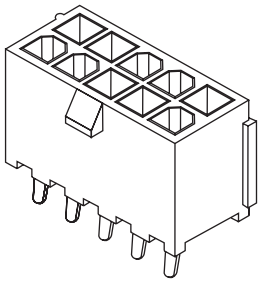
Jameco Part Number 1978174

4.20mm (.165") Pitch Mini-Fit Jr.™ Wire-to-Board Header

87427

Vertical without Flanges High Temperature Material



Features and Benefits

- Sizes 2 to 24 circuits
- Molded in high temperature, surface mount compatible material
- Fully isolated terminals to protect contacts from damage

Reference Information

Product Specification: PS-87427-0001
Packaging: Bag
UL File No.: E29179
CSA File No.: LR19980
Mates With: 5557 dual row receptacle
Designed in: Millimeters

Electrical

Voltage: 600V
Current: (Used with 16 AWG)

Circuits	2–3	4–6	7–10	12–24
Jr.	9.0A	8.0A	7.0A	6.0A
HCS	12.0A	11.0A	10.0A	9.0A

Contact Resistance: 10 milliohms max.
Dielectric Withstanding Voltage: 1500V
Insulation Resistance: 1000 Megohms min.

Mechanical

Pin Retention Force: 9.81N (2.2 lb) min.
Mating Force: 14.23N (3.19 lb) max.
Unmating Force: 0.50N (0.11 lb) max.
Durability: 30 cycles

Physical

Housing: 4/6 Nylon, UL 94V-0
Contact: Brass (1.07 square)
Plating: Tin
Operating Temperature: -40 to +105°C

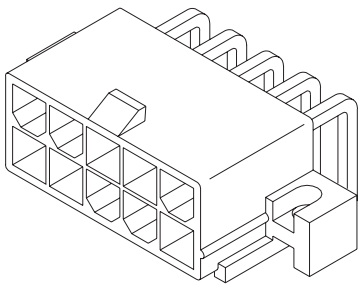
Circuits	Order No.		Lead-free
	Tin Over Nickel Plating	Tin Over Copper Plating	
2	87427-0242	87427-0243	Yes
4	87427-0442	87427-0443	
6	87427-0642	87427-0643	
8	87427-0842	87427-0843	
10	87427-1042	87427-1043	
12	87427-1242	87427-1243	

Circuits	Order No.		Lead-free
	Tin Over Nickel Plating	Tin Over Copper Plating	
14	87427-1442	87427-1443	Yes
16	87427-1642	87427-1643	
18	87427-1842	87427-1843	
20	87427-2042	87427-2043	
22	87427-2242	87427-2243	
24	87427-2442	87427-2443	

4.20mm (.165") Pitch Mini-Fit Jr.™ Header

5569

Right Angle, Dual Row With Flanges



Features and Benefits

- Flanges allow for screw-in retention to board-mounted header
- Low profile for space constraints
- Positive housing locks

Reference Information

Packaging: Bag
UL File No.: E29179
CSA File No.: LR19980
TUV License No.: R75142
Mates With: 5557 dual row receptacles
PCB Thickness: 1.60mm (.062")
Process: Wave solder
Designed In: Millimeters

Electrical

Voltage: 600V
Current: (Used with 16 AWG)

Series	Circuits			
	2-3	4-6	7-10	12-24
46083	9.0A	8.0A	7.0A	6.0A
45750	12.0A	12.0A	12.0A	11.0A

Contact Resistance: 10 milliohms max.
Dielectric Withstanding Voltage: 1500V AC
Insulation Resistance: 1000 Megohms min.

