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ELECTRONICS

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Jameco Part Number 882306

FEATURES AND SPECIFICATIONS

Features and Benefits

- Peg-mounted for increased board retention
- Low profile for space constraints
- Positive housing locks
- Fully isolated terminals to protect contacts from damage

Reference Information

Product Specification: PS-5556-0001

Packaging: Tray or bag

UL File No.: E29179

CSA File No.: LR19980

TUV License No.: R75142

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
Amperes-Jr.	9	8	7	6
Amperes-HCS	12	11	10	9

Contact Resistance: 10mΩ max.

Dielectric Withstanding Voltage: 1500V

Insulation Resistance: 1000 MΩ min.

Mechanical

Insertion Force to PCB: 5.0kg max.

Mating Force: 0.7kg (1.54 lb) max.

Unmating Force: 0.35kg (0.7 lb) min.

Normal Force: 200g min.

Durability: 30 cycles

Physical

Housing: 6/6 nylon, UL 94V-2 or 94V-0

Contact: Brass

Plating: Tin, select Gold or overall Gold

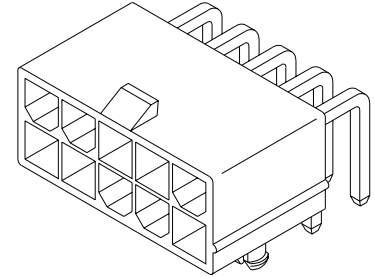
Operating Temperature: -40 to +105°C



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

5569

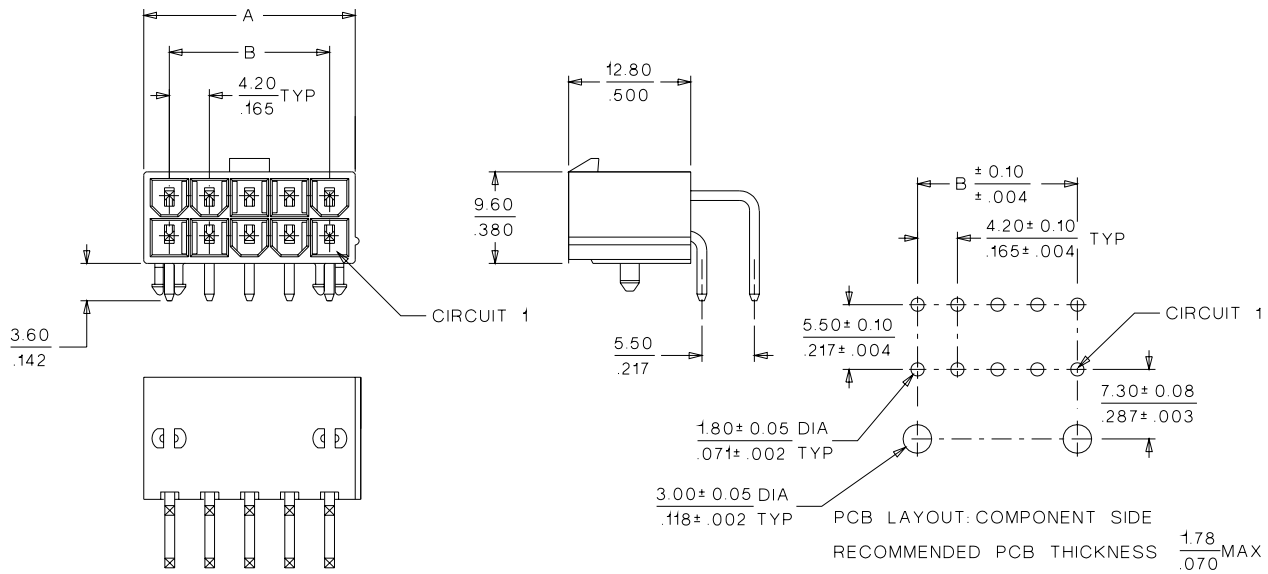
Right Angle, Dual Row With Pegs



Power Connectors

F

CATALOG DRAWING (FOR REFERENCE ONLY)



ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.						Dimension	
	Tin Plated		Gold Plated (30μ")		Select Gold Plated (30μ")		A	B
	94V-2	94V-0	94V-2	94V-0	94V-2	94V-0		
2	• 39-30-1020	• 39-30-0020	39-30-1021	39-30-1022	39-30-0023	39-30-0024	5.40 (.213)	
4	• 39-30-1040	• 39-30-0040	39-30-1041	39-30-1042	39-30-0043	39-30-0044	9.60 (.378)	4.20 (.165)
6	• 39-30-1060	• 39-30-0060	39-30-1061	39-30-1062			13.80 (.543)	8.40 (.331)
8	• 39-30-1080	• 39-30-0080	39-30-1081	39-30-1082			18.00 (.709)	12.60 (.496)
10	• 39-30-1100	• 39-30-0100	39-30-1101	39-30-1102			22.20 (.874)	16.80 (.661)
12	• 39-30-1120	• 39-30-0120	39-30-1121	39-30-1122			26.40 (1.039)	21.00 (.827)
14	• 39-30-1140	• 39-30-0140	39-30-1141	39-30-1142			30.60 (1.205)	25.20 (.992)
16	• 39-30-1160	• 39-30-0160	39-30-1161	39-30-1162			34.80 (1.370)	29.40 (1.158)
18	• 39-30-1180		39-30-1181				39.00 (1.535)	33.60 (1.323)
20	• 39-30-1200	• 39-30-0200	39-30-1201	39-30-1202			43.20 (1.701)	37.80 (1.488)
22	• 39-30-1220		39-30-1221				47.40 (1.866)	42.00 (1.654)
24	• 39-30-1240	• 39-30-0240	39-30-1241	39-30-1242			51.60 (2.031)	46.20 (1.819)

• US Standard Product, available through Molex franchised distributors



PRODUCT SPECIFICATION

MINI-FIT JR.

1.0 SCOPE

This Product Specification covers performance requirements for the MINI-FIT JR. 4.20 mm (.165 inch) centerline (pitch) printed circuit board (PCB) connector series with Tin or Gold plating, and The MINI-FIT JR. connector series terminated with 16 to 28 AWG wire using Crimp technology with Tin or Gold plating.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER (S)

<u>PRODUCT NAME</u>	<u>PART NUMBER</u>
Female Crimp Terminal	5556-****
Male Crimp Terminal	5558-****
Receptacle Housing	5557-****
Plug Housing	5559-****
Vertical Header Assembly	5566-****
Right Angle Header Assembly	5569-****

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

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

2.3 SAFETY AGENCY APPROVALS

UL File: E29179
CSA Certificate: LR 19980
TUV Certificate: R75142-8

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See sales drawings and the other sections of this specification for the necessary referenced documents and specifications

4.0 RATINGS

4.1 VOLTAGE

600 Volts AC (RMS) (or 600 Volts DC)

4.2 CURRENT AND APPLICABLE WIRES

Maximum Insulation Diameter and Applicable Wire Gauges	16 AWG: 3.10/. 122 MAXIMUM
	18-24 AWG: 3.10/. 122 MAXIMUM
	22-28 AWG: 1.80/. 071 MAXIMUM

<u>REVISION:</u> C	<u>ECR/ECN INFORMATION:</u> <u>EC No:</u> UCP2004-2349 <u>DATE:</u> 2004 / 05 / 25	<u>TITLE:</u> PRODUCT SPECIFICATION FOR MINI-FIT JR. CONNECTOR SYSTEM	<u>SHEET No.</u> 1 of 5
<u>DOCUMENT NUMBER:</u> PS-5556-001	<u>CREATED / REVISED BY:</u> BANDURA	<u>CHECKED BY:</u> BANDURA	<u>APPROVED BY:</u> MARGULIS



PRODUCT SPECIFICATION

4.2 CURRENT AND APPLICABLE WIRES (continued)

MAXIMUM CURRENT RATING (Amperes)									
Brass					Phosphor Bronze				
Wire \ Ckt. Size	2 & 3	4 - 6	7 - 10	12 - 24	Wire \ Ckt. Size	2 & 3	4 - 6	7 - 10	12 - 24
AWG #16	9	8	7	6	AWG #16	8	7	6	5
AWG #18	9	8	7	6	AWG #18	8	7	6	5
AWG #20	7	6	5	5	AWG #20	6	5	4	4
AWG #22	5	4	4	4	AWG #22	4	3	3	3
AWG #24	4	3	3	3	AWG #24	3	2	2	2
AWG #26	3	2	2	2	AWG #26	2	1	1	1
AWG #28	2	1	1	1	AWG #28	1	1	1	1

