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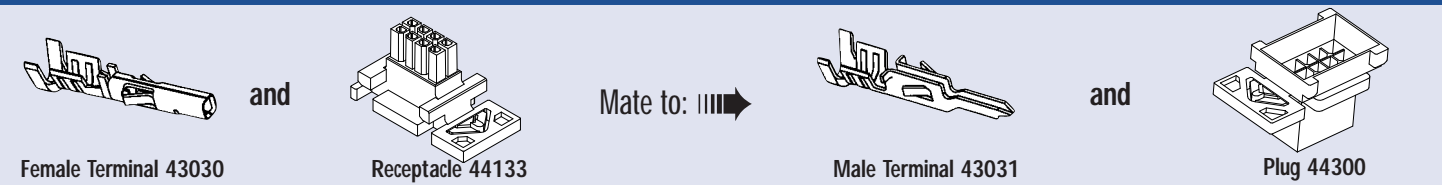
**JAMECO**<sup>®</sup>  
ELECTRONICS

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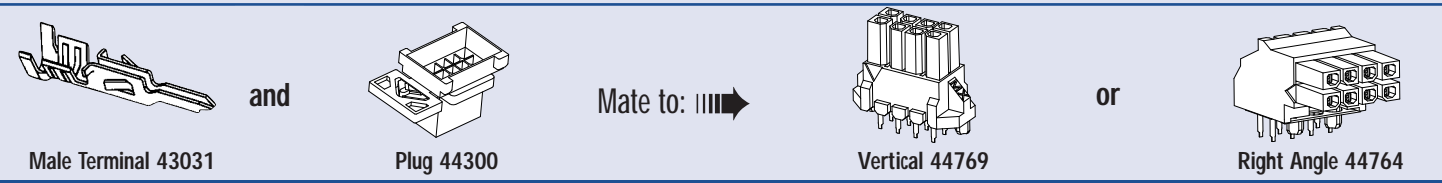
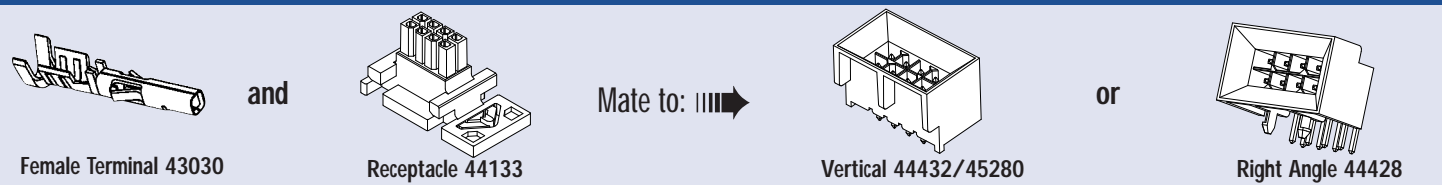
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Jameco Part Number 1300507

