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**JAMECO**<sup>®</sup>  
ELECTRONICS

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Jameco Part Number 878884

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Sizes 2 to 28 circuits
- 4030 with voids is 4380 Series
- Various pin lengths available
- Voided circuits available (contact Molex)

### Reference Information

Product Specification: PS-10-07  
 Packaging: Bag  
 UL File No.: E29179  
 CSA File No.: LR19980  
 Mates With: 2695, 4455, 6471, 7720 and 7880  
 Designed In: Inches

### Electrical

Voltage: 250V  
 Current: 4.0A  
 Contact Resistance: 20mΩ max.  
 Dielectric Withstanding Voltage: 1500V  
 Insulation Resistance: 50K MΩ min.

### Mechanical

Durability:  
 Tin—25 cycles max.  
 Gold—100 cycles max.

### Physical

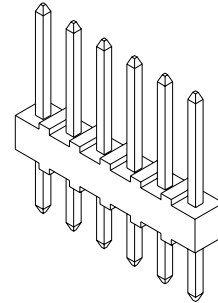
Housing: White nylon, UL 94V-0  
 Contact: Brass, 0.64mm (.025") square  
 Plating: See Table  
 Operating Temperature: 0 to +75°C

**molex**® **2.54mm (.100") Pitch**  
**KK**®

**Solid Header**

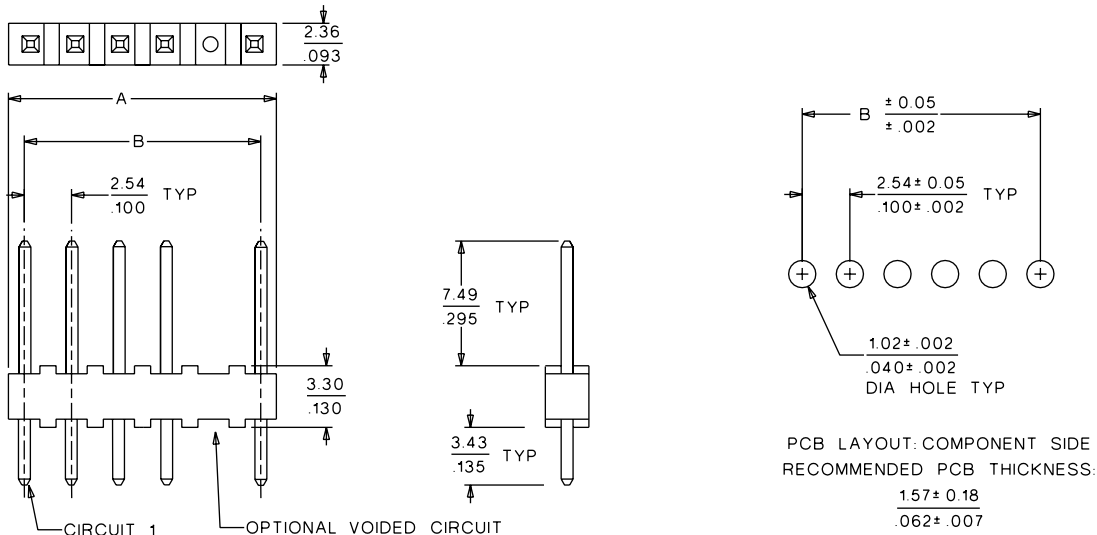
**4030**

**Vertical**



2.54mm (.100") Pitch

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.		Dimension	
	4030		A	B
	Tin	Gold		
2	• 22-03-2021	• 22-10-2021	4.83 (.190)	2.54 (.100)
3	• 22-03-2031	• 22-10-2031	7.37 (.290)	5.08 (.200)
4	• 22-03-2041	• 22-10-2041	9.91 (.390)	7.62 (.300)
5	• 22-03-2051	• 22-10-2051	12.45 (.490)	10.16 (.400)
6	• 22-03-2061	• 22-10-2061	14.99 (.590)	12.70 (.500)
7	• 22-03-2071	• 22-10-2071	17.53 (.690)	15.24 (.600)
8	• 22-03-2081	• 22-10-2081	20.07 (.790)	17.78 (.700)
9	• 22-03-2091	• 22-10-2091	22.61 (.890)	20.32 (.800)
10	• 22-03-2101	• 22-10-2101	25.15 (.990)	22.86 (.900)
11	• 22-03-2111	• 22-10-2111	27.69 (1.090)	25.40 (1.000)
12	• 22-03-2121	• 22-10-2121	30.23 (1.190)	27.94 (1.100)
13	• 22-03-2131	• 22-10-2131	32.77 (1.290)	30.48 (1.200)
14	• 22-03-2141	• 22-10-2141	35.31 (1.390)	33.02 (1.300)
15	• 22-03-2151	• 22-10-2151	37.85 (1.490)	35.56 (1.400)

Circuits	Order No.		Dimension	
