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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
<b>PCB Headers</b>	90325	Vertical Thru Hole Header	SDA-90325
	90779	Vertical Thru Hole Header, High Temperature Thermoplastic	SDA-90779
	90715	Vertical Thru Hole Header, with Kinked Tails and Optional Polarising Pegs	SDA-90715
	90814	Vertical SMT Header	SDA-90814
	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
	91819	Vertical Thru Hole Header, RoHS Compatible	SD-91819-001
	91820	Vertical SMT Header, RoHS Compatible	SD-91820-001
	91822	Bottom Entry SMT Header, RoHS Compatible	SD-91822-001
<b>IDT Connector</b>	90327	Insulation Displacement Connector	SDA-90327
<b>Crimp Housing</b>	91935	Discrete Wire Crimp Housing	SD-91935-001
<b>Crimp Terminal</b>	91821	Discrete Wire Crimp Terminal	SD-91821-001
<b>PCB Connectors</b>	90584	Insulation Displacement Board-In Connector	SDA-90584
	91577	Insulation Displacement Board-In Connector with Alternative Terminal Stagger	SD-91577-001

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**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			
90715	N/a	1.2A			
90814	N/a	1.2A			
90800	N/a	1.2A			
91714	N/a	1.2A			
91330	N/a	1.2A			
91819	N/a	2.4A			
91820	N/a	2.4A			
91822	N/a	2.4A			
90327	28 AWG	1.2A			
91935 & 91821	24 AWG	2.4A			
	26AWG	2.2A			
	28AWG	1.2A			
90584	28 AWG	1.2A			
91577	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 & 91821 series only)	Insertion force tested by inserting standard gauge blade specified in Appendix A  Rate of insertion = 25 ±6 mm/sec	1.7N maximum for initial insertion of Tin contact  1.1N maximum for initial insertion of Gold contact
5.2	Withdrawal Force (Per individual contact, 90327 & 91821 series only)	Withdrawal force tested by withdrawing standard gauge blade specified in Appendix A  Rate of withdrawal = 25 ±6 mm/seconds	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	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.
5.7	Terminal Retention Force in Housing (Crimp Terminal & Housing)	Terminal withdrawal force to be applied at the rate of 25 ± 6mm per minute	Terminal Retention force = 15N minimum

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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: <table border="1"> <thead> <tr> <th>Temperature °C</th> <th>Time Duration</th> </tr> </thead> <tbody> <tr> <td>-40 +0 /-3</td> <td>30 minutes</td> </tr> <tr> <td>+20 ± 5</td> <td>5 minutes max</td> </tr> <tr> <td>+105 +3/-0</td> <td>30 minutes</td> </tr> </tbody> </table>	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
Temperature °C	Time Duration										
-40 +0 /-3	30 minutes										
+20 ± 5	5 minutes max										
+105 +3/-0	30 minutes										
6.5	Corrosive Atmosphere Sulphur Dioxide (SO <sub>2</sub> )	Mate Connectors and expose to: Atmosphere: 10 parts per million (PPM) SO <sub>2</sub> 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 <sub>2</sub> S)	Mate Connectors and expose to: Atmosphere: 1 part per million (PPM) H <sub>2</sub> S 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, 90715, 90800 and 91577 series only	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 90779, 90814, 91330, 91714, 91819, 91820 and 91822 series only	Subject unmated connectors to applicable re-flow profile shown in Appendix C	No damage that would impair normal operation
6.9	Glow Wire 91819, 91820, 91821, 91822 and 91935 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

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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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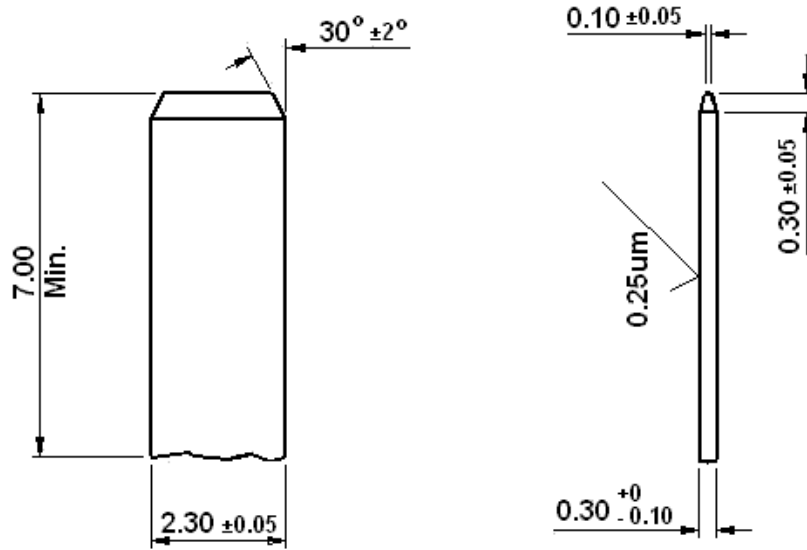
**8.0 TEST GROUPS**