Mechanical

Insertion Force to PCB: 5.0kg max.
Durability: 30 cycles

Physical

Housing: 6/6 nylon, UL 94V-2 or 94V-0
Contact: Brass
Plating: Tin
Underplating: Copper
Operating Temperature: -40 to +105˚C

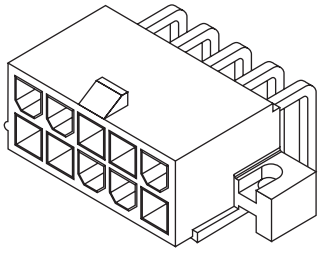
Circuits	Order No.		Lead-free
	94V-2	94V-0	
2	39-29-1028	39-29-1027	Yes
4	39-29-1048	39-29-1047	
6	39-29-1068	39-29-1067	
8	39-29-1088	39-29-1087	
10	39-29-1108	39-29-1107	
12	39-29-1128	39-29-1127	

Circuits	Order No.		Lead-free
	94V-2	94V-0	
14	39-29-1148	39-29-1147	Yes
16	39-29-1168	39-29-1167	
18	39-29-1188	39-29-1187	
20	39-29-1208	39-29-1207	
22	39-29-1228	39-29-1227	
24	39-29-1248	39-29-1247	

4.20mm (.165") Pitch Mini-Fit Jr.™ Wire-to-Board Header

87427

Right Angle with Flange High Temperature Material



Features and Benefits

- Sizes 2 to 24 circuits
- Molded in high temperature, surface mount compatible material
- Fully isolated terminals to protect contacts from damage

Reference Information

Product Specification: PS-87427-0001
Packaging: Bag
UL File No.: E29179
CSA File No.: LR19980
Mates With: 5557 dual row receptacle
Designed in: Millimeters

Electrical

Voltage: 600V
Current: (Used with 16 AWG)

Circuits	2–3	4–6	7–10	12–24
Jr.	9.0A	8.0A	7.0A	6.0A
HCS	12.0A	11.0A	10.0A	9.0A

Contact Resistance: 10 milliohms max.
Dielectric Withstanding Voltage: 1500V
Insulation Resistance: 1000 Megohms min.

Mechanical

Pin Retention Force: 9.81N (2.2 lb) min.
Mating Force: 14.23N (3.19 lb) max.
Unmating Force: 0.50N (0.11 lb) max.
Durability: 30 cycles

Physical

Housing: 4/6 Nylon, UL 94V-0
Contact: Brass (1.07 square)
Plating: Tin
Operating Temperature: -40 to +105˚C

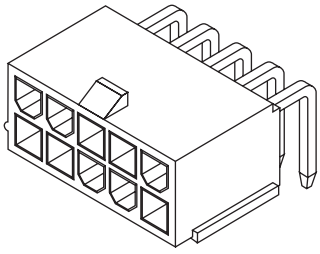
Circuits	Order No.		Lead-free
	Tin Over Nickel Plating	Tin Over Copper Plating	
2	87427-0212	87427-0213	Yes
4	87427-0412	87427-0413	
6	87427-0612	87427-0613	
8	87427-0812	87427-0813	
10	87427-1012	87427-1013	
12	87427-1212	87427-1213	

Circuits	Order No.		Lead-free
	Tin Over Nickel Plating	Tin Over Copper Plating	
14	87427-1412	87427-1413	Yes
16	87427-1612	87427-1613	
18	87427-1812	87427-1813	
20	87427-2012	87427-2013	
22	87427-2212	87427-2213	
24	87427-2412	87427-2413	

4.20mm (.165") Pitch Mini-Fit Jr.™ Wire-to-Board Header

87427

Right Angle without Flanges High Temperature Material



Features and Benefits

- Sizes 2 to 24 circuits
- Molded in high temperature, surface mount compatible material
- Fully isolated terminals to protect contacts from damage

Reference Information

Product Specification: PS-87427-0001
Packaging: Bag
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Mates With: 5557 dual row receptacle
Designed in: Millimeters

Electrical

Voltage: 600V
Current: (Used with 16 AWG)

Circuits	2–3	4–6	7–10	12–24
Jr.	9.0A	8.0A	7.0A	6.0A
HCS	12.0A	11.0A	10.0A	9.0A

Contact Resistance: 10 milliohms max.
Dielectric Withstanding Voltage: 1500V
Insulation Resistance: 1000 Megohms min.