	4030		A	B
	Tin	Gold		
16	• 22-03-2161	• 22-10-2161	40.39 (1.590)	38.10 (1.500)
17	• 22-03-2171	• 22-10-2171	42.93 (1.690)	40.64 (1.600)
18	• 22-03-2181	• 22-10-2181	45.47 (1.790)	43.18 (1.700)
19	• 22-03-2191	• 22-10-2191	48.01 (1.890)	45.72 (1.800)
20	• 22-03-2201	• 22-10-2201	50.55 (1.990)	48.26 (1.900)
21	• 22-03-2211	• 22-10-2211	53.09 (2.090)	50.80 (2.000)
22	• 22-03-2221	• 22-10-2221	55.63 (2.190)	53.34 (2.100)
23	• 22-03-2231	• 22-10-2231	58.17 (2.290)	55.88 (2.200)
24	• 22-03-2241	• 22-10-2241	60.71 (2.390)	58.42 (2.300)
25	• 22-03-2251	• 22-10-2251	63.25 (2.490)	60.96 (2.400)
26	• 22-03-2261	• 22-10-2261	65.79 (2.590)	63.50 (2.500)
27	• 22-03-2271	• 22-10-2271	68.33 (2.690)	66.04 (2.600)
28	• 22-03-2281	• 22-10-2281	70.87 (2.790)	68.58 (2.700)

• US Standard Product, available through Molex franchised distributors

Note: In the Far East, the polyester product has different Engineering No. and Order No.

Circuit 1 designation is used to orient the header to locate the voided circuit. Review mating connector to assure correct mating orientation.



# PRODUCT SPECIFICATION

## 1.0 SCOPE

This Product Specification covers the 2.54 mm (.100 inch) centerline (pitch) 0.64 mm (.025) square pin headers when mated with either printed circuit board (PCB) connectors or connectors terminated with 22 to 28 AWG wire using crimp technology.

## 2.0 PRODUCT DESCRIPTION

### 2.1 PRODUCT NAME AND SERIES NUMBERS

Crimp Terminals: 2759, 41572, 6459  
Crimp Housings: 2695  
PCB Connectors: 4455, 42625  
Headers: 4030, 4094, 6373, 7478, 42225, 42226, 42227, 42228, 42152, 42153, 42375, 42376, 42377, 42624.  
Other products conforming to this specification are noted on the individual drawings.

### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

Terminal Material: Brass or Phos. Bronze (for Max performance use phos bronze material.)  
Housing: Nylon or Polyester  
Pins: Brass or Phos. Bronze  
For more information on dimensions, materials, and plating see the individual drawings.

