MINI-FIT BMI

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1.0 SCOPE

This Product Specification covers performance requirements for the MINI-FIT BMI 4.20 mm (.165 inch) centerline (pitch) printed circuit board (PCB) connector series with Tin or Gold plating in Wire-To-Wire, Wire-to-Board and Board-To-Board and terminated with 16 to 28 AWG wire using Crimp technology.

2.0 PRODUCT DESCRIPTION

2.1 NAMES AND SERIES NUMBER(S)

Table 1 – WIRE-TO-WIRE				
Description	Series Number	UL	CSA	TUV
Female Crimp Terminal	5556	N/A	N/A	N/A
Receptacle Housing	5557	Yes	Yes	Yes
Male Crimp Terminal	5558	N/A	N/A	N/A
Receptacle Housing, BMI	42474	Yes	Yes	Yes
Plug Housing, BMI	42475	Yes	Yes	Yes
Plug Housing, BMI	43558	Yes	Yes	No
Plug Housing, BMI	43770	Yes	Yes	Yes

Table 2 – WIRE-TO-BOARD				
Description	Series Number	UL	CSA	TUV
Female Crimp Terminal	5556	N/A	N/A	N/A
Receptacle Housing	5557	Yes	Yes	Yes
Male Crimp Terminal	5558	N/A	N/A	N/A
Receptacle Header, BMI	42385	Yes	Yes	No
Right Angle Header, BMI	42404	Yes	Yes	No
Receptacle Header, BMI	42416	Yes	Yes	No
Right Angle Header, BMI	42417	Yes	Yes	No
Vertical Header, BMI	42440	Yes	Yes	No
Receptacle Housing, BMI	42474	Yes	Yes	Yes
Plug Housing, BMI	42475	Yes	Yes	Yes
Vertical Header, BMI	42786	Yes	Yes	Yes
Vertical Header, BMI	43176	No	No	No
Vertical Header, BMI	43459	Yes	Yes	No
Plug Housing, BMI	43558	Yes	Yes	No
Right Angle Header, BMI	43644	Yes	Yes	No
Vertical Header, BMI	43693	Yes	Yes	No
Right Angle Header, BMI	44151	Yes	Yes	No
Right Angle Header, BMI	44499	Yes	Yes	No

Table 3 – BOARD-TO-BOARD				
Description	Series Number	UL	CSA	TUV
Vertical Receptacle Header, BMI	42385	Yes	Yes	No
Vertical Receptacle Header, BMI	42416	Yes	Yes	No
Vertical Header, BMI	42440	Yes	Yes	No
Vertical Header, BMI	42786	Yes	Yes	Yes
Vertical Header, BMI	43459	Yes	Yes	No
Vertical Header, BMI	43693	Yes	Yes	No
Right Angle Header, BMI	42404	Yes	Yes	No
Right Angle Header, BMI	42417	Yes	Yes	No
Right Angle Header, BMI	43644	Yes	Yes	No
Right Angle Header, BMI	44151	Yes	Yes	No
Right Angle Header, BMI	44499	Yes	Yes	No

Other products conforming to this specification noted on the individual drawings.

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: LR19980
TUV Certificate: R72081037

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See sales drawings and the other sections of this specification for the necessary referenced documents and specifications.
Test summary: TS-5556-002

4.0 RATINGS

4.1 VOLTAGE

600 Volts AC (RMS) (or 600 Volts DC)

4.2 APPLICABLE WIRES

Applicable Wire Gauges and Maximum Insulation Diameter	16 AWG: 3.10 / .122 MAXIMUM
	18-20 AWG: 3.10 / .122 MAXIMUM
	22-28 AWG: 1.80 / .071 MAXIMUM

4.3 MAXIMUM CURRENT RATING (Amperes)**

Table 4 – WIRE-TO-WIRE

Brass					Phosphor Bronze				
Ckt. Size / Wire	2-3	4 - 6	7 - 10	12 - 24	Ckt. Size / Wire	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 MAXIMUM CURRENT RATING (Amperes) (continued)

Table 5 – WIRE-TO-BOARD									
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

Note: PCB trace design may greatly affect temperature rise results.

Table 6 – BOARD-TO-BOARD									
Brass					Phosphor Bronze				
Ckt. Size	2-3	4 - 6	7 - 10	12 - 24	Ckt. Size	2-3	4 - 6	7 - 10	12 - 24
	9	8	7	6		8	7	6	5

Note: PCB trace design may greatly affect temperature rise results.