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
5.7	Terminal Retention Force in Housing (Crimp Terminal & Housing)							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 <sub>2</sub> )				5			
6.6	Corrosive Atmosphere Hydrogen Sulphide (H <sub>2</sub> S)					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



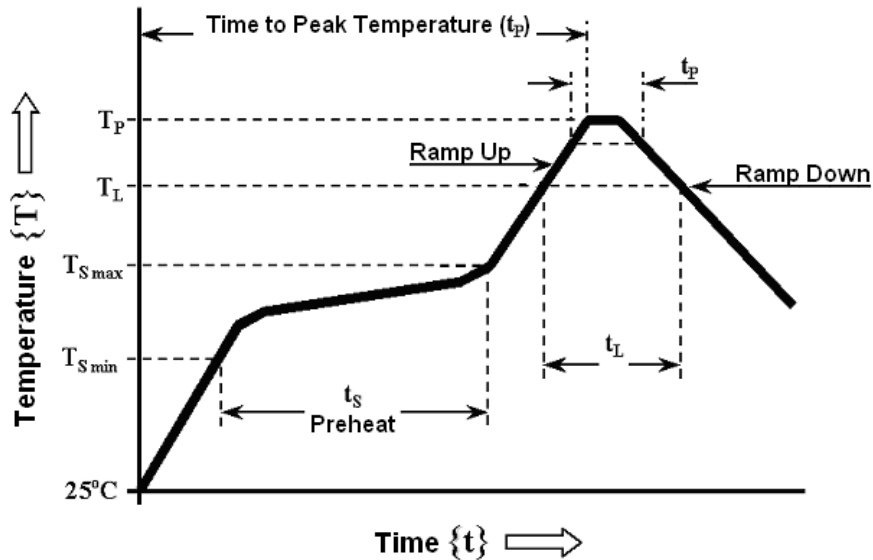
Note: Gauge weight = 25 grams minimum

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**APPENDIX B – RE-FLOW PROFILES**

PROFILE FEATURE	Pb-FREE PROCESS (RoHS) COMPLIANT	Pb-FREE PROCESS (RoHS) COMPATIBLE
Product Series	90814, 90779, 91330, 91714.	91819, 91820, 91822.
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.

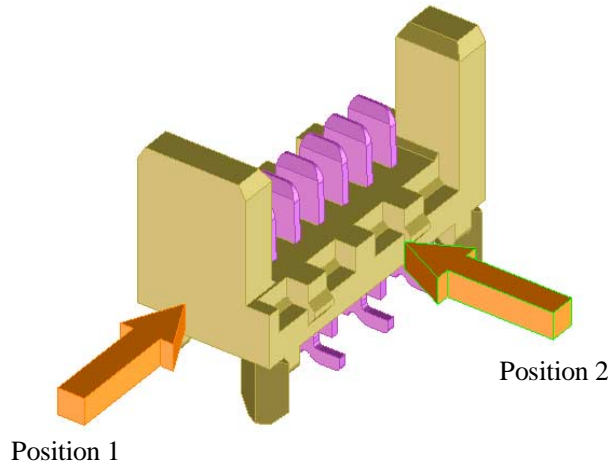


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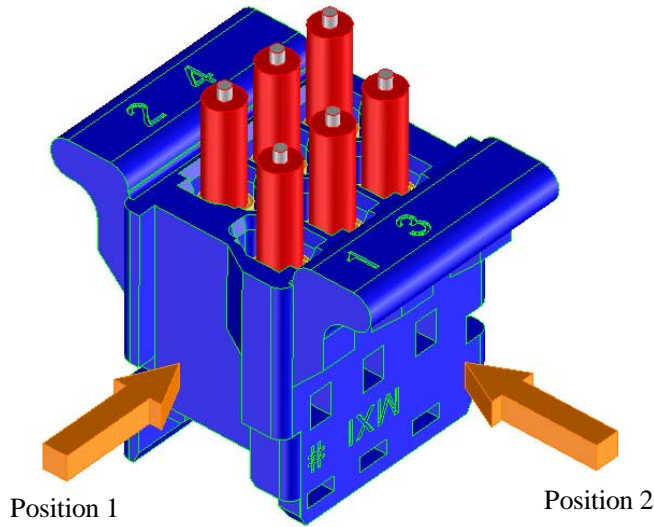


### APPENDIX C - GLOW WIRE TEST POSITIONS

Series 91819, 91820 and 91822



Series 91821 and 91935



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