1.0 SCOPE
This Test Specification covers the 3.00 mm (.118 inch) centerline (pitch) connector series terminated with 20-30 AWG wire using crimp technology and gold plating on the contact interfaces.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME, SERIES, AND PART NUMBER(S)
- Micro-Fit (3.0) Receptacle Series: 43025, 43645, 44133 (BMI)
- Micro-Fit (3.0) Plug Series: 43020, 43640, 44300 (BMI)
- Micro-Fit (3.0) Right Angle & Vertical Header Series: 43045, 43650, 44067
- Micro-Fit (3.0) Compliant Pin Vertical Header Series: 44914
- Micro-Fit (3.0) Female Crimp Terminal Series: 43030
- Micro-Fit (3.0) Male Crimp Terminal Series: 43031
- Micro-Fit (3.0) Female Crimp Terminal with Lubricant: 45773

2.1.1 SERIES NUMBERS TESTED
- Micro-Fit (3.0) Receptacle: 43025
- Micro-Fit (3.0) Plug: 43020
- Micro-Fit (3.0) Right Angle & Vertical Headers: 43045
- Micro-Fit (3.0) Female Crimp Terminal: 43030
- Micro-Fit (3.0) Male Crimp Terminal: 43031
- Micro-Fit (3.0) Female Crimp Terminal with Lubricant: 45773

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS
See the appropriate sales drawings for information on dimensions, materials, plating, and markings.

2.3 PRODUCT SPECIFICATION TITLE AND DOCUMENT NUMBER
- Product Specification Micro-Fit Dual Row Connectors
  Document Number: PS-43045
- Product Specification Micro-Fit Single Row Connectors
  Document Number: PS-43650
- Product Specification Micro-Fit (3.0) BMI Floating Connector System
  Document Number: PS-44300-001
### 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

#### 3.1 TESTING PROCEDURES, SEQUENCES, AND SPECIFICATIONS

- NPS-25298-2
- EIA-364-65A
- EIA-364-1000.01
- MIL-STD-202 METHOD 213
- MIL-STD-202 METHOD 204

#### 3.2 OTHER DOCUMENTS AND SPECIFICATIONS

None

### 4.0 QUALIFICATION

Laboratory conditions and sample selection are in accordance with EIA-364 and NPS-25298-2.

### 5.0 PERFORMANCE RESULTS

#### 5.1 ELECTRICAL PERFORMANCE RESULTS

##### WIRE TO WIRE CONFIGURATION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>CONTACT RESISTANCE (LOW LEVEL)</td>
<td>Initial **</td>
<td>---</td>
<td>17.84 mΩ</td>
<td>17.69 mΩ</td>
<td>18.34 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Vibration</td>
<td>10 milliohms MAXIMUM</td>
<td>0.05 mΩ</td>
<td>-0.49 mΩ</td>
<td>0.46 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Δ mΩ</td>
<td>No Discontinuity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Mechanical Shock</td>
<td>10 milliohms MAXIMUM</td>
<td>0.12 mΩ</td>
<td>-0.41 mΩ</td>
<td>0.48 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Δ mΩ</td>
<td>No Discontinuity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** **A PORTION OF THE MEASUREMENT VALUE IS ATTRIBUTED TO THE BULK RESISTANCE OF THE WIRE USED IN SAMPLE PREPARATION.**

##### WIRE TO BOARD CONFIGURATION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B</td>
<td>CONTACT RESISTANCE (LOW LEVEL)</td>
<td>Initial</td>
<td>---</td>
<td>9.85 mΩ</td>
<td>9.66 mΩ</td>
<td>10.02 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Vibration</td>
<td>10 milliohms MAXIMUM</td>
<td>-0.07 mΩ</td>
<td>-0.21 mΩ</td>
<td>0.00 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Δ mΩ</td>
<td>No Discontinuity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Mechanical Shock</td>
<td>10 milliohms MAXIMUM</td>
<td>-0.02 mΩ</td>
<td>-0.15 mΩ</td>
<td>0.09 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Δ mΩ</td>
<td>No Discontinuity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** SEE APPENDIX “A” FOR TEST SEQUENCE “1” DESCRIPTION
## 5.1 ELECTRICAL PERFORMANCE RESULTS (continued)

