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ELECTRONICS

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Jameco Part Number 794314

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Positive lock
- Fully isolated terminals
- Polarized housing assures proper mating
- Male and female terminals may be used in receptacle housing

### Reference Information

Packaging: Bag  
 UL File No.: E29179  
 CSA File No.: LR19980  
 TUV License No.: R75107  
 Mates With: [5219](#) header and [3191](#) plug  
 Use With: Standard .093" terminal  
 Designed In: Inches

### Electrical

Voltage: 600V  
 Current: 12.0A max.\*  
 Dielectric Withstanding Voltage: 5000V AC rms

### Mechanical

Contact Retention to Housing: 20 lb min.

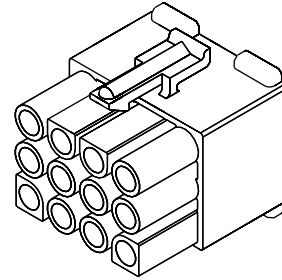
### Physical

Housing: Nylon, UL 94V-0 or 94V-2  
 Operating Temperature: -40 to +105°C

\* Depending on circuit size and wire gauge; please refer to product specifications

# molex® 6.71 mm (.264") Pitch .093" Pin and Socket Receptacle

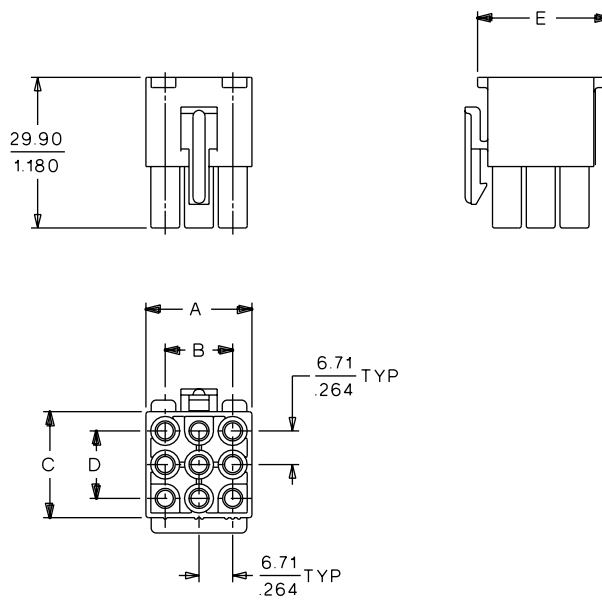
## 3191



Power Connectors

F

## CATALOG DRAWING (FOR REFERENCE ONLY)



## ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.		Amperes per Circuit	Dimension				
	94V-2	94V-0		A	B	C	D	E
1	• 19-09-1019	• 19-09-1016	12	7.60 (.300)		7.60 (.300)		10.62 (.418)
2	• 19-09-1029	• 19-09-1026	12	14.30 (.560)	6.71 (.264)	7.60 (.300)		12.70 (.500)
3	• 19-09-1039	• 19-09-1036	11	21.00 (.830)	13.42 (.528)	7.60 (.300)		12.70 (.500)
4	• 19-09-1049	• 19-09-1046	9	27.70 (1.090)	20.13 (.792)	7.60 (.300)		12.70 (.500)
6	• 19-09-1069	• 19-09-1066	9	21.00 (.830)	13.42 (.528)	14.30 (.560)	6.71 (.264)	19.38 (.763)
9	• 19-09-1099	• 19-09-1096	9	21.00 (.830)	13.42 (.528)	21.00 (.830)	13.42 (.528)	26.20 (1.030)
12	• 19-09-1129	• 19-09-1126	9	27.70 (1.090)	20.13 (.792)	21.00 (.830)	13.42 (.528)	26.20 (1.030)
15	• 19-09-1159	• 19-09-1156	9	34.40 (1.350)	26.84 (1.056)	21.00 (.830)	13.42 (.528)	26.20 (1.030)

• US Standard Product, available through Molex franchised distributors



# PRODUCT SPECIFICATION

## .093 SERIES HIGH CURRENT END-CARRIED TERMINALS

### 1.0 SCOPE

This Product Specification covers the .093 Series 6.71 mm (.264 inch) centerline (pitch) 3191 Series and the 5.03 mm (.198 inch) centerline Standard .093 Series connectors using.

