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Jameco Part Number 1300638



## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Snap-in peg locks header to PCB for optimum retention
- Fully polarized to mating receptacle
- Surface Mount Compatible

### Reference Information

Product Specification: PS-43650

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980

TUV License No.: R95107

Mates With: [43645](#)

Designed In: Millimeters

Power Connectors

F

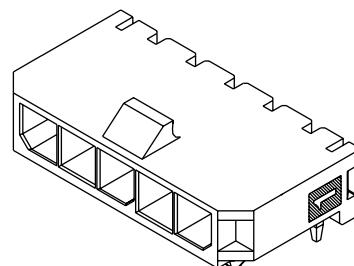
3.00mm (.118") Pitch

Micro-Fit 3.0™

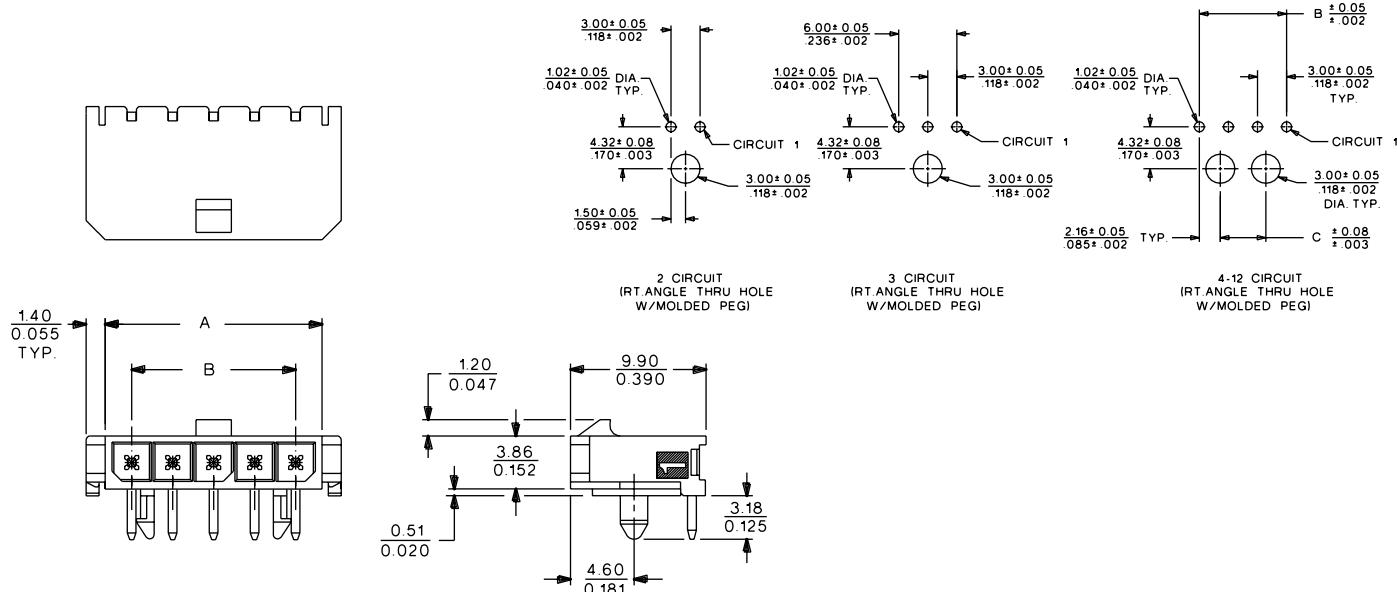
Wire-to-Board  
Header

**43650**

Single Row  
Right Angle



## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.			Dimension		
	Tin	15 $\mu$ " Gold	30 $\mu$ " Gold	A	B	C
2	43650-0200	43650-0201	43650-0202	6.85 (.270)	3.00 (.118)	
3	43650-0300	43650-0301	43650-0302	9.85 (.388)	6.00 (.236)	
4	43650-0400	43650-0401	43650-0402	12.85 (.506)	9.00 (.354)	4.70 (.185)
5	43650-0500	43650-0501	43650-0502	15.85 (.624)	12.00 (.472)	7.70 (.303)
6	43650-0600	43650-0601	43650-0602	18.85 (.742)	15.00 (.591)	10.70 (.421)
7	43650-0700	43650-0701	43650-0702	21.85 (.860)	18.00 (.709)	13.70 (.539)
8	43650-0800	43650-0801	43650-0802	24.85 (.978)	21.00 (.827)	16.70 (.657)
9	43650-0900	43650-0901	43650-0902	27.85 (1.096)	24.00 (.945)	19.70 (.775)
10	43650-1000	43650-1001	43650-1002	30.85 (1.215)	27.00 (1.063)	22.70 (.893)
11	43650-1100	43650-1101	43650-1102	33.85 (1.333)	30.00 (1.181)	25.70 (1.011)
12	43650-1200	43650-1201	43650-1202	36.85 (1.451)	33.00 (1.299)	28.70 (1.129)