### 2.3 SAFETY AGENCY APPROVALS

UL File Number ..... E29179  
CSA .....LR19980

## 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

None

## 4.0 RATINGS

### 4.1 VOLTAGE

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
22	4.00	See Drawings
24	3.75	See Drawings
26	3.50	See Drawings
28	3.00	See Drawings

### 4.3 TEMPERATURE (ambient + 30° temp rise)

Operating: 0°C to +75°C  
Nonoperating: - 40°C to +105°C

<b>REVISION:</b> <b>P</b>	<b>EGR/ECN INFORMATION:</b> EC No: <b>UCR2002-0299</b> DATE: <b>2001 / 09 / 18</b>	<b>TITLE:</b> <b>PRODUCT SPECIFICATION</b> <b>.100 CENTER KK CONNECTORS</b>	<b>SHEET No.</b> <b>1 of 5</b>
<b>DOCUMENT NUMBER:</b> <b>PS-10-07</b>		<b>CREATED / REVISED BY:</b> <b>SAMIEC</b>	<b>CHECKED BY:</b> <b>MUELLER</b>
		<b>APPROVED BY:</b> <b>MARGULIS</b>	



# 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.	10 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.	2 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
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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# PRODUCT SPECIFICATION

## 5.2 MECHANICAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Connector Mate and Unmate Forces	Per circuit when mated to an .025 Sq. pin. Mate and unmate connector (male to female) at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	1.95 N (0.438 lbf) MAXIMUM insertion force & 0.56 N (0.125 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. (Forces will change with platings and materials.)	17.8 N (4.0 lbf) MINIMUM withdrawal force
Terminal Insertion Force (into Housing)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch). (Forces will change with platings and materials.)	6.67 N (1.5 lbf) MAXIMUM insertion force
Durability	Mate connectors up to 25 cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.	10 milliohms MAXIMUM (change from initial)
Vibration (Random)	Mate connectors and vibrate per EIA 364-28, test condition VII.	10 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).	10 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). (For maximum performance use Molex application tooling with stranded tinned copper wire)	22 awg = 44 N (10 lbf) 24 awg = 35 N (8 lbf) 26 awg = 26 N (6 lbf) 28 awg = 17 N (4 lbf) 30 awg = 13 N (3 lbf)
Normal Force	Apply a perpendicular force.	2.94 N (300 grams) average

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# PRODUCT SPECIFICATION

## 5.3 ENVIRONMENTAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT										
Shock (Thermal)	Mate connectors; expose to 5 cycles of: <table border="1"> <thead> <tr> <th>Temperature °C</th> <th>Duration (Minutes)</th> </tr> </thead> <tbody> <tr> <td>-40 +0/-3</td> <td>30</td> </tr> <tr> <td>+25 ±10</td> <td>5 MAXIMUM</td> </tr> <tr> <td>+105 +3/-0</td> <td>30</td> </tr> <tr> <td>+25 ±10</td> <td>5 MAXIMUM</td> </tr> </tbody> </table>	Temperature °C	Duration (Minutes)	-40 +0/-3	30	+25 ±10	5 MAXIMUM	+105 +3/-0	30	+25 ±10	5 MAXIMUM	10 milliohms MAXIMUM (change from initial) & Visual: No Damage
Temperature °C	Duration (Minutes)											
-40 +0/-3	30											
+25 ±10	5 MAXIMUM											
+105 +3/-0	30											
+25 ±10	5 MAXIMUM											
Thermal Aging	Mate connectors; expose to: 96 hours at 105 ± 2°C	10 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.	10 milliohms MAXIMUM (change from initial) & Dielectric Withstanding Voltage: No Breakdown at 500 VAC & Insulation Resistance: 1000 Megohms MINIMUM & Visual: No Damage										
Humidity (Cyclic)	Mate connectors: cycle per EIA-364-31: 24 cycles at temperature 25 ± 3°C at 80 ± 5% relative humidity and 65 ± 3°C at 50 ± 5% relative humidity; dwell time of 1.0 hour; ramp time of 0.5 hours.  {Note: Remove surface moisture and air dry for 1 hour prior to measurements.}	10 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)										

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# PRODUCT SPECIFICATION

## 5.3 ENVIRONMENTAL REQUIREMENTS

DESCRIPTION	TEST CONDITION	REQUIREMENT
Solder Resistance	Dip connector terminal tails in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 230 ± 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	10 milliohms MAXIMUM (change from initial) & Visual: No Damage
Cold Resistance	Mate connectors: Duration: 96 hours; Temperature: -40 ± 3°C	10 milliohms MAXIMUM (change from initial) & Visual: No Damage
Corrosive Atmosphere: Flowing Mixed Gas (FMG)	Mate connectors: Test per EIA-364-65, method 2A	10 milliohms MAXIMUM (change from initial) & Visual: No Damage

