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ELECTRONICS

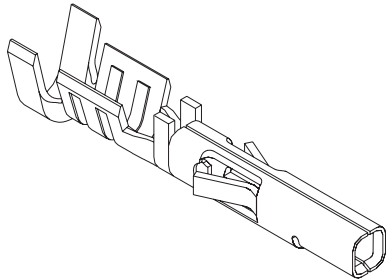
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Jameco Part Number 1931851

## 3.00mm (.118") Pitch Micro-Fit 3.0™ Terminal

**43030**  
Female



### Features and Benefits

- 4 points of contact for optimum reliability
- Box-type spring contact for high normal force
- Locking tang secures terminal in housing

### Reference Information

Product Specification: PS-43045/PS-43650  
Packaging: Bag or reel  
UL File No.: E29179  
CSA File No.: LR19980  
TUV License No.: R72040445  
Use With: 43025, 43645 and 44133 receptacles  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 5.0A max.  
Contact Resistance: 10 milliohms max.

### Mechanical

Contact Insertion Force: 1.5kgf max. (3.30 lb)  
Contact Retention to Housing: 2.5kgf min. (5.50 lb)  
Crimping Pull-Out Force:

| Wire Gauge (AWG) | Kgf min. (lb) |
|------------------|---------------|
| 20               | 6.0 (13.2)    |
| 22               | 4.5 (9.9)     |
| 24               | 3.6 (7.9)     |
| 26               | 2.7 (5.9)     |
| 28               | 1.8 (3.9)     |
| 30               | 1.4 (3.0)     |

Mating Force: 1.0kgf max. (2.2 lb) per contact  
Normal Force: 375gf max. (0.32 lb)

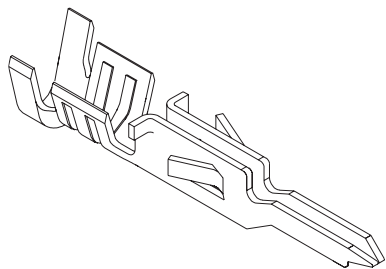
### Physical

Contact: Phosphor Bronze  
Plating: Tin or Gold

| Wire Size AWG | Plating   | Order No.                  |                            | Lead-free |
|---------------|-----------|----------------------------|----------------------------|-----------|
|               |           | Reel                       | Bag                        |           |
| 20-24         | Tin       | <a href="#">43030-0001</a> | <a href="#">43030-0007</a> | Yes       |
| 26-30         |           | <a href="#">43030-0004</a> | <a href="#">43030-0010</a> |           |
| 20-24         | 15µ" Gold | <a href="#">43030-0002</a> | <a href="#">43030-0008</a> |           |
| 26-30         |           | <a href="#">43030-0005</a> | <a href="#">43030-0011</a> |           |
| 20-24         | 30µ" Gold | <a href="#">43030-0003</a> | <a href="#">43030-0009</a> |           |
| 26-30         |           | <a href="#">43030-0006</a> | <a href="#">43030-0012</a> |           |

## 3.00mm (.118") Pitch Micro-Fit 3.0™ Terminal

**43031**  
Male



### Features and Benefits

- Box-type spring contact for high normal force
- Locking tang secures terminal in housing

### Reference Information

Product Specification: PS-43045/PS-43650  
Packaging: Bag or reel  
UL File No.: E29179  
CSA File No.: LR19980  
TUV License No.: R72040445  
Use With: 43020, 43640 and 44300 plugs  
Designed In: Millimeters

### Electrical

Voltage: 250V  
Current: 5.0A max.  
Contact Resistance: 10 milliohms max.

### Mechanical

Contact Insertion Force: 1.5kgf max. (3.30 lb)  
Contact Retention to Housing: 2.5kgf min. (5.50 lb)  
Crimping Pull-Out Force:

| Wire Gauge | Kgf min. (lb) |
|------------|---------------|
| 20         | 6.0 (13.2)    |
| 22         | 4.5 (9.9)     |
| 24         | 3.6 (7.9)     |
| 26         | 2.7 (5.9)     |
| 28         | 1.8 (3.9)     |
| 30         | 1.4 (3.0)     |