4.3 TEMPERATURE

Operating: * - 40°C to + 105°C

Nonoperating: - 40°C to + 105°C

*Including 30°C terminal temperature at rated current

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 100 mA. Wire resistance shall be removed from the measured value.	10 milliohms MAXIMUM [initial]
2	Contact Resistance @ Rated Current	Mate connectors: apply a maximum voltage of 20 mV at rated current.	10 milliohms MAXIMUM [initial]
3	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.	5 milliohms MAXIMUM [initial]
4	Insulation Resistance	Mate connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM

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PRODUCT SPECIFICATION

5.1 ELECTRICAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Dielectric Withstanding Voltage	Mate connectors: apply a voltage of 1500 VAC for 1 minute between adjacent terminals and between terminals to ground.	No breakdown. Current leakage < 5 mA
6	Temperature Rise (via Current Cycling)	Mate connectors. Measure the temperature rise at the rated current after 96 hours, during current cycling (45 minutes ON and 15 minutes OFF per hour) for 240 hours, and after final 96-hour steady state.	Temperature rise: +30°C MAXIMUM

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Terminal Insertion and Withdrawal Forces	Insert and withdraw terminal (male to female) at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute.	14.7 N (3.30 lbf) MAXIMUM insertion force & 1.0 N (0.02 lbf) MINIMUM withdrawal force
2	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.	30 N (6.74 lbf) MINIMUM retention force
3	Durability	Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.	20 milliohms MAXIMUM
4	Vibration (Random)	Mate connectors and vibrate per EIA 364-28, test condition VII.	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
5	Shock (Mechanical)	Mate connectors and shock at 50 g's with $\frac{1}{2}$ sine wave (11 milliseconds) shocks in the $\pm X$, $\pm Y$, $\pm Z$ axes, (18 shocks total).	20 milliohms MAXIMUM & Discontinuity < 1 microsecond
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).	16 Awg = 88.0 N (19.8 lbf) Min. 18 Awg = 88.0 N (19.8 lbf) Min. 20 Awg = 59.0 N (13.3 lbf) Min. 22 Awg = 39.0 N (8.78 lbf) Min. 24 Awg = 29.0 N (6.52 lbf) Min. 26 Awg = 19.0 N (4.27 lbf) Min. 28 Awg = 9.80 N (2.20 lbf) Min.

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PRODUCT SPECIFICATION

5.2 MECHANICAL REQUIREMENTS (continued)

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).	15.0 N (3.37 lbf) MAXIMUM insertion force
8	Normal Force	Apply a perpendicular force.	0.49 N (50 grams) MINIMUM [Gold (noble) plating] OR 1.47 N (150 grams) MINIMUM [Tin (non-noble) plating]
9	PCB Engagement and Separation Forces	Engage and separate a connector at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute. (Applies to parts with PCB retention features only)	49.0 N (11.0 lbf) MAXIMUM insertion force & 10.0 N (2.24 lbf) MINIMUM withdrawal force
10	Panel Insertion and Withdrawal Forces	Insert and withdraw a connector at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute. (Applies to parts with panel retention features only)	225 N (50.7 lbf) MAXIMUM insertion force & 157 N (35.3 lbf) MINIMUM withdrawal force
11	Pin Retention Force	Apply axial push force at the speed rate of 25 ± 3 mm/minute.	1.0 KGF MIN.
12	Thumb latch Operation Force	Depress latch at a speed rate of 25.4 mm/minute.	1.7 KGF MAX.
13	Thumb latch Yield Strength	Mate loaded connectors fully. Pull apart via wires at a speed rate of 25.4 mm/minute.	7.0 KGF MIN.

