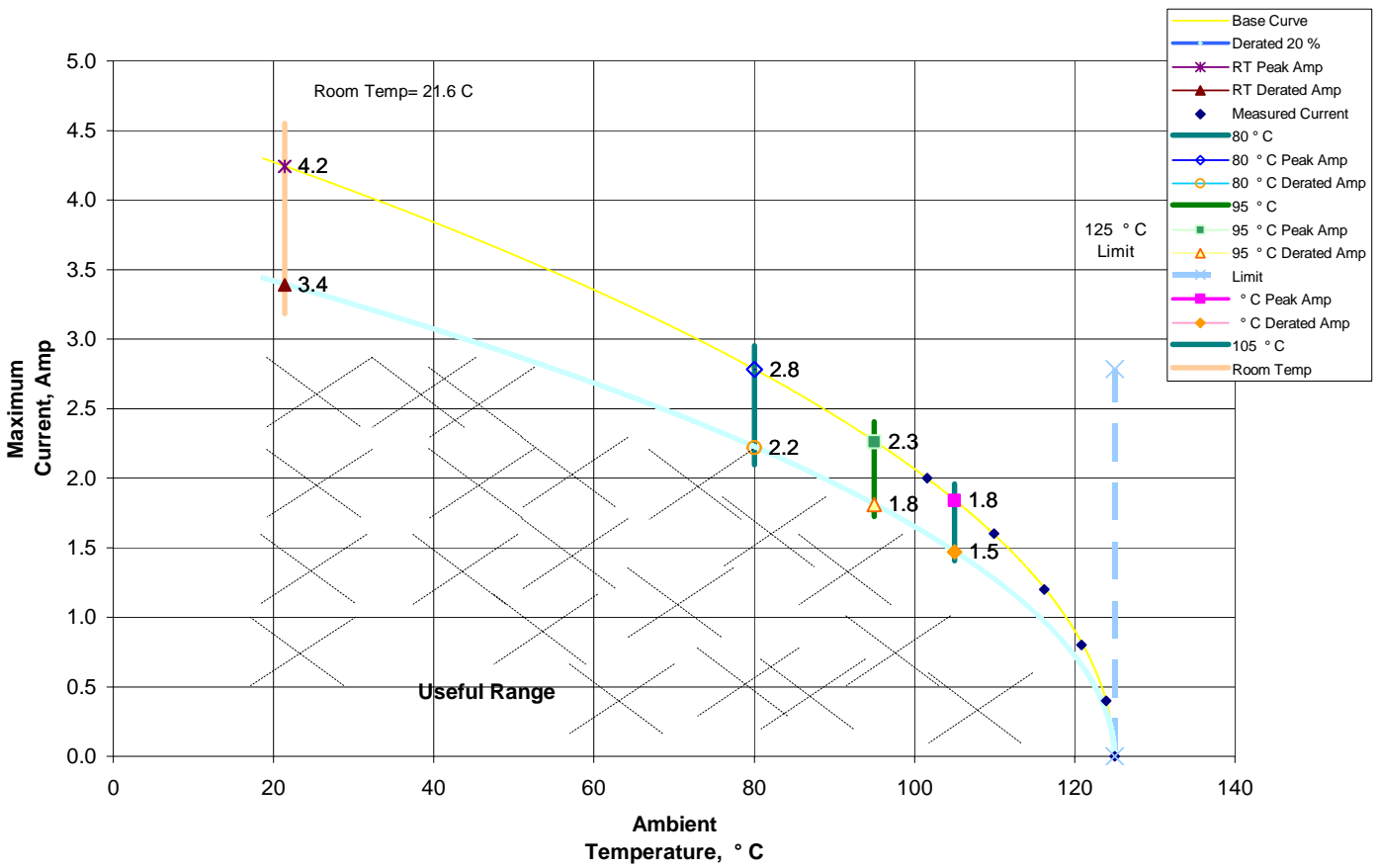
- 1) High quality thermocouples whose temperature slopes track one another were used for temperature monitoring.
- 2) The thermocouples were placed at a location to sense the MAXIMUM temperature generated during testing.
- 3) Temperature readings recorded are those for which three successive readings, 15 minutes apart, differ less than 1° C (computer controlled data acquisition).
- 4) SIX adjacent contacts were powered:
  - a) Linear configuration

