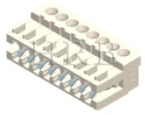
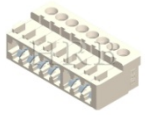
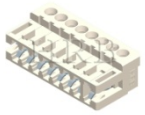
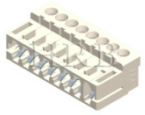
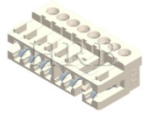
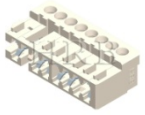
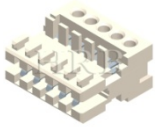
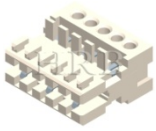
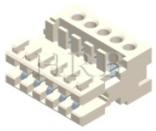
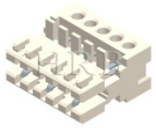
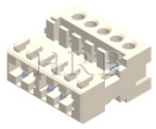
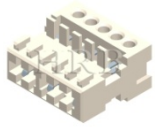
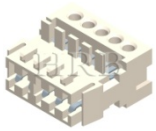
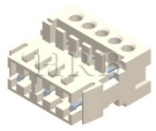
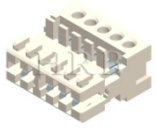
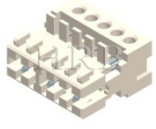
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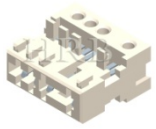
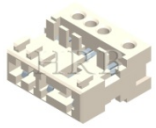
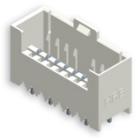
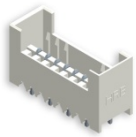
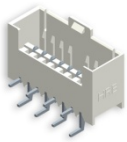
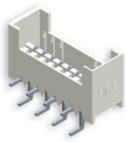
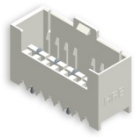
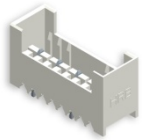
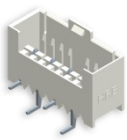
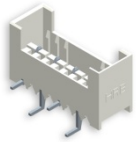
This specification defines the performance for the HRB RAST 2.5 APPLI-MATE family of connectors.

2.0 PRODUCT DESCRIPTION

2.1 Series No and description.

Series No.	Description	Mating Interface	Picture
M7234	RAST 2.5 connector for indirect mating, insulation displacement technology (IDT), for individual conductors contact pitch 2.5 mm	M7230,M7232 M7268	
M7235	RAST 2.5 connector for direct mating, insulation displacement technology (IDT), alternatively with or without keying rib and closed sides, for individual conductors contact pitch 2.5 mm	PCB	
M7238	RAST 2.5 connector for direct mating, insulation displacement technology (IDT), with locking on printed circuit board by means of locking toes, alternatively with or without keying rib, for individual conductors, without closed side. contact pitch 2.5 mm	PCB	
M7239	RAST 2.5 connector for direct mating, insulation displacement technology (IDT), with locking on printed circuit board by means of locking toes, alternatively with or without keying rib, for individual conductors, with closed side. contact pitch 2.5 mm	PCB	
M7242	RAST 2.5 connector for direct and indirect mating, insulation displacement technology (IDT), with interior locking, for individual conductors, without closed side. contact pitch 2.5 mm	PCB	
M7243	RAST 2.5 connector for direct and indirect mating, insulation displacement technology (IDT), with interior locking, for individual conductors, with closed side. contact pitch 2.5 mm	PCB	
M7280	RAST 2.5 connector for indirect mating, insulation displacement technology (IDT), with keying rib contact pitch 2.5 mm	M7230,M7232 M7268	

