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ELECTRONICS

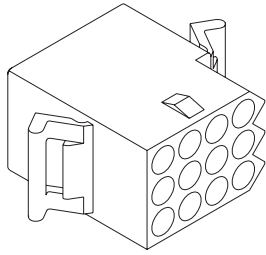
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Jameco Part Number 1960038

5.03mm (.198") Pitch .093 Pin and Socket Receptacle

Standard .093"



Features and Benefits

- Passive (friction) lock
- 1 to 15 circuit housings
- Panel and PCB mountable
- Mating headers available
- Male and female terminals may be used in receptacle housing

Reference Information

Packaging: Bag
UL File No.: E29179
CSA File No.: LR19980
Mates With: Standard .093" plug and 3099 headers
Use With: Standard .093" terminal
Designed In: Inches

Electrical

Voltage: 250V
Current: See chart
Dielectric Withstanding Voltage: 1500V AC rms

Mechanical

Contact Retention to Housing: 88.96N min.

Physical

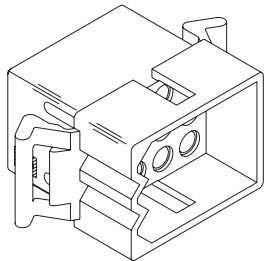
Housing: Nylon, UL 94V-2
Operating Temperature: -40 to +105°C

Circuits	Series No.	Order No.		Amperes per Circuit*
		Panel Mount	Free Hanging	
1	1619	N/A	03-09-1011	14.0
2	1545	03-09-1027	03-09-1022	
3	1396	03-09-1081	03-09-1032	
4 (1 x 4)	1490	03-09-1041	03-09-1042	11.0
4 (2 x 2)	2163	03-09-1040	03-09-1049	
5	2629	N/A	03-09-1054	
6	1261	03-09-1061	03-09-1064	
9	1292	03-09-1091	03-09-1094	
12	1360	03-09-1125	03-09-1126	9.5
15	1375	03-09-1154	03-09-1157	

* Rating based on fully loaded housings and 14 AWG wire

5.03mm (.198") Pitch .093" Pin and Socket Plug

Standard .093"



Features and Benefits

- Passive (friction) lock
- 1 to 15 circuit housings
- Panel and PCB mountable
- Male and female terminals may be used in plug housing

Reference Information

Packaging: Bag
UL File No.: E29179
CSA File No.: LR19980
Mates With: Standard .093" receptacle
Use With: Standard .093" terminal
Designed In: Inches

Electrical

Voltage: 250V
Current: See chart
Dielectric Withstanding Voltage: 1500V AC rms

Mechanical

Contact Retention to Housing: 20 lb min.

Physical

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

Circuits	Series No.	Order No.		Amperes per Circuit*
		Panel Mount	Free Hanging	
1	1619	N/A	03-09-2011	14.0
2	1545	03-09-2021	03-09-2022	
3	1396	03-09-2031	03-09-2032	
4 (1 x 4)	1490	03-09-2041	03-09-2042	11.0
4 (2 x 2)	2163	03-09-2040	03-09-2049	
5	2629	N/A	03-09-2057	
6	1261	03-09-2061	03-09-2062	
9	1292	03-09-2091	03-09-2092	
12	1360	03-09-2122	03-09-2121	9.5
15	1375	03-09-2159	03-09-2158	

* Rating based on fully loaded housings and 14 AWG wire



PRODUCT SPECIFICATION

.093 SERIES PLUG AND RECEPTACLE POWER CONNECTORS

1.0 SCOPE

This Product Specification covers the 5.03 mm (.198 inch) centerline connector series using pin and socket terminals terminated with 14 to 24 AWG wire using crimp technology with tin plating.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