## 6.0 PACKAGING

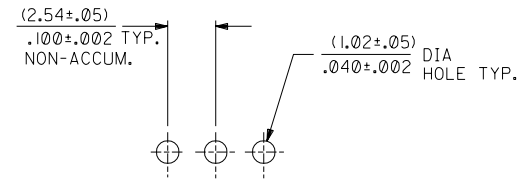
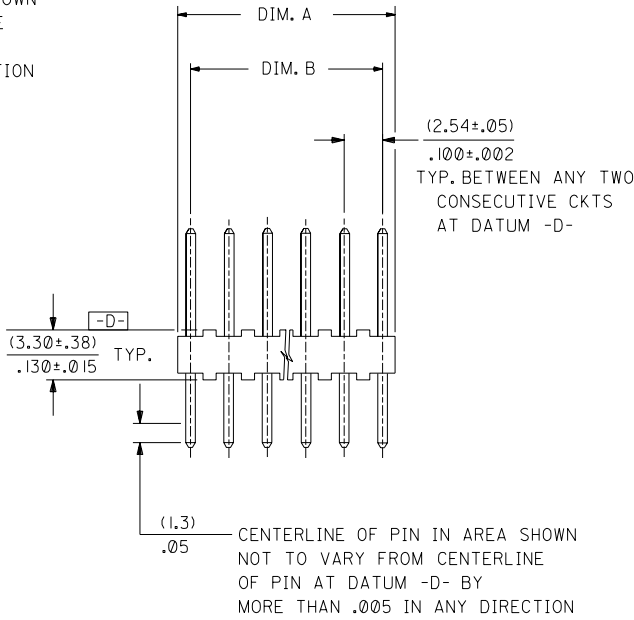
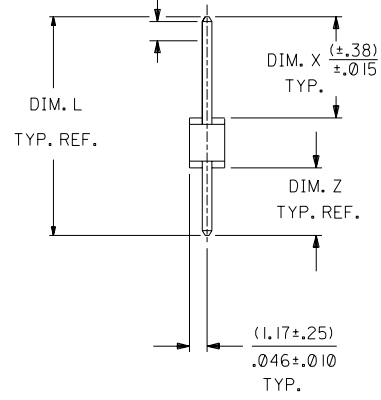
Parts shall be packaged to protect against damage during handling, transit and storage.

## 7.0 GAGES AND FIXTURES

## 8.0 OTHER

REVISION: <b>P</b>	EGR/ECN INFORMATION: EC No: <b>UCR2002-0299</b> DATE: <b>2001 / 09 / 18</b>	TITLE: <b>PRODUCT SPECIFICATION .100 CENTER KK CONNECTORS</b>	SHEET No. <b>5 of 5</b>
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(1.3)  
 .05 CENTERLINE OF PIN IN AREA SHOWN NOT TO VARY FROM CENTERLINE OF PIN AT DATUM -D- BY MORE THAN .008 IN ANY DIRECTION



RECOMMENDED P.C. BOARD HOLE DIMENSIONS

- NOTES:
1. PINS MUST CONFORM TO SOLDERABILITY SPEC. I52.
  2. PIN PUSH OUT FORCE: 2 LBS. MIN.
  3. PARTS ARE STACKABLE END TO END AND SIDE TO SIDE ON (2.54)/.100 CENTERS.
  4. MATERIAL: NYLON, UL 94V-0, COLOR: WHITE
  7. PARTS CONFORM TO PROD. SPEC. 10-07.
  8. FOR CUSTOMER DEFINED OPTIONS SUCH AS:  
 DIM L, X, AND Z  
 PLATINGS, AND PACKAGING  
 SEE DRAWING SDA-4030-002