Mechanical

Pin Retention Force: 9.81N (2.2 lb) min.
Mating Force: 14.23N (3.19 lb) max.
Unmating Force: 0.50N (0.11 lb) max.
Durability: 30 cycles

Physical

Housing: Nylon 4/6, UL 94V-0
Contact: Brass (1.07 square)
Plating: Tin
Operating Temperature: -40 to +105°C

Circuits	Order No.		Lead-free
	Tin Over Nickel Plating	Tin Over Copper Plating	
2	87427-0202	87427-0203	Yes
4	87427-0402	87427-0403	
6	87427-0602	87427-0603	
8	87427-0802	87427-0803	
10	87427-1002	87427-1003	
12	87427-1202	87427-1203	

Circuits	Order No.		Lead-free
	Tin Over Nickel Plating	Tin Over Copper Plating	
14	87427-1402	87427-1403	Yes
16	87427-1602	87427-1603	
18	87427-1802	87427-1803	
20	87427-2002	87427-2003	
22	87427-2202	87427-2203	
24	87427-2402	87427-2403	

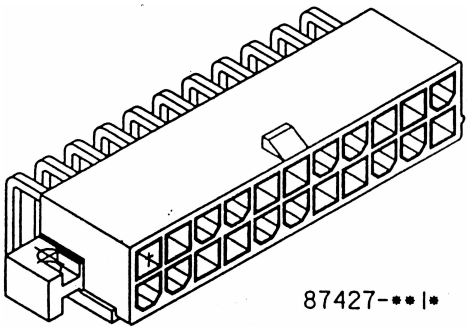
1.0 SCOPE

This specification covers the 4.2mm centerline tin plated Mini-Fit Junior connector series terminated with 16 to 28 WAG wire using crimp technology.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND PART NUMBER

Part Number	Product Description
87427-**1*	High Temperature, Mini-Fit Jr. Right Angle Header with Mounting Flanges
5557 SERIES	Receptacle, Mini-Fit Jr. Series



2.2 DIMENSIONS, MATERIALS, PLATING AND MARKINGS

See the appropriate sales drawings for information on dimensions, materials, plating and markings.

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See the Sales Drawings and the other sections of this specification for the necessary referenced documents and specifications.

4.0 RATINGS

4.1 Rated Voltage (Max.) : 600 Volts [AC (rms)/DC]

4.2 Current Rating (Max.) & Applicable Wires:

	CURRENT (Amps)				Max.Insulation Diameter
CKT / AWG	2&3	4&6	7-10	12-24	
AWG #16	9A	8A	7A	6A	3.10 Max.
AWG #18	9A	8A	7A	6A	3.10 Max.
AWG #20	7A	6A	5A	5A	
AWG #22	5A	4A	4A	4A	
AWG #24	4A	3A	3A	3A	
AWG #26	3A	2A	2A	2A	1.80 Max
AWG #28	2A	1A	1A	1A	

4.3 Operating Temperature Range : - 40 °C to +105 °C

(Including terminal Temperature rise.)

5.0 PERFORMANCE

5.1 ELECTRIC PERFORMANCE

ITEM	TEST CONDITION	REQUIREMENTS
Contact Resistance	Mate connectors,measure by dry circuit, 20mV max., 10mA. as shown. Wire resistance shall be removed from the measured value.	10 mΩ Max.
Insulation Resistance	Mate connectors, apply 500V DC between adjacent terminal or ground.	1000 mΩ Min.
Dielectric Strength	Mate connectors, apply 1500V AC for 1 minute between adjacent terminal or ground.	No breakdown
Contact Resistance On Crimped Portion	Crimp the wire to the terminal measure by dry dircuit, 20mV max., 10mA.	5 mΩ Min

	TEST CONDITION	REQUIREMENTS	
Connector Mating & Unmating Forces	Mate and unmate connectors at a rate of 25 ±3 mm/minute	See Section 6.0	
Crimping Pull out Forces	Mount the crimped terminal, apply axial pull out force on the wire at the speed rate of 25 ±3 mm/minute	AWG #16	9.0 kgf Min.
		AWG #18	9.0 kgf Min.
		AWG #20	6.0 kgf Min.
		AWG #22	4.0 kgf Min.
		AWG #24	3.0 kgf Min.
		AWG #26	2.0 kgf Min.
		AWG #28	1.0 kgf Min.
Terminal Insertion Forces	Insert the crimped terminal into the housing.	1.5 kgf Min.	

