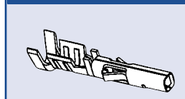
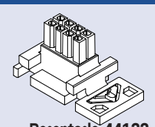
Jameco Part Number 1300275

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

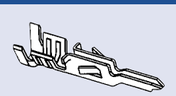
Wire-to-Wire BMI Connector System


Female Terminal 43030

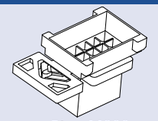
and


Receptacle 44133

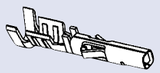
Mate to:


Male Terminal 43031

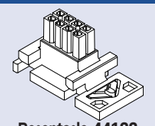
and


Plug 44300

Wire-to-Board BMI Connector System


Female Terminal 43030

and


Receptacle 44133

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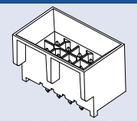
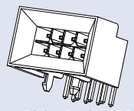
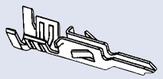
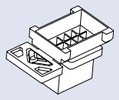

Vertical 44432 / 45280

or


Right Angle 44428


Male Terminal 43031

and


Plug 44300

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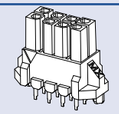
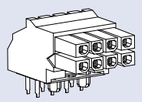
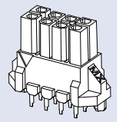

Vertical 44769

or


Right Angle 44764

Board-to-Board BMI Connector System

Horizontal Boards


Vertical 44769

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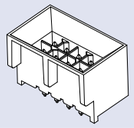
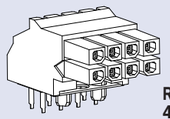

Vertical 44432 / 45280

Coplanar Boards


Right Angle 44764

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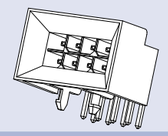
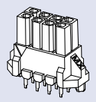
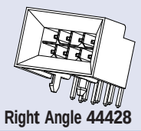

Right Angle 44428

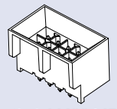
Right Angle Boards


Vertical 44769

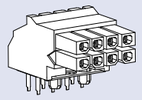
Mate to:


Right Angle 44428

OR


Vertical 44432 / 45280

Mate to:


Right Angle 44764

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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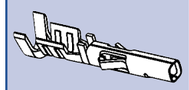
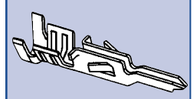
Order No. USA-106 Rev. 3

Printed in USA/5K/JI/JI/2006.01

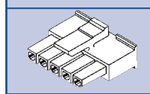
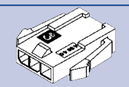
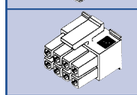
molex® 3.00mm (.118") Pitch Micro-Fit 3.0™ Family

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

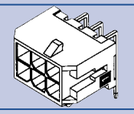
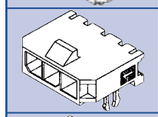
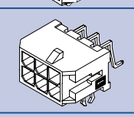
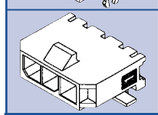
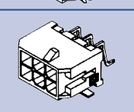
Crimp Terminals

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

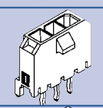
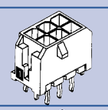
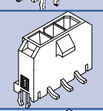
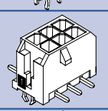
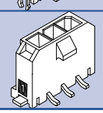
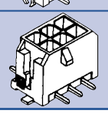
Crimp Housings

	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	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

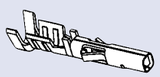
MICRO-FIT 3.0

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.

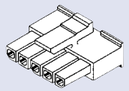
Micro-Fit 3.0 is available in circuit sizes 2 to 24 for wire-to-board and wire-to-wire applications. With more than 500 part numbers and still growing, this expansive product line offers through hole and SMT options. SMT versions are available in tape and reel packaging for robotic placement on the PCB.

