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ELECTRONICS

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Jameco Part Number 882824

FEATURES AND SPECIFICATIONS

Features and Benefits

- Fully isolated contacts
- Fully polarized to mating receptacle
- Integral pull tabs for ease in unmating
- Optional panel mount ears

Reference Information

Product Specification: PS-43045

Packaging: Bag

UL File No.: E29179

CSA File No.: LR19980

TUV License No.: R95107

Mates With: [43025](#)

Use With: [43031](#)

Designed In: Millimeters

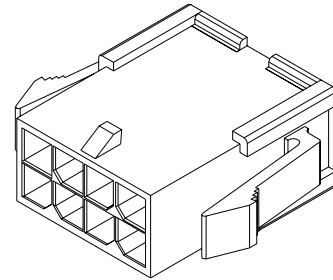
Physical

Housing: Polyester, UL 94V-0

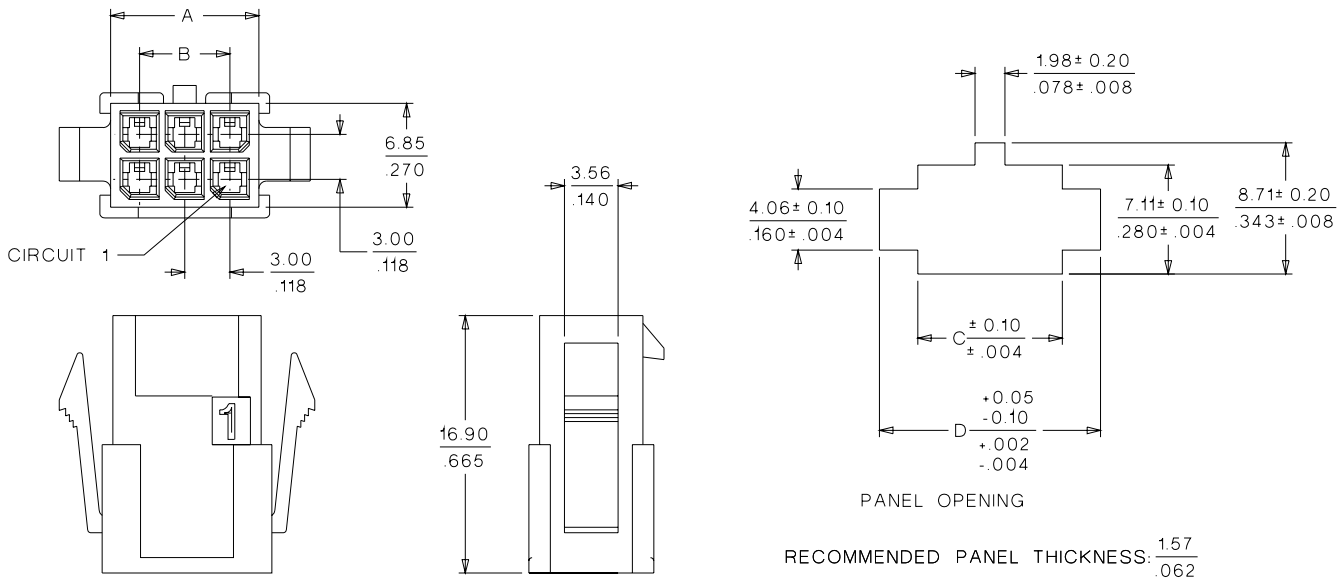
molex® 3.00mm (.118") Pitch Micro-Fit 3.0™ Wire-to-Wire Plug

43020

Dual Row, with or without Panel Mount Ears



CATALOG DRAWING (FOR REFERENCE ONLY)



ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.		Dimension			
	Panel Mount	Free Hanging	A	B	C	D
2	• 43020-0200	• 43020-0201	3.86 (.152)		4.21 (.166)	7.90 (.311)
4	• 43020-0400	• 43020-0401	6.85 (.270)	3.00 (.118)	7.21 (.284)	10.90 (.429)
6	• 43020-0600	• 43020-0601	9.85 (.388)	6.00 (.236)	10.21 (.402)	13.89 (.547)
8	• 43020-0800	• 43020-0801	12.85 (.506)	9.00 (.354)	13.21 (.520)	16.89 (.665)
10	• 43020-1000	• 43020-1001	15.85 (.624)	12.00 (.472)	16.21 (.638)	19.89 (.783)
12	• 43020-1200	• 43020-1201	18.85 (.742)	15.00 (.591)	19.21 (.756)	22.89 (.901)
14	• 43020-1400	• 43020-1401	21.85 (.860)	18.00 (.709)	22.20 (.874)	25.88 (1.019)
16	• 43020-1600	• 43020-1601	24.85 (.978)	21.00 (.827)	25.20 (.992)	28.88 (1.137)
18	• 43020-1800	• 43020-1801	27.85 (1.096)	24.00 (.945)	28.20 (1.110)	31.88 (1.255)
20	• 43020-2000	• 43020-2001	30.85 (1.215)	27.00 (1.063)	31.22 (1.229)	34.87 (1.373)
22	• 43020-2200	• 43020-2201	33.85 (1.333)	30.00 (1.181)	34.22 (1.347)	37.87 (1.491)
24	• 43020-2400	• 43020-2401	36.85 (1.451)	33.00 (1.299)	37.22 (1.465)	40.87 (1.609)

• US Standard Product, available through Molex franchised distributors



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: R95107

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

4.0 RATINGS

4.1 VOLTAGE

UL: 250 Volts

TUV: 200 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)

4.3 TEMPERATURE

Operating: - 40°C to + 105°C (Including Terminal Temperature Rise)

Nonoperating: - 40°C to + 105°

REVISION: H	ECR/ECN INFORMATION: EC No: UCP2003-2248 DATE: 2003 / 04 / 21	TITLE: PRODUCT SPECIFICATION MICRO-FIT DUAL ROW CONNECTORS	SHEET No. 1 of 5
DOCUMENT NUMBER: PS-43045	CREATED / REVISED BY: SAMIEC	CHECKED BY: MUELLER	APPROVED BY: MARGULIS



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

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

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DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-43045	SAMIEC	MUELLER	MARGULIS



PRODUCT SPECIFICATION

5.2 MECHANICAL REQUIREMENTS

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) (Wire from Terminal)	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 (275 grams) 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
Panel Mount Retention	Full mate and then Unmate the connectors at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	155.7 N (35 lbf) MINIMUM pushout force
Compliant Pin Insertion Force into PCB Hole (44914 Series)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch).	106.7 N (24 lbf) MAXIMUM Insertion force (Per Terminal)
Compliant Pin Retention Force in PCB Hole (44914 Series)	Apply an axial extraction force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch).	35.6 N (8 lbf) MINIMUM Retention force (Per Terminal)

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PRODUCT SPECIFICATION

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]) & Visual: No Damage
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 & Visual: No Damage
Solderability	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES- 152)
Solder Resistance	Dip connector terminal tails in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 260 ± 5°C	Visual: No Damage to insulator material
Salt Spray	Mate connectors: Duration: 48 hours exposure; Atmosphere: salt spray from a 5% solution; Temperature: 35 +1/-2°C	20 milliohms MAXIMUM (change from initial) & Visual: No Damage
Cold Resistance	Mate connectors: Duration: 96 hours; Temperature: -40 ± 3°C	20 milliohms MAXIMUM (change from initial) & Visual: No Damage
Corrosive Atmosphere: Sulfur Dioxide Gas (SO₂)	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) & Visual: No Damage
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) & Visual: No Damage

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PRODUCT SPECIFICATION

6.0 PACKAGING

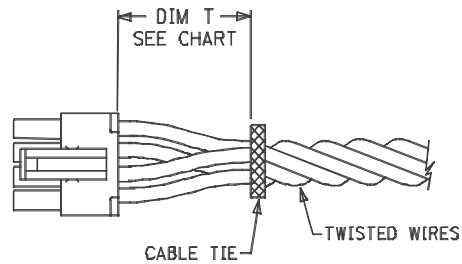
Parts shall be packaged to protect against damage during handling, transit and storage.