### 2.0 PRODUCT DESCRIPTION

#### 2.1 PRODUCT SERIES NUMBER AND DESCRIPTION

42477 / 42478 - .093 SERIES HIGH CURRENT, END-CARRIED CRIMP TERMINALS

3191 - .093 SERIES TYPE PLUG AND RECEPTACLE HOUSINGS

1261,1292, 1360.1375, 1396, 1490, 1545, 1619, 1951, 2163, 2629 - STANDARD .093 SERIES PLUG AND RECEPTACLE HOUSINGS

#### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate sales drawings of above series numbers for further information on dimensions, materials, platings and markings.

#### 2.3 SAFETY AGENCY APPROVALS

UL File #E29179  
CSA File #LR19980  
TUV License #R75107

### 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

MIL-STD-1344A  
UL 1682

### 4.0 RATINGS

#### 4.1 VOLTAGE

600 Volts AC (RMS) for 3191 Series  
250 Volts AC (RMS) for Standard .093 Series

#### 4.2 CURRENT AND APPLICABLE WIRES

AWG	Amps	Outside Insulation Diameter
14	17	3.56 mm (.140 inch)
18	12	2.79 mm (.110 inch)

#### 4.3 TEMPERATURE

Operating: - 55°C to + 105°C

<u>REVISION:</u> <b>B</b>	<u>ECR/ECN INFORMATION:</u> EC No: <b>UCR2002-0301</b> DATE: <b>09 / 26 / 01</b>	<u>TITLE:</u> <b>PRODUCT SPECIFICATION .093 DIA. HIGH CURRENT TERMINALS IN 3191 &amp; STD. .093 SERIES HSGS.</b>	<u>SHEET No.</u> <b>1 of 4</b>
<u>DOCUMENT NUMBER:</u> <b>PS-42477</b>	<u>CREATED / REVISED BY:</u> <b>BWIRKUS 9/26/01</b>	<u>CHECKED BY:</u> <b>BWIRKUS 9/26/01</b>	<u>APPROVED BY:</u> <b>SFRY 10/5/01</b>



# PRODUCT SPECIFICATION

## 5.0 PERFORMANCE

### 5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Contact Resistance (Low Level)	Mate connectors: apply a maximum voltage of 20 mV and a current of 20 mA. (Measurement locations in Section 7.0)	10 milliohms MAXIMUM [initial]
2	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. (Measurement locations in Section 7.0)	2 milliohms MAXIMUM [initial]
3	Dielectric Withstanding Voltage	Mate connectors: apply a voltage of 5000 VAC for the 3191 Series, 2000 VAC for the .093 Series for 1 minute between adjacent terminals and between terminals to ground.	No breakdown; current leakage < 5 mA
4	Temperature Rise (via Current Cycling)	Mate connectors: measure the temperature rise at the rated current, subjecting the connector to : 96 hours of continuous current, followed by 240 hours of current cycling (45 minutes ON and 15 minutes OFF per hour).	Temperature rise: +30°C MAXIMUM

### 5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Terminal Insertion Force	Insert terminal into housing until fully locked at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	22.2 N (5 lbf) MAXIMUM insertion force
6	Connector Mate and Unmate Forces	Mate and unmate connector (male to female) at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	15.6 N (3.5 lbf) MAXIMUM insertion force 6.7 N (1.5 lbf) MINIMUM [initial] withdrawal force
7	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.	89.0 N (20 lbf) MINIMUM retention force
8	Durability	Mate connectors up to {25 cycles for tin (non-noble) plating OR 250 cycles for gold (noble) plating} at a maximum rate of 5 cycles per minute prior to Environmental Tests.	10 milliohms MAXIMUM (change from initial)
9	Vibration (Random)	Subject mated connectors to vibration with an amplitude of 1.52 mm (.060 inch) peak to peak; a sweep of 10-55-10 hertz in 1.0 min.; and a duration of 2.0 hours in the ±X,±Y,±Z axes.	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond

