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Jameco Part Number 1300582

FEATURES AND SPECIFICATIONS

Features and Benefits

- "Offset Terminal Retention" for optimum retention to PC board during wave soldering
- Fully polarized to mating receptacle
- Peg feature provides polarization to PCB
- 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



3.00mm (.118") Pitch

Micro-Fit 3.0™

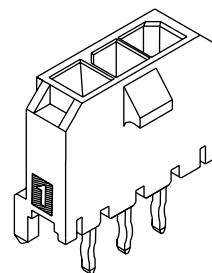
Wire-to-Board
 Header

43650

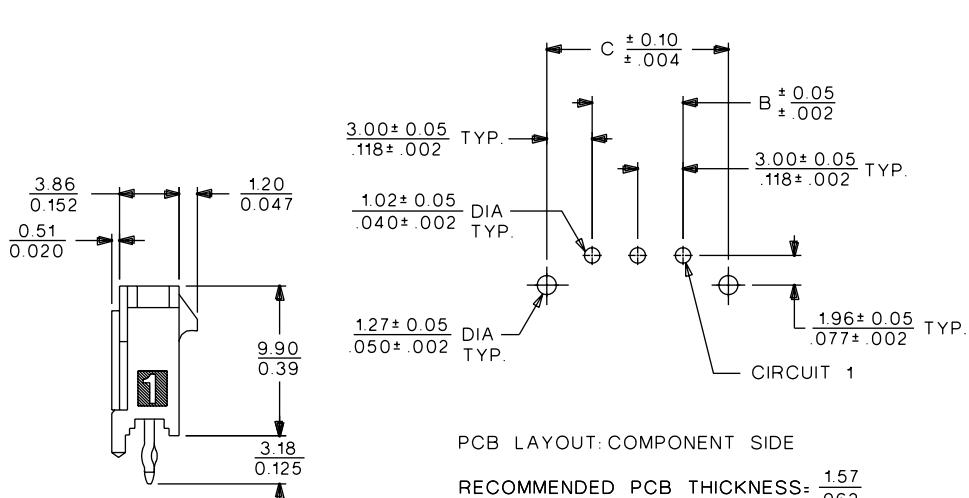
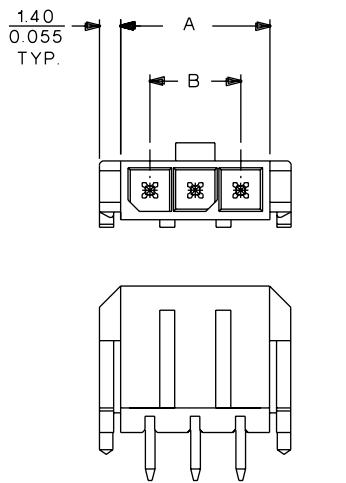
Single Row
 Vertical

Power Connectors

F



CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE

RECOMMENDED PCB THICKNESS = $\frac{1.57}{.062}$

ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.						Dimension		
	Standard "OTR" Version			Straight Tail Version					
	Tin	15 μ " Gold	30 μ " Gold	Tin	15 μ " Gold	30 μ " Gold	A	B	C
2	43650-0215	43650-0216	43650-0217	43650-0227	43650-0228	43650-0229	6.85 (.270)	3.00 (.118)	9.00 (.354)
3	43650-0315	43650-0316	43650-0317	43650-0327	43650-0328	43650-0329	9.85 (.388)	6.00 (.236)	12.00 (.472)
4	43650-0415	43650-0416	43650-0417	43650-0427	43650-0428	43650-0429	12.85 (.506)	9.00 (.354)	15.00 (.591)
5	43650-0515	43650-0516	43650-0517	43650-0527	43650-0528	43650-0529	15.85 (.624)	12.00 (.472)	18.00 (.708)
6	43650-0615	43650-0616	43650-0617	43650-0627	43650-0628	43650-0629	18.85 (.742)	15.00 (.591)	21.00 (.827)
7	43650-0715	43650-0716	43650-0717	43650-0727	43650-0728	43650-0729	21.85 (.860)	18.00 (.709)	24.00 (.945)
8	43650-0815	43650-0816	43650-0817	43650-0827	43650-0828	43650-0829	24.85 (.978)	21.00 (.827)	27.00 (1.063)
9	43650-0915	43650-0916	43650-0917	43650-0927	43650-0928	43650-0929	27.85 (1.096)	24.00 (.945)	30.00 (1.181)
10	43650-1015	43650-1016	43650-1017	43650-1027	43650-1028	43650-1029	30.85 (1.215)	27.00 (1.063)	33.00 (1.299)
11	43650-1115	43650-1116	43650-1117	43650-1127	43650-1128	43650-1129	33.85 (1.333)	30.00 (1.181)	36.00 (1.417)
12	43650-1215	43650-1216	43650-1217	43650-1227	43650-1228	43650-1229	36.85 (1.451)	33.00 (1.299)	39.00 (1.535)

