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ELECTRONICS

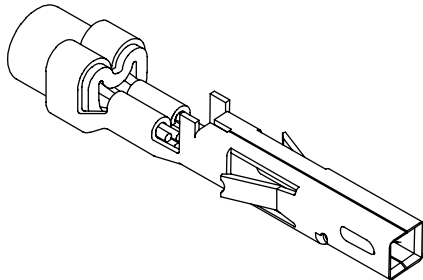
www.Jameco.com ♦ 1-800-831-4242

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Jameco Part Number 880503

4.20mm (.165") Pitch Mini-Fit Plus™ Terminal

46083
Crimp, Female



Features and Benefits

- Post-plated contacts for superior electrical performance over time
- Reliable 2-point contact design for use in harsh applications or where vibration is expected

Reference Information

Packaging: Reel or bag
Use With: 5557, 30067, 42474 and 44516 housings
Designed In: Millimeters

Electrical

Voltage: 600V
Current: When mating 2-circuit connectors

	16 AWG	18 AWG	20 AWG	22 AWG	24 AWG
Brass	9.0A	9.0A	7.0A	5.0A	4.0A
Phosphor Bronze	8.0A	8.0A	6.0A	4.0A	3.0A

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

Mechanical

Contact Insertion Force: 1.5kg max.
Contact Retention to Housing: 3.0kg min.
Wire Pull-Out Force: 9.0kg min.
Normal Force: 200g min.
Durability: Tin—75 cycles
Gold—100 cycles

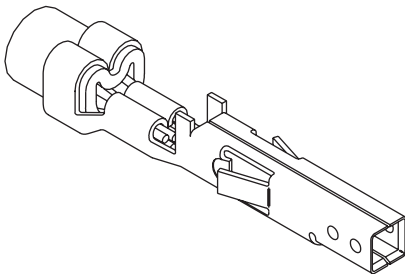
Physical

Contact: Brass or Phosphor Bronze
Plating: Tin or Select Gold
Underplating: Nickel
Operating Temperature: -40 to 105°C

Base Material	Plating Phos Bronze	Insulation Range	Wire Range AWG	Reel	Bag	Lead-free
Brass	Tin	2.20-3.15mm	16	46083-3111	46083-3112	Yes
		1.65-2.95mm	18-20	46083-1111	46083-1112	
		1.20-1.80mm	22-24	46083-2111	46083-2112	
	Select Gold	2.20-3.15mm	16	46083-3211	46083-3212	
		1.65-2.95mm	18-20	46083-1211	46083-1212	
		1.20-1.80mm	22-24	46083-2211	46083-2212	
Phosphor Bronze	Tin	2.20-3.15mm	16	46083-3121	46083-3122	
		1.65-2.95mm	18-20	46083-1121	46083-1122	
		1.20-1.80mm	22-24	46083-2121	46083-2122	
	Select Gold	2.20-3.15mm	16	46083-3221	46083-3222	
		1.65-2.95mm	18-20	46083-1221	46083-1222	
		1.20-1.80mm	22-24	46083-2221	46083-2222	

4.20mm (.165") Pitch Mini-Fit® Family Terminal

5556
Crimp, Female



Features and Benefits

- Four gas-tight points of contact on Tin-plated contacts

Reference Information

Packaging: Reel or bag
Use With: 5557, 30067 and 42474 housings
Designed In: Millimeters

Electrical

Voltage: 600V
Current: 16 AWG—9.0A max.
Contact Resistance: 10 milliohms max.
Dielectric Withstanding Voltage: 1500V
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Insertion Force: 1.5kg max.
Contact Retention to Housing: 3.0kg min.
Wire Pull-Out Force: 9.0kg min.
Normal Force: 200g min.
Durability: 30 cycles

Physical

Contact: Brass or Phosphor Bronze
Plating: Pre-plated Tin
Underplating: Copper
Operating Temperature: -40 to 105°C

