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Jameco Part Number 1298380

FEATURES AND SPECIFICATIONS

Features and Benefits

- Wire-to-board with terminal position assurance (TPA)
- Positive housing locks
- Secondary retention and locking features (TPA and CPA keys)
- Fully isolated contacts

Reference Information

Product Specification: PS-5556-0003 Packaging: Tray and bag UL File No.: E29179 CSA File No.: LR19980 TUV License No.: R75142 Use With: Standard Mini-Fit terminals Mates With: <u>30067</u> receptacle Designed In: Millimeters

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Electrical

Voltage: 600V

Circuits

Amperes-TPA

Amperes-TPA with HCS

Mechanical

Physical

Current: (Used with 16 AWG)

Contact Resistance: $10m\Omega$ max.

Dielectric Withstanding Voltage: 1500V

Insulation Resistance: 1000 $M\Omega$ min.

Insertion Force to PCB: 5.0kg max.

Mating Force: 0.7kg (1.54 lb) max.

Housing: Black polyester, UL 94V-0 Contact: Brass or Phosphor Bronze Plating: Tin, select Gold and overall Gold Operating Temperature: -40 to +105°C

Normal Force: 200g min. Durability: 30 cycles

Unmating Force: 0.35kg (0.7 lb) min.

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olex[®] 4.20mm (.165") Pitch Mini-Fit, TPA[™] Header

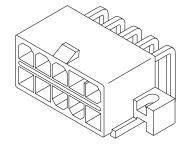
30070

12-24

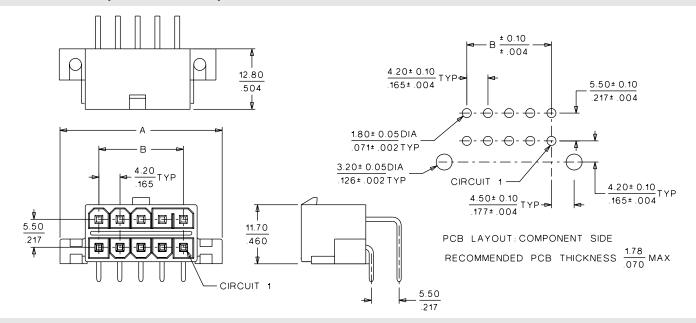
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Right Angle, Dual Row With Flanges



CATALOG DRAWING (FOR REFERENCE ONLY)



ORDERING INFORMATION AND DIMENSIONS

Circuits	Orde	r No.		Dimension	
Circuits	Tin Plated	Gold Plated	A	В	c
2	• 15-97-8022	• 15-97-8027	15.40 (.606)		5.40 (.213)
4	• 15-97-8042	• 15-97-8047	19.60 (.772)	4.20 (.165)	9.60 (.378)
6	• 15-97-8062	• 15-97-8067	23.80 (.937)	8.40 (.331)	13.80 (.543)
8	• 15-97-8082	• 15-97-8087	28.00 (1.102)	12.60 (.496)	18.00 (.709)
10	• 15-97-8102	• 15-97-8107	32.20 (1.268)	16.80 (.661)	22.20 (.874)
12	• 15-97-8122	• 15-97-8127	36.40 (1.433)	21.00 (.827)	26.40 (1.039)
16	• 15-97-8162	• 15-97-8167	44.80 (1.764)	29.40 (1.157)	34.80 (1.370)

• US Standard Product, available through Molex franchised distributors



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)

PRODUCT NAME

Female Crimp Terminal Male Crimp Terminal Receptacle Housing Plug Housing Vertical Header Assembly Vertical Header Assembly Right Angle Header Assembly Right Angle Header Assembly Terminal Position Assurance Key (TPA) Connector Position Assurance Key (CPA) PART NUMBER 5556-**** 30067-**** 30068-**** 30069-**** 44482-**** 30070-**** 44483-**** 30072-* 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	16 AWG: 3.10/. 122 MAXIMUM
and Applicable Wire Gauges	18-24 AWG: 3.10/. 122 MAXIMUM
	22-28 AWG: 1.80/. 071 MAXIMUM