7.0 GAGES AND FIXTURES

8.0 OTHER INFORMATION

8.1 CABLE TIE AND OR WIRE TWIST LOCATION

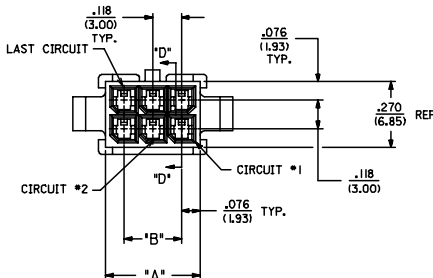
CKT Sizes	Dim T	Min.
2-8	.500	(12.70)
10-16	.750	(19.10)
18-24	1.000	(25.40)



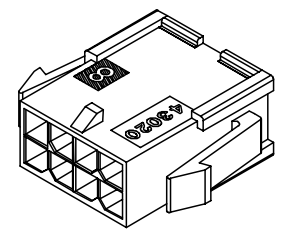
REVISION: H	ECR/ECN INFORMATION: EC No: UCP2003-2248 DATE: 2003 / 04 / 21	TITLE: PRODUCT SPECIFICATION MICRO-FIT DUAL ROW CONNECTORS	SHEET No. 5 of 5
DOCUMENT NUMBER: PS-43045	CREATED / REVISED BY: SAMIEC	CHECKED BY: MUELLER	APPROVED BY: MARGULIS

ASSEMBLY ITEM NUMBER	PART CHARACTERISTICS	
	NUMBER OF POSITION	PANEL MOUNT OPTION
43020-0200	02	YES
43020-0201	02	NO
43020-0400	04	YES
43020-0401	04	NO
43020-0600	06	YES
43020-0601	06	NO
43020-0800	08	YES
43020-0801	08	NO
43020-1000	10	YES
43020-1001	10	NO
43020-1200	12	YES
43020-1201	12	NO
43020-1400	14	YES
43020-1401	14	NO
43020-1600	16	YES
43020-1601	16	NO
43020-1800	18	YES
43020-1801	18	NO
43020-2000	20	YES
43020-2001	20	NO
43020-2200	22	YES
43020-2201	22	NO
43020-2400	24	YES
43020-2401	24	NO

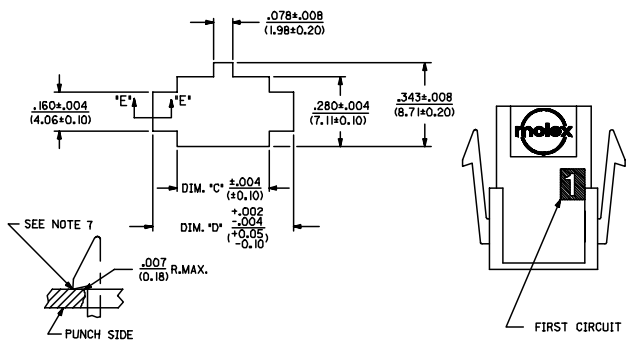
CKT. NO.	DIM. 'A'	DIM. 'B'	DIM. 'C'	DIM. 'D'
2	.152/(3.86)	N/A	.166/(4.21)	.311/(7.90)
4	.270/(6.85)	.118/(3.00)	.284/(7.21)	.429/(10.90)
6	.388/(9.85)	.236/(6.00)	.402/(10.21)	.547/(13.89)
8	.506/(12.85)	.354/(9.00)	.520/(13.21)	.665/(16.89)
10	.624/(15.85)	.472/(12.00)	.638/(16.21)	.783/(19.89)
12	.742/(18.85)	.591/(15.00)	.756/(19.21)	.901/(22.89)
14	.860/(21.85)	.709/(18.00)	.874/(22.20)	1.019/(25.88)
16	.978/(24.85)	.827/(21.00)	.992/(25.20)	1.137/(28.88)
18	1.096/(27.85)	.945/(24.00)	1.110/(28.20)	1.255/(31.88)
20	1.215/(30.85)	1.063/(27.00)	1.229/(31.22)	1.373/(34.87)
22	1.333/(33.85)	1.181/(30.00)	1.347/(34.22)	1.491/(37.87)
24	1.451/(36.85)	1.299/(33.00)	1.465/(37.22)	1.609/(40.87)