Contact Material	Wire Size (AWG)	Insulation Range	Order No. 5556		Lead-free
			Reel	Bag	
Brass	16	1.80-3.10 (.071-.122)	39-00-0077	39-00-0078	Yes
	18-24	1.30-3.10 (.051-.122)	39-00-0038	39-00-0039	
Phosphor Bronze	16	1.80-3.10 (.071-.122)	39-00-0079	39-00-0080	
	18-24	1.30-3.10 (.051-.122)	39-00-0059	39-00-0060	



PRODUCT SPECIFICATION

MINI-FIT TPA

1.0 SCOPE

This Product Specification covers performance requirements for the MINI-FIT TPA 4.20 mm (.165 inch) centerline (pitch) printed circuit board (PCB) connector series with Tin or Gold plating, and The MINI-FIT TPA 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	30067-****
Plug Housing	30068-****
Vertical Header Assembly	30069-****
Vertical Header Assembly	44482-****
Right Angle Header Assembly	30070-****
Right Angle Header Assembly	44483-****
Terminal Position Assurance Key (TPA)	30072-*
Connector Position Assurance Key (CPA)	30071

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

REVISION: C	ECR/ECN INFORMATION: EC No: UCP2004-0947 DATE: 2003 / 11 / 14	TITLE: PRODUCT SPECIFICATION FOR MINI-FIT TPA CONNECTOR SYSTEM	SHEET No. 1 of 5
DOCUMENT NUMBER: PS-5556-003	CREATED / REVISED BY: M. BANDURA	CHECKED BY: M. BANDURA	APPROVED BY: Y. 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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DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-5556-003	M. BANDURA	M. BANDURA	Y. MARGULIS

TEMPLATE FILENAME: PRODUCT_SPEC[SIZE_A](V.1).DOC



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 Mate and Unmate 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	Crimp 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	Crimp Terminal Retention Force (in Housing With TPA Key)	Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute.	SECTION 5.2.7
4	Durability	Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.	20 milliohms MAXIMUM
5	Vibration (Random)	Mate connectors and vibrate per EIA 364-28, test condition VII.	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
6	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

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DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-5556-003	M. BANDURA	M. BANDURA	Y. MARGULIS



PRODUCT SPECIFICATION

5.2 MECHANICAL REQUIREMENTS (continued)

7	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.
8	Crimp 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
9	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]
10	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
12	Receptacle Thumb Latch Strength (CPA not installed)	Mate connectors. Pull connectors apart at a rate of 25 ± 6 mm ($1 \pm \frac{1}{4}$ inch) per minute.	68 N (15.3 lbf)

5.3 ENVIRONMENTAL REQUIREMENTS

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

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
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DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-5556-003	M. BANDURA	M. BANDURA	Y. MARGULIS



