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ELECTRONICS

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Jameco Part Number 303685

FEATURES AND SPECIFICATIONS

Features and Benefits

- Wire-to-wire plug for panel-mounted or free-hanging applications
- Positive housing locks to mate with Mini-Fit, Jr. receptacle
- Fully isolated terminals to protect contacts from damage
- Uses standard Mini-Fit series terminals

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

Use With: [5558](#), [30490](#) or 44478 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

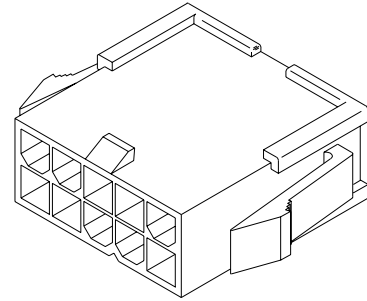
Housing: 6/6 nylon, UL 94V-2 or 94V-0

Operating Temperature: -40 to +105°C

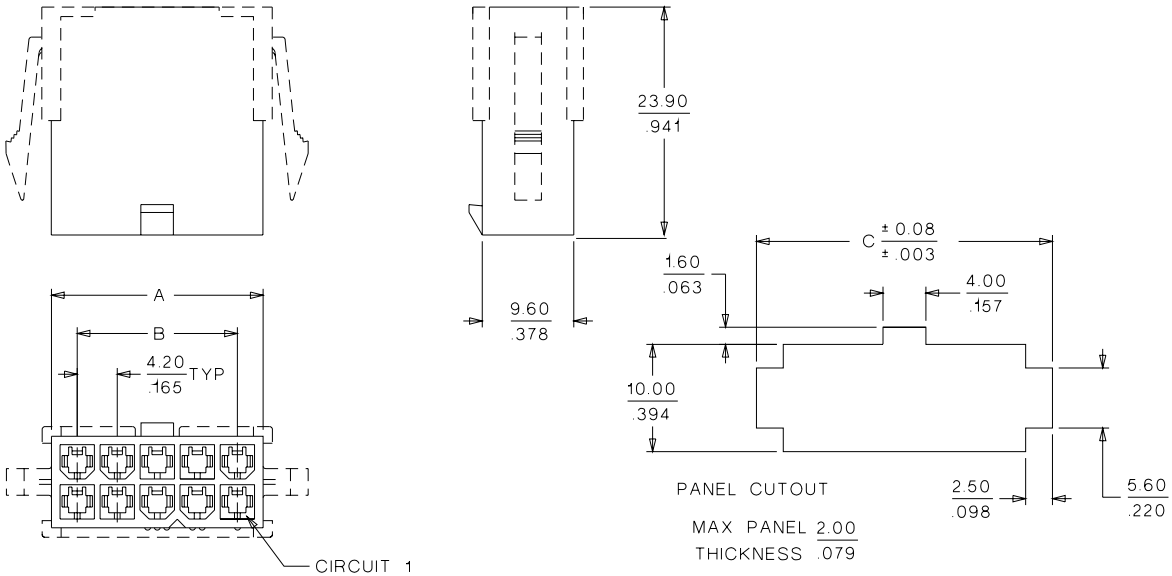
molex® 4.20mm (.165") Pitch Mini-Fit, Jr.™ Plug

5559

Dual Row With and without Panel Mount Ears



CATALOG DRAWING (FOR REFERENCE ONLY)



ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.				Dimension		
	Panel Mount		Free Hanging		A	B	C
	94V-2	94V-0	94V-2	94V-0			
2	• 39-01-2021	• 39-01-2026	• 39-01-3023	• 39-01-3029	5.40 (.213)		10.80 (.425)
4	• 39-01-2041	• 39-01-2046	• 39-01-3043	• 39-01-3049	9.60 (.378)	4.20 (.165)	15.00 (.591)
6	• 39-01-2061	• 39-01-2066	• 39-01-3063	• 39-01-3069	13.80 (.543)	8.40 (.331)	19.20 (.756)
8	• 39-01-2081	• 39-01-2086	• 39-01-3083	• 39-01-3089	18.00 (.709)	12.60 (.496)	23.40 (.921)
10	• 39-01-2101	• 39-01-2106	• 39-01-3103	• 39-01-3109	22.20 (.874)	16.80 (.661)	27.60 (1.087)
12	• 39-01-2121	• 39-01-2126			26.40 (1.039)	21.00 (.827)	31.80 (1.252)
14	• 39-01-2141	• 39-01-2146	• 39-01-3143	• 39-01-3149	30.60 (1.205)	25.20 (.992)	36.00 (1.417)
16	• 39-01-2161	• 39-01-2166	• 39-01-3163	• 39-01-3169	34.80 (1.370)	29.40 (1.158)	40.20 (1.583)
18	• 39-01-2181				39.00 (1.535)	33.60 (1.323)	44.40 (1.748)
20	• 39-01-2201				43.20 (1.701)	37.80 (1.488)	48.60 (1.913)
22	• 39-01-2221				47.40 (1.866)	42.00 (1.654)	52.80 (2.079)
24	• 39-01-2241				51.60 (2.031)	46.20 (1.819)	57.00 (2.244)

• 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>EGR/ECN INFORMATION:</u> EC No: UCP2004-2349 DATE: 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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		APPROVED BY: MARGULIS	



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 ± ¼ 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 ± ¼ 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 ½ sine wave (11 milliseconds) shocks in the ±X, ±Y, ±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 ± ¼ 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 ± 2°C	20 milliohms MAXIMUM & Visual: No Damage
3	Humidity (Steady State)	Mate connectors: expose to a temperature of 60 ± 2°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 ± 5°C	Visual: No Damage to insulator material
6	Cold Resistance	Mate connectors: Duration; 96 hours; Temperature: -40 ± 3°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 ± 3°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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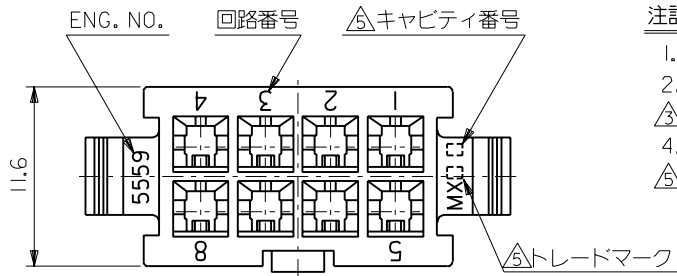
PRODUCT SPECIFICATION

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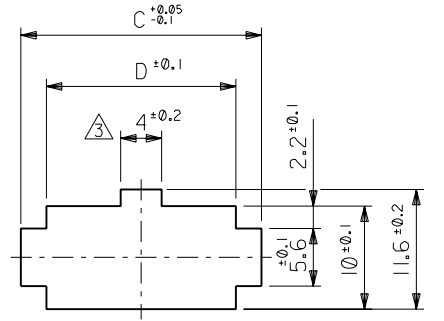
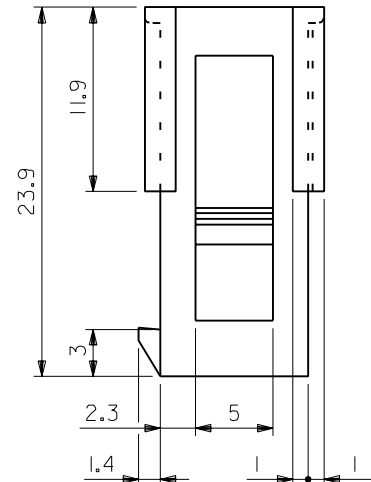
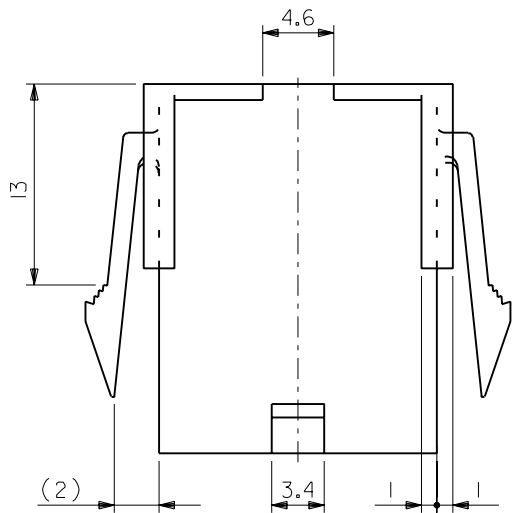
PRODUCT SPECIFICATION

