Jameco Part Number 884184

FEATURES AND SPECIFICATIONS

3.00mm (.118") Pitch Micro-Fit 3.0™ Wire-to-Board Header

43650

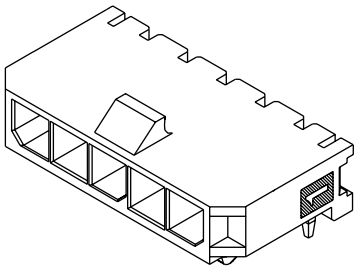
Single Row Right Angle

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

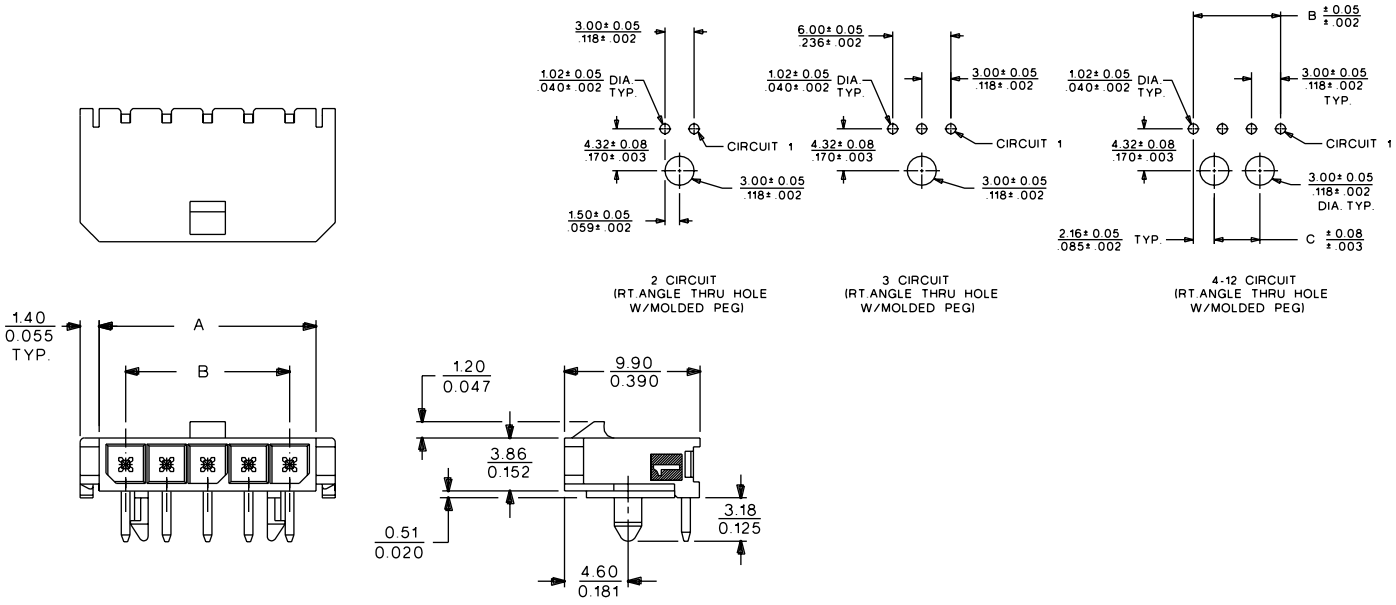
Reference Information
Product Specification: PS-43650
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980
TUV License No.: R95107
Mates With: 43645
Designed In: Millimeters

Electrical
Voltage: 250V
Current: 5.0A max.
Contact Resistance: 10mΩ max.
Dielectric Withstanding Voltage: 1500V AC
Insulation Resistance: 1000 MΩ min.

Physical
Housing: High temperature LCP, UL 94V-0
Contact: Brass
Plating: Tin or Gold



CATALOG DRAWING (FOR REFERENCE ONLY)



ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.			Dimension		
	Tin	15µ" Gold	30µ" 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)

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

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).	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 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)	Apply an axial pullout force on the wire at a rate of 25 ± 6 mm (1 ± ¼ inch).	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 ± 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

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)
Corrosive Atmosphere: Sulfur Dioxide Gas (SO_2)	Mate connectors: Duration: 24 hours exposure; Atmosphere: 50 parts per million (ppm) SO_2 gas; Temperature: 40 ± 3°C	20 milliohms MAXIMUM (change from initial)
Corrosive Atmosphere: Ammonia Gas (NH_3)	Mate connectors: Duration: 40 minutes exposure; Atmosphere: NH_3 gas evaporating from a 28% Ammonia solution	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**

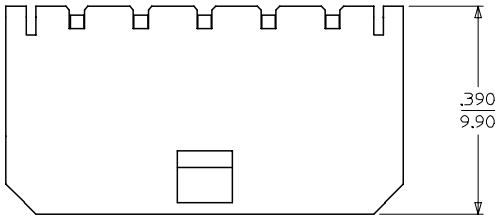
7.0 GAGES AND FIXTURES

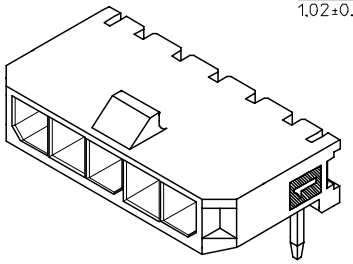
It is recommended that test plugs (Series 44242) be used for continuity testing of receptacles. Standard mating parts should not be used for harness testing.

