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ELECTRONICS

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Jameco Part Number 794293

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.

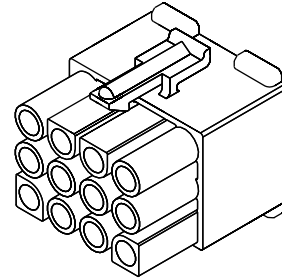
Physical

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

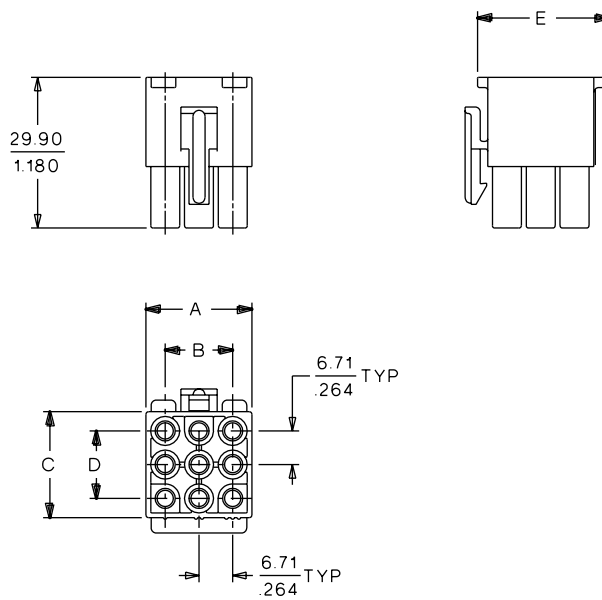
3191



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



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	Shock (Mechanical)	Subject mated connectors to 3 shocks 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
11	Wire Pullout Force (Axial)	Apply an axial pullout force on the wire at a rate of 25 ± 6 mm (1 ± ¼ inch).	*** N (***) lbf) MINIMUM pullout force {Recommended minimum value: 75% of tensile strength of the wire}
12	Wire Pullout Force (Right Angle)	Apply a right angle pullout force on the wire at a rate of 25 ± 6 mm (1 ± ¼ inch).	MINIMUM pullout force: 18 AWG: 89 N (20 lbf) 16 AWG: 133 N (30 lbf) 14 AWG: 267 N (60 lbf) {Recommended minimum value: 75% of tensile strength of the wire}
13	Terminal Insertion Force (into Housing)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch).	22 N (5 lbf) MAXIMUM insertion force

5.3 ENVIRONMENTAL REQUIREMENTS

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

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DOCUMENT NUMBER: PS-42477	CREATED / REVISED BY: BWIRKUS 9/26/01	CHECKED BY: BWIRKUS 9/26/01	APPROVED BY: SFRY 10/5/01



PRODUCT SPECIFICATION

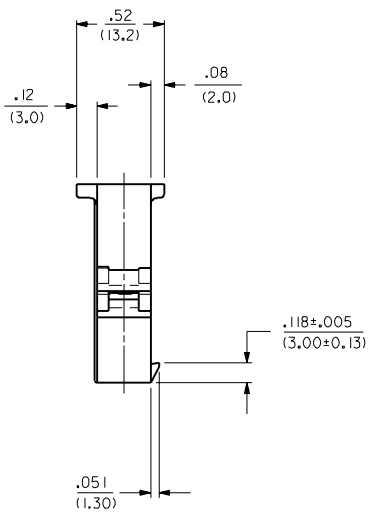
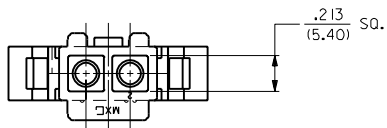
5.3 ENVIRONMENTAL REQUIREMENTS (continued)

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

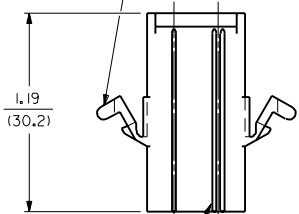
6.0 PACKAGING

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

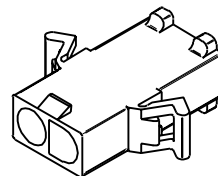
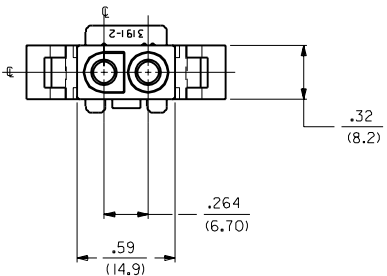
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PREBENT MOUNTING EAR
(WHEN SPECIFIED)



CIRCUIT NUMBER
IDENTIFICATION RIBS



PLUG

3	E2	
2	D	
1	E4	
SH.	REV.	LTR.

E4	REVISED UCR 98-0148 WANG 98-04-15
E3	ADD RAMP DIM'S ECN #U4 0293 3-1-94 RW
E2	X-REMOVE ECR U3 0001 GC 12/30/92 RW
E1	REL. RED VERSIONS ECR U1 2167 GC 1/24/92 RW
E	REV. MATL. CODE ECR # U90901 KBW 01-25-89 RW
D	REV. & REDRAWN ECR UB 1858 GEP 11-21-88 RW