PRODUCT SPECIFICATION

4	Solderability	Per SMES-152	Solder coverage: 95% MINIMUM (per SMES-152)
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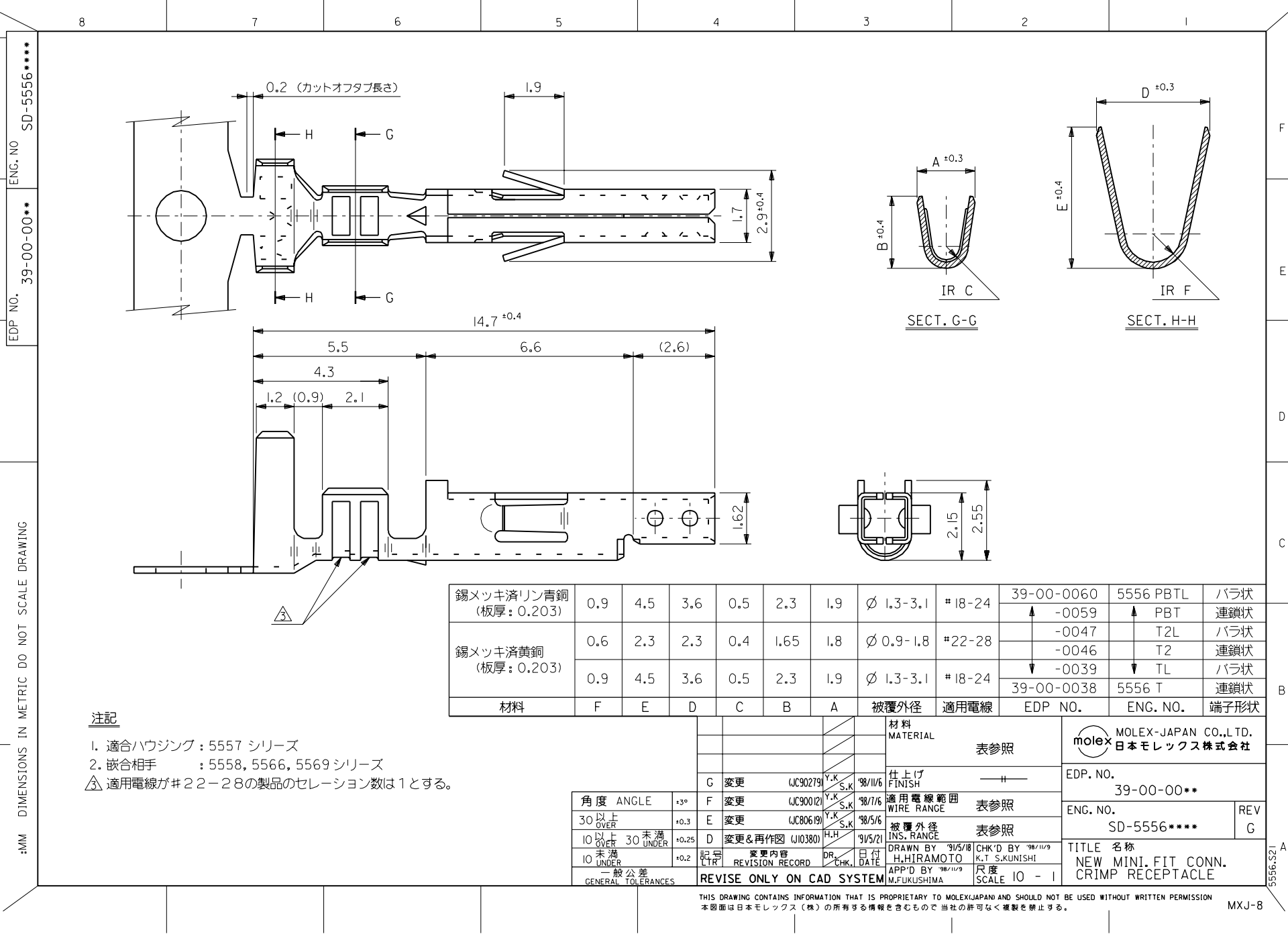
5.3 ENVIRONMENTAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Solder Resistance	Dip connector terminal tails in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: $235 \pm 5^{\circ}\text{C}$	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 (SO ₂)	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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PS-5556-003	M. BANDURA	M. BANDURA	Y. MARGULIS