<u>PRODUCT NAME</u>	<u>SERIES NUMBER</u>
Plug Housing, 1-circuit	1619-1P
Receptacle Housing, 1-circuit	1619-1R
Plug Housing, 2-circuit	1545-P*
Receptacle Housing, 2-circuit	1545-R*
Plug Housing, 3-circuit	1396-P*
Receptacle Housing, 3-circuit	1396-R*
Plug Housing, 4-circuit (in-line)	1490-P*
Receptacle Housing, 4-circuit (in-line)	1490-R*
Plug Housing, 4-circuit (2 x 2)	2163-P*
Receptacle Housing, 4-circuit (2 x 2)	2163-R*
Plug Housing, 5-circuit	1653-P*
Receptacle Housing, 5-circuit	1653-R*
Plug Housing, 6-circuit	1261-P*
Receptacle Housing, 6-circuit	1261-R*
Plug Housing, 9-circuit	1292-P*
Receptacle Housing, 9-circuit	1292-R*
Plug Housing, 12-circuit	1360-P*
Receptacle Housing, 12-circuit	1360-R*
Socket Terminal, 14-18 AWG	1189
Pin Terminal, 14-18 AWG	1190
Socket Terminal, 18-22 AWG	1380
Pin Terminal, 18-22 AWG	1381
Socket Terminal, 22-24 AWG	2870
Pin Terminal, 22-24 AWG	2871
Socket Terminal, 14-18 AWG, (P-B)	4550
Socket Terminal, 18-22 AWG, (P-B)	2151

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

Housings are molded of UL 94V-2 rated PA66.

Terminals are tin-plated brass or phosphor-bronze.

See appropriate sales drawings for additional information on dimensions, materials, platings and markings.

<u>REVISION:</u> B	<u>ECR/ECN INFORMATION:</u> <u>EC No:</u> UCR#2003-0230 <u>DATE:</u> 2002 / 08 / 07	<u>TITLE:</u> PRODUCT SPECIFICATION STANDARD .093 SERIES PLUGS & RECEPTACLES	<u>SHEET No.</u> 1 of 3
<u>DOCUMENT NUMBER:</u> PS-43660-9999	<u>CREATED / REVISED BY:</u> BWIRKUS 10/4/01	<u>CHECKED BY:</u> BWIRKUS 10/4/01	<u>APPROVED BY:</u> SFRY 10/5/01



PRODUCT SPECIFICATION

2.3 SAFETY AGENCY APPROVALS

UL File #E29179

CSA File #E29179

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See the appropriate sales drawings for necessary referenced documents and specifications.

4.0 RATINGS

4.1 VOLTAGE

250 Volts AC (RMS)

4.2 CURRENT AND APPLICABLE WIRES

AWG	Circuit Size	Amps
14	3	14
14	9	11
18	3	10
18	9	7
22	3	7
22	9	5

4.3 TEMPERATURE

Operating: - 55°C to + 105°C

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	Dielectric Withstanding Voltage	Mate connectors: apply a voltage of 2000 VAC for 1 minute between adjacent terminals and between terminals to ground.	No breakdown; current leakage < 500 mA
3	Temperature Rise (via Current Cycling)	Mate connectors, measuring the temperature rise at 60 minute intervals during 96 hours of steady state at rated current; followed by 240 hours of current cycling (45 minutes ON and 15 minutes OFF per hour) with measurements made during last 5 minute period of each ON cycle; followed by 96 hours of steady state at rated current with measurements taken at 60 minute intervals.	Temperature rise: +30°C MAXIMUM

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
B	EC No: UCR#2003-0230 DATE: 2002 / 08 / 07	PRODUCT SPECIFICATION STANDARD .093 SERIES PLUGS & RECEPTACLES	2 of 3
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-43660-9999	BWIRKUS 10/4/01	BWIRKUS 10/4/01	SFRY 10/5/01