REVISIONS

UNLESS OTHERWISE SPECIFIED
TOLERANCES: ANGULAR ± .0010

INCH	METRIC
3 PLACE ± .010	---
2 PLACE ± .014	± 0.25
1 PLACE ---	± 0.35

DRAFT WHERE APPLICABLE MUST
REMAIN WITHIN DIMENSIONS

PART NO. **SEE CHART** DRWG. NO. **SD-3191-2***

FILE NAME: S31912X1.DWG

SCALE: 2 : 1

DATE: 11/21/88

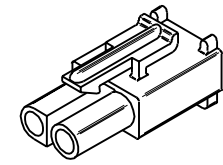
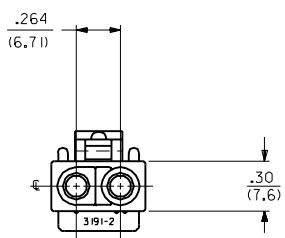
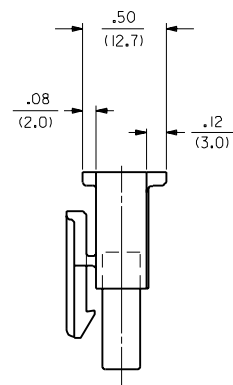
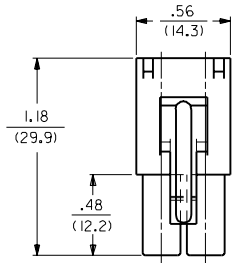
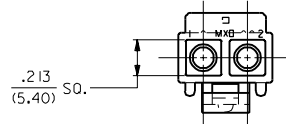
MOLEX INCORPORATED
LITTLE ROCK, AR 72616 U.S.A.

THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.

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

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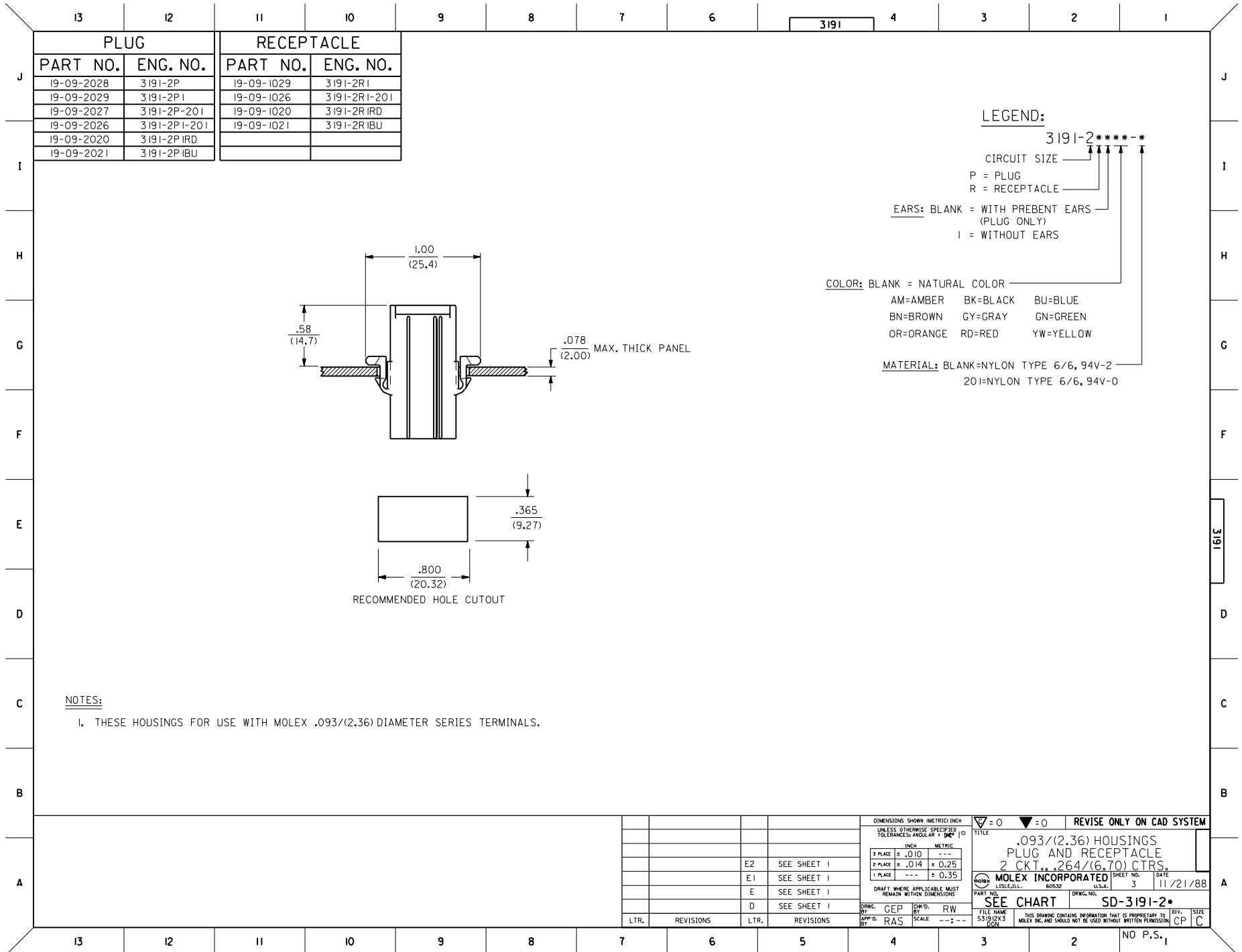