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PRODUCT SPECIFICATION

5.3 ENVIRONMENTAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Thermal Shock	Mate connectors: expose for 5 cycles Between temperatures -55 and 105°C ; Dwell 0.5 hours at each temperature.	20 milliohms MAXIMUM Visual: No Damage Dielectric Strength per 5.1.5 Insulation Resistance per 5.1.4
2	Thermal Aging	Mate connectors; expose to: 96 hours at $105 \pm 2^{\circ}\text{C}$	20 milliohms MAXIMUM & Visual: No Damage
3	Humidity (Steady State)	Mate connectors: expose to a temperature of $60 \pm 2^{\circ}\text{C}$ with a relative humidity of 90-95% for 96 hours.	20 milliohms MAXIMUM Dielectric Strength per 5.1.5 Insulation Resistance per 5.1.4 Visual: No Damage
4	Solderability	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES-152)
5	Solder Resistance	Dip connector terminals tail in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: $260 \pm 5^{\circ}\text{C}$	Visual: No Damage to insulator material
6	Cold Resistance	Mate connectors: Duration; 96 hours; Temperature: $-40 \pm 3^{\circ}\text{C}$	20 milliohms MAXIMUM Visual: No Damage
7	Corrosive Atmosphere: Sulfur Dioxide Gas (SO₂)	Mate connectors: Duration; 24 hours exposure. Atmosphere: 50 parts per million (ppm) SO ₂ Gas. Temperature: $40 \pm 3^{\circ}\text{C}$	20 milliohms MAXIMUM Visual: No Damage

6.0 PACKAGING

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

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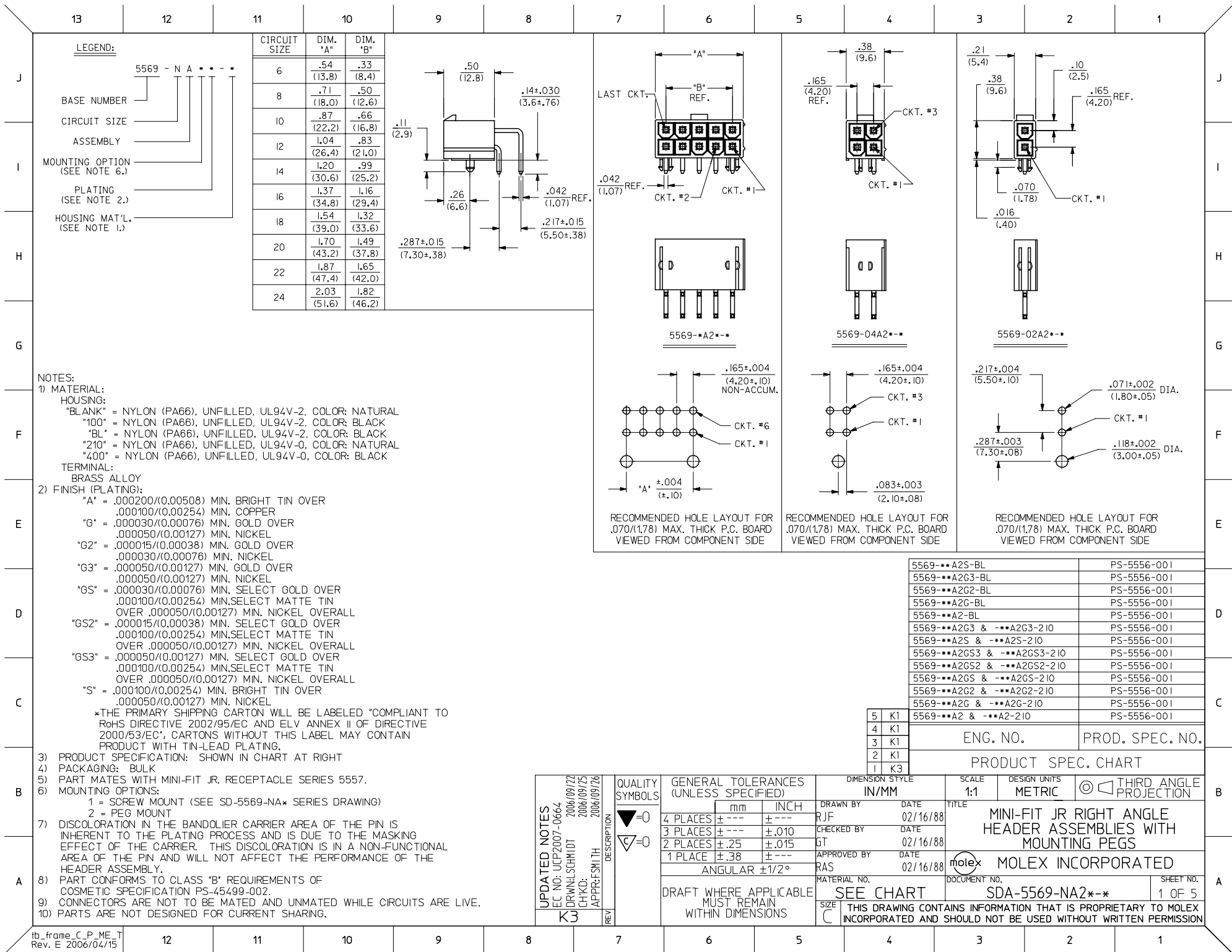
PRODUCT SPECIFICATION

