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ELECTRONICS

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Jameco Part Number 303618

## 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 connectors

Use 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

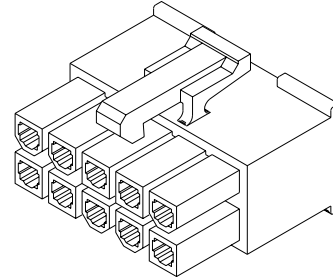
### Physical

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

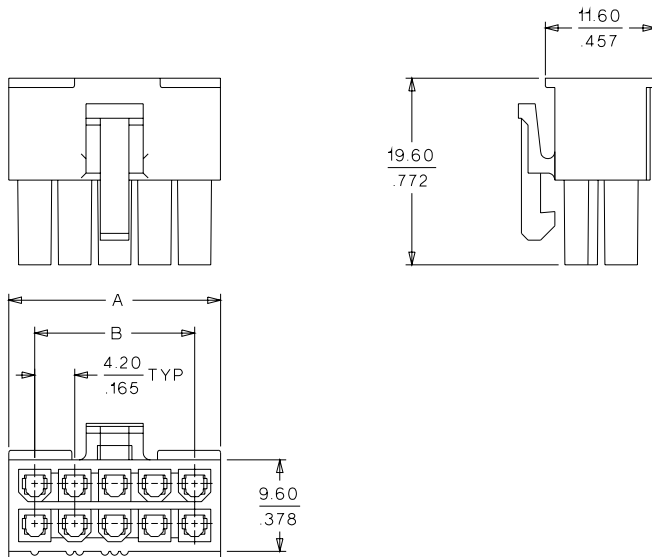
Operating Temperature: -40 to +105°C

# molex® 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)

<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

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

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



# 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	<b>Contact Resistance (Low Level)</b>	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	<b>Contact Resistance @ Rated Current</b>	Mate connectors: apply a maximum voltage of 20 mV at rated current.	10 milliohms MAXIMUM [initial]
3	<b>Contact Resistance of Wire Termination (Low Level)</b>	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	<b>Insulation Resistance</b>	Mate connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM

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DOCUMENT NUMBER: <b>PS-5556-001</b>	CREATED / REVISED BY: <b>BANDURA</b>	CHECKED BY: <b>BANDURA</b>	APPROVED BY: <b>MARGULIS</b>



# PRODUCT SPECIFICATION

## 5.1 ELECTRICAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	<b>Dielectric Withstanding Voltage</b>	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	<b>Temperature Rise (via Current Cycling)</b>	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	<b>Terminal Insertion and Withdrawal Forces</b>	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	<b>Terminal Retention Force (in Housing)</b>	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	<b>Durability</b>	Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.	20 milliohms MAXIMUM
4	<b>Vibration (Random)</b>	Mate connectors and vibrate per EIA 364-28, test condition VII.	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
5	<b>Shock (Mechanical)</b>	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	<b>Wire Pullout Force (Axial)</b>	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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DOCUMENT NUMBER: <b>PS-5556-001</b>	CREATED / REVISED BY: <b>BANDURA</b>	CHECKED BY: <b>BANDURA</b>	APPROVED BY: <b>MARGULIS</b>



# PRODUCT SPECIFICATION

## 5.2 MECHANICAL REQUIREMENTS (continued)

7	<b>Terminal Insertion Force (into Housing)</b>	Apply an axial insertion force on the terminal at a rate of $25 \pm 6$ mm ( $1 \pm \frac{1}{4}$ inch).	15.0 N (3.37 lbf) MAXIMUM insertion force
8	<b>Normal Force</b>	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	<b>PCB Engagement and Separation Forces</b>	Engage and separate a connector at a rate of $25 \pm 6$ 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	<b>Panel Insertion and Withdrawal Forces</b>	Insert and withdraw a connector at a rate of $25 \pm 6$ 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	<b>Pin Retention Force</b>	Apply axial push force at the speed rate of $25 \pm 3$ mm/minute.	1.0 KGF MIN.
12	<b>Thumb latch Operation Force</b>	Depress latch at a speed rate of 25.4 mm/minute.	1.7 KGF MAX.
13	<b>Thumb latch Yield Strength</b>	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	<b>Thermal Shock</b>	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	<b>Thermal Aging</b>	Mate connectors; expose to: 96 hours at 105 ± 2°C	20 milliohms MAXIMUM & Visual: No Damage
3	<b>Humidity (Steady State)</b>	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	<b>Solderability</b>	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES-152)
5	<b>Solder Resistance</b>	Dip connector terminals tail in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 260 ± 5°C	Visual: No Damage to insulator material
6	<b>Cold Resistance</b>	Mate connectors: Duration; 96 hours; Temperature: -40 ± 3°C	20 milliohms MAXIMUM Visual: No Damage
7	<b>Corrosive Atmosphere: Sulfur Dioxide Gas (SO<sub>2</sub>)</b>	Mate connectors: Duration; 24 hours exposure. Atmosphere: 50 parts per million (ppm) SO <sub>2</sub> 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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DOCUMENT NUMBER: <b>PS-5556-001</b>	CREATED / REVISED BY: <b>BANDURA</b>	CHECKED BY: <b>BANDURA</b>	APPROVED BY: <b>MARGULIS</b>