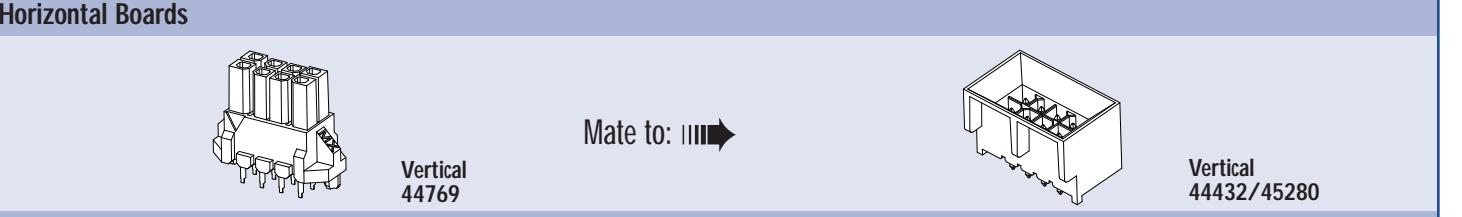
## Wire-to-Wire BMI Connector System



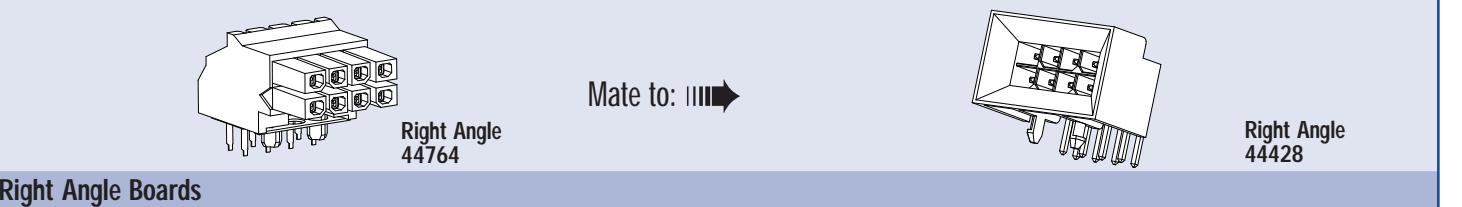
## Wire-to-Board BMI Connector System



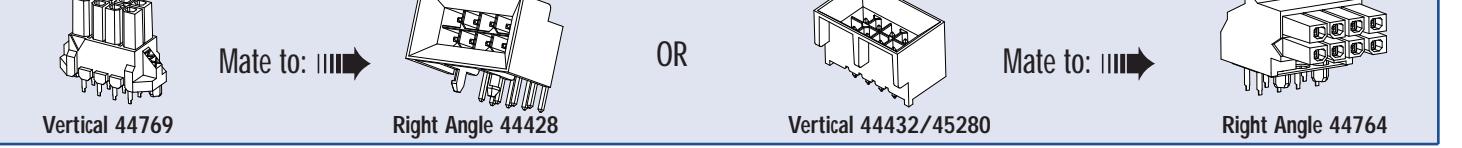
## Board-to-Board BMI Connector System



## Coplanar Boards



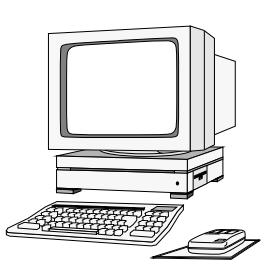
## Right Angle Boards



## MICRO-FIT 3.0 FAMILY APPLICATION EXAMPLES

- Personal Computers
- Mainframe Computers
- Handheld Computers
- Notebook PCs
- Fan Tray Assemblies
- Power Supplies