** Ratings shown represent *MAXIMUM* current carrying capacity of a fully loaded connector with all circuits powered. Ratings are based on a 30°C maximum temperature rise limit over ambient (room temperature). Above charts are intended as a guideline. Current rating is application dependent. Appropriate de-rating is required depending on factors such as higher ambient temperature, smaller copper weight of PCB traces, gross heating from adjacent modules or components and other factors that influence connector performance.

4.4 TEMPERATURE

Operating: * - 40°C to + 105°C
Nonoperating: - 40°C to + 105°C
**Including 30°C terminal temperature rise at rated current*

4.5 WAVE SOLDER PROCESS TEMPERATURE

Headers with pegs: 240°C MAX.
Headers without pegs: 260°C MAX.

5.0 WIRE-TO-WIRE 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	**Insulation Resistance**	Mate connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM
3	**Dielectric Withstanding Voltage**	Mate connectors: apply a voltage of 2200 VAC for 1 minute between adjacent terminals and between terminals to ground.	No breakdown. Current leakage < 5 mA
4	**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 Per Circuit**	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 & 0.5 N (0.11 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 ± 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 (change from initial)

5.2 MECHANICAL REQUIREMENTS (continued)

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 (change from initial) & 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.
7	**Crimp Terminal Insertion Force (into Housing)**	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ 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 ± ¼ inch) per minute. (Applies to parts with PCB retention features only with PCB holes at nominal diameter)	Standard: 49.0 N (11.0 lbf) MAXIMUM insertion force & 10.0 N (2.24 lbf) MINIMUM withdrawal force Press-Fit: T.B.D. Metal Clip: T.B.D.
10	**Thumb Latch Operation Force**	Depress latch at a rate of 25 ± 6mm (1 ± ¼ inch) per minute.	16.67 N (3.75 lbf) MAXIMUM
11	**Thumb Latch Yield Strength**	Mate loaded connectors fully. Pull connectors apart at a rate of 25 ± 6mm (1 ± ¼ inch) per minute.	68 N (15.29 lbf) MINIMUM

5.2 MECHANICAL REQUIREMENTS (continued)

12	**Panel Insertion and Withdrawal Forces (for 42474)**	Insert and withdraw a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	225 N (50.7 lbf) MAXIMUM insertion force & 157 N (35.3 lbf) MINIMUM withdrawal force
13	**Panel Insertion and Withdrawal Forces (for 44516)**	Insert and withdraw a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	0.0 MAXIMUM insertion force & 157 N (35.3 lbf) MINIMUM withdrawal force
14	**Panel Insertion and Withdrawal Forces (for 42475)**	Insert and withdraw a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	225 N (50.7 lbf) MAXIMUM insertion force & 157 N (35.3 lbf) MINIMUM withdrawal force

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 (change from initial) 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 (change from initial) & 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 (change from initial) Dielectric Strength per 5.1.5 Insulation Resistance per 5.1.4 Visual: No Damage
4	**Mixed Flowing Gas**	EIA-364-65 with Class IIa Gas concentrations (Gold plated only)	20 milliohms MAXIMUM (change from initial) Visual: No Damage

6.0 WIRE-TO-BOARD PERFORMANCE

6.1 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	**Insulation Resistance**	Mate connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM
3	**Dielectric Withstanding Voltage**	Mate connectors: apply a voltage of 2200 VAC for 1 minute between adjacent terminals and between terminals to ground.	No breakdown. Current leakage < 5 mA
4	**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

6.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	**Terminal Mate and Unmate Forces Per Circuit**	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 & 0.5 N (0.11 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 ± ¼ inch) per minute.	30 N (6.74 lbf) MINIMUM retention force
3	**Solid PC Tail Header Pin 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.	4.45 N (1.00 lbf) MINIMUM retention force
4	**Stamped PC Tail 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
5	**Durability**	Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.	20 milliohms MAXIMUM (change from initial)
6	**Vibration (Random)**	Mate connectors and vibrate per EIA 364-28, test condition VII.	10 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond
7	**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 (change from initial) & Discontinuity < 1 microsecond
8	**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.
9	**Crimp Terminal Insertion Force (into Housing)**	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm (1 ± ¼ inch).	15.0 N (3.37 lbf) MAXIMUM insertion force