<u>REVISION:</u> C	<u>EGR/ECN INFORMATION:</u> EC No: UCP2004-2349 DATE: 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

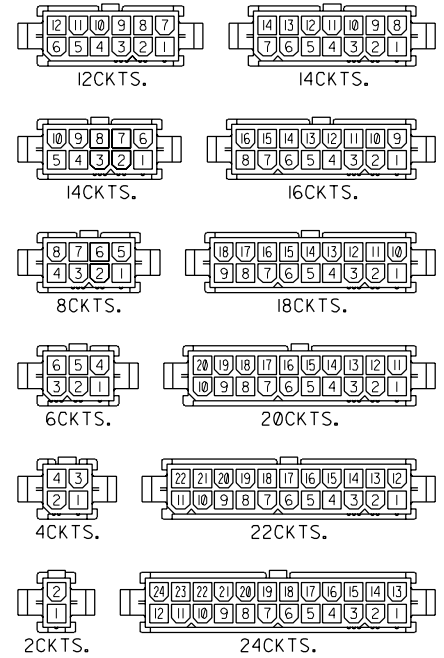
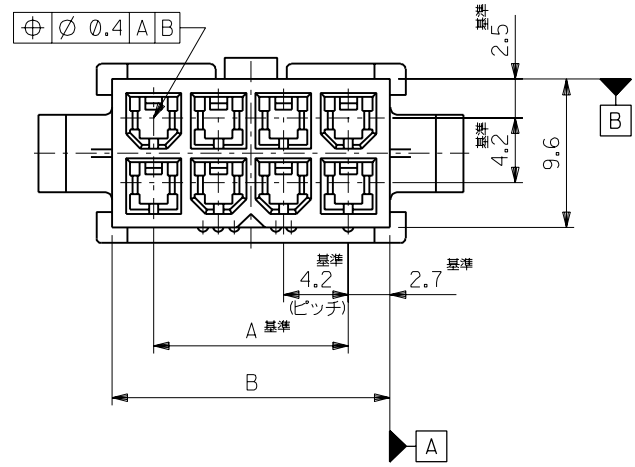


注記

- 適用ターミナル：5558シリーズ
- 嵌合相手：5557-NR
- △ 2極に限り4mm 寸法はD寸法にて可とする。
- パネルスロットの打抜き方向はハウジングの挿入方向と同一のこと。
- △ トレードマーク：MX プラス1文字のアルファベットにて構成
キャビティ番号：1桁～2桁の数字にて構成



パネルスロット寸法 (パネル厚 0.8 - 2.0)



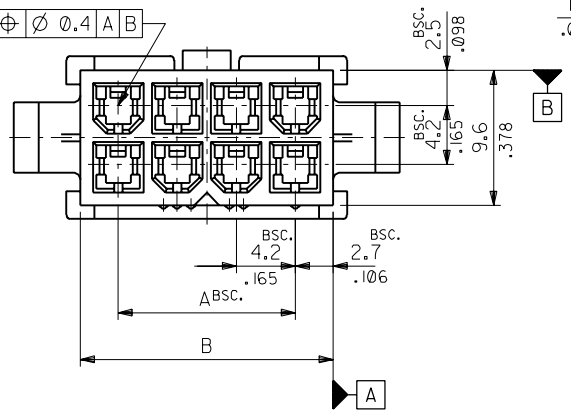
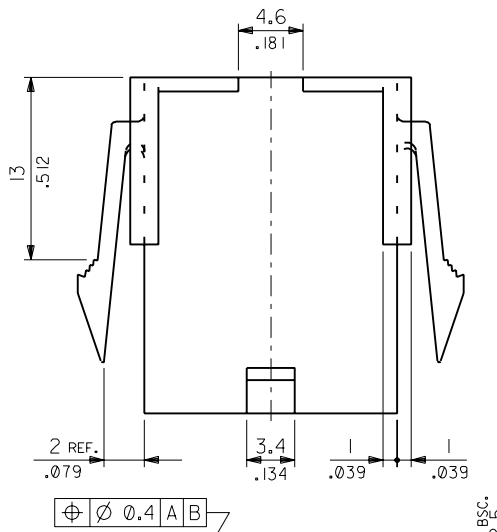
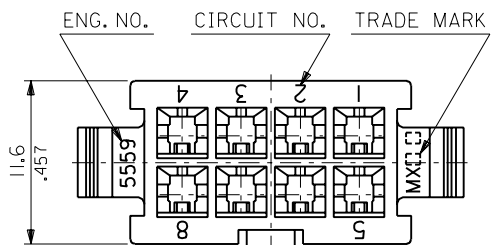
極数別レイアウト図 (SCALE: 1-1)