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# PRODUCT SPECIFICATION

## 5.2 MECHANICAL REQUIREMENTS (CONTINUED)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
10	<b>Shock (Mechanical)</b>	Subject mated connectors to 3 shocks at <b>50 g's</b> with ½ sine wave (11 milliseconds) shocks in the ±X,±Y,±Z axes ( <b>18 shocks</b> total).	<b>10 milliohms MAXIMUM</b> (change from initial) & Discontinuity < <b>1 microsecond</b>
11	<b>Wire Pullout Force (Axial)</b>	Apply an axial pullout force on the wire at a rate of <b>25 ± 6 mm (1 ± ¼ inch)</b> .	<b>*** N (***) lbf)</b> MINIMUM pullout force {Recommended minimum value: 75% of tensile strength of the wire}
12	<b>Wire Pullout Force (Right Angle)</b>	Apply a right angle pullout force on the wire at a rate of <b>25 ± 6 mm (1 ± ¼ inch)</b> .	MINIMUM pullout force: <b>18 AWG: 89 N (20 lbf)</b> <b>16 AWG: 133 N (30 lbf)</b> <b>14 AWG: 267 N (60 lbf)</b> {Recommended minimum value: 75% of tensile strength of the wire}
13	<b>Terminal Insertion Force (into Housing)</b>	Apply an axial insertion force on the terminal at a rate of <b>25 ± 6 mm (1 ± ¼ inch)</b> .	<b>22 N (5 lbf)</b> MAXIMUM insertion force

## 5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT										
14	<b>Shock (Thermal)</b>	Mate connectors; expose to <b>10</b> 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	<b>10 milliohms MAXIMUM</b> (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												
15	<b>Humidity (Cyclic)</b>	Expose mated connectors to a temperature cycles of <b>25 ± 3°C</b> at <b>95 ± 5%</b> relative humidity and <b>65 ± 3°C</b> at <b>50 ± 5%</b> relative humidity; dwell time of <b>1.0</b> hour; ramp time of <b>0.5</b> hours for <b>240</b> hours.	<b>10 milliohms MAXIMUM</b> (change from initial) & Dielectric Withstanding Voltage: No Breakdown at <b>500 VAC</b> & Insulation Resistance: <b>1000 Megohms MINIMUM</b> & Visual: No Damage										
16	<b>Salt Spray</b>	Mate connectors: Duration: <b>96</b> hours exposure; Atmosphere: salt spray from a <b>5%</b> solution; Temperature: <b>35 +1/-2°C</b>	<b>10 milliohms MAXIMUM</b> (change from initial) & Visual: No Damage										