- Work Stations
- Satellites
- Cellular Telephones
- AC Power Line Cords
- Coffeemakers
- Fax Machines
- Vending Machines
- Pin Ball Machines
- Slot Machines
- Exercise Equipment
- Backplane Applications



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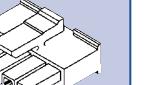
Visit our Web site at <http://www.molex.com>

- Fully isolated contacts
- Up to 5.0A per circuit
- Full polarization
- 250V AC rating
- Positive locks
- UL 94V-0, CSA, TUV approved

## Crimp Terminals

	Description	Order No.		Wire Gauge	Plating
		Reel	Bag		
Female Terminal	43030-0001	43030-0007		20 - 24	Tin
	43030-0004	43030-0010		26 - 30	
	43030-0002	43030-0008		20 - 24	
	43030-0005	43030-0011		26 - 30	15 $\mu$ Gold
	43030-0003	43030-0009		20 - 24	
	43030-0006	43030-0012		26 - 30	30 $\mu$ Gold
Male Terminal	43031-0001	43031-0007		20 - 24	Tin
	43031-0004	43031-0010		26 - 30	
	43031-0002	43031-0008		20 - 24	
	43031-0005	43031-0011		26 - 30	15 $\mu$ Gold
	43031-0003	43031-0009		20 - 24	
	43031-0006	43031-0012		26 - 30	30 $\mu$ Gold

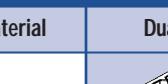
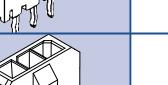
## Crimp Housings

Description		Order No.	Material	Description		Order No.	Material
Receptacles (Use with 43030 terminals)				Plugs (Use with 43031 terminals)			
	Single Row	43645-XX00	Black Polyester		Single Row, Free Hanging	43640-XX01	Black Polyester
					Single Row, Panel Mount	43640-XX00	
	Dual Row	43025-XX00	Black Polyester		Dual Row, Free Hanging	43020-XX01	Black Polyester
					Dual Row, Panel Mount	43020-XX00	

## Right Angle Headers

Single Row	Description	Order No.	Plating	Material	Dual Row	Description	Order No.	Plating	Material
	Surface Mount Compatible with Pegs	43650-XX00	Tin	High Temperature, Black LCP		Surface Mount Compatible with Pegs	43045-XX00	Tin	High Temperature, Black LCP
		43650-XX01	15 $\mu$ Gold				43045-XX01	15 $\mu$ Gold	
		43650-XX02	30 $\mu$ Gold				43045-XX02	30 $\mu$ Gold	
	SMT with Solderable Retention Clip	43650-XX09	Tin	High Temperature, Black LCP		SMT with Solderable Retention Clip	43045-XX06	Tin	High Temperature, Black LCP
		43650-XX10	15 $\mu$ Gold				43045-XX07	15 $\mu$ Gold	
		43650-XX11	30 $\mu$ Gold				43045-XX08	30 $\mu$ Gold	
	SMT with Solder Tabs	43650-XX12	Tin	High Temperature, Black LCP		SMT with Solder Tabs	43045-XX09	Tin	High Temperature, Black LCP
		43650-XX13	15 $\mu$ Gold				43045-XX10	15 $\mu$ Gold	
		43650-XX14	30 $\mu$ Gold				43045-XX11	30 $\mu$ Gold	

## Vertical Headers

Single Row	Description	Order No.	Plating	Material	Dual Row	Description	Order No.	Plating	Material
	Surface Mount Compatible with Pegs	43650-XX15	Tin	High Temperature, Black LCP		Surface Mount Compatible with Pegs	43045-XX12	Tin	High Temperature, Black LCP
		43650-XX16	15 $\mu$ Gold				43045-XX13	15 $\mu$ Gold	
		43650-XX17	30 $\mu$ Gold				43045-XX14	30 $\mu$ Gold	
	SMT with Solderable Retention Clip	43650-XX21	Tin	High Temperature, Black LCP					

## MICRO-FIT 3.0


**molex® 3.00mm (.118") Pitch  
Micro-Fit 3.0™ Family**

The Micro-Fit 3.0 is a unique connector system that incorporates many of the features previously found only on large power connectors. These connectors are the perfect choice when you need compact connectors that can carry up to 5.0A of current. Micro-Fit 3.0 is available in circuit sizes 2 to 24 for wire-to-board and wire-to-wire applications. With more than 500 part numbers and still growing, this expansive product line offers through hole and SMT options. SMT versions are available in tape and reel packaging for robotic placement on the PCB.

