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APPENDICES

1.0 SCOPE

This specification defines the performance characteristics for the PICOFLEX connector system.

2.0 PRODUCT DESCRIPTION AND APPLICABLE DOCUMENTS

Product Type	Series No.	Product Description	Sales Drawing
PCB Headers	90325	Vertical Thru Hole Header	SDA-90325
	90779	Vertical Thru Hole Header, High Temperature Thermoplastic	SDA-90779
	90814	Vertical SMT Header	SDA-90814
	93405	Reverse Footprint Vertical SMT Header	SD-93405-001
	90816	Vertical Latched SMT Header	SD-90816-001
	93407	Reverse Footprint Vertical Latched SMT Header	SD-93407-001
	90800	Right-Angle Thru Hole Header	SDA-90800E
	91714	Right-Angle Thru Hole Header, High Temperature Thermoplastic	SD-91714-001
	91330	Bottom Entry SMT Header	SD-91330-001
IDT Connector	90327	Insulation Displacement Connector	SDA-90327
	93338	Insulation Displacement Connector (Glow Wire)	SD-93338-001
PCB Connectors	90584	Insulation Displacement Board-In Connector	SDA-90584
	91577	Insulation Displacement Board-In Connector with Alternative Terminal Stagger	SD-91577-001

3.0 RATINGS

Series No.	Wire/Cable Size (AWG)	Maximum Current at 105°C	Voltage AC/DC	Operating Temperature	Storage Temperature
90325	N/a	1.2A	250V Max.	-40°C to +105°C	-40°C to +85°C
90779	N/a	1.2A			
90814 93405	N/a	1.2A			
90816 93407	N/a	1.2A			
90800	N/a	1.2A			
91714	N/a	1.2A			
91330	N/a	1.2A			
90327	28 AWG	1.2A			
93338	28 AWG	1.2A			
90584	28 AWG	1.2A			
91577	28 AWG	1.2A			

4.0 ELECTRICAL PERFORMANCE

	ITEM	TEST CONDITION	REQUIREMENT
4.1	Contact Resistance	20mV maximum open circuit voltage. 100mA maximum test current	15mOhms MAXIMUM
4.2	Insulation Resistance	500V DC applied to adjacent circuits	1000 megaOhms MINIMUM
4.3	Dielectric Withstanding Voltage	750 VAC applied to adjacent circuits for 1 minute	No breakdown

5.0 MECHANICAL PERFORMANCE

	ITEM	TEST CONDITION	REQUIREMENT
5.1	Insertion Force (Per individual contact, 90327 & 93338 series only)	Insertion force tested by inserting standard gauge blade specified in Appendix A Rate of insertion = 25 ±6 mm/minute	1.7N maximum for initial insertion of Tin contact 1.5N maximum for initial insertion of PdNi/Gold contact
5.2	Withdrawal Force (Per individual contact, 90327 & 93338 series only)	Withdrawal force tested by withdrawing standard gauge blade specified in Appendix A Rate of withdrawal =25 ±6 mm/minute	Withdrawal force = 0.25N minimum
5.3	Durability	1 durability cycle = 1 Mating & Un-mating of the connector using Picoflex extraction tool or pull-tab For Tin on Tin system number of durability cycles = 30 For Gold on Gold system number of durability cycles = 100 For PdNi plated product number of durability cycles = 100 For 90816/93407 Latched maximum Cycles = 5(Tin or Gold) using Latched Picoflex extraction tool.	Change in insertion force from initial value = 0.5N maximum Change in contact resistance from initial value = 10mOhms maximum
5.4	Shock	Acceleration = 50g Duration = 11 milliseconds Per IEC 512-4, test condition 6c	Change in contact resistance from initial value = 10mOhms maximum Discontinuity = 1micro second maximum
5.5	Vibration	Sweep = 10-55-10Hz Amplitude = 0.35mm or 5g Pulse = 1/2 Sine Duration = 2 hours in each X-Y-Z direction Per IEC 512-4, test condition 6d	Change in contact resistance from initial value = 10mOhms maximum Discontinuity = 1micro second maximum
5.6	Terminal Retention Force in Housing (PCB Headers)	Terminal withdrawal force to be applied at the rate of 25 ± 6mm per minute	Terminal retention force = 7N minimum.
5.8	Latched header retention force. (Reference only)	Connector retention force to be applied at the rate of 25 ± 6mm per minute. Straight and Right angle pull Minimum retention force.	Circuit Size / Straight / R/angle 4ckt / 30N / 30N 14 ckt / 55N / 115N 26ckt / 65N / 175N

