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ELECTRONICS

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Jameco Part Number 303677

FEATURES AND SPECIFICATIONS

Features and Benefits

- Designed for use with strain relief or overmold applications
- Positive housing lock for secure mating retention
- Fully isolated terminals to protect contacts from damage
- Uses standard Mini-Fit series terminals
- 1-piece strain relief available (41995 series) for use with Mini-Fit, Jr. single row receptacles

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: [5559](#), [5566](#), [5569](#), [42404](#), [42440](#), [42475](#),[43810](#), [43879](#) and [44068](#) dual row connectorsUse With: [5556](#) or 44476 terminals

Designed In: Millimeters

Mechanical

Contact Insertion Force: 1.5kg max.

Contact Retention to Housing: 3.0kg min.

Wire Pull-Out Force: 9.0kg min.

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

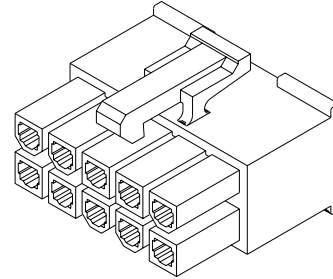
Physical

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

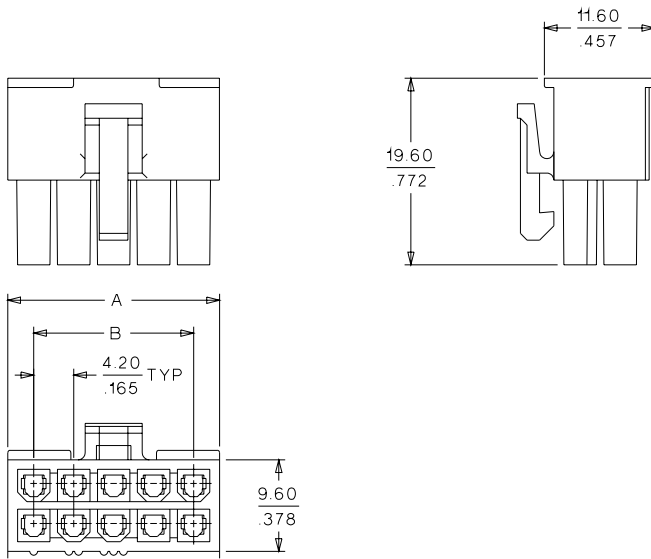
Operating Temperature: -40 to +105°C



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

5557**Dual Row**

CATALOG DRAWING (FOR REFERENCE ONLY)



	Order No.
Polarizing Key	15-04-0211

ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.				Dimension	
	For Use with Strain Relief		Not for Use with Strain Relief		A	B
	94V-2	94V-0	94V-2	94V-0		
2	39-01-3022	39-01-3028	• 39-01-2020	• 39-01-2025	5.40 (.213)	
4	39-01-3042	39-01-3048	• 39-01-2040	• 39-01-2045	9.60 (.378)	4.20 (.165)
6	• 39-01-2060	• 39-01-2065			13.80 (.543)	8.40 (.331)
8	• 39-01-2080	• 39-01-2085			18.00 (.709)	12.60 (.496)
10	• 39-01-2100	• 39-01-2105			22.20 (.874)	16.80 (.661)
12	• 39-01-2120	• 39-01-2125			26.40 (1.039)	21.00 (.827)
14	• 39-01-2140	• 39-01-2145			30.60 (1.205)	25.20 (.992)
16	• 39-01-2160	• 39-01-2165			34.80 (1.370)	29.40 (1.158)
18	• 39-01-2180	• 39-01-2185			39.00 (1.535)	33.60 (1.323)
20	• 39-01-2200	• 39-01-2205			43.20 (1.701)	37.80 (1.488)
22	• 39-01-2220	• 39-01-2225			47.40 (1.866)	42.00 (1.654)
24	• 39-01-2240	• 39-01-2245			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)

PRODUCT NAME

Female Crimp Terminal
Male Crimp Terminal
Receptacle Housing
Plug Housing
Vertical Header Assembly
Right Angle Header Assembly

PART NUMBER

5556-****
5558-****
5557-****
5559-****
5566-****
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