RECEPTACLE

DIMENSIONS SHOWN (METRIC) INCH		REVISIONS ONLY ON CAD SYSTEM	
UNLESS OTHERWISE SPECIFIED TOLERANCES ANGLES ARE ± DPM		TITLE	
3 PLACE	± .010 ---	.093/(2.36) HOUSING, PLUG AND RECEPTACLE, 2 CKT., .264/(6.70) CTRS.	
2 PLACE	± .014 ± 0.25	MOLEX INCORPORATED	
1 PLACE	--- ± 0.35	LITTLE, JILL. 60532 U.S.A. SHEET NO. 2 DATE 11/21/88	
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		PART NO. SEE CHART DRWG. NO. SD-3191-2	
DRWG. BY: CEP	CHK'D. BY: RW	FILE NAME: 531912X2	
APP'D. BY: RAS	SCALE: 2 : 1	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	

LTR.	REVISIONS	LTR.	REVISIONS
		D	SEE SHT. 1

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



PLUG		RECEPTACLE	
PART NO.	ENG. NO.	PART NO.	ENG. NO.
19-09-2028	3191-2P	19-09-1029	3191-2R1
19-09-2029	3191-2P1	19-09-1026	3191-2R1-201
19-09-2027	3191-2P-201	19-09-1020	3191-2R IRD
19-09-2026	3191-2P1-201	19-09-1021	3191-2R IBU
19-09-2020	3191-2P IRD		
19-09-2021	3191-2P IBU		

LEGEND:

3191-2****-*

CIRCUIT SIZE

P = PLUG

R = RECEPTACLE

EARS: BLANK = WITH PREBENT EARS (PLUG ONLY)

I = WITHOUT EARS

COLOR: BLANK = NATURAL COLOR

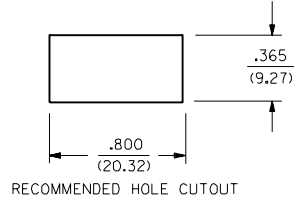
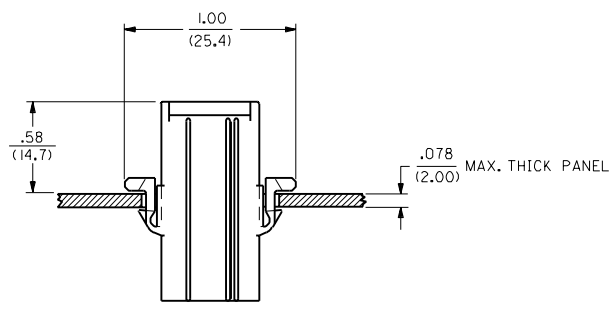
AM=AMBER BK=BLACK BU=BLUE

BN=BROWN GY=GRAY GN=GREEN

OR=ORANGE RD=RED YW=YELLOW

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

201=NYLON TYPE 6/6, 94V-0



NOTES:

1. THESE HOUSINGS FOR USE WITH MOLEX .093/(2.36) DIAMETER SERIES TERMINALS.

DIMENSIONS SHOWN (METRIC) INCH		▽=0 ▼=0		REVISE ONLY ON CAD SYSTEM	
UNLESS OTHERWISE SPECIFIED TOLERANCES: ANGLES .015°		TITLE		.093/(2.36) HOUSINGS PLUG AND RECEPTACLE 2 CKT., .264/(6.70) CTRS.	
INCH METRIC		MOLEX INCORPORATED		SHEET NO. 3 DATE 11/21/88	
3 PLACE ± .010 ---		LITTLE, JILL. 60532 U.S.A.		PART NO. SD-3191-2*	
2 PLACE ± .014 ± 0.25		SEE CHART		DRAWING NO.	
1 PLACE --- ± 0.35		FILE NAME: 531912X3.DGN		DYN. SIZE CP C	
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SCALE: ---:---		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.	
DRWG. BY: CEP	CHK'D. BY: RW	APP'D. BY: RAS		NO P.S. 1	
LTR. REVISIONS	LTR. REVISIONS				

3191