REVISION:	ECR/ECN INFORMATION:	TITLE: PRODUC	T SPECIFICATION	FOR	SHEET No.
C	EC No: UCP2004-0947		MINI-FIT TPA		1 of 5
C	<u>DATE:</u> 2003 / 11 / 14	CONNECTOR SYSTEM		1	1010
DOCUMEN	T NUMBER:	CREATED / REVISED BY:	CHECKED BY:	<u>APPRO\</u>	/ED BY:
Р	S-5556-003	M. BANDURA	M. BANDURA	Y. MAR	GULIS
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MAXIMUM CURRENT RATING (Amperes) **Phosphor Bronze Brass** Ckt. Size Ckt. Size 7 - 10 2&3 4 - 6 12 - 24 2&3 4 - 6 7 - 10 12 - 24 Wire Wire AWG #16 AWG #16 AWG #18 AWG #18 AWG #20 AWG #20 AWG #22 AWG #22 AWG #24 AWG #24 AWG #26 AWG #26 AWG #28 AWG #28

4.2 CURRENT AND APPLICABLE WIRES (continued)

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	ST CONDITION			-
	1	Contact Resistance (Low Level)	of 20 mV and a current of 10	Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA. Wire esistance shall be removed from the neasured value.		10 milliohms MAXIMUM [initial]	
	2	Contact Resistance @ Rated Current	Mate connectors: apply a ma of 20 mV at rated current.	f 20 mV at rated current.		10 milliohms MAXIMUM [initial]	
	3	Contact Resistance of Wire Termination (Low Level)		Ferminate 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		late connectors: apply a voltage of 500 DC between adjacent terminals and etween terminals to ground.		000 Megohms MINIMUM	
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С	•	EC No: UCP2004-0947		MINI-FIT TPA		2 of 5	
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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 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

REVISION:	ECR/ECN INFORMATION:	TITLE: PRODUC	T SPECIFICATION	FOR	SHEET No.
С	EC No: UCP2004-0947		MINI-FIT TPA		3 of 5
C	<u>DATE:</u> 2003 / 11 / 14	CON	NECTOR SYSTEM	1	3013
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5.2 MECHANICAL REQUIREMENTS (continued)

7	Wire Pullout Force (Axial)	Apply an axial pullout force on the wire at a rate of $25 \pm 6 \text{ mm} (1 \pm \frac{1}{4} \text{ inch})$.	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 ($1 \pm 1/4$ 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 ¼ 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 ± 2°C	20 milliohms MAXIMUM & Visual: No Damage
3	Humidity (Steady State)	Mate connectors: expose to a temperature of $60 \pm 2^{\circ}$ 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: PRODUCT SPECIFICATION FOR		SHEET No.	
С	EC No: UCP2004-0947		MINI-FIT TPA		4 of 5
C	<u>DATE:</u> 2003/11/14	CONNECTOR SYSTEM			- 01 3
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Per SMES-152

Solder coverage: 95% MINIMUM (per SMES-152)

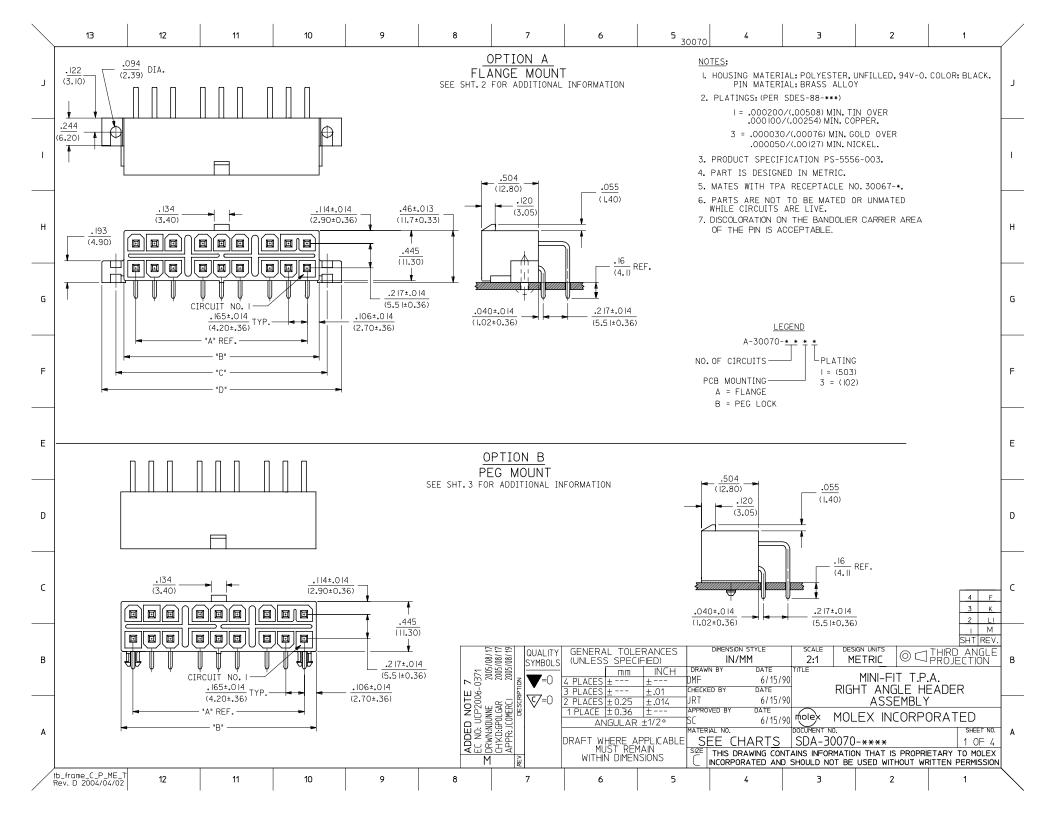
5.3 ENVIRONMENTAL REQUIREMENTS (continued)