TEMPLATE FILENAME: PRODUCT_SPEC[SIZE_A](V.1).DOC



PRODUCT SPECIFICATION

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
4	Connector Mate and Unmate Forces	Mate and unmate connector (male to female) at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute for a total of 25 cycles. Initial mate forces to be measured. Unmate forces to be measured after 25 cycles.	15.6 N (3.5 lbf) MAXIMUM insertion force 4.4 N (1 lbf) MINIMUM withdrawal force
5	Terminal Retention Force (in Housing)	Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute.	89 N (20 lbf) MINIMUM retention force
6	Wire Pullout Force (Axial)	Apply an axial pullout force on the wire at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch).	MINIMUM pullout forces: 14 AWG 178 N (40 lbf) 16 AWG 156 N (35 lbf) 18 AWG 133 N (30 lbf) 20 AWG 89 N (20 lbf) 22 AWG 62 N (14 lbf) 24 AWG 36 N (8 lbf)
7	Terminal Insertion Force (into Housing)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch).	22N (5 lbf) MAXIMUM insertion force

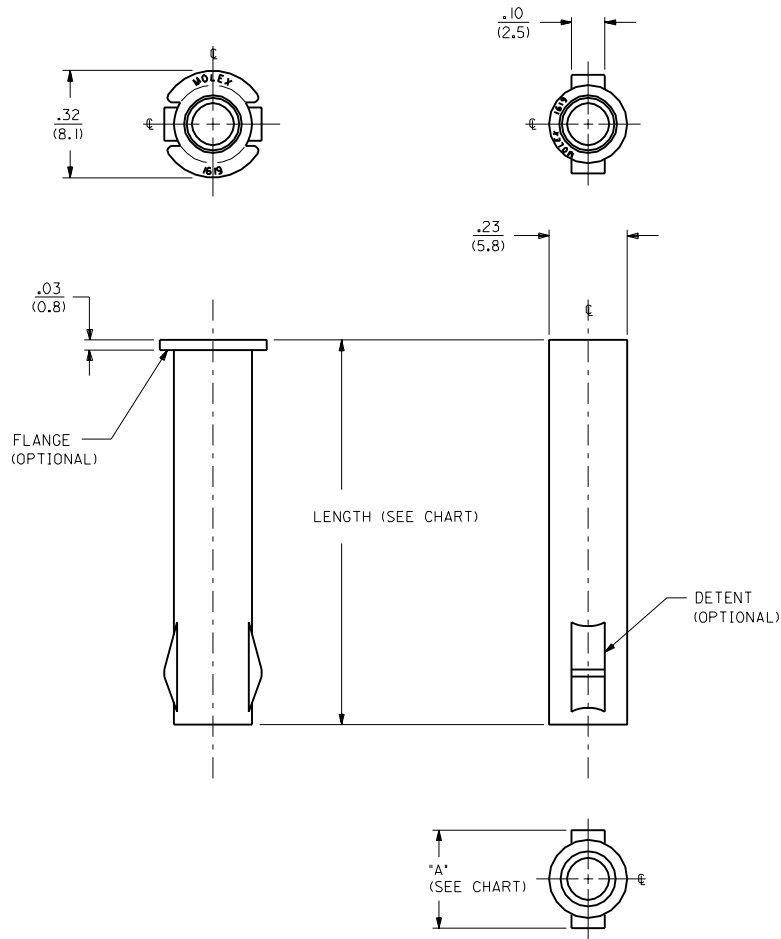
5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
8	Thermal Cycling	Mate connectors; expose to temperature cycling between -25°C and 70°C for 500 cycles with a dwell time of 30 minutes at each extreme. Measurements to be taken initially and after every 100 cycles.	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. See the appropriate sales drawings for additional information on packaging requirements.