### WIRE TO WIRE CONFIGURATION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A</td>
<td>Contact Resistance (Low Level)</td>
<td>Initial **</td>
<td>---</td>
<td>17.84 mΩ</td>
<td>17.70 mΩ</td>
<td>17.98 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Thermal Shock Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>0.05 mΩ</td>
<td>-0.02 mΩ</td>
<td>0.21 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Cyclic Humidity Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>0.04 mΩ</td>
<td>-0.08 mΩ</td>
<td>0.64 mΩ</td>
</tr>
</tbody>
</table>

**NOTE:** **A PORTION OF THE MEASUREMENT VALUE IS ATTRIBUTED TO THE BULK RESISTANCE OF THE WIRE USED IN SAMPLE PREPARATION.**

### WIRE TO BOARD CONFIGURATION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2B</td>
<td>Contact Resistance (Low Level)</td>
<td>Initial</td>
<td>---</td>
<td>5.01 mΩ</td>
<td>4.83 mΩ</td>
<td>5.36 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Thermal Shock Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>-0.01 mΩ</td>
<td>-0.15 mΩ</td>
<td>0.16 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Cyclic Humidity Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>-0.02 mΩ</td>
<td>-0.15 mΩ</td>
<td>0.19 mΩ</td>
</tr>
</tbody>
</table>

### ITEM 2C AND 2D:

ALL OF THE SAMPLES USED IN THE SEQUENCE “2” (GROUP 2) INSULATION RESISTANCE AND DIELECTRIC WITHSTANDING VOLTAGE TESTING PASSED WITHOUT FAILURE (WIRE TO WIRE AND WIRE TO BOARD).

**NOTE:** SEE APPENDIX “A” FOR TEST SEQUENCE “2” DESCRIPTION

### WIRE TO WIRE CONFIGURATION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>3A</td>
<td>Contact Resistance (Low Level)</td>
<td>Initial **</td>
<td>---</td>
<td>17.84 mΩ</td>
<td>17.64 mΩ</td>
<td>19.99 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Thermal Aging Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>0.07 mΩ</td>
<td>-1.09 mΩ</td>
<td>0.16 mΩ</td>
</tr>
</tbody>
</table>

**NOTE:** **A PORTION OF THE MEASUREMENT VALUE IS ATTRIBUTED TO THE BULK RESISTANCE OF THE WIRE USED IN SAMPLE PREPARATION.**
## 5.1 ELECTRICAL PERFORMANCE RESULTS (continued)

### WIRE TO BOARD CONFIGURATION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>Contact Resistance (Low Level)</td>
<td>Initial</td>
<td>---</td>
<td>4.98 mΩ</td>
<td>4.87 mΩ</td>
<td>5.20 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Thermal Aging</td>
<td>10 milliohms MAXIMUM</td>
<td>0.03 mΩ</td>
<td>-0.03 mΩ</td>
<td>0.10 mΩ</td>
</tr>
</tbody>
</table>

SEE APPENDIX “A” FOR TEST SEQUENCE “3” DESCRIPTION

### 43030 FEMALE CRIMP TERMINAL

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>4A</td>
<td>Contact Resistance (Low Level)</td>
<td>Initial</td>
<td>---</td>
<td>3.27 mΩ</td>
<td>3.15 mΩ</td>
<td>3.41 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Thermal Age</td>
<td>10 milliohms MAXIMUM</td>
<td>0.02 mΩ</td>
<td>-0.01 mΩ</td>
<td>0.04 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Tensile Strength</td>
<td>10 milliohms MAXIMUM</td>
<td>0.02 mΩ</td>
<td>-0.02 mΩ</td>
<td>0.04 mΩ</td>
</tr>
</tbody>
</table>

### 43031 MALE CRIMP TERMINAL

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>4B</td>
<td>Contact Resistance (Low Level)</td>
<td>Initial</td>
<td>---</td>
<td>3.31 mΩ</td>
<td>3.17 mΩ</td>
<td>3.40 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Thermal Age</td>
<td>10 milliohms MAXIMUM</td>
<td>0.02 mΩ</td>
<td>0.00 mΩ</td>
<td>0.04 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Tensile Strength</td>
<td>10 milliohms MAXIMUM</td>
<td>0.02 mΩ</td>
<td>0.00 mΩ</td>
<td>0.05 mΩ</td>
</tr>
</tbody>
</table>