Wire-to-Wire Single Row Connector System



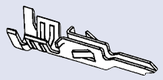
Female Terminal 43030

and



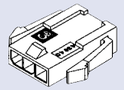
Receptacle 43645

Mate to:



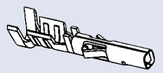
Male Terminal 43031

and



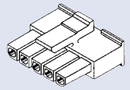
Plug 43640

Wire-to-Board Single Row Connector System



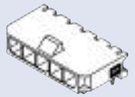
Female Terminal 43030

and



Receptacle 43645

Mate to:

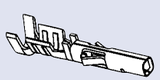


Right Angle SMT with Clips 43650

or

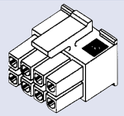
Any 43650 Header

Wire-to-Wire Dual Row Connector System



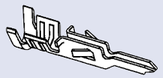
Female Terminal 43030

and



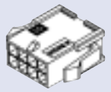
Receptacle 43025

Mate to:



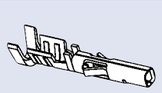
Male Terminal 43031

and



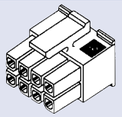
Plug 43020

Wire-to-Board Dual Row Connector System



Female Terminal 43030

and



Receptacle 43025

Mate to:

Vertical SMT with Nails 43045

or

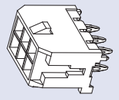
Any 43045 or 44914 Header

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

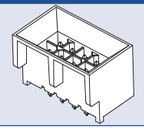
The Micro-Fit 3.0, CPI (Compliant Pin Interface) and Micro-Fit 3.0, BMI CPI (Blind Mate Version with Compliant Pin Interface) are vertical header product extensions featuring press-fit PC tails.

- 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

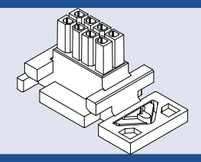
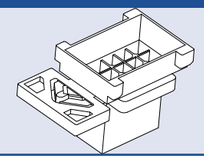
3.00mm (.118") Pitch Micro-Fit 3.0™ Family

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

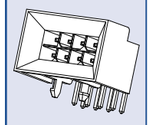
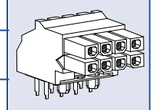
- Use standard Micro-Fit terminals
- Receptacle floats in panel cutout up to 1.27mm (.050") in any direction
- Can be utilized with BMI board-to-board connectors
- Panel thickness: 1.57mm (.062")

	Description	Order No.	Material
Use with 43030 terminal 	Panel Mount Receptacle	44133-XX00	Black, Polyester
Use with 43031 terminal 	Panel Mount Plug	44300-XX00	Black, Polyester

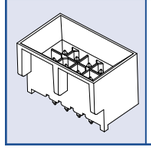
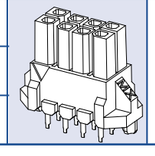
Headers

- 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

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: 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	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)
(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°

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

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 ± ¼ 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 ± ¼ 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 ± ¼ inch) per minute.	14.7 N (3.3 lbf) MAXIMUM insertion force

5.2 MECHANICAL REQUIREMENTS

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 ½ sine wave (11 milliseconds) shocks in the ±X,±Y,±Z axes (18 shocks total).	20 milliohms MAXIMUM (change from initial]) & Discontinuity < 1 microsecond
Wire Pullout Force (Axial) (Wire from Terminal)	Apply an axial pullout force on the wire at a rate of 25 ± 6 mm (1 ± ¼ 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 (275 grams) MINIMUM
Pin to Header Retention	Apply axial push force to pin at a rate of 25 ± 6 mm (1 ± ¼ 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 ± ¼ inch) per minute.	68.4 N (15.4 lbf) MINIMUM Yield Strength
Panel Mount Retention	Full mate and then Unmate the connectors at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	155.7 N (35 lbf) MINIMUM pushout force
Compliant Pin Insertion Force into PCB Hole (44914 Series)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	106.7 N (24 lbf) MAXIMUM Insertion force (Per Terminal)
Compliant Pin Retention Force in PCB Hole (44914 Series)	Apply an axial extraction force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	35.6 N (8 lbf) MINIMUM Retention force (Per Terminal)

5.3 ENVIRONMENTAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Thermal Aging	Mate connectors; expose to: 240 hours at 105 ± 2°C OR 500 hours at 85 ± 2°C	20 milliohms MAXIMUM (change from initial])
Humidity (Steady State)	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
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 ± 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-43025-001
Plug: PK-43020-001
Headers: PK-70873-0313, PK-70873-0314, PK-70873-05**.