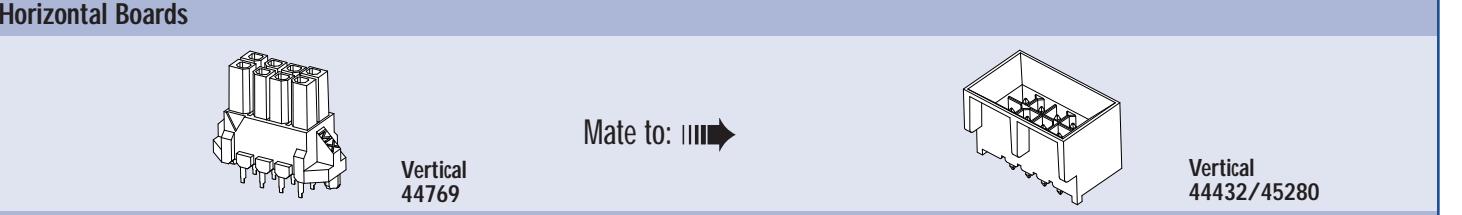
Wire-to-Wire BMI Connector System



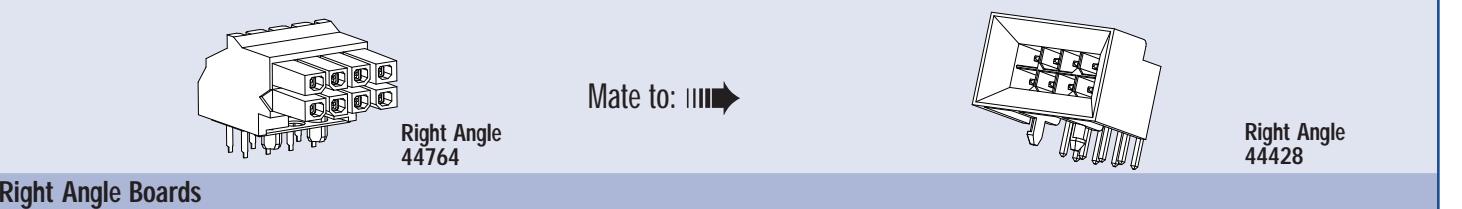
Wire-to-Board BMI Connector System



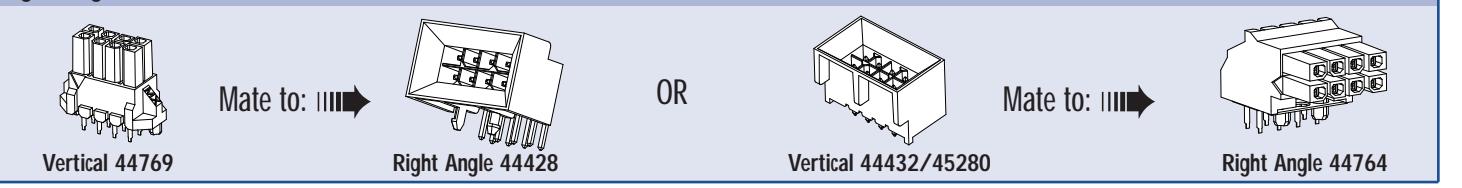
Board-to-Board BMI Connector System



Coplanar Boards



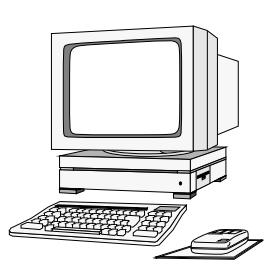
Right Angle Boards



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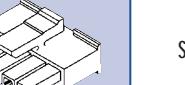
Visit our Web site at <http://www.molex.com>

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

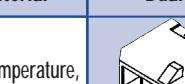
Crimp Terminals

	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 μ Gold
	43030-0003	43030-0009		20 - 24	
	43030-0006	43030-0012		26 - 30	30 μ 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 μ Gold
	43031-0003	43031-0009		20 - 24	
	43031-0006	43031-0012		26 - 30	30 μ Gold

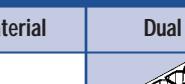
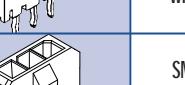
Crimp Housings

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 μ Gold				43045-XX01	15 μ Gold	
		43650-XX02	30 μ Gold				43045-XX02	30 μ 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 μ Gold				43045-XX07	15 μ Gold	
		43650-XX11	30 μ Gold				43045-XX08	30 μ 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 μ Gold				43045-XX10	15 μ Gold	
		43650-XX14	30 μ Gold				43045-XX11	30 μ 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 μ Gold				43045-XX13	15 μ Gold	
		43650-XX17	30 μ Gold				43045-XX14	30 μ 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

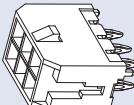


MICRO-FIT 3.0, CPI AND MICRO-FIT 3.0, BMI CPI

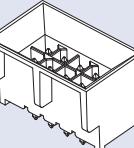
The Micro-Fit 3.0, CPI (Compliant Pin Interface) and Micro-Fit 3.0, BMI CPI (Blind Mate Version with Compliant Pin Interface) are vertical header product extensions featuring press-fit PC tails.