TC0313--0163, BTE/BSE -01 Lead Style  
6 Contacts in Linear Series



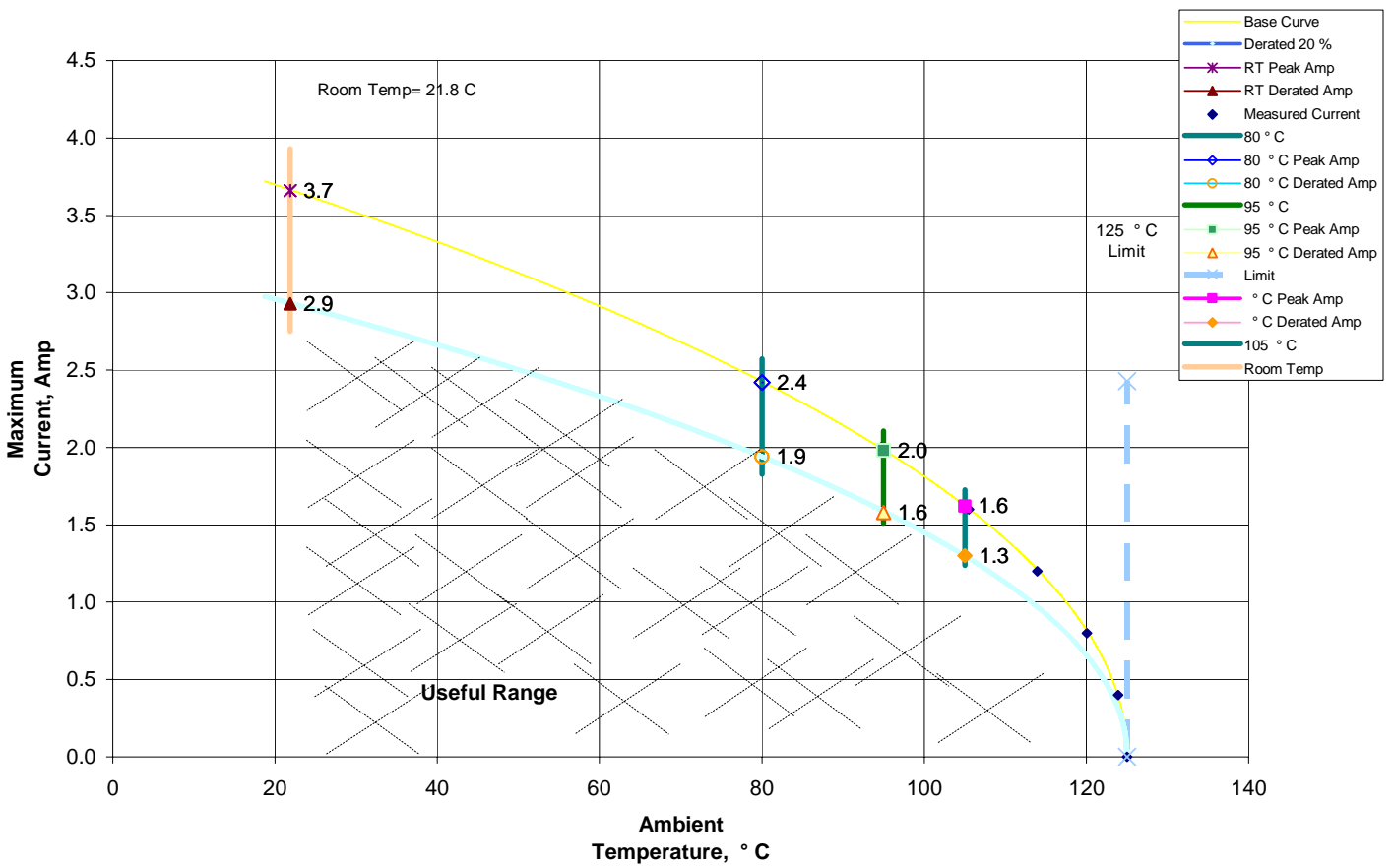
**DATA SUMMARIES Continued**

**TC0313--0163, BTE/BSE -04 Lead Style  
6 Contacts in Linear Series**



**DATA SUMMARIES Continued**

**TC0313--0163, BTE/BSE -08 Lead Style  
6 Contacts in Linear Series**



**DATA SUMMARIES Continued****DIELECTRIC WITHSTANDING VOLTAGE (DWV) – 01 Stack Height:**

<b>Initial</b>			
	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>
VAC			
<b>Average</b>	1450	1088	363
<b>Min</b>	1450	1088	363
<b>Max</b>	1450	1088	363
<b>Thermal</b>			
<b>Average</b>	1475	1106	369
<b>Min</b>	1450	1088	363
<b>Max</b>	1500	1125	375
<b>Humidity</b>			
<b>Average</b>	1325	994	331
<b>Min</b>	1300	975	325
<b>Max</b>	1350	1013	338

**DIELECTRIC WITHSTANDING VOLTAGE (DWV) – 04 Stack Height:**

<b>Initial</b>			
	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>
VAC			
<b>Average</b>	1550	1163	388
<b>Min</b>	1500	1125	375
<b>Max</b>	1600	1200	400
<b>Thermal</b>			
VAC			
<b>Average</b>	1650	1238	413
<b>Min</b>	1600	1200	400
<b>Max</b>	1700	1275	425
<b>Humidity</b>			
VAC			
<b>Average</b>	1425	1069	356
<b>Min</b>	1400	1050	350
<b>Max</b>	1450	1088	363

**DATA SUMMARIES Continued****DIELECTRIC WITHSTANDING VOLTAGE (DWV) – 08 Stack Height:****Initial**

	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>
VAC			
<b>Average</b>	1500	1125	375
<b>Min</b>	1500	1125	375
<b>Max</b>	1500	1125	375

**Thermal**

	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>
VAC			
<b>Average</b>	1400	1050	350
<b>Min</b>	1400	1050	350