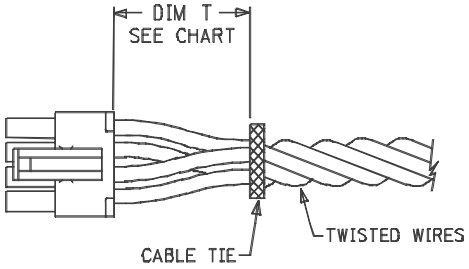
7.0 GAGES AND FIXTURES

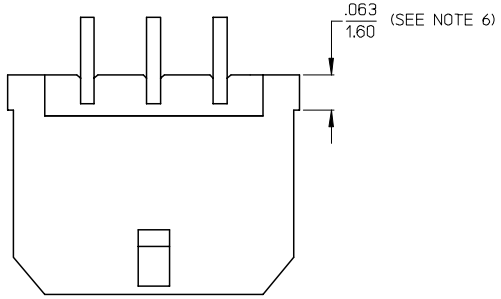
It is recommended that test plugs (Series 44242) be used for continuity testing of receptacles. Standard mating parts should not be used for harness testing.

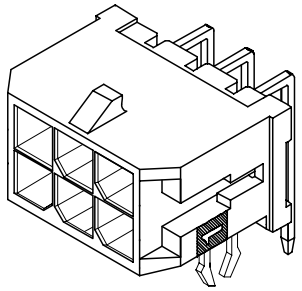
8.0 OTHER INFORMATION

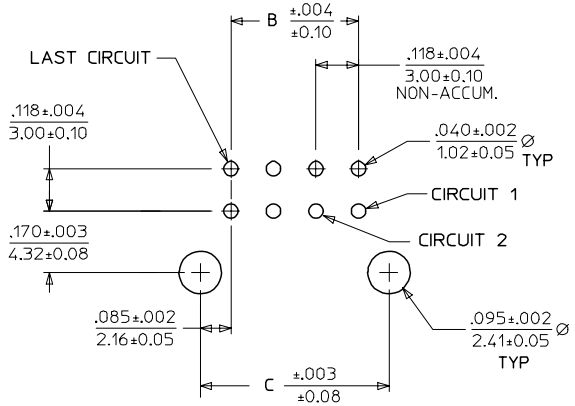
8.1 CABLE TIE AND OR WIRE TWIST LOCATION