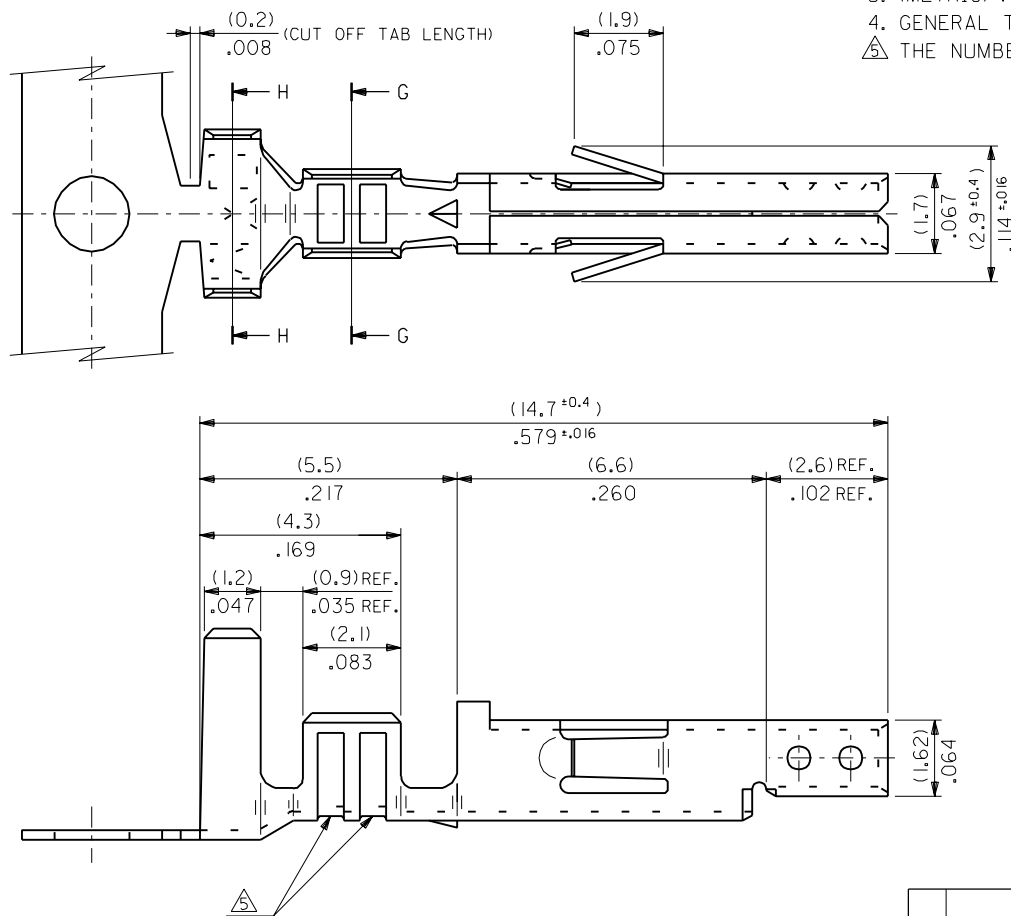


注記

- 適合ハウジング : 5557 シリーズ
- 嵌合相手 : 5558, 5566, 5569 シリーズ
- 適用電線が #22-28 の製品のセレーション数は 1 とする。

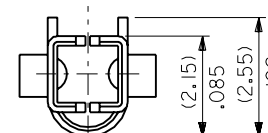
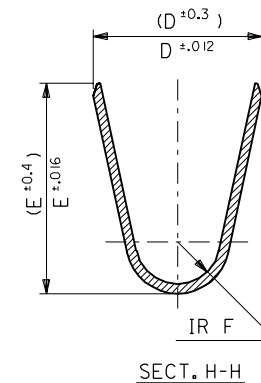
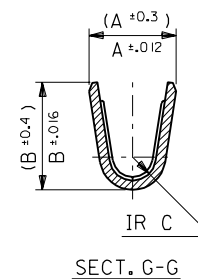
錫メッキ済リン青銅 (板厚: 0.203)	0.9	4.5	3.6	0.5	2.3	1.9	∅ 1.3-3.1	#18-24	39-00-0060	5556 PBTL	バラ状
	0.6	2.3	2.3	0.4	1.65	1.8	∅ 0.9-1.8	#22-28	-0059	PBT	連鎖状
	0.9	4.5	3.6	0.5	2.3	1.9	∅ 1.3-3.1	#18-24	-0047	T2L	バラ状
錫メッキ済黄銅 (板厚: 0.203)	0.6	2.3	2.3	0.4	1.65	1.8	∅ 0.9-1.8	#22-28	-0046	T2	連鎖状
	0.9	4.5	3.6	0.5	2.3	1.9	∅ 1.3-3.1	#18-24	-0039	TL	バラ状
材料	F	E	D	C	B	A	被覆外径	適用電線	39-00-0038	5556 T	連鎖状