<b>Max</b>	1400	1050	350

**Humidity**

	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>
VAC			
<b>Average</b>	1400	1050	350
<b>Min</b>	1350	1013	338
<b>Max</b>	1450	1088	363

**INSULATION RESISTANCE (IR) -01 Stack Height:****MegOhms****Initial**

	<b><u>Mated</u></b>	<b><u>Unmated</u></b>
<b>Average</b>	50000	100000
<b>Min</b>	50000	100000
<b>Max</b>	50000	100000
<b>Thermal</b>		
<b>Average</b>	100000	100000
<b>Min</b>	100000	100000
<b>Max</b>	100000	100000
<b>Humidity</b>		
<b>Average</b>	100000	100000
<b>Min</b>	100000	100000
<b>Max</b>	100000	100000

**DATA SUMMARIES Continued****INSULATION RESISTANCE (IR) -04 Stack Height:**

<u>MegOhms</u>		
<b>Initial</b>		
	<b>Mated</b>	<b>Unmated</b>
<b>Average</b>	7500	100000
<b>Min</b>	6000	100000
<b>Max</b>	9000	100000
<b>Thermal</b>		
<b>Average</b>	100000	100000
<b>Min</b>	100000	100000
<b>Max</b>	100000	100000
<b>Humidity</b>		
<b>Average</b>	100000	100000
<b>Min</b>	100000	100000
<b>Max</b>	100000	100000

**INSULATION RESISTANCE (IR) -08 Stack Height:**

<u>MegOhms</u>	
<b>Initial</b>	
	<b>Mated</b>
<b>Average</b>	7500
<b>Min</b>	7000
<b>Max</b>	8000
<b>Thermal</b>	
<b>Average</b>	100000
<b>Min</b>	100000
<b>Max</b>	100000
<b>Humidity</b>	
<b>Average</b>	100000
<b>Min</b>	100000
<b>Max</b>	100000

**DATA****DIELECTRIC WITHSTANDING VOLTAGE (DWV) -01 Stack Height:**

<b>Test Date:</b>	4/11/2003
<b>Operator:</b>	Troy Cook
<b>Temperature (C):</b>	20
<b>Humidity (RH):</b>	33%
<b>Pressure (In. Hg):</b>	29.23
<b>Equipment ID:</b>	HPM-01
<b>Used In:</b>	<u>BSE/BTE -</u> <u>01</u>