52.1	57.0	51.6	46.2	39-01-2241	5559-24P	24
47.9	52.8	47.4	42.0	↑ -2221	↑ -22P	22
43.7	48.6	43.2	37.8	-2201	-20P	20
39.5	44.4	39.0	33.6	-2181	-18P	18
35.3	40.2	34.8	29.4	-2161	-16P	16
31.1	36	30.6	25.2	-2141	-14P	14
26.8	31.8	26.4	21	-2121	-12P	12
22.6	27.6	22.2	16.8	-2101	-10P	10
18.4	23.4	18	12.6	-2081	-08P	8
14.2	19.2	13.8	8.4	-2061	-06P	6
10	15	9.6	4.2	↓ -2041	↓ -04P	4
5.8	10.8	5.4	—	39-01-2021	5559-02P	2
D	C	B	A	EDP NO.	ENG. NO.	極数

材料 MATERIAL	ナイロン66, UL94V-2
仕上げ FINISH	—
適用電線範囲 WIRE RANGE	—
被覆外径 INS. RANGE	—
DRAWN BY 88/10/17 H.H.HIRAMOTO	CHK'D BY 01/08/20 K.ASAKAWA
APP'D BY 01/08/20 T.YAMAGUCHI	尺度 SCALE 3 - 1
記号 LTR	変更内容 REVISION RECORD
DR. CHK.	日付 DATE
角度 ANGLE	±3°
30以上 OVER	±0.4 ±0.3
10以上 OVER 30未滿 UNDER	±0.3 ±0.25
10未滿 UNDER	±0.2
一般公差 GENERAL TOLERANCES	

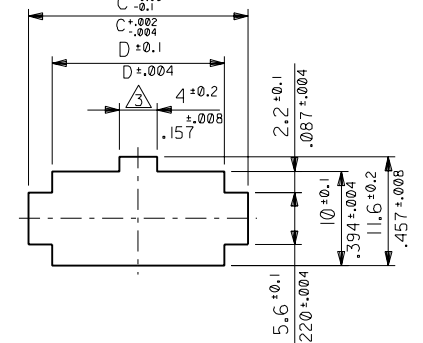
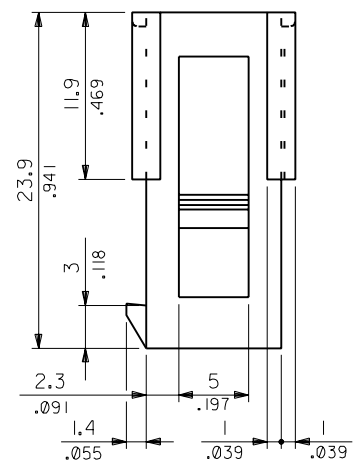
molex MOLEX-JAPAN CO.,LTD. 日本モレックス株式会社
REVISE ONLY ON CAD SYSTEM
TITLE 名称 NEW MINI.FIT CONNECTOR CRIMP PIN HOUSING
DWG. NO. SD-5559-NP
REV H