- 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	12 μ " Gold	
		44914-XX03	30 μ " Gold	

BMI CPI

	Blind Mate Vertical CPI	45280-XX01	Tin	High Temperature, Black Glass-Filled Nylon
		45280-XX02	12 μ " Gold	
		45280-XX03	30 μ " Gold	

MICRO-FIT 3.0, BMI

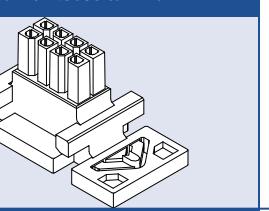
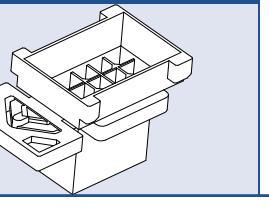

**molex® 3.00mm (.118") Pitch
Micro-Fit 3.0™ Family**

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

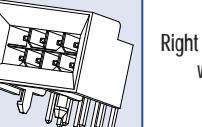
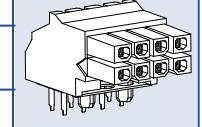
- Use standard Micro-Fit terminals
- Receptacle floats in panel cutout up to 1.27mm (.050") in any direction
- Can be utilized with BMI board-to-board connectors
- Panel thickness: 1.57mm (.062")

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

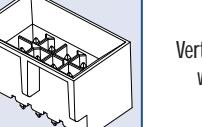
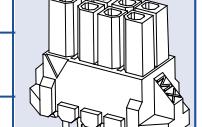
Headers

- 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	15 μ " Gold	44764-XX02		15 μ " Gold	
		44428-XX03	30 μ " Gold	44764-XX03		30 μ " Gold	

Vertical

	Vertical Header with Pegs	44432-XX01	Tin		Vertical Receptacle	44769-XX01	Tin
		44432-XX02	15 μ " Gold			44769-XX02	15 μ " Gold
		44432-XX03	30 μ " Gold			44769-XX03	30 μ " 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> K	<u>ECR/ECN INFORMATION:</u> EC No: UCP2007-1024 <u>DATE:</u> 2006/10/24	<u>TITLE:</u> PRODUCT SPECIFICATION MICRO-FIT SINGLE ROW CONNECTORS	<u>SHEET No.</u> 1 of 5
<u>DOCUMENT NUMBER:</u> PS-43650	<u>CREATED / REVISED BY:</u> M.KIPPER	<u>CHECKED BY:</u> S.SOUSEK	<u>APPROVED BY:</u> F.SMITH



PRODUCT SPECIFICATION

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Contact Resistance (Low Level)	Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA. (Does not include wire resistance)	10 milliohms MAXIMUM [initial]
Contact Resistance @ Rated Current	Mate connectors: apply a maximum voltage of 20 mV at rated current.	30 milliohms MAXIMUM [initial]
Contact Resistance of Wire Termination (Low Level)	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]
Insulation Resistance	Unmate & unmount connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM
Dielectric Withstanding Voltage	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
Capacitance	Measure between adjacent terminals at 1 MHz.	2 picofarads MAXIMUM
Temperature Rise (via Current Cycling)	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

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PRODUCT SPECIFICATION

5.2 MECHANICAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Connector Mate and Unmate Forces	Mate and unmate connector (male to female) at a rate of 25 ± 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
Terminal Retention Force (in Housing)	Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute.	24.5 N (5.5 lbf) MINIMUM retention force
Terminal Insertion Force (into Housing)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute.	14.7 N (3.3 lbf) MAXIMUM insertion force
Durability	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)
Vibration (Random)	Mate connectors and vibrate per EIA 364-28, test condition VII.	20 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
Shock (Mechanical)	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
Wire Pullout Force (Axial)	Apply an axial pullout force on the wire at a rate of 25 ± 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)
Normal Force	Apply a perpendicular force.	2.7 N (0.6 lbf) MINIMUM
Pin to Header Retention	Apply axial push force to pin at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute.	13.7 N (3.1 lbf) MINIMUM pushout force
Thumb Latch to Ramp Yield Strength	Full mate and then Unmate the connectors at a rate of 25 ± 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			3 of 5
DATE: 2006/10/24				
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:	
PS-43650	M.KIPPER	S.SOUSEK	F.SMITH	



PRODUCT SPECIFICATION

5.3 ENVIRONMENTAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Thermal Aging	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)
Humidity (Steady State)	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
Solderability	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES-152)
Solder Resistance	A) Wave Solder Process Dip connector terminal tails in solder; Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 260°C MAX B) Convection Reflow Solder Process 235°C MAX Per SMES-152	Visual: No Damage to insulator material
Cold Resistance	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**

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<u>DOCUMENT NUMBER:</u> PS-43650	<u>CREATED / REVISED BY:</u> M.KIPPER	<u>CHECKED BY:</u> S.SOUSEK	<u>APPROVED BY:</u> F.SMITH
<i>TEMPLATE FILENAME: PRODUCT_SPEC(SIZE_A)(V.1).DOC</i>			



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