**Voltage Rate** 500 VAC Per Sec.

**Test Voltage** *Until Breakdown Occurs*

**Initial**

<u>Sample #</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
1	1450	1088	363
2	1450	1088	363

<b>Test Date:</b>	4/22/2003
<b>Operator:</b>	Troy Cook
<b>Temperature (C):</b>	22
<b>Humidity (RH):</b>	40%
<b>Pressure (In. Hg):</b>	29.35
<b>Equipment ID:</b>	HPM-01
<b>Used In:</b>	<u>BSE/BTE -</u> <u>01</u>

**Voltage Rate** 500 VAC Per Sec.

**Test Voltage** *Until Breakdown Occurs*

**Thermal**

<u>Sample #</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
1	1500	1125	375
2	1450	1088	363

**DATA Continued****DIELECTRIC WITHSTANDING VOLTAGE (DWV) -01 Stack Height:**

Test Date:	5/15/2003
Operator:	Troy Cook
Temperature (C):	21
Humidity (RH):	41%
Pressure (In. Hg):	29.21
Equipment ID	HPM-01
Used In:	BSE/BTE -01

Voltage Rate 500 VAC Per Sec.

Test Voltage Until Breakdown Occurs

**Humidity**

<u>Sample #</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
1	1300	975	325
2	1350	1013	338

**DIELECTRIC WITHSTANDING VOLTAGE (DWV) -04 Stack Height:**

Test Date:	4/11/2003
Operator:	Troy Cook
Temperature (C):	20
Humidity (RH):	33%
Pressure (In. Hg):	29.23
Equipment ID:	HPM-01

Used In: BSE/BTE -  
04

Voltage Rate 500 VAC Per Sec.

Test Voltage Until Breakdown Occurs

**Initial**

<u>Sample #</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
1	1600	1200	400
2	1500	1125	375

**DATA Continued****DIELECTRIC WITHSTANDING VOLTAGE (DWV) -04 Stack Height:**

Test Date:	4/22/2003
Operator:	Troy Cook
Temperature (C):	22
Humidity (RH):	39%
Pressure (In. Hg):	29.35
Equipment ID:	HPM-01

Used In:	<u>BSE/BTE -</u> <u>04</u>
----------	-------------------------------

Voltage Rate 500 VAC Per Sec.  
Test Voltage *Until Breakdown Occurs*

**Thermal**

Sample #	<u>Breakdown Voltage</u>	DWV	<u>Working Voltage</u>
1	1700	1275	425
2	1600	1200	400

Test Date:	5/15/2003
Operator:	Troy Cook
Temperature (C):	22
Humidity (RH):	41%
Pressure (In. Hg):	29.21
Equipment ID:	HPM-01

Used In:	<u>BSE/BTE -</u> <u>04</u>
----------	-------------------------------

Voltage Rate 500 VAC Per Sec.  
Test Voltage *Until Breakdown Occurs*

**Humidity**

Sample #	<u>Breakdown Voltage</u>	DWV	<u>Working Voltage</u>
1	1400	1050	350
2	1450	1088	363

**DATA Continued****DIELECTRIC WITHSTANDING VOLTAGE (DWV) -08 Stack Height:**

<b>Test Date:</b>	4/11/2003
<b>Operator:</b>	Troy Cook
<b>Temperature (C):</b>	20
<b>Humidity (RH):</b>	33%
<b>Pressure (In. Hg):</b>	29.23
<b>Equipment ID:</b>	HPM-01

Used In: 

BSE/BTE - 08
-----------------

**Voltage Rate** 500 V Per Sec.  
**Test Voltage** *Until Breakdown Occurs*

**Initial**

<b>Sample #</b>	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>
1	1500	1125	375
2	1500	1125	375

<b>Test Date:</b>	4/22/2003
<b>Operator:</b>	Troy Cook
<b>Temperature (C):</b>	22
<b>Humidity (RH):</b>	39%
<b>Pressure (In. Hg):</b>	29.35
<b>Equipment ID:</b>	HPM-01

Used In: 