材料				材料				MOLEX-JAPAN CO.,LTD. 日本モレックス株式会社			
表参照				表参照				EDP. NO. 39-00-00**			
仕上げ FINISH				適用電線範囲 WIRE RANGE				ENG. NO. SD-5556****			
被覆外径 INS. RANGE				表参照				REV G			
DRAWN BY '91/5/18 H.HIRAMOTO				CHK'D BY '98/11/9 K.T. S.KUNISHI				TITLE 名称 NEW MINI.FIT CONN. CRIMP RECEPTACLE			
APP'D BY '98/11/9 M.FUKUSHIMA				尺度 SCALE 10 - 1							



NOTES

1. APPLICABLE HOUSING : 5557 SERIES.
 2. MATES WITH TERMINAL : 5558, 5566, 5569 SERIES.
 3. (METRIC) VALUES SHOWN GOVERN OVER ENGLISH CONVERSION VALUES.
 4. GENERAL TOLERANCES OF ENGLISH CONVERSION VALUES : ±.008 INCH.
- △ THE NUMBER OF SERRATIONS TO BE ONE FOR WIRE RANGE #22-28.



						材料 MATERIAL		SEE SHEET 2 OF 2		molex MOLEX-JAPAN CO.,LTD. 日本モレックス株式会社	
						仕上げ FINISH		SEE SHEET 2 OF 2		EDP. NO.	
						適用電線範囲 WIRE RANGE		SEE SHEET 2 OF 2		SEE SHEET 2 OF 2	
						被覆外径 INS. RANGE		SEE SHEET 2 OF 2		ENG. NO. SHEET 1 OF 2	
						DRAWN BY 9/5/18 H.HIRAMOTO		CHK'D BY 98/11/9 K.T. S.KUNISHI		REV J	
						APP'D BY 98/11/9 M.FUKUSHIMA		尺度 SCALE 10 - 1		SD-5556****	
						記号 LTR		変更内容 REVISION RECORD		TITLE 名称	
						REVISE ONLY ON CAD SYSTEM				NEW MINI. FIT CONN. CRIMP RECEPTACLE	

