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ELECTRONICS

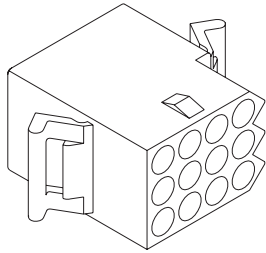
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Jameco Part Number 1960126

# 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

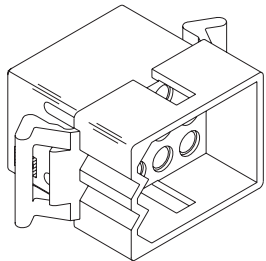
Housing: Nylon, UL 94V-2  
 Operating Temperature: -40 to +105°C

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

\* 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	<a href="#">03-09-2011</a>	14.0
2	1545	<a href="#">03-09-2021</a>	<a href="#">03-09-2022</a>	
3	1396	<a href="#">03-09-2031</a>	<a href="#">03-09-2032</a>	
4 (1 x 4)	1490	<a href="#">03-09-2041</a>	<a href="#">03-09-2042</a>	11.0
4 (2 x 2)	2163	<a href="#">03-09-2040</a>	<a href="#">03-09-2049</a>	
5	2629	N/A	<a href="#">03-09-2057</a>	
6	1261	<a href="#">03-09-2061</a>	<a href="#">03-09-2062</a>	
9	1292	<a href="#">03-09-2091</a>	<a href="#">03-09-2092</a>	
12	1360	<a href="#">03-09-2122</a>	<a href="#">03-09-2121</a>	9.5
15	1375	<a href="#">03-09-2159</a>	<a href="#">03-09-2158</a>	

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



# 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

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DOCUMENT NUMBER: <b>PS-43660-9999</b>	CREATED / REVISED BY: <b>BWIRKUS 10/4/01</b>	CHECKED BY: <b>BWIRKUS 10/4/01</b>	APPROVED BY: <b>SFRY 10/5/01</b>



# 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 $25 \pm 6$ 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 $25 \pm 6$ 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 $25 \pm 6$ 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 $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch).	22N (5 lbf) MAXIMUM insertion force

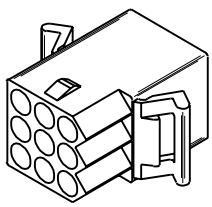
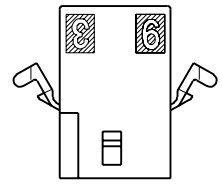
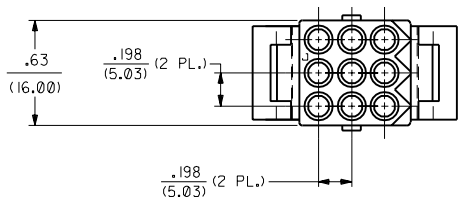
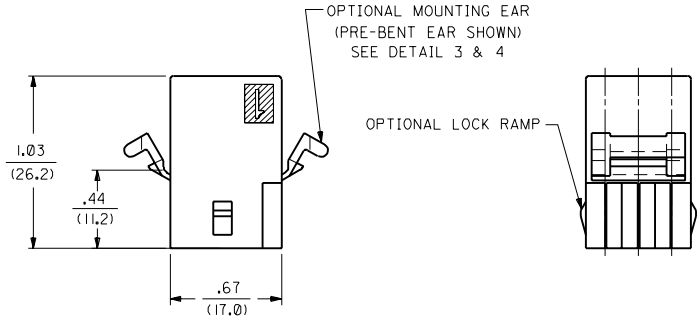
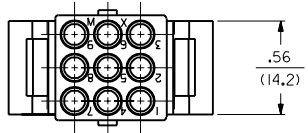
## 5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
8	Thermal Cycling	Mate connectors; expose to temperature cycling between $-25^{\circ}\text{C}$ and $70^{\circ}\text{C}$ 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.

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DOCUMENT NUMBER: <b>PS-43660-9999</b>	CREATED / REVISED BY: <b>BWIRKUS 10/4/01</b>	CHECKED BY: <b>BWIRKUS 10/4/01</b>	APPROVED BY: <b>SFRY 10/5/01</b>



**RECEPTACLE**

(SHOWN WITH PREBENT MOUNTING EARS, LOCK RAMPS)

DIMENSIONS SHOWN METRIC (INCH)		REVISIONS		UNLESS OTHERWISE SPECIFIED TOLERANCES: ANGULAR ± 1/2°		REVISE ONLY ON CAD SYSTEM	
INCH	METRIC	LTR.	REVISIONS	INCH	METRIC	TITLE	DATE
3 PLACE ± .010	---	S	SEE SHT. 1	3 PLACE ± .010	---	.093/(2.36) HOUSING, PLUG AND RECEPTACLE, 9 CKT. ± .198/(5.03) CTRS.	2/18/89
2 PLACE ± .014	± 0.25	RI	SEE SHT. 1	2 PLACE ± .014	± 0.25	SEE CHART	
1 PLACE ---	± 0.35	R	SEE SHT. 1	1 PLACE ---	± 0.35	<b>MOLEX INCORPORATED</b>	
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS				PART NO. <b>SD-1292</b> DRWG. NO. <b>SD-1292</b>			
DRWG. BY <b>RAS</b>	CHKD. BY <b>CEP</b>	FILE NAME <b>S1292X3</b>	SCALE <b>2 : 1</b>	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.			