## Wire-to-Wire Single Row Connector System



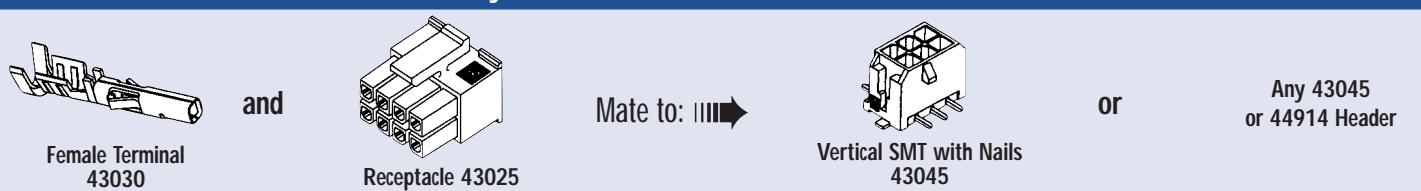
## Wire-to-Board Single Row Connector System



## Wire-to-Wire Dual Row Connector System



## Wire-to-Board Dual Row Connector System

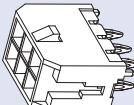


## MICRO-FIT 3.0, CPI AND MICRO-FIT 3.0, BMI CPI

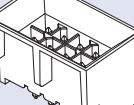
The Micro-Fit 3.0, CPI (Compliant Pin Interface) and Micro-Fit 3.0, BMI CPI (Blind Mate Version with Compliant Pin Interface) are vertical header product extensions featuring press-fit PC tails.

- CPI style (Press-Fit) pins require no soldering to the PCB
- 2.36mm (.093") minimum PCB thickness

## Standard CPI

	Description	Order No.	Plating	Material
	Standard Vertical CPI	44914-XX01	Tin	High Temperature, Black LCP
		44914-XX02	12µ" Gold	
		44914-XX03	30µ" Gold	

## BMI CPI

	Description	Order No.	Plating	Material
	Blind Mate Vertical CPI	45280-XX01	Tin	High Temperature, Black Glass-Filled Nylon
		45280-XX02	12µ" Gold	
		45280-XX03	30µ" Gold	

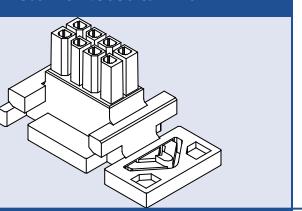
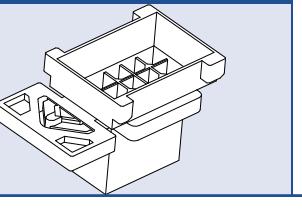
## MICRO-FIT 3.0, BMI

Micro-Fit 3.0, BMI™ (Blind Mate Interface) features an innovative panel mounting design that securely locks the plugs and receptacles in place in the panel cutout, while allowing for removal. The plugs and headers feature a funnel entry to guide the mating receptacle or receptacle header into place. Micro-Fit 3.0, BMI housings and headers mate exclusively with the BMI components shown here.

- Full polarization
- Fully isolated contacts
- Dual row
- Sizes 4 to 24 circuits
- Up to 5.0A per circuit
- Up to 1500V AC dielectric withstand voltage
- UL 94V-0, CSA, TUV approved

## Crimp Housings

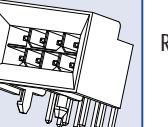
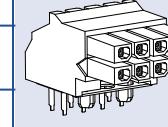
- Use standard Micro-Fit terminals
- Receptacle floats in panel cutout up to 1.27mm (.050") in any direction
- Can be utilized with BMI board-to-board connectors
- Panel thickness: 1.57mm (.062")

	Description	Order No.	Material
	Panel Mount Receptacle	44133-XX00	Black, Polyester
	Panel Mount Plug	44300-XX00	Black, Polyester

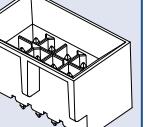
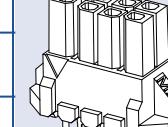
## Headers

- Can be utilized with BMI wire-to-wire connectors
- 1.57mm (.062") PCB thickness
- Surface mount compatible (SMC)
- Black, glass filled nylon housings