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DOCUMENT NUMBER: PS-5556-001		CREATED / REVISED BY: BANDURA	CHECKED BY: BANDURA	APPROVED BY: MARGULIS	
TEMPLATE FILENAME: PRODUCT_SPEC[SIZE_A](V.1).DOC					



PRODUCT SPECIFICATION

<u>REVISION:</u> C	<u>ECR/ECN INFORMATION:</u> <u>EC No:</u> UCP2004-2349 <u>DATE:</u> 2004 / 05 / 25	<u>TITLE:</u> PRODUCT SPECIFICATION FOR MINI-FIT JR. CONNECTOR SYSTEM	<u>SHEET No.</u> 7 of 5	
<u>DOCUMENT NUMBER:</u> PS-5556-001		<u>CREATED / REVISED BY:</u> BANDURA	<u>CHECKED BY:</u> BANDURA	<u>APPROVED BY:</u> MARGULIS
TEMPLATE FILENAME: PRODUCT_SPEC[SIZE_A](V.1).DOC				



J		I		H		G		F		E		D		C		B		A							
13		12		11		10		9		8		7		6		5		4		3		2		1	
HSG. MAT'L.		PLATING (NOTE 6)		MTG. OPTION		CKT. SIZE		ENG. NUMBER		PART NUMBER		HSG. MAT'L.		PLATING (NOTE 6)		MTG. OPTION		CKT. SIZE		ENG. NUMBER		PART NUMBER		HSG. MAT'L.	
94V-0		TIN OVER COPPER		PEGS		2		5569-02A2-210		39-30-0020		94V-2		TIN OVER COPPER		PEGS		2		5569-02A2		39-30-1020		94V-2	
						4		-04A2-210		-0040								4		-04A2		-1040			
						6		-06A2-210		-0060								6		-06A2		-1060			
						8		-08A2-210		-0080								8		-08A2		-1080			
						10		-10A2-210		-0100								10		-10A2		-1100			
						12		-12A2-210		-0120								12		-12A2		-1120			
						14		-14A2-210		-0140								14		-14A2		-1140			
						16		-16A2-210		-0160								16		-16A2		-1160			
						18		-18A2-210		-0180								18		-18A2		-1180			
						20		-20A2-210		-0200								20		-20A2		-1200			
						22		-22A2-210		-0220								22		-22A2		-1220			
						24		5569-24A2-210		39-30-0240		94V-2		TIN OVER COPPER		PEGS		24		5569-24A2		39-30-1240		94V-2	
						2		5569-02A2G-210		39-30-1022		94V-2		30 M.I. GOLD		PEGS		2		5569-02A2G		39-30-1021		94V-2	
						4		-04A2G-210		-1042								4		-04A2G		-1041			
						6		-06A2G-210		-1062								6		-06A2G		-1061			
						8		-08A2G-210		-1082								8		-08A2G		-1081			
						10		-10A2G-210		-1102								10		-10A2G		-1101			
						12		-12A2G-210		-1122								12		-12A2G		-1121			
						14		-14A2G-210		-1142								14		-14A2G		-1141			
						16		-16A2G-210		-1162								16		-16A2G		-1161			
						18		-18A2G-210		-1182								18		-18A2G		-1181			
						20		-20A2G-210		-1202								20		-20A2G		-1201			
						22		-22A2G-210		-1222								22		-22A2G		-1221			
						24		5569-24A2G-210		39-30-1242		94V-2		30 M.I. GOLD		PEGS		24		5569-24A2G		39-30-1241		94V-2	
						2		5569-02A2G2-210		39-30-0022		94V-2		15 M.I. GOLD		PEGS		2		5569-02A2G2		39-30-0021		94V-2	
						4		-04A2G2-210		-0042								4		-04A2G2		-0041			
						6		-06A2G2-210		-0062								6		-06A2G2		-0061			
						8		-08A2G2-210		-0082								8		-08A2G2		-0081			
						10		-10A2G2-210		-0102								10		-10A2G2		-0101			
						12		-12A2G2-210		-0122								12		-12A2G2		-0121			
						14		-14A2G2-210		-0142								14		-14A2G2		-0141			
						16		-16A2G2-210		-0162								16		-16A2G2		-0161			
						18		-18A2G2-210		-0182								18		-18A2G2		-0181			
						20		-20A2G2-210		-0202								20		-20A2G2		-0201			
						22		-22A2G2-210		-0222								22		-22A2G2		-0221			
						24		5569-24A2G2-210		39-30-0242		94V-2		15 M.I. GOLD		PEGS		24		5569-24A2G2		39-30-0241		94V-2	
						2		5569-02A2G3-210		NOT TOOLED		94V-2		50 M.I. GOLD		PEGS		2		5569-02A2G3		NOT TOOLED			
						4		-04A2G3-210		-04A2G3								4		-04A2G3		15-27-1514			
						6		-06A2G3-210		-06A2G3								6		-06A2G3		15-27-1511			
						8		-08A2G3-210		NOT TOOLED								8		-08A2G3		15-27-1512			
						10		-10A2G3-210		15-27-1504								10		-10A2G3		15-27-1503			
						12		-12A2G3-210		NOT TOOLED								12		-12A2G3		NOT TOOLED			
						14		-14A2G3-210		-14A2G3								14		-14A2G3		NOT TOOLED			
						16		-16A2G3-210		-16A2G3								16		-16A2G3		15-27-1513			
						18		-18A2G3-210		-18A2G3								18		-18A2G3		NOT TOOLED			
						20		-20A2G3-210		-20A2G3								20		-20A2G3		-20A2G3			
						22		-22A2G3-210		-22A2G3								22		-22A2G3		-22A2G3			
						24		5569-24A2G3-210		NOT TOOLED		94V-2		50 M.I. GOLD		PEGS		24		5569-24A2G3		NOT TOOLED		94V-2	