# PRODUCT SPECIFICATION

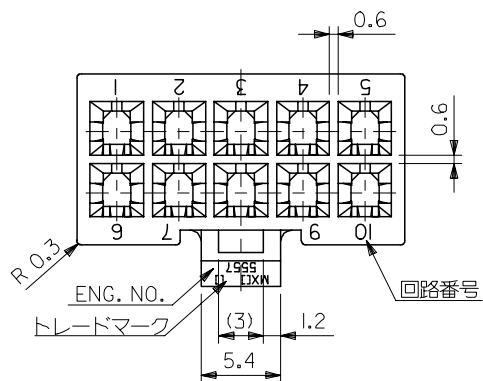
<u>REVISION:</u> <b>C</b>	<u>EGR/ECN INFORMATION:</u> EC No: <b>UCP2004-2349</b> DATE: <b>2004 / 05 / 25</b>	<u>TITLE:</u> <b>PRODUCT SPECIFICATION FOR MINI-FIT JR. CONNECTOR SYSTEM</b>	<u>SHEET No.</u> <b>6 of 5</b>
<u>DOCUMENT NUMBER:</u> <b>PS-5556-001</b>	<u>CREATED / REVISED BY:</u> <b>BANDURA</b>	<u>CHECKED BY:</u> <b>BANDURA</b>	<u>APPROVED BY:</u> <b>MARGULIS</b>



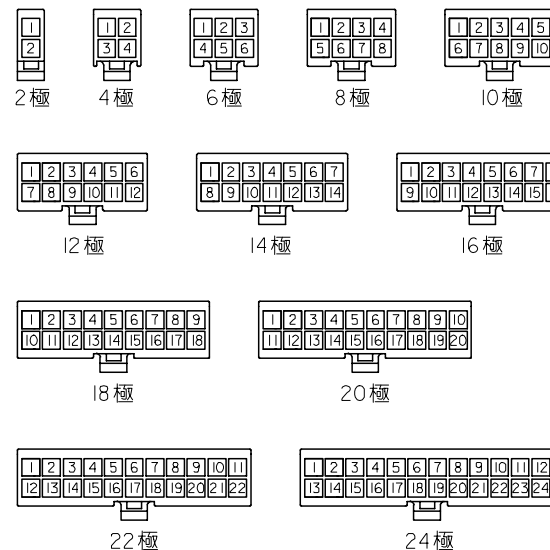


# PRODUCT SPECIFICATION

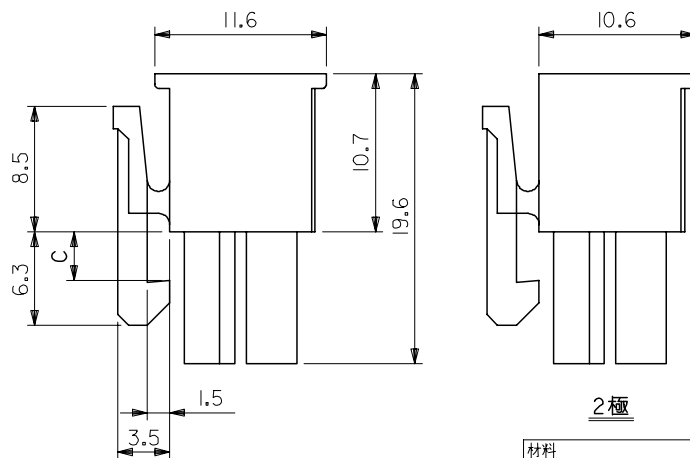
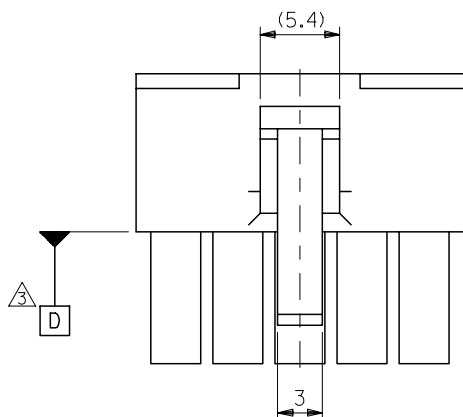
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- 注記**
- 適用ターミナル：5556 シリーズ
  - 嵌合相手：5559 シリーズ  
5566 シリーズ  
5569 シリーズ  
501566 シリーズ
- △ D 面の位置にて維持すること。