### Physical

Contact: Phosphor Bronze  
Plating: Tin or Gold

| Wire Size AWG | Plating   | Order No.                  |                            | Lead-free |
|---------------|-----------|----------------------------|----------------------------|-----------|
|               |           | Reel                       | Bag                        |           |
| 20-24         | Tin       | <a href="#">43031-0001</a> | <a href="#">43031-0007</a> | Yes       |
| 26-30         |           | <a href="#">43031-0004</a> | <a href="#">43031-0010</a> |           |
| 20-24         | 15µ" Gold | <a href="#">43031-0002</a> | <a href="#">43031-0008</a> |           |
| 26-30         |           | <a href="#">43031-0005</a> | <a href="#">43031-0011</a> |           |
| 20-24         | 30µ" Gold | <a href="#">43031-0003</a> | <a href="#">43031-0009</a> |           |
| 26-30         |           | <a href="#">43031-0006</a> | <a href="#">43031-0012</a> |           |



# PRODUCT SPECIFICATION

## MICRO-FIT

### 1.0 SCOPE

This Product Specification covers the 3.00 mm (.118 inch) centerline (pitch) square pin headers when mated with either printed circuit board (PCB) connector or connectors terminated with 20 to 30 AWG wire using crimp technology.

### 2.0 PRODUCT DESCRIPTION

#### 2.1 PRODUCT NAME AND SERIES NUMBERS

Receptacle: 43025      Terminal: 43030  
Plug: 43020            Terminal: 43031  
Headers: 43045, 44914

Test Plug: 44242 (recommended for continuity testing only)

Other products conforming to this specification are noted on the individual drawings.

#### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

Housings: Polyester or LCP

Terminal: Phosphor Bronze

Pins: Brass, Modified Tin/Brass

#### 2.3 SAFETY AGENCY APPROVALS

UL File Number: E29179

CSA: LR19980

TUV: R95107

### 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

### 4.0 RATINGS

#### 4.1 VOLTAGE

UL: 250 Volts

TUV: 200 Volts

**4.2 CURRENT AND APPLICABLE WIRES** (Current is dependent on connector size, contact material, plating, ambient temperature, printed circuit board characteristics and related factors. Actual current rating is application dependent and should be evaluated for each application.)

| AWG | Amps | Max. Outside Insulation Diameter |
|-----|------|----------------------------------|
| 20  | 5    | 1.85 mm (.073 inch)              |
| 22  | 5    | 1.85 mm (.073 inch)              |
| 24  | 4    | 1.85 mm (.073 inch)              |
| 26  | 3    | 1.27 mm (.050 inch)              |
| 28  | 2    | 1.27 mm (.050 inch)              |
| 30  | 1    | 1.27 mm (.050 inch)              |

#### 4.2.1 CURRENT FOR TEST PLUG 44242

2.5 Amps Maximum (Pogo pin current capacity)

#### 4.3 TEMPERATURE

Operating: - 40°C to + 105°C (Including Terminal Temperature Rise)

Nonoperating: - 40°C to + 105°

|  |   |   |                                       |
|--|---|---|---------------------------------------|
| <b>REVISION:</b><br><br><b>I</b>           | <b>EGR/ECN INFORMATION:</b><br><b>EC No: UCP2004-1424</b><br><b>DATE: 2004/2/03</b> | <b>TITLE:</b><br><b>PRODUCT SPECIFICATION</b><br><b>MICRO-FIT</b><br><b>DUAL ROW CONNECTORS</b> | <b>SHEET No.</b><br><br><b>1 of 5</b> |
| <b>DOCUMENT NUMBER:</b><br><b>PS-43045</b> | <b>CREATED / REVISED BY:</b><br><b>J.CERNY</b>                                      | <b>CHECKED BY:</b><br><b>F.SMITH</b>  | <b>APPROVED BY:</b><br><b>F.SMITH</b> |



# PRODUCT SPECIFICATION

## 5.0 PERFORMANCE

### 5.1 ELECTRICAL REQUIREMENTS

| DESCRIPTION   | TEST CONDITION  | REQUIREMENT                             |
|---|---|---|
| <b>Contact Resistance (Low Level)</b>                     | Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA. (Does not include wire resistance)   | 10 milliohms<br>MAXIMUM<br>[initial]    |
| <b>Contact Resistance @ Rated Current</b>                 | Mate connectors: apply a maximum voltage of 20 mV at rated current.   | 30 milliohms<br>MAXIMUM<br>[initial]    |
| <b>Contact Resistance of Wire Termination (Low Level)</b> | Terminate the applicable wire to the terminal and measure wire using a voltage of 20 mV and a current of 100 mA.  | 5 milliohms<br>MAXIMUM<br>[initial]     |
| <b>Insulation Resistance</b>                              | Unmate & unmount connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.   | 1000 Megohms<br>MINIMUM                 |
| <b>Dielectric Withstanding Voltage</b>                    | Unmate connectors: apply a voltage of {two times the rated voltage plus 1000 volts} VAC for 1 minute between adjacent terminals and between terminals to ground.                                  | No breakdown;<br>current leakage < 5 mA |
| <b>Capacitance</b>  | Measure between adjacent terminals at 1 MHz.  | 2 picofarads<br>MAXIMUM                 |
| <b>Temperature Rise (via Current Cycling)</b>             | Mate connectors: measure the temperature rise at the rated current after:<br>1) 96 hours (steady state)<br>2) 240 hours (45 minutes ON and 15 minutes OFF per hour)<br>3) 96 hours (steady state) | Temperature rise:<br>+30°C MAXIMUM      |