**Wire-to-Wire BMI Connector System**

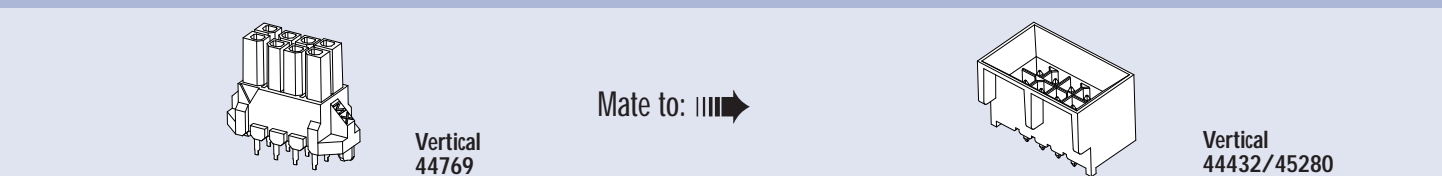


**Wire-to-Board BMI Connector System**

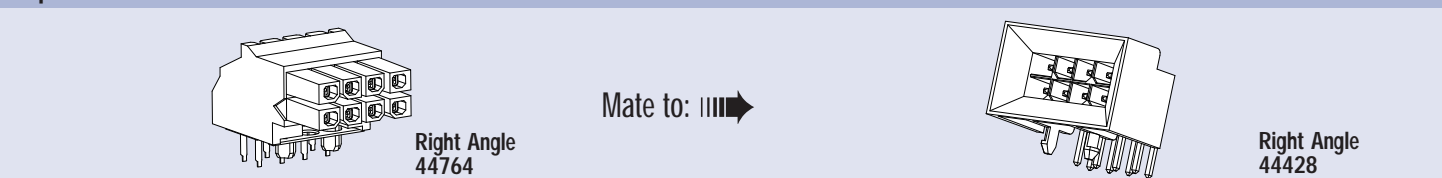


**Board-to-Board BMI Connector System**

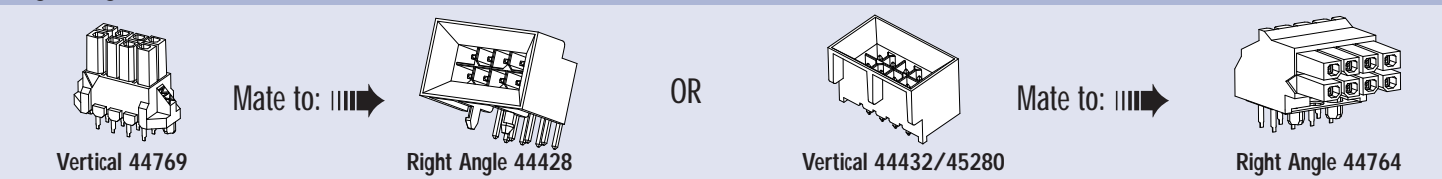
**Horizontal Boards**



**Coplanar Boards**

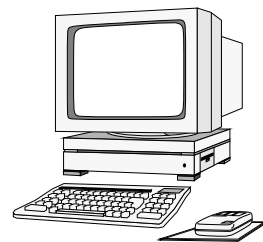


**Right Angle Boards**



**MICRO-FIT 3.0 FAMILY APPLICATION EXAMPLES**

- Personal Computers
- Work Stations
- Vending Machines
- Mainframe Computers
- Satellites
- Pin Ball Machines
- Handheld Computers
- Cellular Telephones
- AC Power Line Cords
- Slot Machines
- Notebook PCs
- Coffeemakers
- Exercise Equipment
- Fan Tray Assemblies
- Fax Machines
- Backplane Applications
- Power Supplies



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- 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	15µ" Gold
		43030-0002	43030-0008	20 - 24	30µ" Gold
		43030-0005	43030-0011	26 - 30	
		43030-0003	43030-0009	20 - 24	
		43030-0006	43030-0012	26 - 30	
	Male Terminal	43031-0001	43031-0007	20 - 24	Tin
		43031-0004	43031-0010	26 - 30	15µ" Gold
		43031-0002	43031-0008	20 - 24	30µ" Gold
		43031-0005	43031-0011	26 - 30	
		43031-0003	43031-0009	20 - 24	
		43031-0006	43031-0012	26 - 30	

**Crimp Housings**

	Description	Order No.	Material		Description	Order No.	Material
	Single Row	43645-XX00	Black Polyester		Single Row, Free Hanging	43640-XX01	Black Polyester
					Single Row, Panel Mount	43640-XX00	Black Polyester
	Dual Row	43025-XX00	Black Polyester		Dual Row, Free Hanging	43020-XX01	Black Polyester
					Dual Row, Panel Mount	43020-XX00	Black Polyester

**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	15µ" Gold				43045-XX01	15µ" Gold	
		43650-XX02	30µ" Gold				43045-XX02	30µ" 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	15µ" Gold				43045-XX07	15µ" Gold	
		43650-XX11	30µ" Gold				43045-XX08	30µ" 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	15µ" Gold				43045-XX10	15µ" Gold	
		43650-XX14	30µ" Gold				43045-XX11	30µ" 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	15µ" Gold				43045-XX13	15µ" Gold	
		43650-XX17	30µ" Gold				43045-XX14	30µ" Gold	
	SMT with Solderable Retention Clip	43650-XX21	Tin	High Temperature, Black LCP		SMT with Solderable Retention Clip	43045-XX15	Tin	High Temperature, Black LCP
		43650-XX22	15µ" Gold				43045-XX16	15µ" Gold	
		43650-XX23	30µ" Gold				43045-XX17	30µ" Gold	
	SMT with Solder Tabs	43650-XX24	Tin	High Temperature, Black LCP		SMT with Solder Tabs	43045-XX18	Tin	High Temperature, Black LCP
		43650-XX25	15µ" Gold				43045-XX19	15µ" Gold	
		43650-XX26	30µ" Gold				43045-XX20	30µ" Gold	

