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SECTION **PAGE**

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1.0 SCOPE

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

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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
	90816	Vertical Latched SMT Header	SD-90816-001
IDT Connector	90327	Insulation Displacement Connector	SDA-90327
PCB Connectors	90584	Insulation Displacement Board-In Connector	SDA-90584

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3.0 RATINGS

Series No.	Wire/Cable Size (AWG)	Maximum Current at 105ºC	Voltage AC/DC	Operating Temperature	Storage Temperature
90325	N/a	1.2A	250V Max.	-40ºC to +105ºC	-40ºC to +85ºC
90779	N/a	1.2A			
90814	N/a	1.2A			
90816	N/a	1.2A			
90327	28 AWG	1.2A			
90584	28 AWG	1.2A			

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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

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5.0 MECHANICAL PERFORMANCE

	ITEM	TEST CONDITION	REQUIREMENT
5.1	Insertion Force (Per individual contact, 90327 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 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 90816 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

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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 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
6.7	Solder Heat Resistance 90325, 90584, 90779 and 90814 series only (*90814 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

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	ITEM	TEST CONDITION	REQUIREMENT
6.8	Resistance to Reflow Temperature 90814 and 90816 series only (* 90814 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 and 90816 series only	Glow wire temperature: 750ºC 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

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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.

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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

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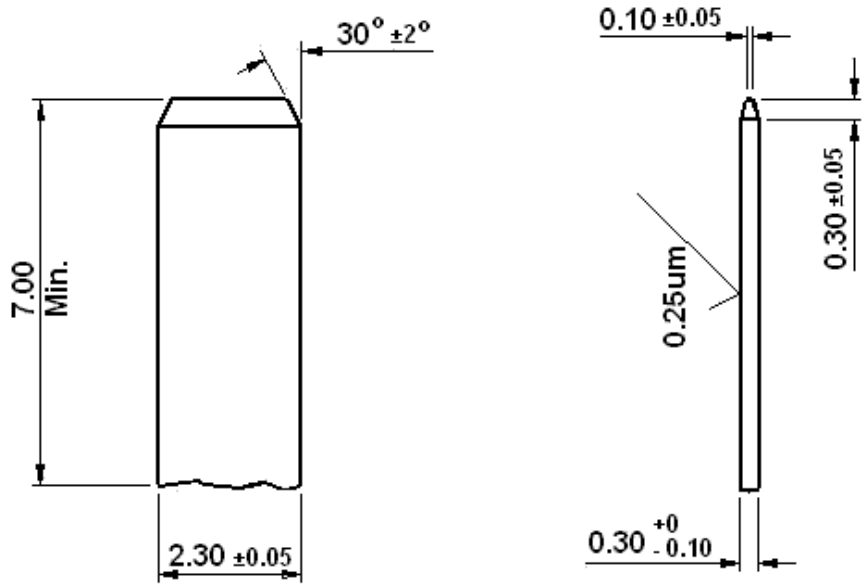
APPENDIX A - INSERTION/WITHDRAWAL GAUGE SPECIFICATION



Note: Gauge weight = 25 grams minimum

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APPENDIX C – RE-FLOW PROFILES

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

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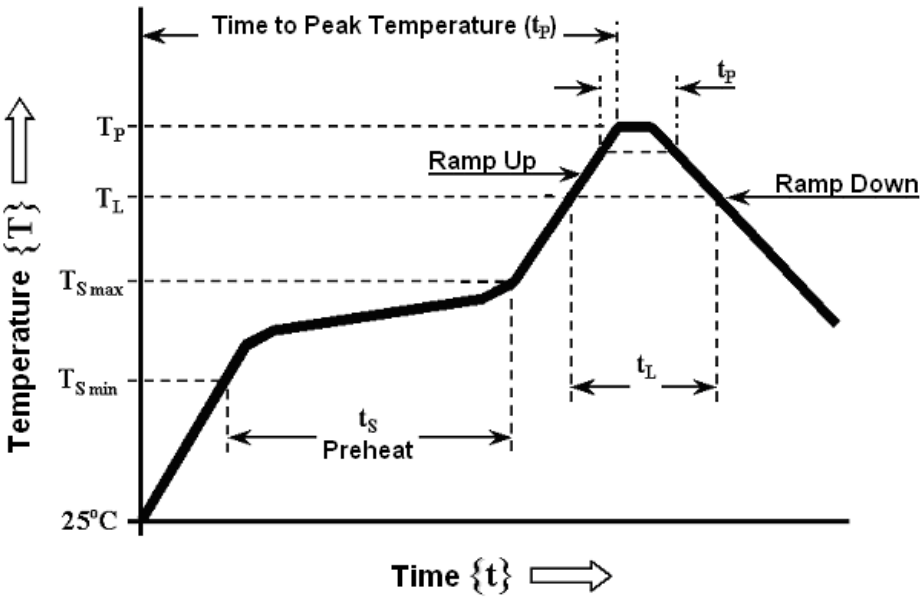
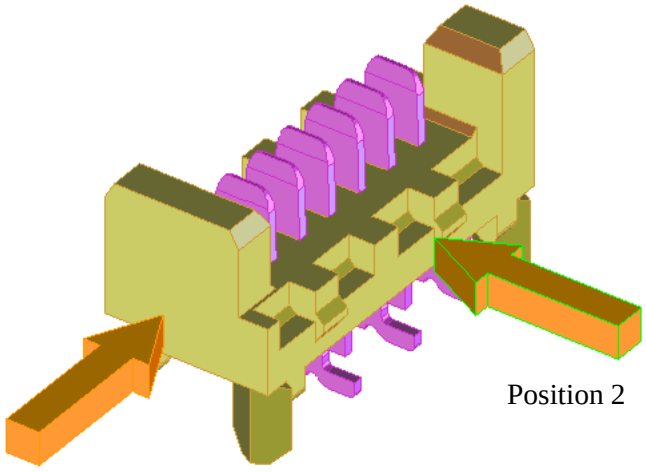


Note: Please check the mount condition (reflow soldering condition) by your own devices beforehand, because the condition changes by the soldering devices, printed wiring boards (PWB), and so on. Although tail of terminal and nail may discolors, a solderability does not have a problem.

APPENDIX D - GLOW WIRE TEST POSITIONS

Series 90779, 90814 and 90816



Position 2

Position 1

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