NOTE: SEE APPENDIX “A” FOR TEST SEQUENCE “4” DESCRIPTION
5.1 ELECTRICAL PERFORMANCE RESULTS (continued)

### 43030 FEMALE CRIMP TERMINAL

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>4A</td>
<td>Initial</td>
<td>---</td>
<td></td>
<td>3.45 mΩ</td>
<td>3.24 mΩ</td>
<td>3.74 mΩ</td>
</tr>
<tr>
<td></td>
<td>After Thermal Age</td>
<td>10 milliohms MAXIMUM</td>
<td>0.00 mΩ</td>
<td>-0.01 mΩ</td>
<td>0.02 mΩ</td>
<td></td>
</tr>
<tr>
<td></td>
<td>After Gas Tightness</td>
<td>10 milliohms MAXIMUM</td>
<td>0.01 mΩ</td>
<td>0.00 mΩ</td>
<td>0.05 mΩ</td>
<td></td>
</tr>
</tbody>
</table>

### 43031 MALE CRIMP TERMINAL

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>4B</td>
<td>Initial</td>
<td>---</td>
<td></td>
<td>3.48 mΩ</td>
<td>3.25 mΩ</td>
<td>3.73 mΩ</td>
</tr>
<tr>
<td></td>
<td>After Thermal Age</td>
<td>10 milliohms MAXIMUM</td>
<td>0.01 mΩ</td>
<td>-0.01 mΩ</td>
<td>0.03 mΩ</td>
<td></td>
</tr>
<tr>
<td></td>
<td>After Gas Tightness</td>
<td>10 milliohms MAXIMUM</td>
<td>0.02 mΩ</td>
<td>-0.01 mΩ</td>
<td>0.05 mΩ</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: SEE APPENDIX “A” FOR TEST SEQUENCE “4” DESCRIPTION
## TEST SUMMARY

### 5.1 ELECTRICAL PERFORMANCE RESULTS (continued)

**NOTE:** The following Mixed Flowing Gas Testing results are for the MicroFit Female Crimp Terminal 45773 series (43030 series terminal with environmental lube applied).

#### WIRE TO WIRE CONFIGURATION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>5A</td>
<td>Contact Resistance (Low Level)</td>
<td>Initial **</td>
<td>---</td>
<td>18.16 mΩ</td>
<td>18.03 mΩ</td>
<td>18.59 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Durability Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>-0.12 mΩ</td>
<td>-0.67 mΩ</td>
<td>0.03 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Unmated 5 days Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>-0.05 mΩ</td>
<td>-0.57 mΩ</td>
<td>0.65 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Unmated 10 days Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>0.05 mΩ</td>
<td>-1.10 mΩ</td>
<td>1.05 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Mated 15 days Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>0.04 mΩ</td>
<td>-0.12 mΩ</td>
<td>0.24 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Mated 20 days Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>-0.01 mΩ</td>
<td>-0.99 mΩ</td>
<td>2.57 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Durability Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>-0.22 mΩ</td>
<td>-2.58 mΩ</td>
<td>0.50 mΩ</td>
</tr>
</tbody>
</table>

**NOTE:** **A PORTION OF THE MEASUREMENT VALUE IS ATTRIBUTED TO THE BULK RESISTANCE OF THE WIRE USED IN SAMPLE PREPARATION.**

#### WIRE TO BOARD CONFIGURATION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>5B</td>
<td>Contact Resistance (Low Level)</td>
<td>Initial</td>
<td>---</td>
<td>5.24 mΩ</td>
<td>5.09 mΩ</td>
<td>5.42 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Durability Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>-0.01 mΩ</td>
<td>-0.32 mΩ</td>
<td>0.24 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Unmated 5 days Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>0.03 mΩ</td>
<td>-0.30 mΩ</td>
<td>1.03 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Unmated 10 days Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>0.00 mΩ</td>
<td>-0.36 mΩ</td>
<td>0.18 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Mated 15 days Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>0.09 mΩ</td>
<td>-0.33 mΩ</td>
<td>0.58 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Mated 20 days Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>0.04 mΩ</td>
<td>-0.29 mΩ</td>
<td>0.42 mΩ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Durability Δ mΩ</td>
<td>10 milliohms MAXIMUM</td>
<td>0.11 mΩ</td>
<td>-0.11 mΩ</td>
<td>0.39 mΩ</td>
</tr>
</tbody>
</table>

