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ELECTRONICS

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Jameco Part Number 883827



# 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°

<b>REVISION:</b> <b>K</b>	<b>EGR/ECN INFORMATION:</b> EC No: <b>UCP2007-0365</b> DATE: <b>2006/08/08</b>	<b>TITLE:</b> <b>PRODUCT SPECIFICATION MICRO-FIT DUAL ROW CONNECTORS</b>	<b>SHEET No.</b> <b>1 of 5</b>
<b>DOCUMENT NUMBER:</b> <b>PS-43045</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

### 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 ± 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
<b>Terminal Retention Force (in Housing)</b>	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
<b>Terminal Insertion Force (into Housing)</b>	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

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DOCUMENT NUMBER: <b>PS-43045</b>	CREATED / REVISED BY: <b>M.KIPPER</b>	CHECKED BY: <b>S.SOUSEK</b>	APPROVED BY: <b>F.SMITH</b>



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## 5.2 MECHANICAL REQUIREMENTS

<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 1/2 sine wave (11 milliseconds) shocks in the ±X,±Y,±Z axes (18 shocks total).	20 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
<b>Wire Pullout Force (Axial)</b> (Wire from Terminal)	Apply an axial pullout force on the wire at a rate of 25 ± 6 mm (1 ± 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)
<b>Normal Force</b>	Apply a perpendicular force.	2.7 N (275 grams) MINIMUM
<b>Pin to Header Retention</b>	Apply axial push force to pin at a rate of 25 ± 6 mm (1 ± 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 ± 6 mm (1 ± 1/4 inch) per minute.	68.4 N (15.4 lbf) MINIMUM Yield Strength
<b>Panel Mount Retention</b>	Full mate and then Unmate the connectors at a rate of 25 ± 6 mm (1 ± 1/4 inch) per minute.	155.7 N (35 lbf) MINIMUM pushout force
<b>Compliant Pin Insertion Force into PCB Hole (44914 Series)</b>	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± 1/4 inch).	106.7 N (24 lbf) MAXIMUM Insertion force (Per Terminal)
<b>Compliant Pin Retention Force in PCB Hole (44914 Series)</b>	Apply an axial extraction force on the terminal at a rate of 25 ± 6 mm (1 ± 1/4 inch).	35.6 N (8 lbf) MINIMUM Retention force (Per Terminal)

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<b>DOCUMENT NUMBER:</b> <b>PS-43045</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>



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## 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)
<b>Corrosive Atmosphere: Sulfur Dioxide Gas (SO<sub>2</sub>)</b>	Mate connectors: Duration: 24 hours exposure; Atmosphere: 50 parts per million (ppm) SO <sub>2</sub> gas; Temperature: 40 ± 3°C	20 milliohms MAXIMUM (change from initial)
<b>Corrosive Atmosphere: Ammonia Gas (NH<sub>3</sub>)</b>	Mate connectors: Duration: 40 minutes exposure; Atmosphere: NH <sub>3</sub> gas evaporating from a 28% Ammonia solution	20 milliohms MAXIMUM (change from initial)

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DOCUMENT NUMBER: <b>PS-43045</b>	CREATED / REVISED BY: <b>M.KIPPER</b>	CHECKED BY: <b>S.SOUSEK</b>	APPROVED BY: <b>F.SMITH</b>



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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-43025-001

Plug: PK-43020-001

Headers: PK-70873-0313, PK-70873-0314, PK-70873-05\*\*.

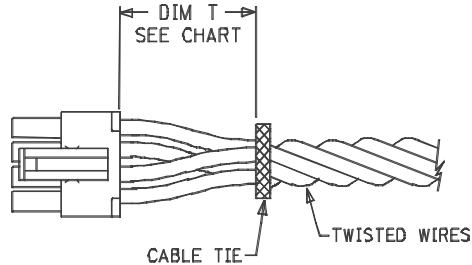
## 7.0 GAGES AND FIXTURES

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

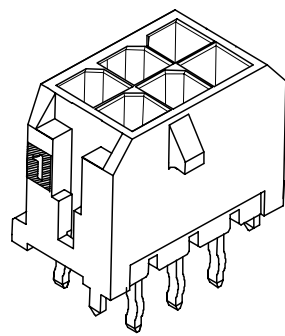
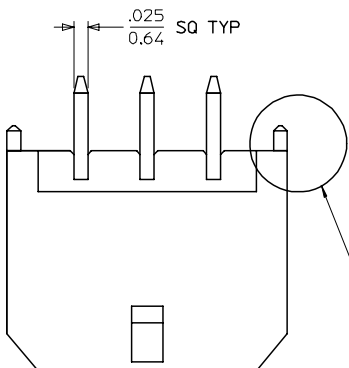
CKT Sizes	Dim T	Min.
2-8	.500	(12.70)
10-16	.750	(19.10)
18-24	1.000	(25.40)