### 5.2 MECHANICAL REQUIREMENTS

| DESCRIPTION                                    | TEST CONDITION   | REQUIREMENT  |
|--|--|--|
| <b>Connector Mate and Unmate Forces</b>        | Mate and unmate connector (male to female) at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute. (Per circuit) | 8.0 N (1.8 lbf)<br>MAXIMUM insertion force<br>&<br>3.7 N (0.8 lbf)<br>MINIMUM withdrawal force |
| <b>Terminal Retention Force (in Housing)</b>   | Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.       | 24.5 N (5.5 lbf)<br>MINIMUM retention force  |
| <b>Terminal Insertion Force (into Housing)</b> | Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch).                      | 14.7 N (3.3 lbf)<br>MAXIMUM insertion force  |

|  |   |   |                                       |
|--|---|---|---------------------------------------|
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| <b>DOCUMENT NUMBER:</b><br><b>PS-43045</b> | <b>CREATED / REVISED BY:</b><br><b>J.CERNY</b>                                      | <b>CHECKED BY:</b><br><b>F.SMITH</b>  | <b>APPROVED BY:</b><br><b>F.SMITH</b> |



# PRODUCT SPECIFICATION

## 5.2 MECHANICAL REQUIREMENTS

|   |   |  |
|---|---|--|
| <b>Durability</b>   | Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.                 | 20 milliohms MAXIMUM (change from initial)   |
| <b>Vibration (Random)</b>   | Mate connectors and vibrate per EIA 364-28, test condition VII.   | 20 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond   |
| <b>Shock (Mechanical)</b>   | Mate connectors and shock at 50 g's with 1/2 sine wave (11 milliseconds) shocks in the ±X,±Y,±Z axes (18 shocks total). | 20 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond   |
| <b>Wire Pullout Force (Axial)</b><br>(Wire from Terminal)         | Apply an axial pullout force on the wire at a rate of 25 ± 6 mm (1 ± 1/4 inch).   | MINIMUM pullout force<br>20 awg: 57.8 N (13.0 lbf)<br>22 awg: 35.6 N (8.0 lbf)<br>24 awg: 22.2 N (5.0 lbf)<br>26 awg: 13.3 N (3.0 lbf)<br>28 awg: 8.9 N (2.0 lbf)<br>30 awg: 6.6 N (1.5 lbf) |
| <b>Normal Force</b>   | Apply a perpendicular force.  | 2.7 N (275 grams) MINIMUM  |
| <b>Pin to Header Retention</b>                                    | Apply axial push force to pin at a rate of 25 ± 6 mm (1 ± 1/4 inch) per minute.   | 13.7 N (3.1 lbf) MINIMUM pushout force   |
| <b>Thumb Latch to Ramp Yield Strength</b>                         | Full mate and then Unmate the connectors at a rate of 25 ± 6 mm (1 ± 1/4 inch) per minute.                              | 68.4 N (15.4 lbf) MINIMUM Yield Strength   |
| <b>Panel Mount Retention</b>                                      | Full mate and then Unmate the connectors at a rate of 25 ± 6 mm (1 ± 1/4 inch) per minute.                              | 155.7 N (35 lbf) MINIMUM pushout force   |
| <b>Compliant Pin Insertion Force into PCB Hole (44914 Series)</b> | Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± 1/4 inch).                                   | 106.7 N (24 lbf) MAXIMUM Insertion force (Per Terminal)  |
| <b>Compliant Pin Retention Force in PCB Hole (44914 Series)</b>   | Apply an axial extraction force on the terminal at a rate of 25 ± 6 mm (1 ± 1/4 inch).                                  | 35.6 N (8 lbf) MINIMUM Retention force (Per Terminal)  |