5.2 ENVIRONMENTAL PERFORMANCEITEM

Terminal Retention Force in Housing	Apply axial pull out force at the speed rate of 25±3 mm/minute on terminal assembled in the housing.	3.0 kgf Min.
Pin Retention Force in Housing	Apply axial push force at the speed rate of 25±3 mm/minute	1.0 kgf Min.
Thumblatch Operation Force	Depress latch at a speed rate of 25.4 mm/minute.	1.7 kgf Max.
Thumblatch Yield Strength	Mate loaded connector fully. Pull apart via wires at a speed rate of 25.4mm/minute.	7.0 kgf Min.
Normal Force	Insert split test fixture into female terminal. Apply force perpendicular to terminal sides at a speed rate of 2.54mm/minute.	375.0 gf Max.

5.3 ENVIRONMENTAL PERFORMANCE & OTHERS

Item	Test condition	Requirement	
Repeated Mate/Unmate	When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute.	Contact Resistance	20 mΩ Max.
Mechanical Shock	50 G's with three saw tooth waveform shocks in each X-Y-Z axis.	Appearance	No Damage.
		Contact Resistance	20 mΩ Max.
		Discontinuity	Iusec Max.
Vibration	Amplitute: 1.5mm peak to peak Sweep: 10-55-10 Hz in one minute Duration: 2 hours in each X-Y-Z axis	Appearance	No Damage.
		Contact Resistance	20 mΩ Max.

		Discontinuity	1 usec Max.

Item	Test Condition	Requirement	
Heat Resistance	105 ± 2 °C, 96 hours	Appearance	No Damage
		Contact Resistance	20 mΩ Max.
Cold Resistance	-40 ± 3 °C, 96 hours	Appearance	No Damage
		Contact Resistance	20 mΩ Max.
Temperature Cycling	5 Cycles: a) -55 °C, 30 minutes b) +105 °C, 30 minutes	Appearance	No Damage
		Contact Resistance	20 mΩ Max.
Humidity	Temperature: - 60 ± 2 °C Relative Humidity: 90 - 95% Duration: 96 hours	Appearance	No Damage
		Contact Resistance	20 mΩ Max.
		Dielectric Strength	No Breakdown
		Insulation Resistance	100 mΩ Min.
Salt Spray	48 ± 4 hours exposure to a salt spray from the 5 ± 1% solution at 35 ± 2 °C	Appearance	No Damage
		Contact Resistance	20 mΩ Max.
SO_2 Gas	24 hours exposure to 50 ± 5 ppm. SO_2 gas at 40 ± 2 °C	Appearance	No Damage
		Contact Resistance	20 mΩ Max.
Solderability	Solder Time : 5 ± 0.5 sec. Solder Temperature : 245 ± 5 °C	75% of immersed area must show no voids or pinholes.	
Temperature Rise	Carrying rated current load.	30 °C rise Max.	
NH_3 Gas	40 minutes exposure to NH_3 gas evaporating form 28% Ammonia solution.	Appearance	No Damage
		Contact Resistance	20 mΩ Max.

Resistance to Soldering Heat	Solder Time : 5 ± 0.5 sec. Solder Temperature : 260 ± 5 °C	No Damage

Item	Test Condition	Requirement
Resistance to Reflow Soldering (Infrared)	Preheat at 3 °C/sec to 150 °C & using 60/40 solder, IR at 240 °C for 30 sec. (see Figure A) Component must withstand two IR reflow cycles with cooling down in between.	No evidence of bridging or cracking and the part shall meet all electrical & mechanical specifications.