## Right Angle

	Description	Order No.	Plating		Description	Order No.	Plating
	Right Angle Header with Pegs	44428-XX01	Tin		Right Angle Receptacle	44764-XX01	Tin
		44428-XX02	15µ" Gold	44764-XX02		15µ" Gold	
		44428-XX03	30µ" Gold	44764-XX03		30µ" Gold	

## Vertical

	Description	Order No.	Plating		Description	Order No.	Plating
	Vertical Header with Pegs	44432-XX01	Tin		Vertical Receptacle	44769-XX01	Tin
		44432-XX02	15µ" Gold	44769-XX02		15µ" Gold	
		44432-XX03	30µ" Gold	44769-XX03		30µ" Gold	

Replace XX with number of circuits, 04 to 24



# PRODUCT SPECIFICATION

## MICRO-FIT SINGLE ROW CONNECTOR SYSTEM

### 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: 43645      Female Crimp Terminal: 43030

Plug: 43640      Male Crimp Terminal: 43031

Headers: 43650

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: Receptacle and Plug - Polyester; Headers - LCP

Crimp Terminals: Phosphor Bronze

Pins: Brass

#### 2.3 SAFETY AGENCY APPROVALS

UL File Number: E29179

CSA: LR19980

TUV: 72040445

### 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Test Summary: TS-43045-001

### 4.0 RATINGS

#### 4.1 VOLTAGE

UL: 250 Volts AC (MAX) {or 176 Volts DC}

TUV: 250 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	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)

(Test plugs are for testing purposes only and not intended for continuous use.)

#### 4.3 TEMPERATURE

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

Nonoperating: - 40°C to + 105°C

<u>REVISION:</u> <b>K</b>	<u>ECR/ECN INFORMATION:</u> <b>EC No: UCP2007-1024</b> <u>DATE:</u> 2006/10/24	<u>TITLE:</u> <b>PRODUCT SPECIFICATION</b> <b>MICRO-FIT</b> <b>SINGLE ROW CONNECTORS</b>	<u>SHEET No.</u> <b>1 of 5</b>
<u>DOCUMENT NUMBER:</u> <b>PS-43650</b>	<u>CREATED / REVISED BY:</u> <b>M.KIPPER</b>	<u>CHECKED BY:</u> <b>S.SOUSEK</b>	<u>APPROVED BY:</u> <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 MAXIMUM [initial]
<b>Contact Resistance @ Rated Current</b>	Mate connectors: apply a maximum voltage of 20 mV at rated current.	30 milliohms MAXIMUM [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 MAXIMUM [initial]
<b>Insulation Resistance</b>	Unmate & unmount connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms 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; current leakage < 5 mA
<b>Capacitance</b>	Measure between adjacent terminals at 1 MHz.	2 picofarads MAXIMUM
<b>Temperature Rise (via Current Cycling)</b>	Mate connectors: measure the temperature rise at the rated current after: 1) 96 hours (steady state) 2) 240 hours (45 minutes ON and 15 minutes OFF per hour) 3) 96 hours (steady state)	Temperature rise: +30°C MAXIMUM

<u>REVISION:</u> <b>K</b>	<u>ECR/ECN INFORMATION:</u> <u>EC No:</u> UCP2007-1024 <u>DATE:</u> 2006/10/24	<u>TITLE:</u> <b>PRODUCT SPECIFICATION MICRO-FIT SINGLE ROW CONNECTORS</b>	<u>SHEET No.</u> <b>2 of 5</b>
<u>DOCUMENT NUMBER:</u> <b>PS-43650</b>	<u>CREATED / REVISED BY:</u> <b>M.KIPPER</b>	<u>CHECKED BY:</u> <b>S.SOUSEK</b>	<u>APPROVED BY:</u> <b>F.SMITH</b>