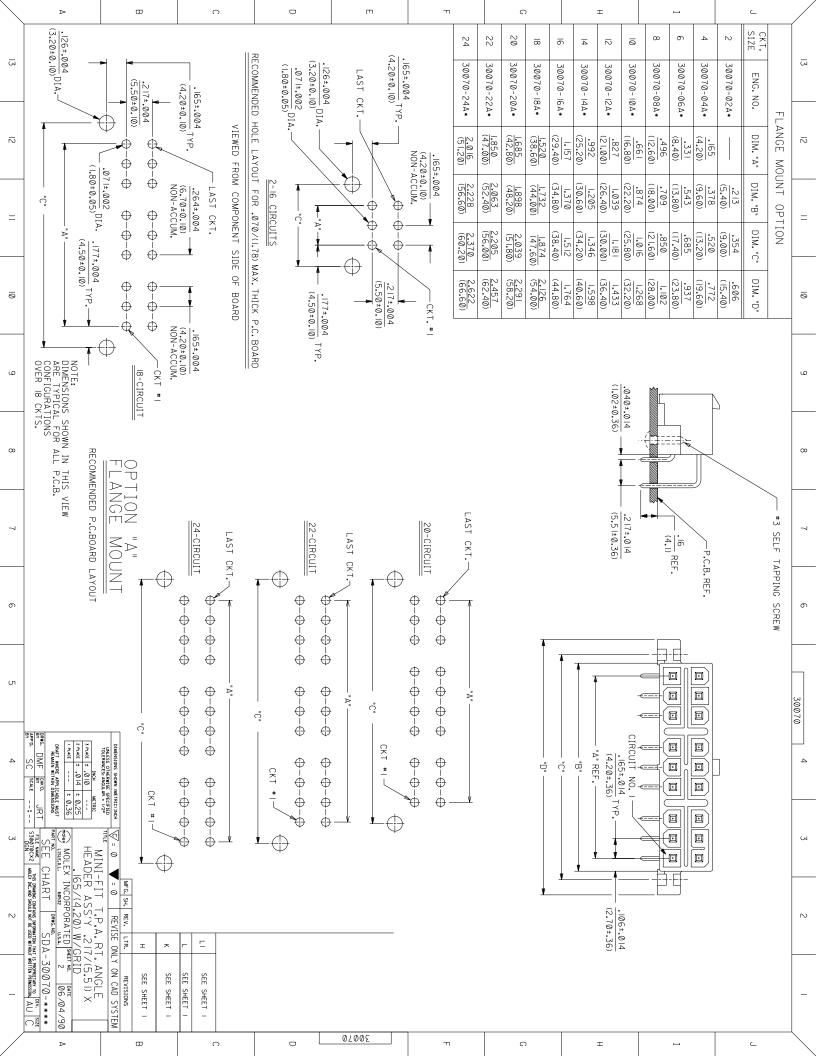
ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Solder Resistance	Dip connector terminal tails in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 235 ± 5 °C	Visual: No Damage to insulator material
6	Cold Resistance	Mate connectors: Duration: 96 hours; Temperature: -40 ± 3°C	20 milliohms MAXIMUM Visual: No Damage
7	Corrosive Atmosphere: Sulfur Dioxide Gas (SO ₂)	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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DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:					
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