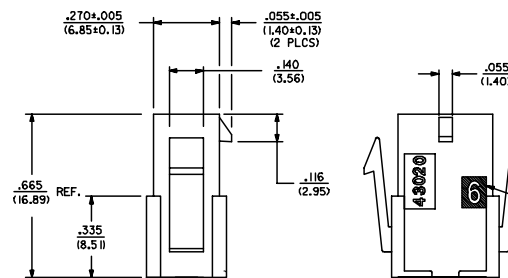
- NOTES:
- 1) HOUSING MATERIAL: UNFILLED POLYESTER (PBT), UL 94V-0
COLOR - BLACK
 - 2) PRODUCT SPECIFICATION: PS-43045
 - 3) THIS HOUSING MATES WITH MICRO-FIT RECEPTACLE #43025-*****
 - 4) THIS HOUSING TO BE USED WITH MOLEX MALE TERMINAL #43031-*****
 - 5) DESIGNED FOR .055(1.4) MINIMUM TO A .100(2.54) MAXIMUM THICK PANEL OR PRINTED CIRCUIT BOARD.
 - 6) SEE SECTION "D"- "D" FOR TERMINAL ORIENTATION IN HOUSING.
 - 7) PANEL MOUNT FEATURES MUST LOCK ON SIDE OPPOSITE PUNCH SIDE FOR OPTIMUM RETENTION.



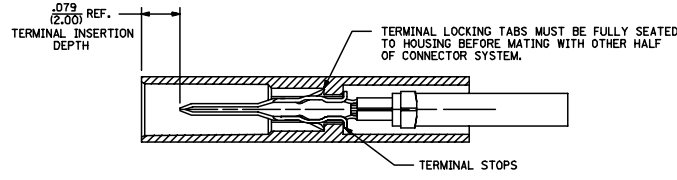
PLUG WITH OPTIONAL PANEL MOUNTS
ISO VIEW
(8 CIRCUIT SHOWN)



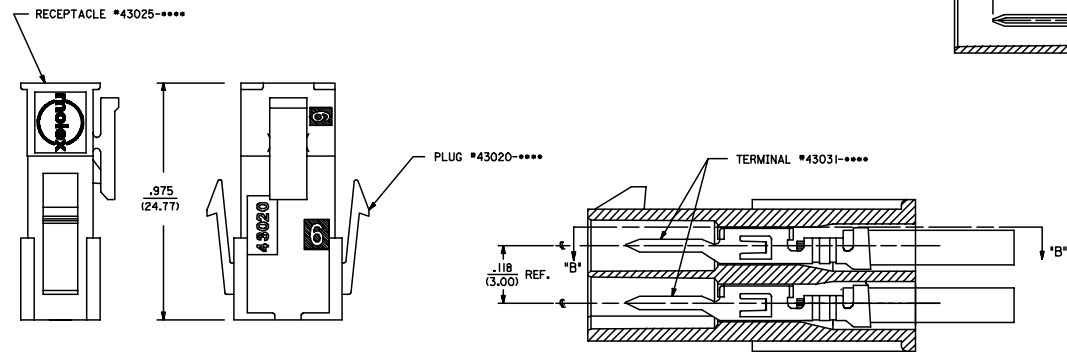
SECTION "E"- "E"
(NO SCALE)
RECOMMENDED PANEL CUT-OUT



OPTIONAL PANEL MOUNTS
LAST CIRCUIT



SECTION "B"- "B"



MATED MICRO-FIT CONNECTOR

SECTION "D"- "D"
WITH TERMINAL
(SCALE 8X)

QUALITY SYMBOLS ▽=0 ▽=0	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE	SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION
	4 PLACES ± --- ± --- 3 PLACES ± --- ± .010 2 PLACES ± 0.25 ± .014 1 PLACE ± 0.35 ± --- ANGULAR ±1/2°	IN/MM INCH	DRAWN BY DATE AFG 1993/01/07 CHECKED BY DATE BAP 1993/01/07 APPROVED BY DATE RAS 1993/01/07	4:1	METRIC
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS SIZE D	SEE CHART	MATERIAL NO.	DOCUMENT NO.	SHEET NO.	
			SDA-43020-*****	1 OF 1	