Jameco Part Number 883974

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:

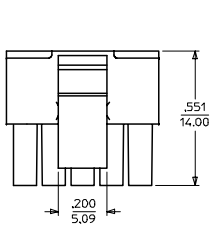
Receptacle: PK-43645-001
Plug: PK-43640-001
Headers: PK-70873-0321, PK-70873-0811, PK-70873-07**

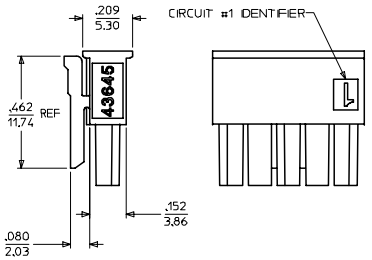
7.0 GAGES AND FIXTURES

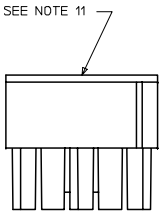
It is recommended that test plugs (Series 44242) be used for continuity testing of receptacles. Standard mating parts should not be used for harness testing.

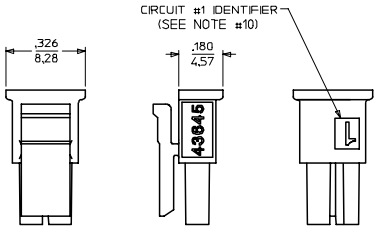
8.0 OTHER INFORMATION

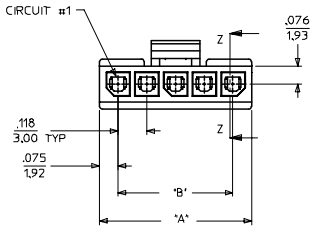
ITEM NUMBER	ITEM NUMBER WITH I.D. RIB	NUMBER OF CIRCUIT	DIM. "A"	DIM. "B"
43645-0200	43645-02XX	02	SEE DETAIL	.118/(3,00)
43645-0300	43645-03XX	03	.388/(9,85)	.236/(6,00)
43645-0400	43645-04XX	04	.506/(12,85)	.354/(9,00)
43645-0500	43645-05XX	05	.624/(15,85)	.472/(12,00)
43645-0600	43645-06XX	06	.742/(18,85)	.591/(15,00)
43645-0700	43645-07XX	07	.860/(21,85)	.709/(18,00)
43645-0800	43645-08XX	08	.978/(24,85)	.827/(21,00)
43645-0900	43645-09XX	09	1.096/(27,85)	.945/(24,00)
43645-1000	43645-10XX	10	1.215/(30,85)	1.063/(27,00)
43645-1100	43645-11XX	11	1.333/(33,85)	1.181/(30,00)
43645-1200	43645-12XX	12	1.451/(36,85)	1.299/(33,00)

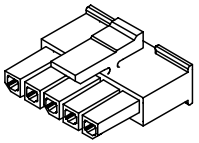


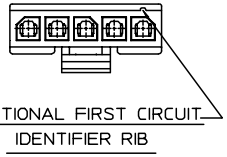


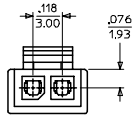


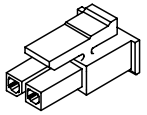






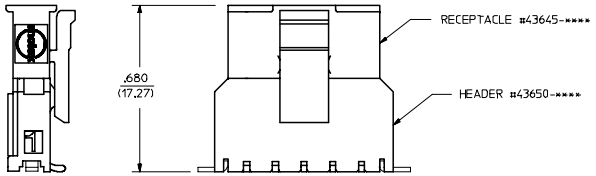


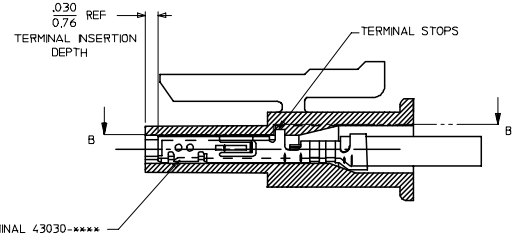




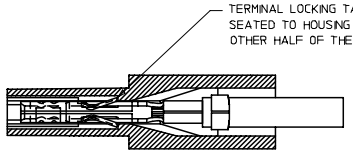
(2 CIRCUIT HOUSING)

(3-12 CIRCUIT HOUSING)





SECTION "A"-"A"
SHOWN WITH TERMINAL INSTALLED

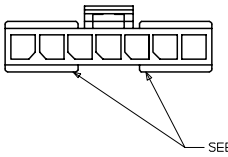


SECTION "B"-"B"

MATED MICRO-FIT CONNECTOR

NOTES:

1. MATERIAL : POLYESTER (PBT), UL94V-0.
   COLOR - BLACK
2. FINISH : N/A
3. PRODUCT SPECIFICATION : PS-43650
4. THIS RECEPTACLE ACCEPTS MOLEX MICRO FIT FEMALE CRIMP TERMINALS ONLY.
   SEE MOLEX DRAWING SD-43030-**** FOR SPECIFICATIONS.
5. SEE SECTION "A"-"A" FOR TERMINAL ORIENTATION IN HOUSING.
6. FOR OVERMOLDING PARAMETERS SEE ENGINEERING SPECIFICATION #SDES-43025-1000.
7. THIS RECEPTACLE MATES WITH MOLEX PCB HEADER 43650 SERIES AND
   MOLEX PLUG 43640 SERIES (WIRE TO WIRE APPLICATIONS).
8. SOME HOUSINGS MAY HAVE A SMALL GATE BLEMISH NEAR THE CIRCUIT #1 IDENTIFIER THAT DOES NOT AFFECT FUNCTIONALITY.
9. MOLEX RECOMMENDS THE USE OF MICRO-FIT TEST PLUG, SERIES 44242-**** WHENEVER CONTINUITY TESTING IS PERFORMED.
   TEST PLUGS MUST NOT BE USED TO MAKE OR BREAK UNDER LOAD. MOLEX DOES NOT RECOMMEND USING
   STANDARD MATING COMPONENTS FOR HARNESS TESTING PURPOSES.
10. HOUSINGS MAY HAVE EITHER AN IDENTIFIER RIB OR THE "1" SYMBOL
    ENGRAVED TO INDICATE CIRCUIT #1.
11. THIS RIB IS DISCONTINUOUS ON CIRCUIT SIZES 7 THROUGH 12



REV	DESCRIPTION	DRWN	CHKD	APPR	DATE
D2	ADD NOTE 11 EC NO: UCP2007-0404	BWIRKUS	SSOUSEK	KIPPER	2006/08/15 2006/08/28 2006/08/28

QUALITY SYMBOLS
▼=0
▽=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

DIMENSION STYLE: IN/MM
SCALE: 4:1
DESIGN UNITS: INCH
THIRD ANGLE PROJECTION

DRAWN BY: A.F.G. DATE: 1995/11/15
CHECKED BY: B.A.P. DATE: 1995/11/15
APPROVED BY: R.J.F. DATE: 1995/11/15

TITLE: MICRO-FIT (3.0)
2 THRU 12 SINGLE ROW
RECEPTACLE

MOLEX INCORPORATED

MATERIAL NO.: SEE CHART
DOCUMENT NO.: SDA-43645-****
SHEET NO.: 1 OF 1
SIZE: D