**NOTE:** SEE APPENDIX “A” FOR TEST SEQUENCE “5” DESCRIPTION
### 5.2 MECHANICAL PERFORMANCE RESULTS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>TREATMENT</th>
<th>REQUIREMENT</th>
<th>MEAN</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>3C</td>
<td>Contact Normal Force (grams)</td>
<td>Initial</td>
<td>275 g Min</td>
<td>443 g</td>
<td>413 g</td>
<td>466 g</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Thermal Age</td>
<td>275 g Min</td>
<td>292 g</td>
<td>285 g</td>
<td>297 g</td>
</tr>
</tbody>
</table>

NOTE: SEE APPENDIX “A” FOR TEST SEQUENCE “3” DESCRIPTION
APPENDIX A
TEST SEQUENCES
A.1 TEST SEQUENCES

Sequence 1
- Wire to Wire (1A)
- Wire to Board (1B)
  - Initial Contact Resistance
  - Vibration
    10g: 10-500 Hz
  - Contact Resistance
  - Mechanical Shock
    50g: half sine 11ms. pulse duration
  - Final Contact Resistance

Sequence 2
- Group 1
  - Mounted to PCB's
  - Wire to Wire (2A)
  - Wire to Board (2B)
  - Initial Contact Resistance
  - Thermal Shock
    -55°C to 85°C
    30 minute dwell
    100 cycles
  - Contact Resistance
  - Moisture Resistance
    25°C to 65°C
    95% RH
    10 days
  - Final Contact Resistance

- Group 2
  - Loose Connectors
  - Wire to Wire (2C)
  - Wire to Board (2D)
  - Insulation Resistance
  - Dielectric Withstanding
  - Thermal Shock
    -55°C to 85°C
    30 minute dwell
    100 cycles
  - Insulation Resistance
  - Dielectric Withstanding
  - Moisture Resistance
    25°C to 65°C
    95% RH
    10 days
  - Insulation Resistance
  - Dielectric Withstanding

TITLE:
MICRO-FIT (3.0)
DUAL ROW CONNECTORS (GOLD)
A.1 TEST SEQUENCES (continued)

Sequence 3

Group 1
Wire to Wire (3A)
Wire to Board (3B)

Initial Contact Resistance

Thermal Aging 105°C 500 hours

Final Contact Resistance

Sequence 4

Initial Cable Termination Resistance (Female 4A) (Male 4B)

Thermal Aging 105°C 500 hours

Cable Termination Resistance

Lot 1 Cable Termination Tensile Strength

Lot 2 Termination Gas Tightness

Final Cable Termination Resistance

Group 2
Loose Contacts (3C)

Initial Normal Force

Thermal Aging 105°C 500 hours

Final Normal Force

Initial Contact Resistance

Thermal Aging 105°C 500 hours

Final Contact Resistance

Group 2
Loose Contacts (3C)

Initial Normal Force

Thermal Aging 105°C 500 hours

Final Normal Force

Initial Contact Resistance

Thermal Aging 105°C 500 hours

Final Contact Resistance

Group 1
Wire to Wire (3A)
Wire to Board (3B)
A.1 TEST SEQUENCES (continued)

Sequence 5

Wire to Wire (5A)  
Wire to Board (SB)

Initial Contact  
Resistance

Durability  
25 Cycles

Mixed Flowing Gas  
(Unmated - 5 days)

Contact Resistance

Mixed Flowing Gas  
(Unmated - 5 days)

Contact Resistance

Mixed Flowing Gas  
(Mated - 5 days)

Contact Resistance

Mixed Flowing Gas  
(Mated - 5 days)

Contact Resistance

Mixed Flowing Gas  
(Mated - 5 days)

Contact Resistance

Final Contact  
Resistance

Durability  
25 Cycles