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# PRODUCT SPECIFICATION

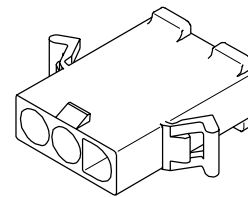
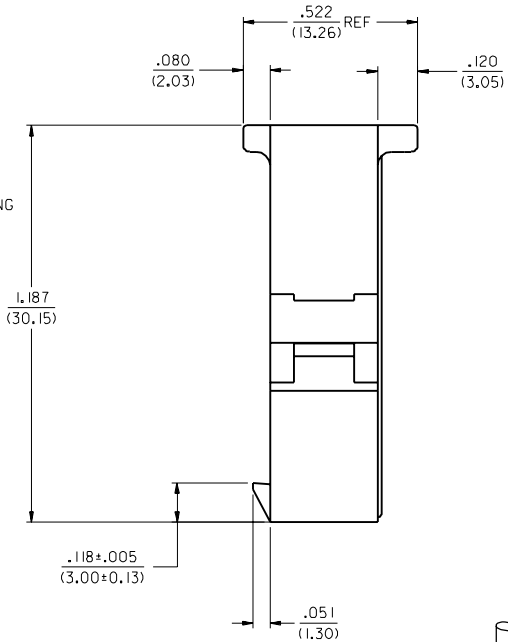
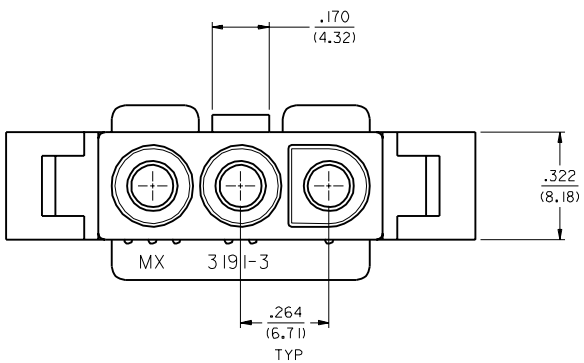
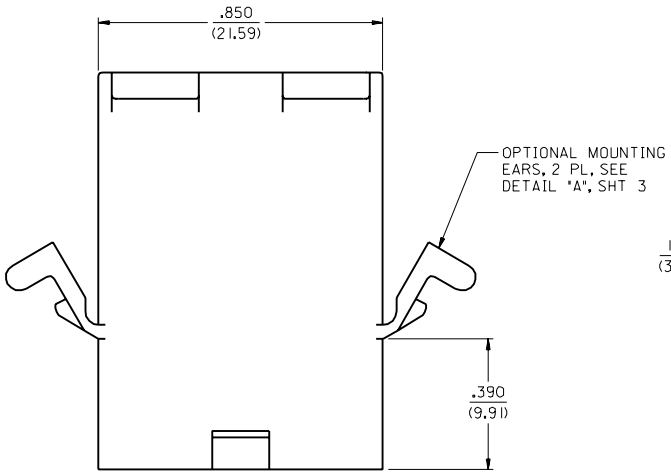
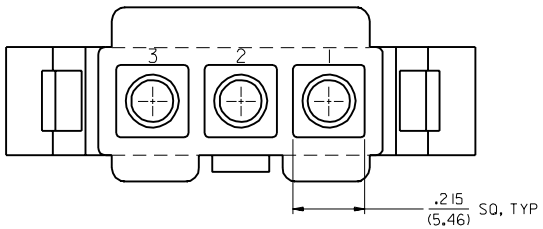
## 5.3 ENVIRONMENTAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
17	Thermal Aging	Mate connectors; expose to: <b>240</b> hours at <b>105 ± 2°C</b>	<b>10</b> milliohms MAXIMUM (change from initial]) & Visual: No Damage
18	Humidity (Steady State)	Mate connectors: expose to a temperature of <b>40 ± 2°C</b> with a relative humidity of <b>90-95%</b> for <b>240</b> hours.	<b>10</b> milliohms MAXIMUM (change from initial) & Dielectric Withstanding Voltage: No Breakdown at <b>500 VAC</b> & Insulation Resistance: <b>1000</b> Megohms MINIMUM & Visual: No Damage

## 6.0 PACKAGING

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

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PLUG

3	J5			
2	J5	J5	REDRAWN ON CAD	
1	J5		ECR U6 0734	RW
			CK 1/8/96	

MMB, SH, REV, LTR, REVISIONS

DIMENSIONS SHOWN METRIC (INCH)		▽ = 0	▼ = 0	REVISE ONLY ON CAD SYSTEM	
UNLESS OTHERWISE SPECIFIED TOLERANCES: ANGULAR ± 1/2°				TITLE	
				.093/(2.36) HOUSING	
				PLUG AND RECEPTACLE	
				3 CKT., .264/(6.71) CTRS.	
				PART NO.	
				SD-3191-3•	
				DRAWING NO.	
				SEE CHART	
				DATE	
				1/ 8/96	
				SHEET NO.	
				1 of 3	
				DATE	
				1/ 8/96	
				U.S.A.	
				MOLEX INCORPORATED	
				LITSEJLL	
				60532	
				U.S.A.	
				DRAWN BY	
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				RAS	
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				S31913X1	
				DGN	
				THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.	
				DIV.	
				CP	
				SIZE	
				C	