|  |   |   |                                       |
|--|---|---|---------------------------------------|
| <b>REVISION:</b><br><b>I</b>               | <b>EGR/ECN INFORMATION:</b><br>EC No: <b>UCP2004-1424</b><br>DATE: <b>2004/2/03</b> | <b>TITLE:</b><br><b>PRODUCT SPECIFICATION<br/>MICRO-FIT<br/>DUAL ROW CONNECTORS</b> | <b>SHEET No.</b><br><b>3 of 5</b>     |
| <b>DOCUMENT NUMBER:</b><br><b>PS-43045</b> | <b>CREATED / REVISED BY:</b><br><b>J.CERNY</b>                                      | <b>CHECKED BY:</b><br><b>F.SMITH</b>  | <b>APPROVED BY:</b><br><b>F.SMITH</b> |



# PRODUCT SPECIFICATION

## 5.3 ENVIRONMENTAL REQUIREMENTS

| DESCRIPTION  | TEST CONDITION  | REQUIREMENT   |
|--|---|---|
| <b>Thermal Aging</b>   | Mate connectors; expose to:<br>240 hours at 105 ± 2°C<br>OR<br>500 hours at 85 ± 2°C  | 20 milliohms MAXIMUM<br>(change from initial])<br>&<br>Visual: No Damage  |
| <b>Humidity<br/>(Steady State)</b>   | Mate connectors: expose to a temperature of<br>40 ± 2°C with a relative humidity of 90-95%<br>for 96 hours.<br><br>Note: Remove surface moisture and air dry<br>for 1 hour prior to measurements. | 20 milliohms MAXIMUM<br>(change from initial)<br>&<br>Dielectric Withstanding<br>Voltage:<br>No Breakdown at 500 VAC<br>&<br>Insulation Resistance:<br>1000 Megohms MINIMUM<br>&<br>Visual: No Damage |
| <b>Solderability</b>   | Per SMES-152  | Solder coverage:<br>95% MINIMUM (per SMES-152)  |
| <b>Solder Resistance</b>   | Dip connector terminal tails in solder:<br>Solder Duration: 5 ± 0.5 seconds;<br>Solder Temperature: 260 ± 5°C   | Visual:<br>No Damage to insulator<br>material   |
| <b>Salt Spray</b>  | Mate connectors:<br>Duration: 48 hours exposure;<br>Atmosphere: salt spray from a 5% solution;<br>Temperature: 35 +1/-2°C   | 20 milliohms MAXIMUM<br>(change from initial)<br>&<br>Visual: No Damage   |
| <b>Cold Resistance</b>   | Mate connectors:<br>Duration: 96 hours;<br>Temperature: -40 ± 3°C   | 20 milliohms MAXIMUM<br>(change from initial)<br>&<br>Visual: No Damage   |
| <b>Corrosive<br/>Atmosphere:<br/>Sulfur Dioxide Gas<br/>(SO<sub>2</sub>)</b> | Mate connectors:<br>Duration: 24 hours exposure;<br>Atmosphere: 50 parts per million (ppm) SO <sub>2</sub><br>gas; Temperature: 40 ± 3°C  | 20 milliohms MAXIMUM<br>(change from initial)<br>&<br>Visual: No Damage   |
| <b>Corrosive<br/>Atmosphere:<br/>Ammonia Gas<br/>(NH<sub>3</sub>)</b>        | Mate connectors:<br>Duration: 40 minutes exposure;<br>Atmosphere: NH <sub>3</sub> gas evaporating from a<br>28% Ammonia solution  | 20 milliohms MAXIMUM<br>(change from initial)<br>&<br>Visual: No Damage   |

|  |   |   |                                       |
|--|---|---|---------------------------------------|
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| <b>DOCUMENT NUMBER:</b><br><b>PS-43045</b> | <b>CREATED / REVISED BY:</b><br><b>J.CERNY</b>                                      | <b>CHECKED BY:</b><br><b>F.SMITH</b>  | <b>APPROVED BY:</b><br><b>F.SMITH</b> |



# PRODUCT SPECIFICATION

## 6.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage per the packaging specifications listed below:

Receptacle: PK-43025-001

Plug: PK-43020-001

Headers: PK-70873-0313, PK-70873-0314, PK-70873-05\*\*.

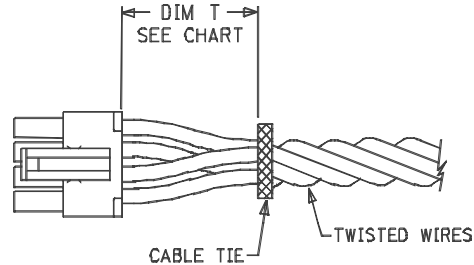
## 7.0 GAGES AND FIXTURES

It is recommended that test plugs (Series 44242) be used for continuity testing of receptacles. Standard mating parts should not be used for harness testing.