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MXJ-8

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TIN OVER NICKEL PLATED PHOSPHOR BRONZE	(0.9) .035	(4.5) .177	(3.6) .142	(0.6) .024	(2.7) .106	(2.3) .091	Ø (3.1) .122 MAX.	# 16	39-00-0119	5556 PBS3L	LOOSE
	(0.6) .024	(2.3) .091	(2.3) .091	(0.4) .016	(1.65) .065	(1.8) .071	Ø (0.9-1.8) .035-.071	#22-28	-0118	PBS3	CHAIN
	(0.9) .035	(4.5) .177	(3.6) .142	(0.5) .020	(2.3) .091	(1.9) .075	Ø (1.3-3.1) .051-.122	# 18-24	-0117	PBS2L	LOOSE
									-0116	PBS2	CHAIN
TIN PLATED PHOSPHOR BRONZE	(0.9) .035	(4.5) .177	(3.6) .142	(0.6) .024	(2.7) .106	(2.3) .091	Ø (3.1) .122 MAX.	# 16	-0115	PBSL	LOOSE
	(0.6) .024	(2.3) .091	(2.3) .091	(0.4) .016	(1.65) .065	(1.8) .071	Ø (0.9-1.8) .035-.071	#22-28	-0114	PBS	CHAIN
	(0.9) .035	(4.5) .177	(3.6) .142	(0.5) .020	(2.3) .091	(1.9) .075	Ø (1.3-3.1) .051-.122	# 18-24	-0080	PBT3L	LOOSE
									-0079	PBT3	CHAIN
TIN OVER NICKEL PLATED BRASS	(0.9) .035	(4.5) .177	(3.6) .142	(0.6) .024	(2.7) .106	(2.3) .091	Ø (3.1) .122 MAX.	# 16	-0066	PBT2L	LOOSE
	(0.6) .024	(2.3) .091	(2.3) .091	(0.4) .016	(1.65) .065	(1.8) .071	Ø (0.9-1.8) .035-.071	#22-28	-0065	PBT2	CHAIN
	(0.9) .035	(4.5) .177	(3.6) .142	(0.5) .020	(2.3) .091	(1.9) .075	Ø (1.3-3.1) .051-.122	# 18-24	-0060	PBTL	LOOSE
									-0059	PBT	CHAIN
TIN OVER COPPER PLATED BRASS	(0.9) .035	(4.5) .177	(3.6) .142	(0.6) .024	(2.7) .106	(2.3) .091	Ø (3.1) .122 MAX.	# 16	-0113	S3L	LOOSE
	(0.6) .024	(2.3) .091	(2.3) .091	(0.4) .016	(1.65) .065	(1.8) .071	Ø (0.9-1.8) .035-.071	#22-28	-0112	S3	CHAIN
	(0.9) .035	(4.5) .177	(3.6) .142	(0.5) .020	(2.3) .091	(1.9) .075	Ø (1.3-3.1) .051-.122	# 18-24	-0111	S2L	LOOSE
									-0110	S2	CHAIN
MATERIAL	(0.9) .035	(4.5) .177	(3.6) .142	(0.6) .024	(2.7) .106	(2.3) .091	Ø (3.1) .122 MAX.	# 16	-0109	SL	LOOSE
	(0.6) .024	(2.3) .091	(2.3) .091	(0.4) .016	(1.65) .065	(1.8) .071	Ø (0.9-1.8) .035-.071	#22-28	-0108	S	CHAIN
	(0.9) .035	(4.5) .177	(3.6) .142	(0.5) .020	(2.3) .091	(1.9) .075	Ø (1.3-3.1) .051-.122	# 18-24	-0078	T3L	LOOSE
									-0077	T3	CHAIN
MATERIAL	(0.6) .024	(2.3) .091	(2.3) .091	(0.4) .016	(1.65) .065	(1.8) .071	Ø (0.9-1.8) .035-.071	#22-28	-0047	T2L	LOOSE
	(0.9) .035	(4.5) .177	(3.6) .142	(0.5) .020	(2.3) .091	(1.9) .075	Ø (1.3-3.1) .051-.122	# 18-24	-0046	T2	CHAIN
									-0039	TL	LOOSE
									39-00-0038	5556 T	CHAIN
MATERIAL	F	E	D	C	B	A	INS. RANGE	WIRE RANGE	EDP NO.	ENG. NO.	FORM

材料 MATERIAL		SEE CHART	moLEX MOLEX-JAPAN CO.,LTD. 日本モレックス株式会社	
THICKNESS : (0.203)/.008				
仕上げ FINISH		SEE CHART	EDP. NO. SEE CHART	
適用電線範囲 WIRE RANGE		SEE CHART	ENG. NO. SHEET 2 OF 2 REV SD-5556**** J	
被覆外径 INS. RANGE		SEE CHART		
DRAWN BY 9/5/18 H.HIRAMOTO		CHK'D BY 98/11/9 K.T.S.KUNISHI	TITLE 名称 NEW MINI. FIT CONN. CRIMP RECEPTACLE	
APP'D BY 98/11/9 M.FUKUSHIMA		尺度 SCALE 10 - 1		
角度 ANGLE		30°		
30 以上 OVER		+0.3		
10 以上 30 未満 UNDER		+0.25		
10 未満 UNDER		+0.2		
記号 LTR		変更内容 REVISION RECORD		
一般公差 GENERAL TOLERANCES		REVISION RECORD		