REVISION: B	ECR/ECN INFORMATION: EC No: UCR#2003-0230 DATE: 2002 / 08 / 07	TITLE: PRODUCT SPECIFICATION STANDARD .093 SERIES PLUGS & RECEPTACLES	SHEET No. 3 of 3
DOCUMENT NUMBER: PS-43660-9999	CREATED / REVISED BY: BWIRKUS 10/4/01	CHECKED BY: BWIRKUS 10/4/01	APPROVED BY: SFRY 10/5/01



DIMENSIONS SHOWN (METRIC) INCH		▽ = 0 ▼ = 0		REVISE ONLY ON CAD SYSTEM													
UNLESS OTHERWISE SPECIFIED TOLERANCES: ANGULAR ± 1/2°		TITLE		1 CKT. HOUSING RECEPTACLE .093/(2.36) DIAMETER													
<table border="1"> <thead> <tr> <th></th> <th>INCH</th> <th>METRIC</th> </tr> </thead> <tbody> <tr> <td>3 PLACE</td> <td>± .010</td> <td>---</td> </tr> <tr> <td>2 PLACE</td> <td>± .014</td> <td>± 0.25</td> </tr> <tr> <td>1 PLACE</td> <td>---</td> <td>± 0.35</td> </tr> </tbody> </table>			INCH	METRIC	3 PLACE	± .010	---	2 PLACE	± .014	± 0.25	1 PLACE	---	± 0.35	PART NO.		DRAWG. NO.	
	INCH	METRIC															
3 PLACE	± .010	---															
2 PLACE	± .014	± 0.25															
1 PLACE	---	± 0.35															
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SEE CHART		SD-1619-IR*													
DRWG. BY AFG APP'D. BY RAS		CHK'D. BY RW SCALE 4 : 1		FILE NAME SR1619X1.DGN													
		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.		DIV. CP SIZE C													

MOLEX INCORPORATED		SHEET NO. 1 OF 2		DATE 92/10/22	
LITSEJLL 60532 U.S.A.					

Y1	OBsolete VERSIONS PER ECR U5 0358 9/15/95 RW
2 Y1	Y REDRAWN PER ECR U2-1543
1 Y1	Y AFG 92-10-22 RW
REV.	REVISIONS

I3	I2	I1		I0	9	8	7	6	I6 I9	4	3	2	I	
ORDER NO.	ENG. NO.	MATERIAL	LENGTH	DIMENSION "A"	DETENT	FLANGE	MARKING METHOD	COLOR	NOTES:					
03-09-I0I1	I6 I9-I R IB5NIA5	I	B	5	N	I	A	5	1. THIS HOUSING IS FOR USE WITH THE .093/(2.36) DIA. TERMINALS.					
03-09-60II	I6 I9-I R IB5N IA6	I	B	5	N	I	A	6	2. PRODUCT SPEC. 02-09 APPLIES.					
03-09-60I2	I6 I9-I R IB5N IA7	I	B	5	N	I	A	7	△ 3. FOR VERSIONS SPECIFYING LENGTH "B", PARTS PROVIDED FROM TOOLS					
03-09-60I3	I6 I9-I R IB5N IA8	I	B	5	N	I	A	8	BUILT PRIOR TO 9/86 HAVE AN OVERALL LENGTH SPECIFICATION OF L00/(25.4).					

LEGEND

16 19- IR*****

CIRCUIT SIZE

TYPE

R) RECEPTACLE

MATERIAL

- 1) NYLON, TYPE 6/6, FLAMMABILITY RATING:
94V-2.
- 2) NYLON, TYPE 6/6, FLAMMABILITY RATING:
94V-0, MONSANTO M-340.
- 3) POLYPROPYLENE, FLAMMABILITY RATING:
94V-0, A. SCHULMAN - POLYFLAM ® R.P.P.-958

LENGTH

- B) $1.03/(26.2)$ 
C) $1.15/(29.2)$

DIMENSION "A"

- 5) $.297/(7.54)$
6) $.294/(7.47)$
7) NONE

DETENT

- M) NONE
N) WITH DETENT

- COLOR

- 1) AMBER 6) BLACK
2) BROWN 7) RED
3) ORANGE 8) BLUE
4) GRAY 9) GREEN
5) NATURAL 0) YELLOW

- MARKING METHOD

- A) NOT APPLICABLE

- FLANGE

- 1) NONE
2) WITH FLANGE

[illegible]