## 8.0 OTHER INFORMATION

### 8.1 CABLE TIE AND OR WIRE TWIST LOCATION

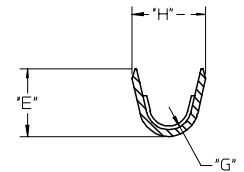
| CKT Sizes | Dim T | Min.    |
|-----------|-------|---------|
| 2-8       | .500  | (12.70) |
| 10-16     | .750  | (19.10) |
| 18-24     | 1.000 | (25.40) |



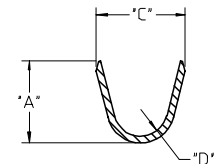
|                                     |  |  |                                |
|-------------------------------------|--|--|--------------------------------|
| REVISION:<br><b>I</b>               | EGR/ECN INFORMATION:<br>EC No: <b>UCP2004-1424</b><br>DATE: <b>2004/2/03</b> | TITLE:<br><b>PRODUCT SPECIFICATION<br/>MICRO-FIT<br/>DUAL ROW CONNECTORS</b> | SHEET No.<br><b>5 of 5</b>     |
| DOCUMENT NUMBER:<br><b>PS-43045</b> | CREATED / REVISED BY:<br><b>J.CERNY</b>                                      | CHECKED BY:<br><b>F.SMITH</b>  | APPROVED BY:<br><b>F.SMITH</b> |

| WIRE SIZE | MAX INSULATION | "A"<br>±.012<br>±0.30 | "C"<br>±.012<br>±0.30 | "D"<br>±.005<br>±0.13 | "E"<br>±.012<br>±0.30 | "G"<br>±.005<br>±0.13 | "H"<br>±.012<br>±0.30 |
|-----------|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 20-24     | .073/1.85      | .090/2.29             | .100/2.54             | .030/0.76             | .075/1.91             | .025/0.64             | .082/2.08             |
| 26-30     | .050/1.27      | .075/1.91             | .083/2.10             | .025/0.64             | .058/1.47             | .020/0.51             | .065/1.65             |

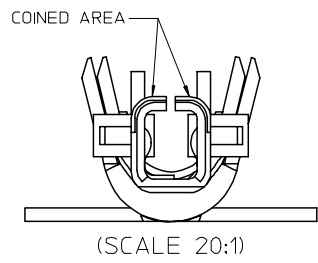
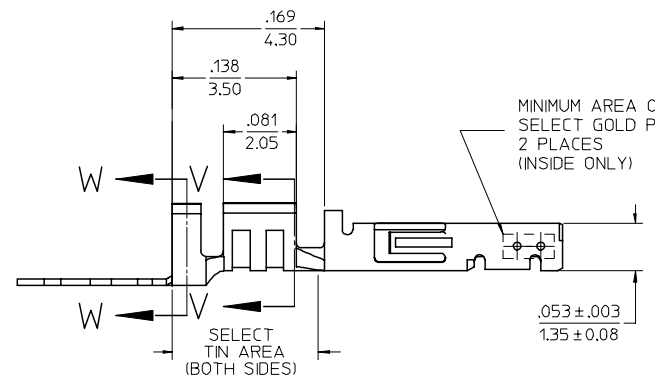
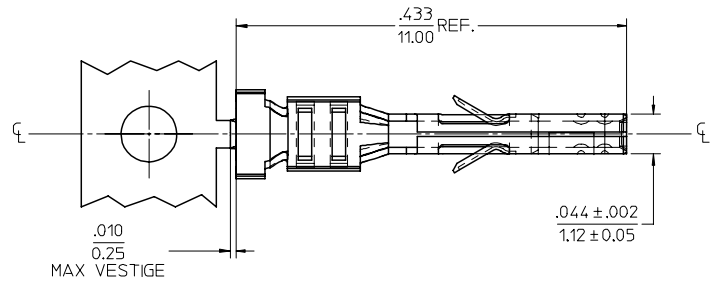
| MATERIAL NUMBER | PLATING | WIRE SIZE | FORM  |
|-----------------|---------|-----------|-------|
| 43030-0001      | A       | 20-24     | CHAIN |
| 43030-0002      | B       | 20-24     | CHAIN |
| 43030-0003      | C       | 20-24     | CHAIN |
| 43030-0004      | A       | 26-30     | CHAIN |
| 43030-0005      | B       | 26-30     | CHAIN |
| 43030-0006      | C       | 26-30     | CHAIN |
| 43030-0007      | A       | 20-24     | LOOSE |
| 43030-0008      | B       | 20-24     | LOOSE |
| 43030-0009      | C       | 20-24     | LOOSE |
| 43030-0010      | A       | 26-30     | LOOSE |
| 43030-0011      | B       | 26-30     | LOOSE |
| 43030-0012      | C       | 26-30     | LOOSE |