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



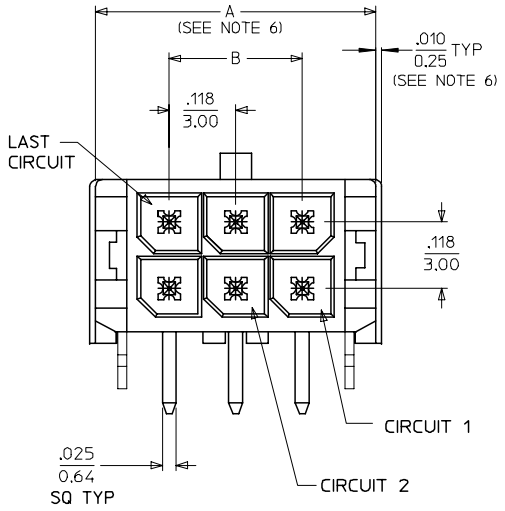


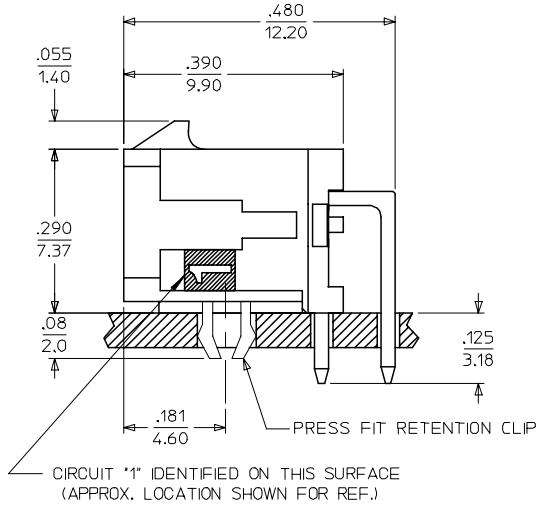




PCB LAYOUT: COMPONENT SIDE
RECOMMEND PCB THICKNESS: .062/1.57

CKTS	A (SEE NOTE 6)	B	C
02	.262 / 6.65	NA	.169 / 4.30
04	.380 / 9.65	.118 / 3.00	.287 / 7.30
06	.498 / 12.65	.236 / 6.00	.405 / 10.30
08	.616 / 15.65	.354 / 9.00	.524 / 13.30
10	.734 / 18.65	.472 / 12.00	.642 / 16.30
12	.852 / 21.65	.591 / 15.00	.760 / 19.30
14	.970 / 24.65	.709 / 18.00	.878 / 22.30
16	1.088 / 27.65	.827 / 21.00	.996 / 25.30
18	1.206 / 30.65	.945 / 24.00	1.114 / 28.30
20	1.325 / 33.65	1.063 / 27.00	1.252 / 31.30
22	1.443 / 36.65	1.181 / 30.00	1.350 / 34.30
24	1.561 / 39.65	1.299 / 33.00	1.469 / 37.30





	FINISH A	FINISH B	FINISH C
CKTS	MATERIAL NO:	MATERIAL NO:	MATERIAL NO:
02	43045-0221	43045-0222	43045-0223
04	43045-0421	43045-0422	43045-0423
06	43045-0621	43045-0622	43045-0623
08	43045-0821	43045-0822	43045-0823
10	43045-1021	43045-1022	43045-1023
12	43045-1221	43045-1222	43045-1223
14	43045-1421	43045-1422	43045-1423
16	43045-1621	43045-1622	43045-1623
18	43045-1821	43045-1822	43045-1823
20	43045-2021	43045-2022	43045-2023
22	43045-2221	43045-2222	43045-2223
24	43045-2421	43045-2422	43045-2423

NOTES:

1. HOUSING MATERIAL: GLASS FILLED LIQUID CRYSTAL POLYMER
   UL94V-0, COLOR: BLACK
   TERMINAL MATERIAL: BRASS ALLOY
2. FINISH: A = .000100/(0.00254) MIN. TIN OVER
   .000050/(0.00127) MIN. NICKEL PLATE.
   B = .000015/(0.00038) MIN. SELECT GOLD IN CONTACT AREA;
   .000100/(0.00254) MIN. SELECT MATTE TIN ON SOLDER TAILS;
   BOTH OVER .000050/(0.00127) MIN. NICKEL PLATE.
   C = .000030/(0.00076) MIN. SELECT GOLD IN CONTACT AREA;
   .000100/(0.00254) MIN. SELECT MATTE TIN ON SOLDER TAILS;
   BOTH OVER .000050/(0.00127) MIN. NICKEL PLATE.
   * 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.
3. PRODUCT SPECIFICATION: PS-43045
4. TRAY PACKAGED: SEE MOLEX DRAWING PK-70873-0313
5. MATES WITH MICRO FIT (3.0) RECEPTACLE SERIES 43025
6. PARTS MANUFACTURED AFTER 2007/02/28 MAY HAVE ADDITIONAL .010/0.25 OFFSETS AS INDICATED.

REV: G
DESCRIPTION: ADD OFFSET/NOTE 6
EC NO: UCP2007-1860
DRWN:MKIPPER 2007/01/29
CHKD:SSOUSEK 2007/01/29
APPR:FSMITH 2007/01/30

QUALITY SYMBOLS
▼=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± .010
2 PLACES	± 0.25	± .014
1 PLACE	± 0.36	± ---
ANGULAR ±1/2°		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DIMENSION STYLE: IN/MM
SCALE: ---
DESIGN UNITS: METRIC
THIRD ANGLE PROJECTION

DRAWN BY: SAMIEC DATE: 2000/03/15
CHECKED BY: MUELLER DATE: 2000/03/15
APPROVED BY: EDGLEY DATE: 2000/03/15

TITLE: MICRO FIT (3.0) DUAL ROW RIGHT ANGLE THRU HOLE HEADER W/CLIPS

MOLEX INCORPORATED

MATERIAL NO.: SEE CHART
DOCUMENT NO.: SD-43045-008
SHEET NO.: 1 OF 1
SIZE: C