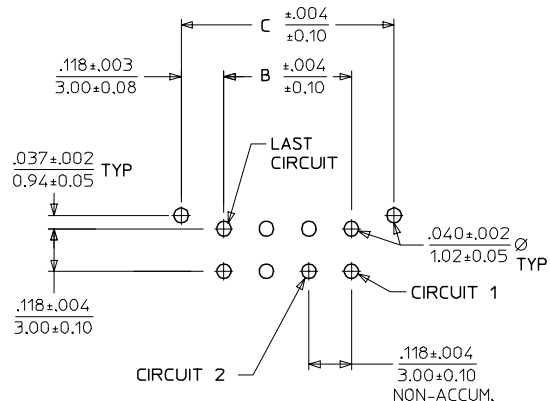
REVISION: <b>K</b>	EGR/ECN INFORMATION: EC No: <b>UCP2007-0365</b> DATE: <b>2006/08/08</b>	TITLE: <b>PRODUCT SPECIFICATION MICRO-FIT DUAL ROW CONNECTORS</b>	SHEET No. <b>5 of 5</b>
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13 12 11 10 9 8 7 6 5 4 3 2 43045

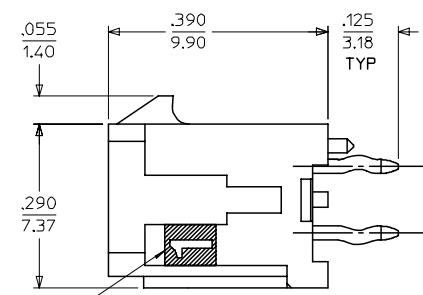
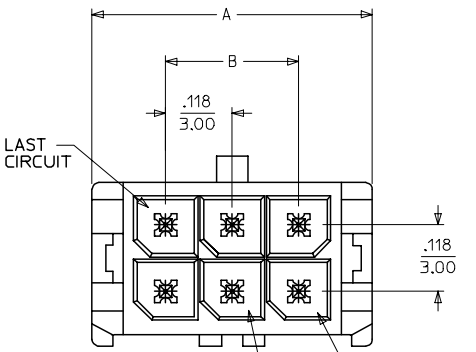
CKTS	A	B	C
02	.262 6.65	NA	.236 6.00
04	.380 9.65	.118 3.00	.354 9.00
06	.498 12.65	.236 6.00	.472 12.00
08	.616 15.65	.354 9.00	.591 15.00
10	.734 18.65	.472 12.00	.709 18.00
12	.852 21.65	.591 15.00	.827 21.00
14	.970 24.65	.709 18.00	.945 24.00
16	1.088 27.65	.827 21.00	1.063 27.00
18	1.206 30.65	.945 24.00	1.181 30.00
20	1.325 33.65	1.063 27.00	1.299 33.00
22	1.443 36.65	1.181 30.00	1.417 36.00
24	1.561 39.65	1.299 33.00	1.535 39.00



NOTE : (2) POLARIZATION PEGS ARE SHOWN. HOWEVER, ASSEMBLIES MAY BE MANUFACTURED WITH (1) PEG ONLY.



PCB LAYOUT: COMPONENT SIDE  
RECOMMEND PCB THICKNESS: .062/157



CIRCUIT 1  
CIRCUIT 2  
CIRCUIT "1" IDENTIFIED ON THIS SURFACE (APPROX. LOCATION SHOWN FOR REF.)

NOTES:

- HOUSING MATERIAL: GLASS FILLED LIQUID CRYSTAL POLYMER, UL94V-0. COLOR: BLACK  
TERMINAL MATERIAL: BRASS ALLOY
- 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 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 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.
- PRODUCT SPECIFICATION: PS-43045
- MATES WITH MICRO FIT (3.0) RECEPTACLE SERIES 43025
- TRAY PACKAGED: SEE MOLEX DRAWING PK-70873-0314

	FINISH A	FINISH B	FINISH C
CKTS	MATERIAL NO:	MATERIAL NO:	MATERIAL NO:
02	43045-0212	43045-0213	43045-0214
04	43045-0412	43045-0413	43045-0414
06	43045-0612	43045-0613	43045-0614
08	43045-0812	43045-0813	43045-0814
10	43045-1012	43045-1013	43045-1014
12	43045-1212	43045-1213	43045-1214
14	43045-1412	43045-1413	43045-1414
16	43045-1612	43045-1613	43045-1614
18	43045-1812	43045-1813	43045-1814
20	43045-2012	43045-2013	43045-2014
22	43045-2212	43045-2213	43045-2214
24	43045-2412	43045-2413	43045-2414

CHANGED "1" LOCATION EC NO: UCP2006-1962 DRAWN:PRDIER 2006/03/30 CHKD:SSOUSEK 2006/03/31 APPR:FSMITH 2006/04/03	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)	SCALE ---	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION	REVISE ON CAD ONLY	
	DESCRIPTION -0 -0	4 PLACES ± --- ± ---	mm INCH	DIMENSION STYLE IN/MM		DRAWN BY DATE SAMIEC 2000/03/15 CHECKED BY DATE MUELLER 2000/03/15 APPROVED BY DATE EDGLEY 2000/03/15	TITLE MICRO FIT (3.0) DUAL ROW VERTICAL THRU HOLE HEADER ASS'Y molex MOLEX INCORPORATED
		3 PLACES ± --- ± .010					
		2 PLACES ± 0.25 ± .014					
1 PLACE ± 0.36 ± ---							
	ANGULAR ±1/2°	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		MATERIAL NO. DOCUMENT NO. SHEET NO.			
				SD-43045-005 1 OF			
				THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION			

12 11 10 9 8 7 6 5 4 3 2 1