Replace XX with number of circuits, 02 to 24

**MICRO-FIT 3.0**

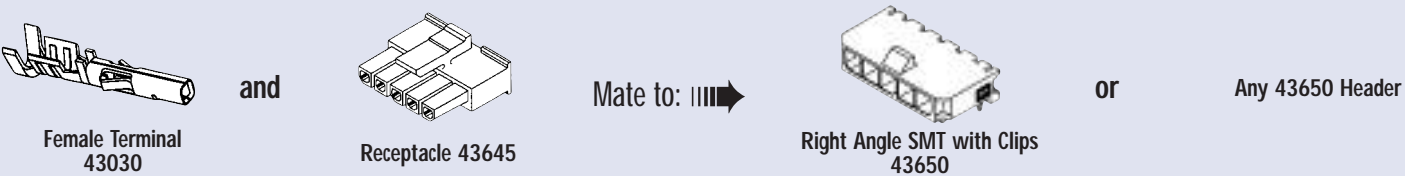
**molex® 3.00mm (.118") Pitch  
Micro-Fit 3.0™ Family**

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**

	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**

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

**Vertical**

	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

<b>REVISION:</b> <b>K</b>	<b>EGR/ECN INFORMATION:</b> EC No: <b>UCP2007-1024</b> DATE: <b>2006/10/24</b>	<b>TITLE:</b> <b>PRODUCT SPECIFICATION MICRO-FIT SINGLE ROW CONNECTORS</b>	<b>SHEET No.</b> <b>1 of 5</b>
<b>DOCUMENT NUMBER:</b> <b>PS-43650</b>	<b>CREATED / REVISED BY:</b> <b>M.KIPPER</b>	<b>CHECKED BY:</b> <b>S.SOUSEK</b>	<b>APPROVED BY:</b> <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

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DOCUMENT NUMBER: <b>PS-43650</b>	CREATED / REVISED BY: <b>M.KIPPER</b>	CHECKED BY: <b>S.SOUSEK</b>	APPROVED BY: <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: <b>K</b>	EGR/ECN INFORMATION: EC No: <b>UCP2007-1024</b> DATE: <b>2006/10/24</b>	TITLE: <b>PRODUCT SPECIFICATION MICRO-FIT SINGLE ROW CONNECTORS</b>	SHEET No. <b>3 of 5</b>
DOCUMENT NUMBER: <b>PS-43650</b>	CREATED / REVISED BY: <b>M.KIPPER</b>	CHECKED BY: <b>S.SOUSEK</b>	APPROVED BY: <b>F.SMITH</b>



# PRODUCT SPECIFICATION

## 5.3 ENVIRONMENTAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
<b>Thermal Aging</b>	Mate connectors; expose to: 240 hours at 105 ± 2°C OR 500 hours at 85 ± 2°C	20 milliohms MAXIMUM (change from initial)
<b>Humidity (Steady State)</b>	Mate connectors: expose to a temperature of 40 ± 2°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 ± 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
<b>Cold Resistance</b>	Mate connectors: Duration: 96 hours; Temperature: -40 ± 3°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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<b>DOCUMENT NUMBER:</b> <b>PS-43650</b>	<b>CREATED / REVISED BY:</b> <b>M.KIPPER</b>	<b>CHECKED BY:</b> <b>S.SOUSEK</b>	<b>APPROVED BY:</b> <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.

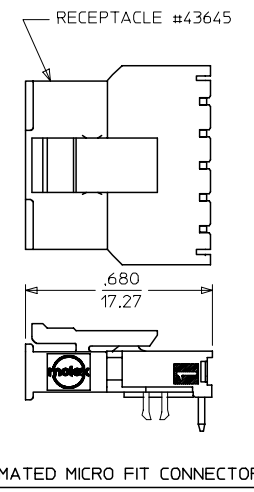
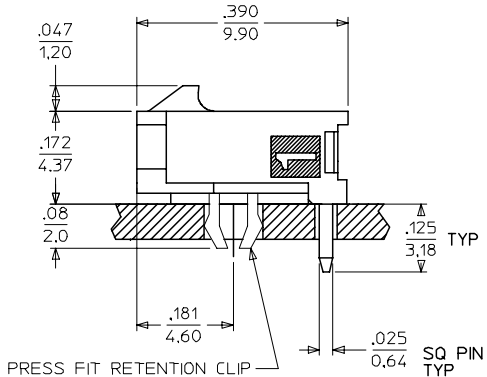
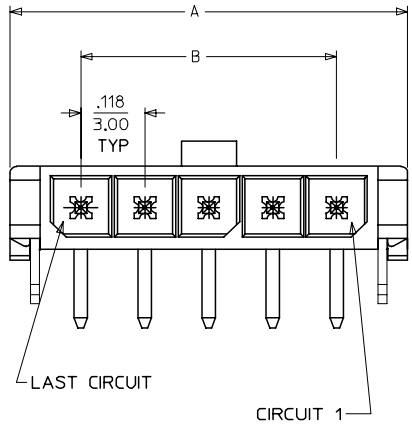
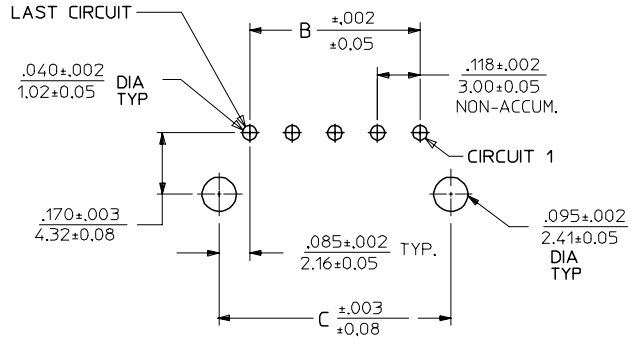
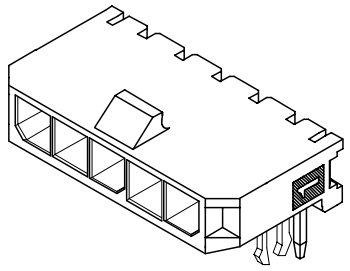
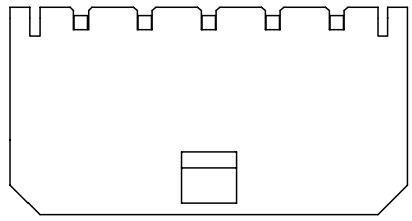
## 8.0 OTHER INFORMATION