6.0 ENVIRONMENTAL PERFORMANCE

	ITEM	TEST CONDITION	REQUIREMENT
6.1	Damp Heat	Mate connectors and expose to: Temperature = +40°C +3/-0°C Humidity = 90 - 95% R.H. Duration = 1000 Hours	Change in contact resistance from initial value = 10mOhms maximum For 93338 series maximum contact resistance after test <50 mOhms No visual damage
6.2	Dry Heat	Mate connectors and expose to: Temperature = +105°C +3/-0°C Duration = 240 Hours	Change in contact resistance from initial value = 10mOhms maximum No visual damage
6.3	Cold	Mate connectors and expose to: Temperature = -40° C +0°C /-3°C Duration = 96 Hours	Change in contact resistance from initial value = 10mOhms maximum No visual damage
6.4	Thermal Shock	Mate connectors and expose to 10 cycles of the following profile: Temperature °C — Time Duration -40 +0 /-3 — 30 minutes +20 ± 5 — 5 minutes max +105 +3/-0 — 30 minutes	Change in contact resistance from initial value = 10mOhms maximum No visual damage
6.5	Corrosive Atmosphere Sulphur Dioxide (SO_2)	Mate Connectors and expose to: Atmosphere: 10 parts per million (PPM) SO_2 Duration: 240 hours Temperature: 25 °C Humidity: 75% R.H.	Change in contact resistance from initial value = 10mOhms maximum No visual damage
6.6	Corrosive Atmosphere Hydrogen Sulphide (H_2S)	Mate Connectors and expose to: Atmosphere: 1 part per million (PPM) H_2S Duration: 96 hours Temperature: 25 °C Humidity: 75% R.H.	Change in contact resistance from initial value = 10mOhms maximum No visual damage

	ITEM	TEST CONDITION	REQUIREMENT
6.7	Solder Heat Resistance 90325, 90584, 90779 90800, 90814/93405*, 91577 and 91714 series only (*90814/93405 standard profile parts).	Insert Terminal Solder Tails in solder bath: Solder Temperature: 230°C Duration: 5 seconds maximum	No damage that would impair normal operation
6.8	Resistance to Reflow Temperature 90814/93405*,90816, 93407 and 91330 series only (* 90814/93405 Low Profile parts only)	Subject unmated connectors to applicable re-flow profile shown in Appendix C	No damage that would impair normal operation
6.9	Glow Wire 90779, 90814,93405,90816,93 407, 91330, 91714 and 93338 series only	Glow wire temperature: 750°C Test positions shown in Appendix D Per IEC 60695-2-11	Flame must extinguish within 2 seconds of removal of glow wire No ignition of wrapping tissue 200mm under test specimen

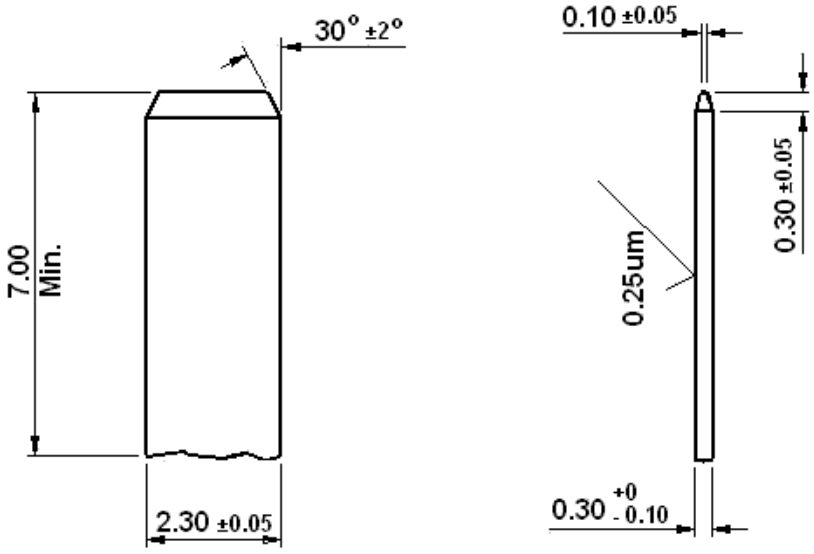
7.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage. No Styrofoam shall be used in any packing that comes in direct contact with the connectors.