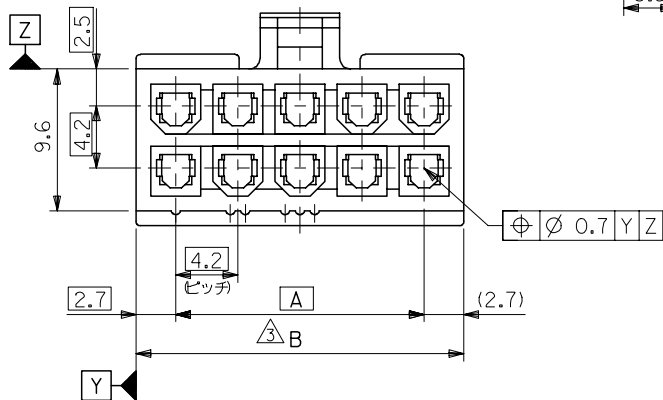
回路レイアウト図  
(SCALE 1:1)



4~24極

材料 MATERIAL	66ナイロン (UL94V-2)	
仕上げ FINISH	—	
適用電線範囲 WIRE RANGE	—	
被覆外径 INS. RANGE	—	

C	B	A	EDP. NO.	ENG. NO.	極数
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
3.3	39	33.6	-2180	-18R	18
	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
	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

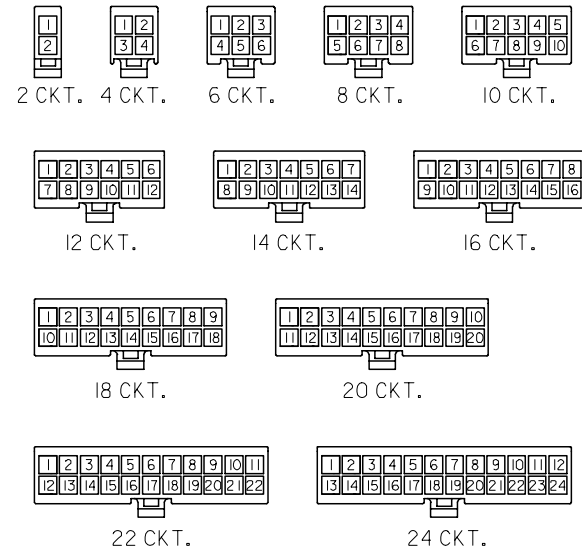


REVISED EC NO: J2005-3799 DRWN: NABE CHKD: TOYODA APPR: NUKITA	DESCRIPTION	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE MM ONLY	SCALE ---	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION
	REV	10 UNDER ±0.2	DRAWN BY DATE S. MOCHIZUKI '90/02/22	TITLE NEW MINI FIT CONN REC. HOUSING	MOLEX INCORPORATED	
	J	10 OVER 30 UNDER ±0.3	CHECKED BY DATE M. FUKUSHIMA '97/01/08	APPROVED BY DATE M. FUKUSHIMA '97/01/08		
		30 OVER ±0.4	ANGULAR ±3 °	MATERIAL NO. SEE CHART	DOCUMENT NO. SD-5557-003	SHEET NO. 1 OF 2
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	SIZE A3	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		

10 9 8 7 6 5 4 3 2 1

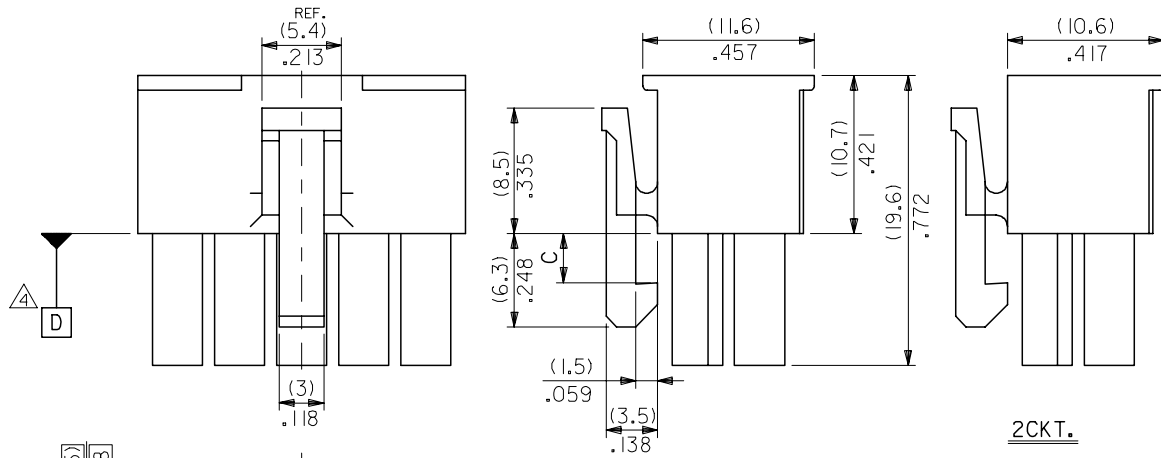
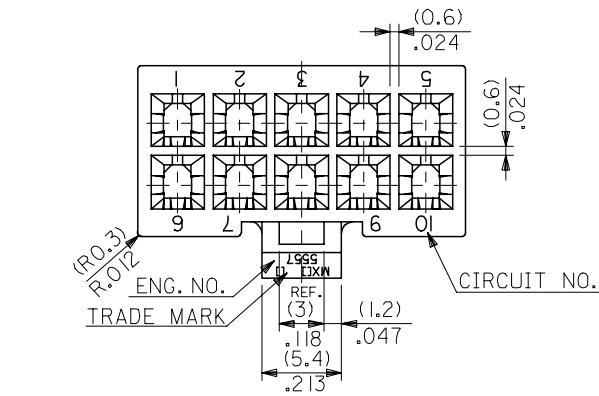
**NOTES**