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



13 12 11 10 9 8 7 6 5 4 3 2 43650

CKTS	DIM A	DIM B	DIM C
2	.380 9.65	.118 3.00	.287 7.30
3	.498 12.65	.236 6.00	.405 10.30
4	.616 15.65	.354 9.00	.524 13.30
5	.734 18.64	.472 12.00	.642 16.30
6	.852 21.64	.591 15.00	.760 19.30
7	.970 24.64	.709 18.00	.878 22.30
8	1.088 27.64	.827 21.00	.996 25.30
9	1.206 30.63	.945 24.00	1.114 28.30
10	1.325 33.66	1.063 27.00	1.232 31.30
11	1.443 36.65	1.181 30.00	1.350 34.30
12	1.561 39.65	1.299 33.00	1.469 37.30



**NOTES:**

- HOUSING MATERIAL: LIQUID CRYSTAL POLYMER, GLASS FILLED, UL94V-0, COLOR: BLACK  
TERMINAL MATERIAL: BRASS ALLOY
- FINISH:  
A = .000100/(0.00254) MIN. TIN OVER  
.000050/(0.00127) MIN. NICKEL  
B = .000015/(0.00038) MIN. SELECT GOLD IN CONTACT AREA  
.000100/(0.00254) MIN. SELECT TIN ON SOLDER TAILS  
BOTH OVER .000050/(0.00127) NICKEL OVERALL  
C = .000030/(0.00076) MIN. SELECT GOLD IN CONTACT AREA  
.000100/(0.00254) MIN. SELECT TIN ON SOLDER TAILS  
BOTH OVER .000050/(0.00127) 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.
- PRODUCT SPECIFICATION: PS-43650
- MATES WITH MICRO FIT (3.0) RECEPTACLE SERIES 43645
- TRAY PACKAGED : SEE MOLEX DRAWING PK-70873-0321

	FINISH A	FINISH B	FINISH C
CKTS	MATERIAL NO:	MATERIAL NO:	MATERIAL NO:
02	43650-0203	43650-0204	43650-0205
03	43650-0303	43650-0304	43650-0305
04	43650-0403	43650-0404	43650-0405
05	43650-0503	43650-0504	43650-0505
06	43650-0603	43650-0604	43650-0605
07	43650-0703	43650-0704	43650-0705
08	43650-0803	43650-0804	43650-0805
09	43650-0903	43650-0904	43650-0905
10	43650-1003	43650-1004	43650-1005
11	43650-1103	43650-1104	43650-1105
12	43650-1203	43650-1204	43650-1205

LEAD FREE EC NO: UCP2004-1276 DRWN: JCERNY 2004/03/12 CHKD: 2004/03/31 APPR: FSMITH 2004/04/05	QUALITY SYMBOLS ▽ = 0 ▽ = 0	GENERAL TOLERANCES (UNLESS SPECIFIED)		SCALE --- DESIGN UNITS METRIC	THIRD ANGLE PROJECTION REVISE ON CAD ONLY
		DIMENSION STYLE IN/MM		TITLE MICRO FIT (3.0) SINGLE ROW / RIGHT ANGLE THRU HOLE / CLIPS / TRAY	
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		MOLEX MOLEX INCORPORATED	
		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		MATERIAL NO. SEE CHART DOCUMENT NO. SD-43650-002 SHEET NO. 1 OF 1	

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