CKTS. NO. OF	4030	
	DIM. B	DIM. A
2	.100 ± .002 ( 2.54 ± .05 )	.190 ± .008 ( 4.83 ± .20 )
3	.200 ± .005 ( 5.08 ± .13 )	.290 ± .008 ( 7.37 ± .20 )
4	.300 ± .005 ( 7.62 ± .13 )	.390 ± .008 ( 9.91 ± .20 )
5	.400 ± .005 ( 10.16 ± .13 )	.490 ± .008 ( 12.45 ± .20 )
6	.500 ± .006 ( 12.70 ± .15 )	.590 ± .009 ( 14.99 ± .23 )
7	.600 ± .006 ( 15.24 ± .15 )	.690 ± .009 ( 17.53 ± .23 )
8	.700 ± .006 ( 17.78 ± .15 )	.790 ± .009 ( 20.07 ± .23 )
9	.800 ± .007 ( 20.32 ± .18 )	.890 ± .010 ( 22.61 ± .25 )
10	.900 ± .007 ( 22.86 ± .18 )	.990 ± .010 ( 25.15 ± .25 )
11	1.000 ± .007 ( 25.40 ± .18 )	1.090 ± .010 ( 27.69 ± .25 )
12	1.100 ± .008 ( 27.94 ± .20 )	1.190 ± .011 ( 30.23 ± .28 )
13	1.200 ± .008 ( 30.48 ± .20 )	1.290 ± .011 ( 32.77 ± .28 )
14	1.300 ± .008 ( 33.02 ± .20 )	1.390 ± .011 ( 35.31 ± .28 )
15	1.400 ± .008 ( 35.56 ± .20 )	1.490 ± .011 ( 37.85 ± .28 )
16	1.500 ± .008 ( 38.10 ± .20 )	1.590 ± .011 ( 40.39 ± .28 )
17	1.600 ± .009 ( 40.64 ± .23 )	1.690 ± .012 ( 42.93 ± .30 )
18	1.700 ± .009 ( 43.18 ± .23 )	1.790 ± .012 ( 45.47 ± .30 )
19	1.800 ± .009 ( 45.72 ± .23 )	1.890 ± .012 ( 48.01 ± .30 )
20	1.900 ± .009 ( 48.26 ± .23 )	1.990 ± .012 ( 50.55 ± .30 )
21	2.000 ± .010 ( 50.80 ± .25 )	2.090 ± .013 ( 53.09 ± .33 )
22	2.100 ± .010 ( 53.34 ± .25 )	2.190 ± .013 ( 55.63 ± .33 )
23	2.200 ± .010 ( 55.88 ± .25 )	2.290 ± .013 ( 58.17 ± .33 )
24	2.300 ± .010 ( 58.42 ± .25 )	2.390 ± .013 ( 60.71 ± .33 )
25	2.400 ± .011 ( 60.96 ± .28 )	2.490 ± .014 ( 63.25 ± .36 )
26	2.500 ± .011 ( 63.50 ± .28 )	2.590 ± .014 ( 65.79 ± .36 )
27	2.600 ± .011 ( 66.04 ± .28 )	2.690 ± .014 ( 68.33 ± .36 )
28	2.700 ± .011 ( 68.58 ± .28 )	2.790 ± .014 ( 70.87 ± .36 )

2	CG	CHI	REV BOW	UCP2003-1608
1	CHI	CH	UCR2002-0675	1/23/2003 SAMIEC
			WAS M340 RED	12/27/2002 SAMIEC

UNLESS OTHERWISE SPECIFIED TOLERANCES: ANGULAR ± 1/2°

3 PLACE ±	INCH	METRIC
2 PLACE ±		
1 PLACE ±		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DRWG. BY: SAMIEC  
 APP'D. BY: LENZ

CHK'D. BY: PATEL  
 SCALE: :

TITLE: KK HEADER  
 .100 C  
 STANDARD CATALOG PRODUCTS

MOLEX INCORPORATED  
 LISLE, ILL. 60532

SHEET NO. 1 OF 2  
 DATE 06/10/88

PART NO. SDA-4030  
 DRWG. NO. SEE CHART

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4030