ENG. NO. SD-5559-NP
 EDP NO. 39-01-2**1
 :MM DIMENSIONS IN METRIC DO NOT SCALE DRAWING

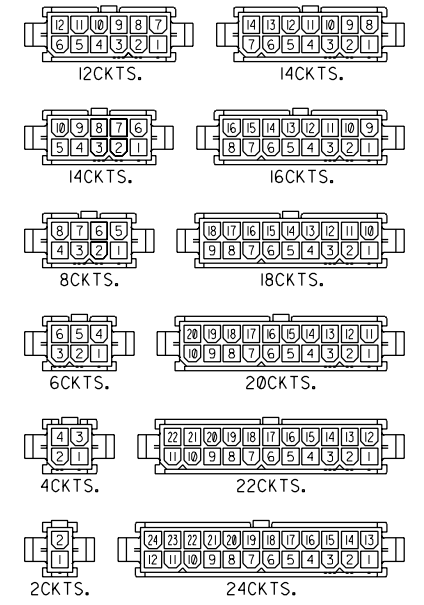


NOTES

1. TERMINAL : 5558 SERIES
2. MATES WITH : 5557-NR
- △ THIS DIMENSION IS ALLOWABLE UP TO "D" DIMENSION IN CASE OF 2 CIRCUITS.
4. PANEL HOLE TO BE PUNCHED OUT IN THE SAME DIRECTION AS INSERTION INTO THE PANEL.



RECOMMENDED PANEL HOLE DIMENSION
(THICKNESS : 0.8-2.0/.032-.079)



CIRCUIT SIZE LAYOUT (SCALE : 1-1)

52.1/2.051	57.0/2.244	51.6/2.031	46.2/1.819	39-01-2241	5559-24P	24	
47.9/1.886	52.8/2.079	47.4/1.866	42.0/1.654	-2221	-22P	22	
43.7/1.720	48.6/1.913	43.2/1.701	37.8/1.488	-2201	-20P	20	
39.5/1.555	44.4/1.748	39.0/1.535	33.6/1.323	-2181	-18P	18	
35.3/1.390	40.2/1.583	34.8/1.370	29.4/1.158	-2161	-16P	16	
31.1/1.224	36.0/1.417	30.6/1.205	25.2/0.992	-2141	-14P	14	
26.8/1.055	31.8/1.252	26.4/1.039	21.0/0.827	-2121	-12P	12	
22.6/0.890	27.6/1.087	22.2/0.874	16.8/0.661	-2101	-10P	10	
18.4/0.724	23.4/0.921	18.0/0.709	12.6/0.496	-2081	-08P	8	
14.2/0.559	19.2/0.756	13.8/0.543	8.4/0.331	-2061	-06P	6	
10.0/0.394	15.0/0.591	9.6/0.378	4.2/0.165	-2041	-04P	4	
5.8/0.228	10.8/0.425	5.4/0.213		39-01-2021	5559-02P	2	
	D	C	B	A	EDP NO.	ENG. NO.	CIRCUIT

材料 MATERIAL		NYLON 66, UL94V-2		molex MOLEX-JAPAN CO.,LTD. 日本モレックス株式会社	
仕上げ FINISH		---		EDP. NO. 39-01-2**1	
適用電線範囲 WIRE RANGE		---		ENG. NO. SD-5559-NP	
被覆外径 INS. RANGE		---		REV G	
DRAWN BY 08/10/14 H.HIRAMOTO		CHK'D BY 08/10/21 Y.YAMADA		TITLE 名称 NEW MINI.FIT CONNECTOR	
APP'D BY 08/10/24 M.ENOMOTO		尺度 SCALE 3-1		CRIMP PIN HOUSING	
角度 ANGLE	+3°				
30 以上 OVER	+0.4 ±0.03				
10 以上 30 未満 UNDER	+0.3 ±0.025				
10 未満 UNDER	+0.2				
一般公差 GENERAL TOLERANCES					
REVISION RECORD		REVISE ONLY ON CAD SYSTEM			
G	REVISED & REDRAWN (J80832)	H.H	08/10/17		
記号 LTR	変更内容	DR. CHK.	日付 DATE		

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MXJ-8