6.2 MECHANICAL REQUIREMENTS (continued)

10	**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]	
11	**PCB Engagement And Separation Forces**	Engage and separate a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute. (Applies to parts with PCB retention features only with PCB holes at nominal diameter)	Standard	49.0 N (11.0 lbf) MAXIMUM insertion force & 10.0 N (2.24 lbf) MINIMUM withdrawal force
			Press-Fit	T.B.D.
			Metal Clip	T.B.D.
12	**Thumb Latch Operation Force**	Depress latch at a rate of 25 ± 6mm (1 ± ¼ inch) per minute.	16.67 N (3.75 lbf) MAXIMUM	
13	**Thumb Latch Yield Strength**	Mate loaded connectors fully. Pull connectors apart at a rate of 25 ± 6mm (1 ± ¼ inch) per minute.	68 N (15.29 lbf) MINIMUM	
14	**Panel Insertion and Withdrawal Forces (for 42474)**	Insert and withdraw a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	225 N (50.7 lbf) MAXIMUM insertion force & 157 N (35.3 lbf) MINIMUM withdrawal force	
15	**Panel Insertion and Withdrawal Forces (for 44516)**	Insert and withdraw a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	0.0 MAXIMUM insertion force & 157 N (35.3 lbf) MINIMUM withdrawal force	
16	**Panel Insertion and Withdrawal Forces (for 42475)**	Insert and withdraw a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute.	225 N (50.7 lbf) MAXIMUM insertion force & 157 N (35.3 lbf) MINIMUM withdrawal force	

6.3 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 (change from initial) 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 (change from initial) & 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 (change from initial) 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 Temperature Heat Transfer Resistance**	Dip connector terminals tail in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 260 ± 5°C	Visual: No Damage to the insulator where the terminal or pin locks to the connector housing
6	**Mixed Flowing Gas**	EIA-364-65 with Class IIa Gas concentrations (Gold plated only)	20 milliohms MAXIMUM (change from initial) Visual: No Damage

7.0 BOARD-TO-BOARD PERFORMANCE

7.1 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	**Insulation Resistance**	Mate connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM
3	**Dielectric Withstanding Voltage**	Mate connectors: apply a voltage of 2200 VAC for 1 minute between adjacent terminals and between terminals to ground.	No breakdown. Current leakage < 5 mA
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7.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT	
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2	**Stamped PC Tail 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	**Solid PC Tail Header Pin 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.	4.45 N (1.00 lbf) MINIMUM retention force	
4	**Durability**	Mate connectors up to 75 (Sn) or 100 (Au) cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.	20 milliohms MAXIMUM (change from initial)	
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 ½ sine wave (11 milliseconds) shocks in the ±X, ±Y, ±Z axes, (18 shocks total).	20 milliohms MAXIMUM (change from initial) & Discontinuity < 1 microsecond	
7	**Normal Force**	Apply a perpendicular force.	1.96 N (200 grams) MINIMUM	
8	**PCB Peg Engagement and Separation Forces**	Engage and separate a connector at a rate of 25 ± 6 mm (1 ± ¼ inch) per minute. (Applies to parts with PCB retention features only with PCB holes at nominal diameter)	Standard	98.0 N (22.0 lbf) MAXIMUM insertion force & 10.0 N (2.24 lbf) MINIMUM withdrawal force
			Press-Fit	T.B.D.
			Metal Clip	T.B.D.

7.3 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 (change from initial) 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 (change from initial) & 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 (change from initial) 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 Temperature Hest Transfer**	Dip connector terminals tail in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 260 ± 5°C	Visual: No Damage to the insulator insulator where the terminal or pin locks to the connector housing
6	**Mixed Flowing Gas**	EIA-364-65 with Class IIa Gas concentrations (Gold plated only)	20 milliohms MAXIMUM (change from initial) Visual: No Damage

8.0 TEST SEQUENCES

Testing sequences to be performed in accordance with EIA-364-1000.01

9.0 PACKAGING

Parts shall be packaged to protect against damage during normal handling, transit and storage. Nylon parts should remain in there original packaging until ready for use to prevent moisture loss or gain.

10.0 OTHER INFORMATION

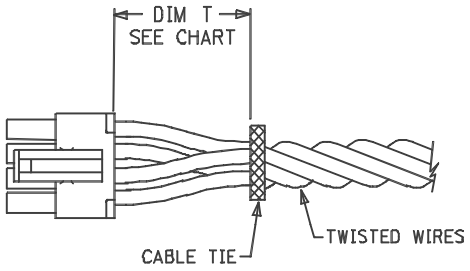
10.1 GAGES AND FIXTURES

It is recommended that test plugs (Series 44281) be used for continuity testing of receptacles. Standard mating parts should not be used for harness testing.