13 12 11 10 9 8 7 6 3191 4 3 2 1

PLUG	
PART NO.	ENG. NO.
19-09-2038	3191-3P
19-09-2039	3191-3P1
19-09-2037	3191-3P-201
19-09-2036	3191-3P1-201
19-09-1038	3191-3P IRD
19-09-3032	3191-3PRD
19-09-3033	3191-3PBU

RECEPTACLE	
PART NO.	ENG. NO.
19-09-1039	3191-3R1
19-09-1036	3191-3R1-201
19-09-3030	3191-3R IRD

**LEGEND**

3191-3\*\*\*\*\*

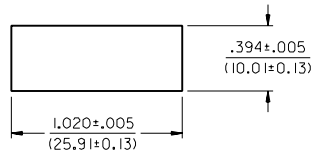
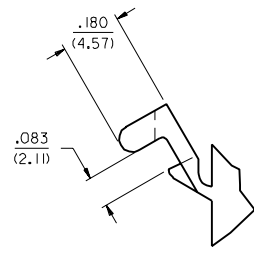
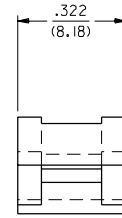
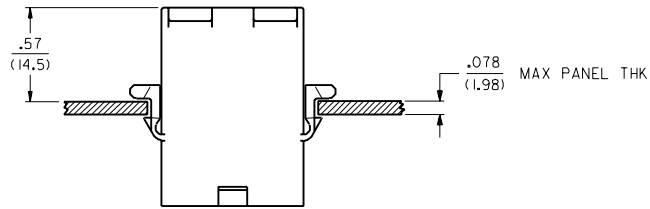
CIRCUIT SIZE

P = PLUG  
R = RECEPTACLE

EARS: BLANK = WITH PREBENT EARS (PLUG ONLY)  
I = WITHOUT EARS

COLOR: BLANK = NATURAL COLOR  
AM=AMBER BK=BLACK BU=BLUE  
BN=BROWN GY=GRAY GN=GREEN  
OR=ORANGE RD=RED YW=YELLOW  
COLORS AVAILABLE ONLY IN 94V-2 MATERIAL

MATERIAL: BLANK=NYLON TYPE 6/6,94V-2  
201=NYLON TYPE 6/6, 94V-0



RECOMMENDED HOLE CUTOUT

DETAIL "A"  
PREBENT MOUNTING EAR  
(SCALE 4:1)

DIMENSIONS SHOWN (METRIC) INCH		▽=0 ▼=0		REVISE ONLY ON CAD SYSTEM	
UNLESS OTHERWISE SPECIFIED TOLERANCES ANGULAR ± 1/2°					
INCH		METRIC		TITLE	
3 PLACE	± .010	---	---	.093/(2.36) HOUSINGS	
2 PLACE	± .015	± 0.25	---	PLUG AND RECEPTACLE	
1 PLACE	---	± 0.38	---	3 CKT. ±.264/(6.71) CTRS.	
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS					
J5		SEE SHEET 1		PART NO. SD-3191-3*	
LTR. REVISIONS		LTR. REVISIONS		DRAWING NO. 60532	
DRG. BY: GIC		CHK'D. BY: RW		SHEET NO. 3	
APP'D. BY: RAS		SCALE: --:--		DATE 1/8/96	
FILE NAME: 531913X3.DGN		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		DIV. CP	

13 12 11 10 9 8 7 6 5 4 3 2 NO P.S. 1