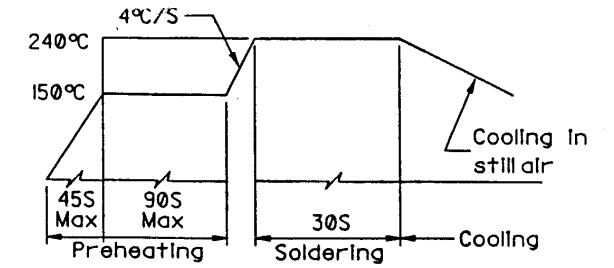


FIGURE A - INFRARED SOLDERING PROFILE

6.0 MATE/UNMATE FORCE

Receptacle and Right Angle Header Assemblies with Tin-plated Brass Terminals.

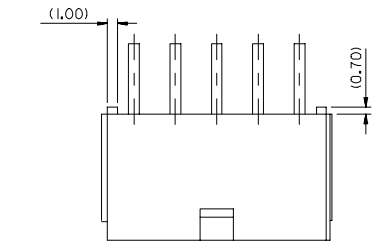
CKT SIZE	Mate (kg. Max.)			Unmate (kg. Max.)		
	Initial	6th	30th	Initial	6th	30th
10	14.50	13.50	13.50	0.50	0.40	0.40
22	31.90	29.70	29.70	1.10	0.88	0.88

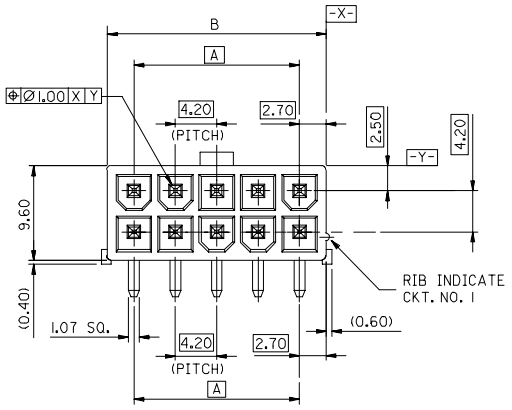
7.0 PACKAGING

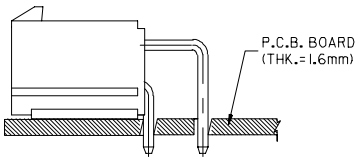
Part shall be packaged to protect against damage during handling, transit and storage.

REVISE ON PC ONLY		TITLE	HIGH TEMPERATURE MINI-FIT JR. RIGHT ANGLE CONNECTOR WITH MOUNTING FLANGES
A	RELEASE AS PER ECN S2000-0325		
REV	DESCRIPTION	THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	

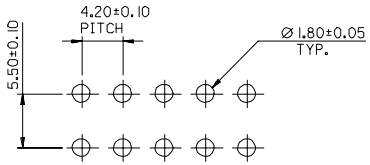
DOCUMENT NO.		FILE NAME	SHEET
PS-87427-0001		PS87427.LWP	7



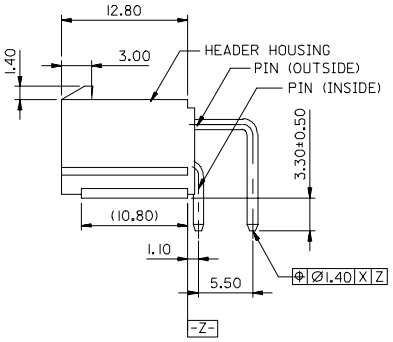


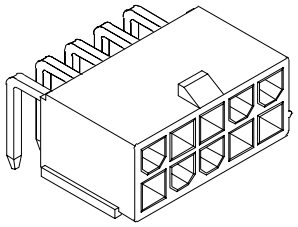


RECOMMENDED INSTALLATION PATTERN



RECOMMENDED P.C.B. LAYOUT





ISOMETRIC VIEW

LEGEND

87427-****

CKT. SIZE (SEE SHEET 2).

