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Jameco Part Number 884109



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

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DOCUMENT NUMBER: PS-43650	CREATED / REVISED BY: M.KIPPER	CHECKED BY: S.SOUSEK	APPROVED BY: 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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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).	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).	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

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PS-43650	M.KIPPER	S.SOUSEK	F.SMITH



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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)
Corrosive Atmosphere: Sulfur Dioxide Gas (SO₂)	Mate connectors: Duration: 24 hours exposure; Atmosphere: 50 parts per million (ppm) SO ₂ gas; Temperature: $40 \pm 3^{\circ}\text{C}$	20 milliohms MAXIMUM (change from initial)
Corrosive Atmosphere: Ammonia Gas (NH₃)	Mate connectors: Duration: 40 minutes exposure; Atmosphere: NH ₃ gas evaporating from a 28% Ammonia solution	20 milliohms MAXIMUM (change from initial)

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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

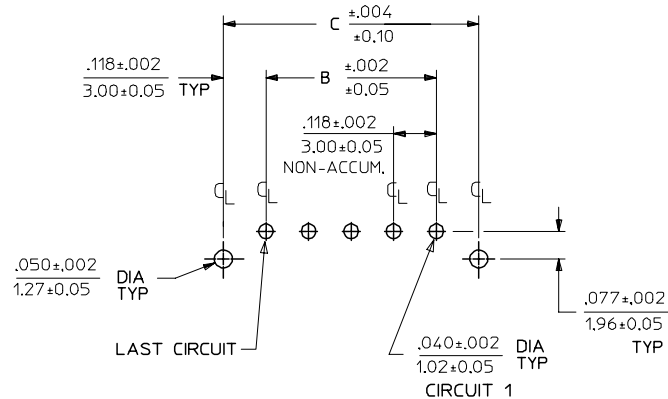
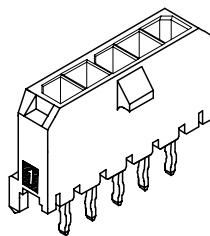
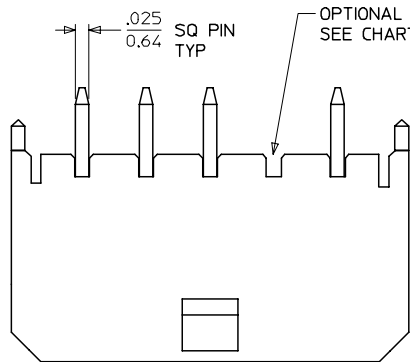
Headers: PK-70873-0321, PK-70873-0811, PK-70873-07**

7.0 GAGES AND FIXTURES

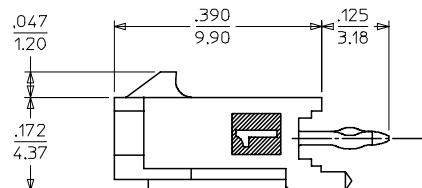
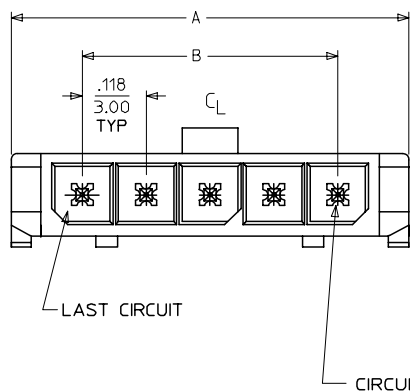
It is recommended that test plugs (Series 44242) be used for continuity testing of receptacles. Standard mating parts should not be used for harness testing.

8.0 OTHER INFORMATION

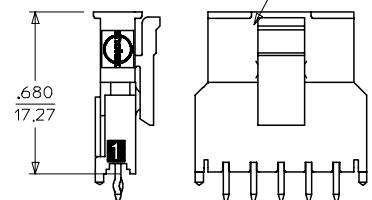
<u>REVISION:</u> J	<u>ECR/ECN INFORMATION:</u> <u>EC No:</u> UCP2007-0365 <u>DATE:</u> 2006/08/08	<u>TITLE:</u> PRODUCT SPECIFICATION MICRO-FIT SINGLE ROW CONNECTORS	<u>SHEET No.</u> 5 of 5
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PCB LAYOUT: COMPONENT SIDE
RECOMMENDED PCB THICKNESS: .062/157



RECEPTACLE #43645



MATED MICRO FIT CONNECTORS

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-70873-0811

FINISH A			
CKTS	MATERIAL NO:	VOID CKT	
02	43650-0215		
03	43650-0315		
04	43650-0415		
05	43650-0515		
06	43650-0615		
07	43650-0715		
08	43650-0815		
09	43650-0915		
10	43650-1015		
11	43650-1115		
12	43650-1215		
03	43650-0330	02	
05	43650-9915	03	
06	43650-0630	02,04,05	

FINISH B			
CKTS	MATERIAL NO:	VOID CKT	
02	43650-0216		
03	43650-0316		
04	43650-0416		
05	43650-0516		
06	43650-0616		
07	43650-0716		
08	43650-0816		
09	43650-0916		
10	43650-1016		
11	43650-1116		
12	43650-1216		
04	43650-0431	02,03	

FINISH C			
CKTS	MATERIAL NO:	VOID CKT	
02	43650-0217		
03	43650-0317		
04	43650-0417		
05	43650-0517		
06	43650-0617		
07	43650-0717		
08	43650-0817		
09	43650-0917		
10	43650-1017		
11	43650-1117		
12	43650-1217		
04	43650-0430	02,03	

LEAD FREE EC NO: UCP2004-1276 DRAWN: JCERNY 2004/03/12 CHKD: 2004/03/31 APPR: FSMITH 2004/04/05	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)			SCALE ---	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION		REVISE ON CAD ONLY			
					DIMENSION STYLE		TITLE MICRO-FIT (3.0) SINGLE ROW / VERTICAL THRU HOLE / PEGS / TRAY					
					IN/MM							
			▽ = 0	4 PLACES	± ---	± ---	DRAWN BY		DATE		MOLEX MOLEX INCORPORATED	
				3 PLACES	± ---	± .010	SAMIEC		2000/07/07			
				2 PLACES	± 0.25	± .014	CHECKED BY		DATE			
				1 PLACE	± 0.36	± ---	MUELLER		2000/07/07			
			▽ = 0	ANGULAR		± 1/2°		APPROVED BY		DATE		MATERIAL NO.
DRAFT WHERE APPLICABLE				EDGLEY		2000/07/07		DOCUMENT NO.				
MUST REMAIN WITHIN DIMENSIONS								SHEET NO.				
REV	DESCRIPTION									THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		