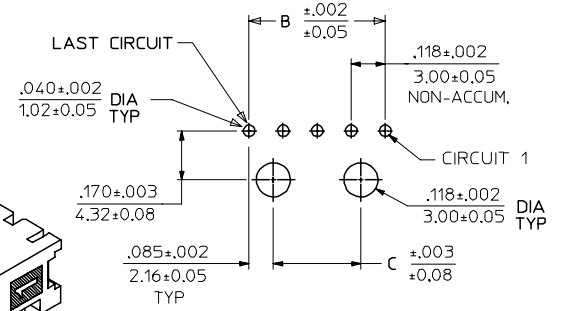
8.0 OTHER INFORMATION

43650

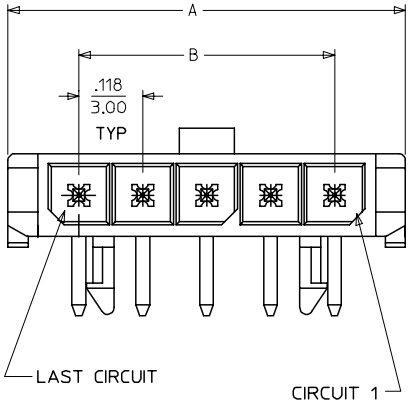
CKTS	A	B	C
2	.380 / 9.65	.118 / 3.00	NA
3	.498 / 12.65	.236 / 6.00	NA
4	.616 / 15.65	.354 / 9.00	.185 / 4.70
5	.734 / 18.64	.472 / 12.00	.303 / 7.70
6	.852 / 21.64	.591 / 15.00	.421 / 10.70
7	.970 / 24.64	.709 / 18.00	.539 / 13.70
8	1.088 / 27.64	.827 / 21.00	.657 / 16.70
9	1.206 / 30.63	.945 / 24.00	.776 / 19.70
10	1.325 / 33.66	1.063 / 27.00	.894 / 22.70
11	1.443 / 36.65	1.181 / 30.00	1.012 / 25.70
12	1.561 / 39.65	1.299 / 33.00	1.130 / 28.70

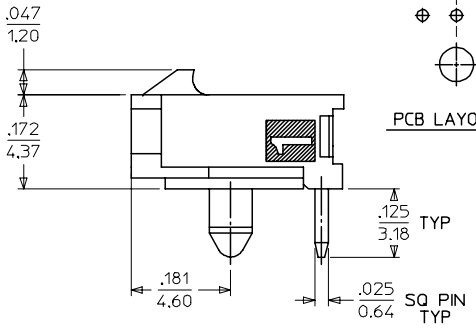


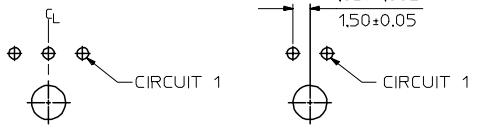




PCB LAYOUT: COMPONENT SIDE
RECOMMENDED PCB THICKNESS: .062/1.57
4-12 CIRCUIT HEADERS

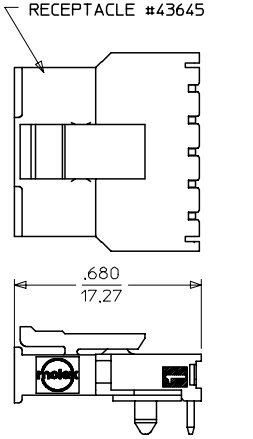






PCB LAYOUT: 3 CKT

PCB LAYOUT: 2 CKT



MATED MICRO FIT CONNECTOR

CKTS	FINISH A MATERIAL NO:	FINISH B MATERIAL NO:	FINISH C MATERIAL NO:
02	43650-0200	43650-0201	43650-0202
03	43650-0300	43650-0301	43650-0302
04	43650-0400	43650-0401	43650-0402
05	43650-0500	43650-0501	43650-0502
06	43650-0600	43650-0601	43650-0602
07	43650-0700	43650-0701	43650-0702
08	43650-0800	43650-0801	43650-0802
09	43650-0900	43650-0901	43650-0902
10	43650-1000	43650-1001	43650-1002
11	43650-1100	43650-1101	43650-1102
12	43650-1200	43650-1201	43650-1202

NOTES:

1. HOUSING MATERIAL: LIQUID CRYSTAL POLYMER, GLASS FILLED, UL94V-0, COLOR - BLACK
   TERMINAL MATERIAL: BRASS ALLOY
2. 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.
3. PRODUCT SPECIFICATION: PS-43650
4. MATES WITH MICRO FIT (3.0) RECEPTACLE SERIES 43645
5. TRAY PACKAGED : SEE MOLEX DRAWING PK-70873-0321

LEAD FREE
EC NO: UCP2004-1276 2004/03/12
DRWN: JCERNY 2004/03/31
CHKD:
APPR: FSMITH 2004/04/05
DESCRIPTION
REV

QUALITY SYMBOLS
▼ = 0
▽(C) = 0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± .010
2 PLACES	± 0.25	± .014
1 PLACE	± 0.35	± ---
ANGULAR ±1/2°		

DRAFT WHERE APPLICABLE
MUST REMAIN WITHIN DIMENSIONS

SCALE ---
DESIGN UNITS METRIC
THIRD ANGLE PROJECTION
REVISE ON CAD ONLY
DIMENSION STYLE IN/MM

DRAWN BY SAMIEC DATE 2000/07/07
CHECKED BY MUELLER DATE 2000/07/07
APPROVED BY EDGLEY DATE 2000/07/07

TITLE
MICRO-FIT (3.0)
SINGLE ROW / RIGHT ANGLE
THRU HOLE / PEGS / TRAY

MOLEX INCORPORATED

MATERIAL NO. SEE CHART
DOCUMENT NO. SD-43650-001
SHEET NO. 1 OF 1

C

tb_frame_C_P_ME_T
Rev. C 2002/05/05