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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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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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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	Thumblatch Operation Force	Depress latch at a speed rate of 25.4 mm/minute.	1.7 KGF MAX.
13	Thumblatch 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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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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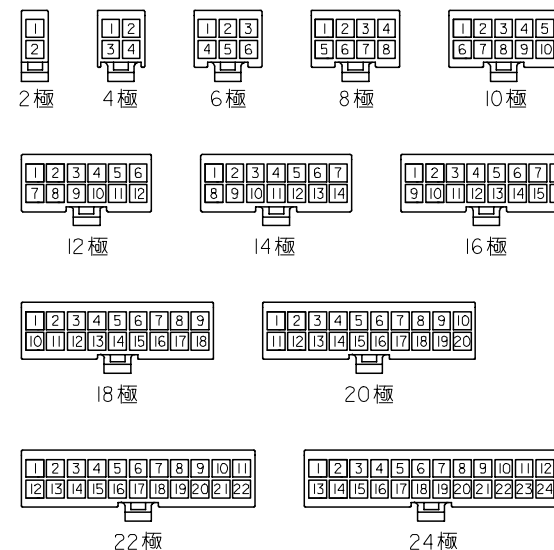
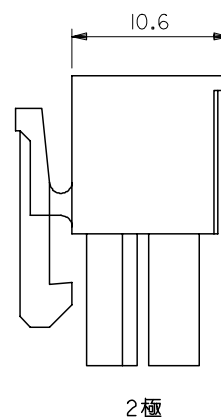
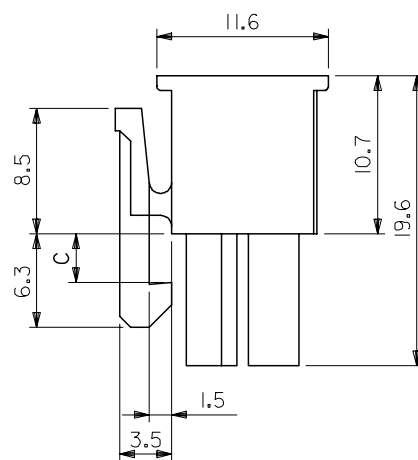
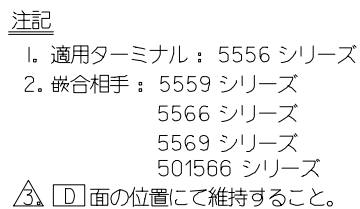
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TEMPLATE FILENAME: PRODUCT_SPEC(SIZE_A)(V.1).DOC					



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(SCALE 1:1)

3.6	51.6	46.2	39-01-2240	5557-24R	24
	47.4	42	↑ -2220	↑ -22R	22
	43.2	37.8	-2200	-20R	20
	39	33.6	-2180	-18R	18
3.3	34.8	29.4	-2160	-16R	16
	30.6	25.2	-2140	-14R	14
	26.4	21	-2120	-12R	12
	22.2	16.8	-2100	-10R	10
3.3	18	12.6	-2080	-08R	8
	13.8	8.4	-2060	-06R	6
	9.6	4.2	↓ -2040	↓ -04R	4
	5.4	—	39-01-2020	5557-02R	2
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REVISED	EC NO: J2005-3799 DRAWN: MABEI CHKD: K TOYODA APPR: NUKITA	2005/06/20 2005/06/21 2005/06/27	DESCRIPTION	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE ---	DESIGN UNITS METRIC		THIRD ANGLE PROJECTION
				10 UNDER	± 0.2	DRAWN BY S. MOCHIZUKI	DATE '90/02/22	TITLE NEW MINI FIT CONN REC. HOUSING			
				10 OVER 30 UNDER	± 0.3	CHECKED BY M. FUKUSHIMA	DATE '97/01/08				
				30 OVER	± 0.4	APPROVED BY M. FUKUSHIMA	DATE '97/01/08	 MOLEX INCORPORATED			
				ANGULAR ±3 °		MATERIAL NO.					
				DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SEE CHART		SD-5557-003		1 OF 2	
REV	J			SIZE A3 THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION							