NOTE: The use of unauthorized testing devices and/or probes with a Molex product may cause damage to and affect functionality of the Molex product, and such use may void any and all warranties, expressed or implied.

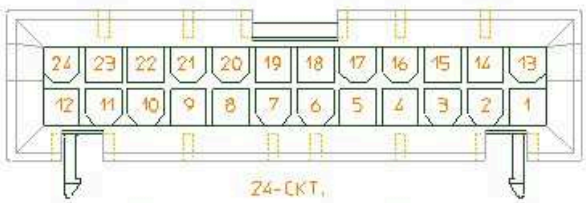
10.2 CABLE TIE AND OR WIRE TWIST LOCATION

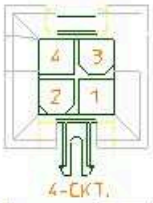
CKT Sizes	Dim T Min.
2-6	.50” (12.7 mm)
8	.75’ (19.1 mm)
10-12	1.00” (25.40 mm)
14-16	1.25”(31.75 mm)
18-20	1.50”(38.09 mm)
22.24	1.75”(44.45 mm)

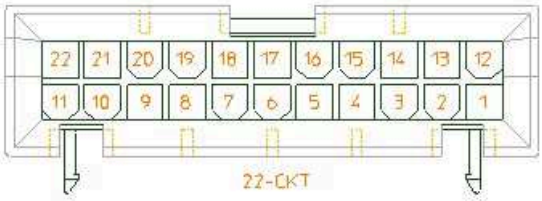


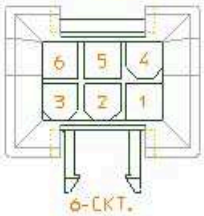
The “T” dimension defines a “free” length of wire, or a length of wire that is not subject to significant bias by external factors such as a wire tie, wire twisting, or other means of bending or deforming of the wires that repositions them from their natural relaxed state or location where they enter the housing. Wires are to be dressed in such a manner to allow the terminals to float freely in the pocket. This dimension is general recommendation and may need to be adjusted for different wire gauges and wire type and insulation thickness and insulation material.

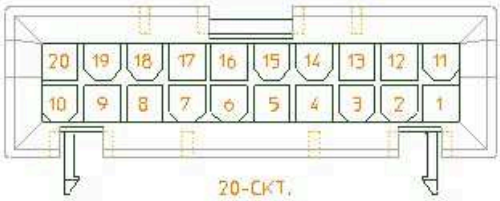
11.0 STANDARD POLARIZATION FOR HEADERS AND PLUGS (HEADERS ARE SHOWN)

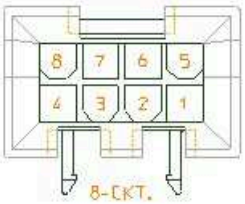


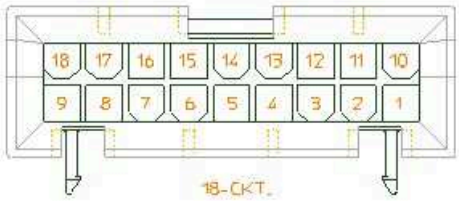


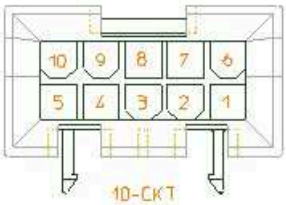


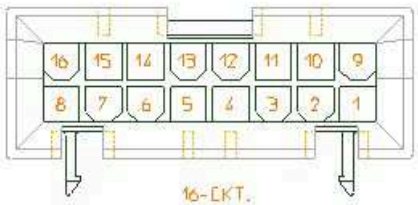


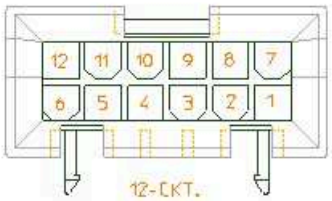


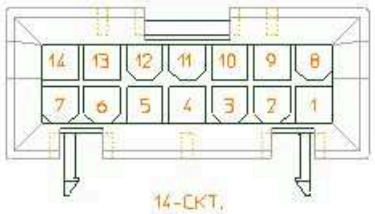












12.0 STANDARD POLARIZATION FOR RECEPTACLES