8.0 TEST GROUPS

TEST REF.	TEST	A	B	C	D	E	F	G
4.1	Contact Resistance	2 4 6 8	2 4 6	2 4 6 9	2 4 6	2 4 6		
4.2	Insulation Resistance	9						
4.3	Dielectric Withstanding Voltage	10						
5.1	Insertion Force						1	
5.2	Withdrawal Force						2	
5.3	Durability	3	3	3	3	3		
5.4	Shock			8				
5.5	Vibration			7				
5.6	Terminal Retention Force in Housing (PCB Headers)							1
5.8	Latched header retention force.							1
6.1	Damp Heat	7						
6.2	Dry Heat	5						
6.3	Cold			5				
6.4	Thermal Shock		5					
6.5	Corrosive Atmosphere Sulphur Dioxide (SO_2)				5			
6.6	Corrosive Atmosphere Hydrogen Sulphide (H_2S)					5		
6.7	Solder Heat Resistance	1	1	1	1	1		
6.8	Resistance to Reflow Temperature	1	1	1	1	1		
6.9	Glow Wire							1

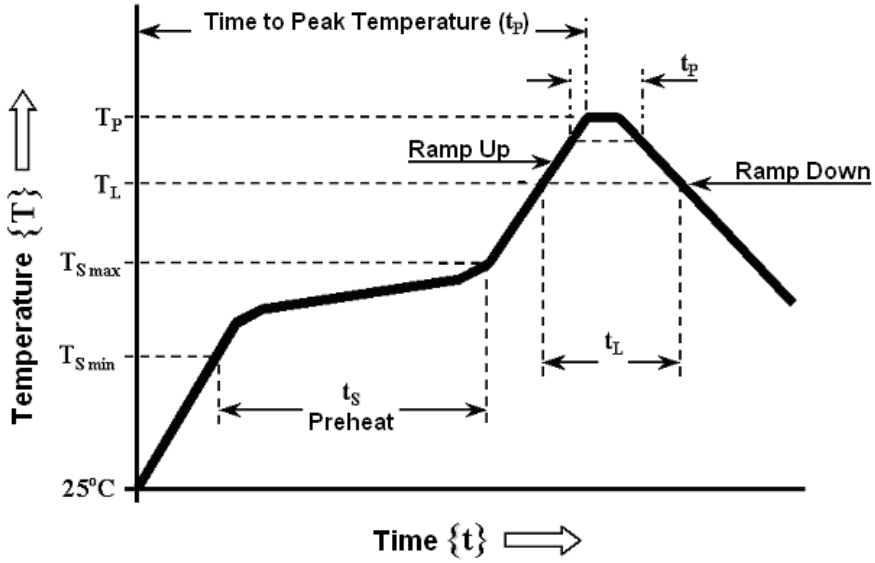
APPENDIX A - INSERTION/WITHDRAWAL GAUGE SPECIFICATION



Note: Gauge weight = 25 grams minimum

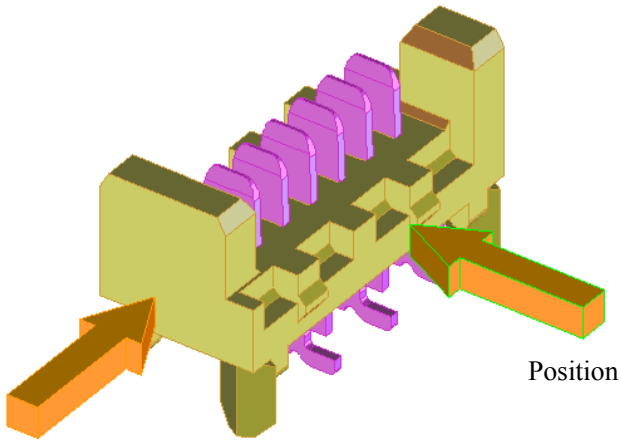
APPENDIX B – RE-FLOW PROFILES

PROFILE FEATURE	Pb-FREE PROCESS (RoHS) COMPLIANT	Pb-FREE PROCESS (RoHS) COMPATIBLE
Product Series	90779, 91714 and 90814/93405. (90814/93405 standard profile)	90814, 90816/93407 & 91330. (90814/93405 low profile)