BSE/BTE - 08
-----------------

**Test Voltage** *Until Breakdown Occurs*

**Thermal**

<b>Sample #</b>	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>
1	1400	1050	350
2	1400	1050	350

**DATA Continued****DIELECTRIC WITHSTANDING VOLTAGE (DWV) -08 Stack Height:**

Test Date:	5/15/2003
Operator:	Troy Cook
Temperature (C):	22
Humidity (RH):	41%
Pressure (In. Hg):	29.21
Equipment ID	HPM-01

Used In:	<u>BSE/BTE -</u> <u>08</u>
----------	-------------------------------

Voltage Rate *500 V Per Sec.*Test Voltage *Until Breakdown Occurs***Humidity**

<u>Sample #</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
1	1350	1013	338
2	1450	1088	363

**INSULATION RESISTANCE (IR) -01 Stack Height:**

Test Date:	4/10/2003
Operator:	Troy Cook
Temperature (C):	23
Humidity (RH):	32%
Pressure (In. Hg):	29.35
Equipment ID:	HPM-01
Used In:	<u>BSE/BTE -01</u>

Electrification Time *Two (2) minutes*

MegOhms

<u>Sample #</u>	<u>Initial</u>	
	<u>Mated</u>	<u>Unmated</u>
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
1	50000	100000
2	50000	100000

**DATA Continued****INSULATION RESISTANCE (IR) -01 Stack Height:**

<b>Test Date:</b>	4/22/2003
<b>Operator:</b>	Troy Cook
<b>Temperature (C):</b>	22
<b>Humidity (RH):</b>	40%
<b>Pressure (In. Hg):</b>	29.35
<b>Equipment ID:</b>	HPM-01
<b>Used In:</b>	BSE/BTE -01

Electrification Time *Two (2) minutes*  
MegOhms

<u>Sample #</u>	<b>Thermal</b>	
	<i><b>Mated</b></i>	<i><b>Unmated</b></i>
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
1	100000	100000
2	100000	100000

<b>Test Date:</b>	5/15/2003
<b>Operator:</b>	Troy Cook
<b>Temperature (C):</b>	22
<b>Humidity (RH):</b>	41%
<b>Pressure (In. Hg):</b>	29.21
<b>Equipment ID:</b>	HPM-01
<b>Used In:</b>	BSE/BTE -01

Electrification Time *Two (2) minutes*  
MegOhms

<u>Sample #</u>	<b>Humidity</b>	
	<i><b>Mated</b></i>	<i><b>Unmated</b></i>
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
1	100000	100000
2	100000	100000

**DATA Continued****INSULATION RESISTANCE (IR) -04 Stack Height:**

Test Date:	4/10/2003
Operator:	Troy Cook
Temperature (C):	23
Humidity (RH):	32%
Pressure (In. Hg):	29.35
Equipment ID:	HPM-01

Used In: 

<u>BSE/BTE -</u> <u>04</u>
-------------------------------

Electrification Time *Two (2) minutes*

MegOhms

Initial

<u>Sample</u> <u>#</u>	<i>Mated</i>	<i>Unmated</i>
	<u>Insulation</u> <u>Resistance</u>	<u>Insulation</u> <u>Resistance</u>
1	9000	100000
2	6000	100000

Test Date:	4/22/2003
Operator:	Troy Cook
Temperature (C):	22
Humidity (RH):	39%
Pressure (In. Hg):	29.35
Equipment ID:	HPM-01

Used In: 

<u>BSE/BTE -</u> <u>04</u>
-------------------------------

Electrification Time *Two (2) minutes*

MegOhms

Thermal

<u>Sample</u> <u>#</u>	<i>Mated</i>	<i>Unmated</i>
	<u>Insulation</u> <u>Resistance</u>	<u>Insulation</u> <u>Resistance</u>
1	100000	100000
2	100000	100000

**DATA Continued****INSULATION RESISTANCE (IR) -04 Stack Height:**

<b>Test Date:</b>	5/15/2003
<b>Operator:</b>	Troy Cook
<b>Temperature (C):</b>	21
<b>Humidity (RH):</b>	41%
<b>Pressure (In. Hg):</b>	29.21
<b>Equipment ID:</b>	HPM-01