SEE SHEET ONE		EC NO: UCP2005-1130		2004/12/04	
K1		DRWNLSTEWART		2004/12/09	
		CHKDGPOLGAR		2004/12/13	
		APPR:YMARQUILL		2004/12/13	
REV		DESCRIPTION			
QUALITY SYMBOLS		GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE	
▽=0		mm INCH		IN/MM	
▽=0		4 PLACES ± --- ± ---		DRAWN BY DATE	
		3 PLACES ± --- ± ---		R/JF 08/16/88	
		2 PLACES ± --- ± ---		CHECKED BY DATE	
		1 PLACE ± --- ± ---		JTR 08/16/88	
		ANGULAR ±1/2°		APPROVED BY DATE	
				RAS 08/16/88	
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		MATERIAL NO. DOCUMENT NO.	
				SEE CHART	
				SDA-5569-NA2*-*	
				SHEET NO. 2 OF 5	
				THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	

ib_frame_C.P.ME_T

Rev. D 2004/04/02

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SEE SHEET ONE
EC NO: UCP2005-1130
K1

DRINKS STEWART 2004/12/01
CHKD: GPOLGAR 2004/12/09
APPR: YMARQUILL 2004/12/13

REV

QUALITY SYMBOLS

DESCRIPTION

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± .005	± .0004
3 PLACES	± .005	± .0004
2 PLACES	± .005	± .0004
1 PLACE	± .005	± .0004

ANGULAR ±1/2°

DRAFT WHERE APPLICABLE
MUST REMAIN
WITHIN DIMENSIONS

DIMENSION STYLE
IN/MM

DRAWN BY	DATE
RJF	08/16/88
CHECKED BY	DATE
JTR	08/16/88
APPROVED BY	DATE
RAS	08/16/88

MATERIAL NO.

DOCUMENT NO.

SHEET NO.

SCALE
1:1

DESIGN UNITS
INCH

THIRD ANGLE
PROJECTION

MINI-FIT JR. RIGHT ANGLE
HEADER ASSEMBLIES
WITH MOUNTING PEGS

MOLEX INCORPORATED

SDA-5569-NA2*-*

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