Average Ramp Up Rate	3°C/second max.	3°C/second max.
Preheat - Temperature Min ($T_{S\ min}$) - Temperature Max ($T_{S\ max}$) - Time (t_S)	 100°C 150°C 60 – 120 seconds	 150°C 200°C 60 – 180 seconds
Time over Liquidus - Temperature (T_L) - Time (t_L)	 183°C 60 – 150 seconds	 217°C 60 – 150 seconds
Time from 25°C to Peak Temperature (T_P)	6 minutes max.	8 minutes max.
Peak Temperature (T_P)	230°C max.	260°C max.
Time within 5°C of Peak Temperature (t_P)	30 seconds max.	40 seconds max.
Ramp Down Rate	6°C/second max.	6°C/second max.



APPENDIX C - GLOW WIRE TEST POSITIONS

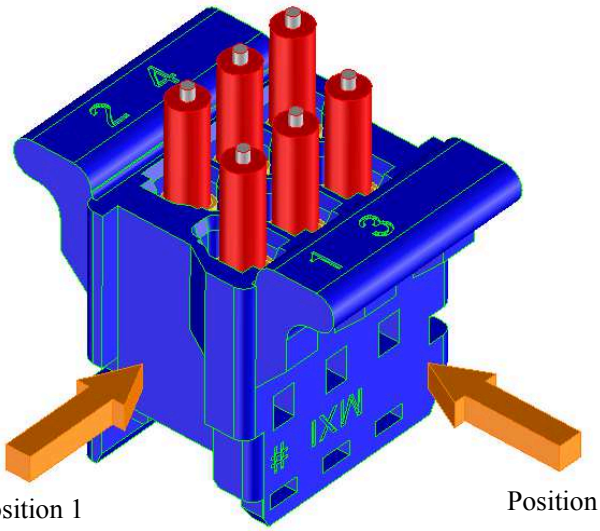
Series 90779, 90814, 93405, 90816, 93407, 91330 and 91714



Position 2

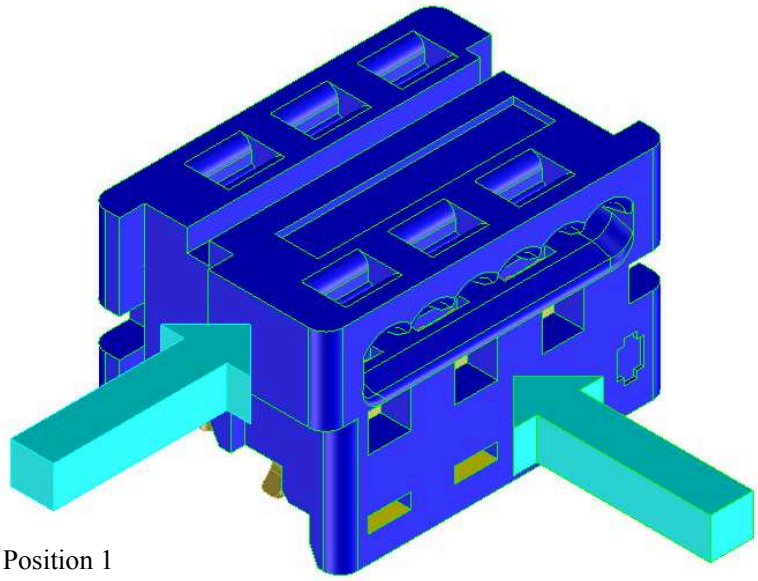
Position 1

Series 91821 and 91935



Position 1 Position 2

Series 93338



Position 1

Position 2

REVISE ON PC ONLY:		TITLE:	PICOFLEX CONNECTOR SYSTEM PRODUCT SPECIFICATION	
W	SEE SHEET 1			
REV.	DESCRIPTION	THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		
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