PLATING OPTIONS
2 = NOTE 2
3 = NOTE 3

PACKAGING OPTIONS
0 = TRAY PACKED
2 = TUBE PACKED

NOTES

1. MATERIAL - HEADER : NYLON 46, UL94V-0, COLOR BEIGE
   PIN : BRASS (1.07 SQUARE)
2. PLATING OF PIN
   TIN 2.54um MIN. OVER NICKEL 1.27um MIN.
3. PLATING OF PIN
   TIN 4-10um OVER COPPER 2-8um.

EC NO: 12006-0672	2006/06/19	D
DRWN: CHP	2006/06/20	
CHKD: SSUDHIR	2006/09/26	
APPR: SSUDHIR		
DESCRIPTION		REV

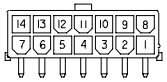
QUALITY SYMBOLS
▼=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

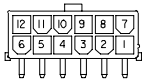
	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± ---
2 PLACES	± 0.20	± ---
1 PLACE	± 0.20	± ---
ANGULAR ±---°		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

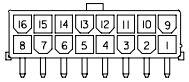
DIMENSION STYLE	MM ONLY
SCALE	2:1
DESIGN UNITS	METRIC
	THIRD ANGLE PROJECTION
DRAWN BY	STEVEN
DATE	1995/02/27
CHECKED BY	EDMUD
DATE	1995/03/01
APPROVED BY	ROY WONG
DATE	1995/03/01
MATERIAL NO.	SEE CHART
TITLE	4.2MM W-T-B HIGH TEMP. RIGHT ANGLE HEADER WITHOUT MOUNTING FLANGES
	MOLEX INCORPORATED
DOCUMENT NO.	SD-87427-**0*
SHEET NO.	1 OF 2
SIZE	A3



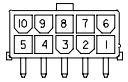
CKT. SIZE 14



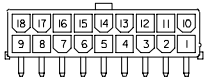
CKT. SIZE 12



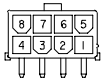
CKT. SIZE 16



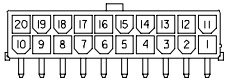
CKT. SIZE 10



CKT. SIZE 18

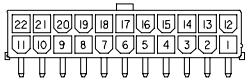


CKT. SIZE 8



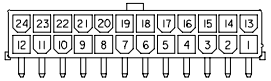
CKT. SIZE 20

CKT. SIZE 6



CKT. SIZE 22

CKT. SIZE 4



CKT. SIZE 24

CKT. SIZE 2

51.60	46.20	87427-242*	24
B	A	ENG. NO. TUBE PACKED	CKT. SIZE
51.60	46.20	87427-240*	24
47.40	42.00	87427-220*	22
43.20	37.80	87427-200*	20
39.00	33.60	87427-180*	18
34.80	29.40	87427-160*	16
30.60	25.20	87427-140*	14
26.40	21.00	87427-120*	12
22.20	16.80	87427-100*	10
18.00	12.60	87427-080*	8
13.80	8.40	87427-060*	6
9.60	4.20	87427-040*	4
5.40	--	87427-020*	2
B	A	ENG. NO. TRAY PACKED	CKT. SIZE

EC NO: 12006-0672 2006/06/19
DRWN: CHP 2006/06/20
CH'KD: SSUDHIR 2006/09/26
APPR: SSUDHIR
DESCRIPTION
REV D

QUALITY SYMBOLS
▼=0
▽C=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± ---
2 PLACES	± 0.20	± ---
1 PLACE	± 0.20	± ---
ANGULAR ±---°		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DIMENSION STYLE: MM ONLY
SCALE: 1:1
DESIGN UNITS: METRIC
THIRD ANGLE PROJECTION

DRAWN BY: SAMC DATE: 1996/02/05
CHECKED BY: DATE:
APPROVED BY: DATE:

TITLE: 4.2MM W-T-B,HIGH TEMP. RIGHT ANGLE HEADER WITHOUT MOUNTING FLANGES

MOLEX INCORPORATED

MATERIAL NO.: SEE CHART
DOCUMENT NO.: SD-87427-**0*
SHEET NO.: 2 OF 2
SIZE: A3