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Jameco Part Number 800471

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™

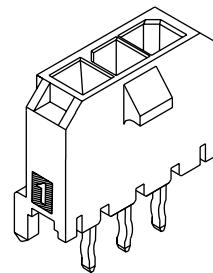
Wire-to-Board
Header

43650

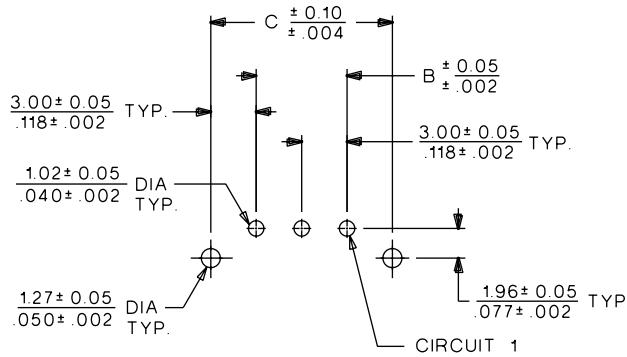
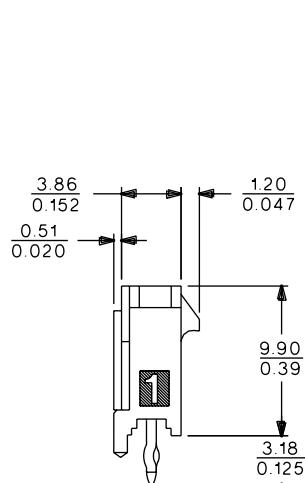
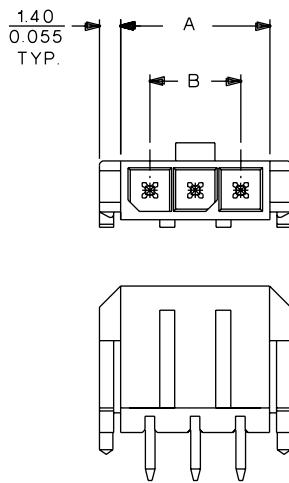
Single Row
Vertical

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)



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> J	<u>ECR/ECN INFORMATION:</u> EC No: UCP2007-0365 <u>DATE:</u> 2006/08/08	<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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<i>TEMPLATE FILENAME: PRODUCT_SPEC(SIZE_A)(V.1).DOC</i>			



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).	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

REVISION:	ECR/ECN INFORMATION:	TITLE:	PRODUCT SPECIFICATION MICRO-FIT SINGLE ROW CONNECTORS	SHEET No.
J	EC No: UCP2007-0365			3 of 5
DATE:	2006/08/08			
DOCUMENT NUMBER:	PS-43650	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
		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)
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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<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
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PRODUCT SPECIFICATION

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>	<u>ECR/ECN INFORMATION:</u>	<u>TITLE:</u>	PRODUCT SPECIFICATION	<u>SHEET No.</u>
J	<u>EC No:</u> UCP2007-0365		MICRO-FIT	
	<u>DATE:</u> 2006/08/08		SINGLE ROW CONNECTORS	5 of 5
<u>DOCUMENT NUMBER:</u>		<u>CREATED / REVISED BY:</u>	<u>CHECKED BY:</u>	<u>APPROVED BY:</u>
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