1292

A

PLUG	
PART NO.	ENG. NO.
03-09-2091	I292-P
03-09-2092	I292-PI
03-09-7091	I292-PBK
03-09-7092	I292-PIBK
NOT TOOLED	I292-P2
27-09-2092	I292-PI-A

RECEPTACLE	
PART NO.	ENG. NO.
03-09-1091	I292-R
03-09-1092	I292-RI
03-09-6091	I292-RBK
03-09-6092	I292-RIBK
03-09-1093	I292-R2
03-09-6093	I292-R2BK
03-09-1094	I292-R3
03-09-6094	I292-R3BK
27-09-1093	I292-R2-A

LEGEND: PLUG

I292-P\*\*\*-\*

P = PLUG

BLANK = OPT. PLUG WITH PREBENT EARS

1 = STD. PLUG WITHOUT PREBENT EARS

2 = STD. PLUG WITH PREBENT EARS & RIBS

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 6/6, U.L. 94V-2

A = NYLON 6/6, U.L. 94V-0

LEGEND: RECEPTACLE

I292-R\*\*\*-\*

R = RECEPTACLE

BLANK = WITH PREBENT EARS, WITH LOCK RAMP

1 = WITH PREBENT EARS, WITHOUT LOCK RAMP

2 = WITHOUT EARS, WITHOUT LOCK RAMP

3 = WITHOUT EARS, WITH LOCK RAMP

COLOR: BLANK=NATURAL COLOR

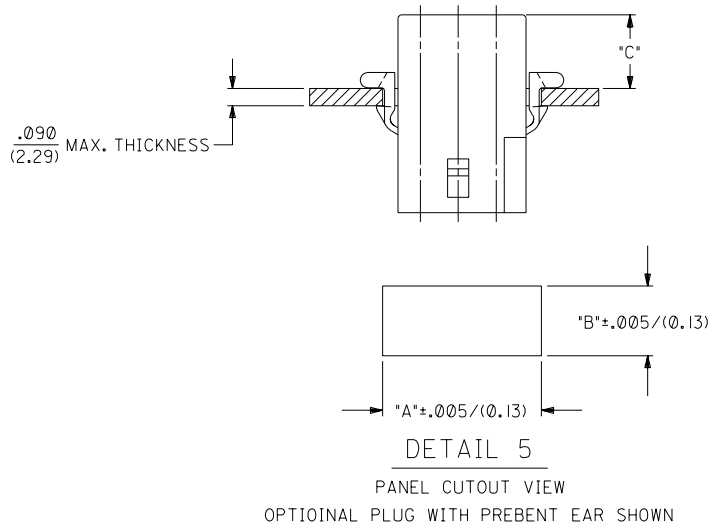
AM=AMBER BK=BLACK BU=BLUE

BN=BROWN GY=GRAY GN=GREEN

OR=ORANGE RD=RED YW=YELLOW

MATERIAL: BLANK = NYLON 6/6, U.L. 94V-2

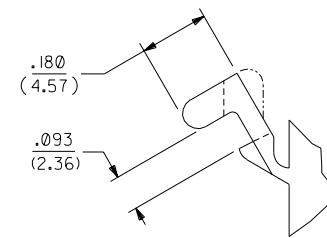
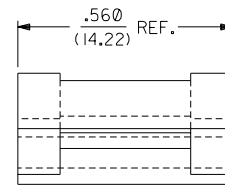
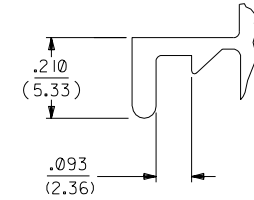
A = NYLON 6/6, U.L. 94V-0



HOUSING	DIM. "A"	DIM. "B"	DIM. "C" (STD. EAR)	DIM. "C" (PREBENT)
STD. PLUG	.930/(23.62)	.760/(19.30)	N/A	.39/(9.9)
OPT. PLUG	.937/(23.80)	.660/(16.76)	.13/(3.3)	N/A
RECEPTACLE	.828/(21.03)	.725/(18.42)	.37/(9.4)	.41/(10.4)

NOTES:

- 1 THESE PARTS COMPLY WITH MOLEX PRODUCT SPEC. 02-09.
- 2 HOUSINGS FOR USE WITH MOLEX .093/(2.36) PIN AND SOCKET TERMINALS.
- 3 RIBS ARE PRESENT ONLY ON STANDARD PLUG WITH PREBENT MOUNTING EARS. FOR PLUG HOUSINGS REQUIRING MOUNTING EARS, ONLY PREBENT STYLE IS AVAILABLE.



DIMENSIONS SHOWN (METRIC) INCH UNLESS OTHERWISE SPECIFIED TOLERANCES: ANGULAR ±.0020		REVISE ONLY ON CAD SYSTEM	
3 PLACE ± .010 --- 2 PLACE ± .014 ± 0.25 1 PLACE --- ± 0.35		TITLE .093/(2.36) HOUSING, PLUG AND RECEPTACLE, 9 CKT. 198/(5.03) CTRS.	
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		MOLEX INCORPORATED SHEET NO. DATE U.S.A. 4 2/18/89	
DRWG. BY: GEP CHK'D. BY: RW APP'D. BY: RAS SCALE: 2:1		PART NO. SD-1292-*	
LTR. REVISIONS		FILE NAME: 51292X4.DWG DIV. CP	