<b>Used In:</b>	<u>BSE/BTE -</u> <u>04</u>
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Electrification Time *Two (2) minutes*MegOhms

Humidity

<u>Sample #</u>	<i>Mated</i>	<i>Unmated</i>
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
1	100000	100000
2	100000	100000

**INSULATION RESISTANCE (IR) -08 Stack Height:**

<b>Test Date:</b>	4/10/2003
<b>Operator:</b>	Troy Cook
<b>Temperature (C):</b>	23
<b>Humidity (RH):</b>	32%
<b>Pressure (In. Hg):</b>	29.35
<b>Equipment ID:</b>	HPM-01

<b>Used In:</b>	<u>BSE/BTE -</u> <u>08</u>
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MegOhmsElectrification Time *Two (2) minutes*

Initial

<u>Sample #</u>	<u>Insulation Resistance</u>
1	8000
2	7000

**DATA Continued****INSULATION RESISTANCE (IR) -08 Stack Height:**

<b>Test Date:</b>	4/22/2003
<b>Operator:</b>	Troy Cook
<b>Temperature (C):</b>	22
<b>Humidity (RH):</b>	39%
<b>Pressure (In. Hg):</b>	29.35
<b>Equipment ID:</b>	HPM-01

<b>Used In:</b>	BSE/BTE - 08
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MegOhms

Electrification Time *Two (2) minutes***Thermal**

<u>Sample #</u>	<u>Insulation Resistance</u>
1	100000
2	100000

<b>Test Date:</b>	5/15/2003
<b>Operator:</b>	Troy Cook
<b>Temperature (C):</b>	22
<b>Humidity (RH):</b>	41%
<b>Pressure (In. Hg):</b>	29.21
<b>Equipment ID:</b>	HPM-01

<b>Used In:</b>	BSE/BTE - 08
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MegOhms

Electrification Time *Two (2) minutes***Humidity**

<u>Sample #</u>	<u>Insulation Resistance</u>
1	100000
2	100000

**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 #:** MO-02**Description:** Multimeter /Data Acquisition System**Manufacturer:** Keithley**Model:** 2700**Serial #:** 0780546**Accuracy:** See Manual

... Last Cal: 6/25/02, Next Cal: 6/25/03

**Equipment #:** MO-04**Description:** Multimeter /Data Acquisition System**Manufacturer:** Keithley**Model:** 2700**Serial #:** 0798688**Accuracy:** See Manual

... Last Cal: 6/25/02, Next Cal: 6/25/03

**Equipment #:** TC090601-103/105**Description:** IC Thermocouple-103/105**Manufacturer:** Samtec**Model:****Serial #:** TC090601-103/105**Accuracy:** +/- 1 degree C**Equipment #:** HPM-01**Description:** Hipot Megommeter**Manufacturer:** Hipotronics**Model:** H306B-A**Serial #:** M9905004**Accuracy:** 2 % Full Scale Accuracy

... Last Cal: 6/25/02, Next Cal: 6/25/03

**Equipment #:** PS-01**Description:** System Power Supply**Manufacturer:** Hewlett Packard**Model:** HP 6033A**Serial #:** (HP) 3329A-07330**Accuracy:** See Manual 10/16/02- Had a fuse replaced and equipment was re-calibrated.

... Last Cal: 10/16/02, Next Cal: 10/31/03

Tracking Code: TC0313--0163

Part #: BTE-040-(01,04,08)-L-D-A

Part description: BTE/BSE-040

**Equipment #:** OV-03

**Description:** Cascade Tek Forced Air Oven

**Manufacturer:** Cascade Tek

**Model:** TFO-5

**Serial #:** 0500100

**Accuracy:** Temp. Stability: +/- .1C/C change in ambient Temp. Stability: +/- .1C/C change in ambient  
... Last Cal: 6/25/02, Next Cal: 6/25/03

**Equipment #:** THC-01

**Description:** Temperature/Humidity Chamber

**Manufacturer:** Thermotron

**Model:** SM-8-7800

**Serial #:** 30676

**Accuracy:** See Manual

... Last Cal: 5/13/02, Next Cal: 5/13/03