SECTION V-V



SECTION W-W



NOTES

- 1) MATERIAL: PHOSPHOR BRONZE ALLOY
- 2) TERMINAL PLATING:  
 \*A\* - HOT TIN DIP: .000040/0.00102 MIN.  
 \*B\* - .000015/0.00038 MIN. SELECT GOLD  
 .000100/0.00254 MIN. SELET TIN  
 ALL OVER .000050/0.00127 MIN. NICKEL OVERALL.  
 \*C\* - .000030/0.00076 MIN. SELECT GOLD  
 .000100/0.00254 MIN. SELECT TIN  
 ALL OVER .000050/0.00127 MIN. NICKEL OVERALL.  
 \* THE PRIMARY SHIPPING CARTON WILL BE LABELED "COMPLIANT TO ROHS DIRECTIVE 2002/95/EC AND ELV ANNEX II OF DIRECTIVE 2000/53/EC." CARTONS WITHOUT THIS LABEL MAY CONTAIN PRODUCT WITH TIN/LEAD IN THE PC TAIL AREA.  
 MATERIAL NUMBERS WITH SELECT PLATING ARE POST PLATED.
- 3) PRODUCT SPECIFICATION: PS-43045, PS-43650, PS-44300-001.
- 4) PACKAGING SPECIFICATION: PK-43030-001
- 5) TERMINAL FOR USE IN A MICRO FIT RECEPTACLE #43025-\*\*\*\*, 43645-\*\*\*\*, AND 44133-\*\*\*\*.
- 6) FOR TERMINAL ORIENTATION IN RECEPTACLE SEE DRAWING #SDA-43025 OR SDA-43645.
- 7) THIS TERMINAL IS DESIGNED IN METRIC.
- 8) MOLEX RECOMMENDS THE USE OF MICRO-FIT TEST PLUG (SERIES 44242) WHENEVER CONTINUITY TESTING IS PERFORMED. TEST PLUGS MUST NOT BE USED TO MAKE OR BREAK UNDER LOAD. MOLEX DOES NOT RECOMMEND USING STANDARD MATING COMPONENTS (SERIES 43020, 43045, 43640, 43650, OR 43031) FOR HARNESS TESTING PURPOSES.

|   |                               |                                       |                       |                          |                    |  |                        |                        |  |
|---|-------------------------------|---------------------------------------|-----------------------|--------------------------|--------------------|--|------------------------|------------------------|--|
| REDRAWN<br>FC NO: UICP2007-1159<br>DRAWN/PRI/DDR<br>CHKD:SSOUSEK<br>APPR:FSM TH<br>2007/05/03<br>2007/05/04<br>2007/05/08 | QUALITY SYMBOLS<br>▽=0<br>▽=0 | GENERAL TOLERANCES (UNLESS SPECIFIED) |                       | DIMENSION STYLE<br>IN/MM |                    | SCALE<br>10:1                                  | DESIGN UNITS<br>METRIC | THIRD ANGLE PROJECTION |  |
|   |                               | 4 PLACES ± --- ± ---                  | 3 PLACES ± --- ± .010 | DRAWN BY<br>MUELLER      | DATE<br>2002/08/03 | TITLE<br>MICRO-FIT (3.0) FEMALE CRIMP TERMINAL |                        |                        |  |
|   |                               | 2 PLACES ± 0.25 ± .014                | 1 PLACE ± 0.35 ± ---  | CHECKED BY<br>MUELLER    | DATE<br>2002/08/03 | MOLEX INCORPORATED                             |                        |                        |  |
|   |                               | ANGULAR ±1/2°                         |                       | APPROVED BY<br>MARGULIS  | DATE<br>2002/08/03 | DOCUMENT NO.<br>SD-43030-****                  |                        |                        |  |
| DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS  |                               | SEE CHART                             |                       | MATERIAL NO.             |                    | SHEET NO.<br>1 OF 1                            |                        | SIZE<br>C              |  |