# PRODUCT SPECIFICATION

## 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 $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch) per minute. (per circuit)	8.0 N (1.8 lbf) MAXIMUM insertion force & 3.7 N (0.8 lbf) MINIMUM withdrawal force
<b>Terminal Retention Force (in Housing)</b>	Axial pullout force on the terminal in the housing at a rate of $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch) per minute.	24.5 N (5.5 lbf) MINIMUM retention force
<b>Terminal Insertion Force (into Housing)</b>	Apply an axial insertion force on the terminal at a rate of $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch) per minute.	14.7 N (3.3 lbf) MAXIMUM insertion force
<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 $\frac{1}{2}$ sine wave (11 milliseconds) shocks in the $\pm X, \pm Y, \pm Z$ axes (18 shocks total).	20 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
<b>Wire Pullout Force (Axial)</b>	Apply an axial pullout force on the wire at a rate of $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch) per minute.	MINIMUM pullout force 20 awg: 57.8 N (13.0 lbf) 22 awg: 35.6 N (8.0 lbf) 24 awg: 22.2 N (5.0 lbf) 26 awg: 13.3 N (3.0 lbf) 28 awg: 8.9 N (2.0 lbf) 30 awg: 6.6 N (1.5 lbf)
<b>Normal Force</b>	Apply a perpendicular force.	2.7 N (0.6 lbf) MINIMUM
<b>Pin to Header Retention</b>	Apply axial push force to pin at a rate of $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ 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 $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch) per minute.	68.4 N (15.4 lbf) MINIMUM Yield Strength

REVISION:	ECR/ECN INFORMATION:	TITLE:	PRODUCT SPECIFICATION MICRO-FIT SINGLE ROW CONNECTORS	SHEET No.
K	EC No: UCP2007-1024 DATE: 2006/10/24			3 of 5
DOCUMENT NUMBER:	PS-43650	CREATED / REVISED BY: M.KIPPER	CHECKED BY: S.SOUSEK	APPROVED BY: F.SMITH
TEMPLATE FILENAME: PRODUCT_SPEC(SIZE_A)(V.1).DOC				



# PRODUCT SPECIFICATION

## 5.3 ENVIRONMENTAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
<b>Thermal Aging</b>	Mate connectors; expose to: 240 hours at $105 \pm 2^\circ\text{C}$ OR 500 hours at $85 \pm 2^\circ\text{C}$	20 milliohms MAXIMUM (change from initial)
<b>Humidity (Steady State)</b>	Mate connectors: expose to a temperature of $40 \pm 2^\circ\text{C}$ with a relative humidity of 90-95% for 96 hours.  Note: Remove surface moisture and air dry for 1 hour prior to measurements.	20 milliohms MAXIMUM (change from initial) & Dielectric Withstanding Voltage: No Breakdown at 500 VAC & Insulation Resistance: 1000 Megohms MINIMUM
<b>Solderability</b>	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES-152)
<b>Solder Resistance</b>	A) Wave Solder Process Dip connector terminal tails in solder; Solder Duration: $5 \pm 0.5$ seconds; Solder Temperature: $260^\circ\text{C}$ MAX  B) Convection Reflow Solder Process $235^\circ\text{C}$ MAX Per SMES-152	Visual: No Damage to insulator material
<b>Cold Resistance</b>	Mate connectors: Duration: 96 hours; Temperature: $-40 \pm 3^\circ\text{C}$	20 milliohms MAXIMUM (change from initial)

## 6.0 PACKAGING

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

Receptacle: PK-43645-001

Plug: PK-43640-001

Headers: PK-70873-0321, PK-70873-0811, PK-70873-07\*\*

<u>REVISION:</u> <b>K</b>	<u>ECR/ECN INFORMATION:</u> <b>EC No: UCP2007-1024</b> <u>DATE:</u> <b>2006/10/24</b>	<u>TITLE:</u> <b>PRODUCT SPECIFICATION MICRO-FIT SINGLE ROW CONNECTORS</b>	<u>SHEET No.</u> <b>4 of 5</b>
<u>DOCUMENT NUMBER:</u> <b>PS-43650</b>	<u>CREATED / REVISED BY:</u> <b>M.KIPPER</b>	<u>CHECKED BY:</u> <b>S.SOUSEK</b>	<u>APPROVED BY:</u> <b>F.SMITH</b>



# PRODUCT SPECIFICATION

## 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

<u>REVISION:</u> <b>K</b>	<u>ECR/ECN INFORMATION:</u> <u>EC No:</u> UCP2007-1024 <u>DATE:</u> 2006/10/24	<u>TITLE:</u> <b>PRODUCT SPECIFICATION MICRO-FIT SINGLE ROW CONNECTORS</b>	<u>SHEET No.</u> <b>5 of 5</b>
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