1. TERMINAL : 5556 SERIES
2. MATE WITH : 5559 SERIES  
5566 SERIES  
5569 SERIES  
501566 SERIES
3. (METRIC) VALUES SHOWN GOVERN OVER ENGLISH CONVERSION VALUES.  
A TO BE MEASURED AT POSITION OF D SURFACE.



**CIRCUIT SIZE LAYOUT**  
(SCALE 1:1)

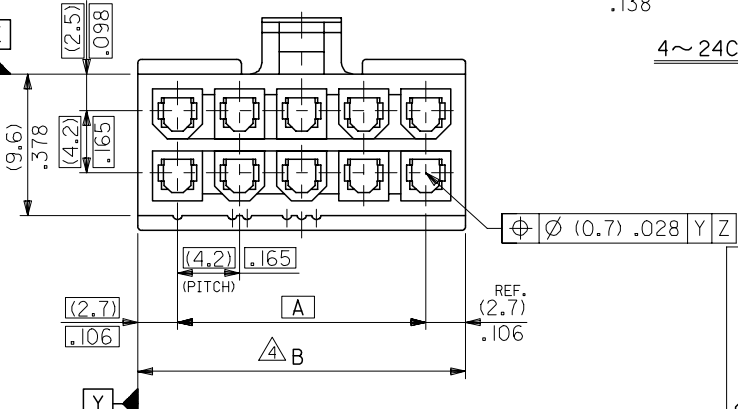
(3.6) .142	(51.6) 2.031	(46.2) 1.819	39-01-2240	5557-24R	24
	(47.4) 1.866	(42) 1.654	↑ -2220	↑ -22R	22
(3.3) .129	(43.2) 1.701	(37.8) 1.488	-2200	-20R	20
	(39) 1.535	(33.6) 1.323	-2180	-18R	18
	(34.8) 1.37	(29.4) 1.158	-2160	-16R	16
	(30.6) 1.205	(25.2) .992	-2140	-14R	14
	(26.4) 1.039	(21) .827	-2120	-12R	12
	(22.2) .874	(16.8) .661	-2100	-10R	10
	(18) .709	(12.6) .496	-2080	-08R	8
	(13.8) .543	(8.4) .331	-2060	-06R	6
	(9.6) .378	(4.2) .165	↓ -2040	↓ -04R	4
	(5.4) .213	—	39-01-2020	5557-02R	2
C	B	A	EDP. NO.	ENG. NO.	NO. OF CKTS.



**2CKT.**

**4~24CKT.**

材料 MATERIAL	66NYLON (UL94V-2)
仕上り FINISH	—
適用電線範囲 WIRE RANGE	—
被覆外径 NS. RANGE	—



REVISED EC NO: J2005-3799 DRW: NABEI CHK: KATOYODA APP: NUKITA	2005/06/20	2005/06/21	2005/06/27	DESCRIPTION	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE MM ONLY	SCALE 3:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION	
	±0.2	±0.3	±0.4		±3 °	DRAWN BY S. MOCHIZUKI	DATE '90/02/22	TITLE NEW MINI FIT CONN REC. HOUSING		
	10 UNDER	10 OVER 30 UNDER	30 OVER		ANGULAR	CHECKED BY M. FUKUSHIMA	DATE '97/01/08	APPROVED BY M. FUKUSHIMA '97/01/08		
	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS				MATERIAL NO. SEE CHART	DATE '97/01/08	DOCUMENT NO. SD-5557-003	SHEET NO. 2 OF 2		