M7281	RAST 2.5 connector for indirect mating, insulation displacement technology (IDT), with keying rib contact pitch 5.0 mm	M7264,M7266	
M7282	RAST 2.5 connector for direct and indirect mating, insulation displacement technology (IDT), with interior locking, for individual cable contact pitch 2.5 mm	M7231,M7233	
M7283	RAST 2.5 connector for direct and indirect mating, insulation displacement technology (IDT), with interior locking, for individual cable contact pitch 5.0 mm	M7265,M7267	
M7284	RAST 2.5 connector for direct mating, insulation displacement technology (IDT), alternatively with or without keying rib and closed sides, for individual conductors contact pitch 2.5 mm	PCB	
M7285	RAST 2.5 connector for direct mating, insulation displacement technology (IDT), alternatively with or without keying rib and closed sides, for individual conductors contact pitch 5.0 mm	PCB	
M7286	RAST 2.5 connector for direct mating, insulation displacement technology (IDT), with locking on printed circuit board by means of lateral locking hooks, with keying rib, for individual conductors contact pitch 2.5 mm	PCB	
M7287	RAST 2.5 connector for direct mating, insulation displacement technology (IDT), with locking on printed circuit board by means of lateral locking hooks, with keying rib, for individual conductors contact pitch 5.0 mm	PCB	
M7288	RAST 2.5 connector for direct mating, insulation displacement technology (IDT), with locking on printed circuit board by means of locking hooks, alternatively with or without keying rib and closed sides, for individual conductors contact pitch 2.5 mm	PCB	
M7289	RAST 2.5 connector for direct mating, insulation displacement technology (IDT), with locking on printed circuit board by means of locking hooks, alternatively with or without keying rib and closed sides, for individual conductors contact pitch 5.0 mm	PCB	

M7290	RAST 2.5 connector for direct mating, insulation displacement technology (IDT), with locking on printed circuit board by means of locking hooks, alternatively with or without keying rib and closed sides, for individual conductors contact pitch 2.5 mm	PCB	
M7291	RAST 2.5 connector for direct mating, insulation displacement technology (IDT), with locking on printed circuit board by means of locking hooks, alternatively with or without keying rib and closed sides, for individual conductors contact pitch 5.0 mm	PCB	
M7230	RAST 2.5 pin header, with locking latch and positioning spigot contact pitch 2.5 mm	M7234,M7280	
M7231	RAST 2.5 pin header, upright, with positioning spigot, for interior locking contact pitch 2.5 mm	M7282	
M7232	RAST 2.5 pin header, angular, with locking latch contact pitch 2.5 mm	M7234,M7280	
M7233	RAST 2.5 pin header, angular, for interior locking contact pitch 2.5 mm	M7282	
M7264	RAST 2.5 pin header, with locking latch and positioning spigot contact pitch 5 mm	M7281	
M7265	RAST 2.5 pin header, upright, with positioning spigot, for interior locking contact pitch 5 mm	M7283	
M7266	RAST 2.5 pin header, angular, with locking latch contact pitch 5 mm	M7281	
M7267	RAST 2.5 pin header, angular, for interior locking contact pitch 5 mm	M7283	

M7268	RAST 2.5 pin header, upright, in surface mount technology (SMT), with locking latch and one positioning spigots, with double-sided keying contact pitch 2.5 mm	M7234,M7280	

2.2 Materials

RAST 2.5 connector:

Part Name	Material and surface finished
Contact/ terminal	Phosphor bronze, tin /silver/ selective gold plated
Housing	PA66,UL 94V-0, Glow wire test

RAST 2.5 pin header:

Part Name	Material and surface finished
Contact/ terminal	Brass, tin /silver/ selective gold plated
Housing	PA66,UL 94V-0, Glow wire test; M7268 : PA9T UL 94V-0

2.3 Wire requirement

Wire type mm^2(AWG)	Number of single wire and max. diameter mm	Lay-length of the strands mm	Insulation material type	Shore hardness	Insulation diameter mm	Temperature resistance ° C
0.22(AWG24)	7x0.20	<20	PVC	90A±5	≤1.3	105
0.35 (AWG 22)	7x0.25, 17x.16	<20	PVC	90A±5	≤1.5	105

3.0 ELECTRICAL PERFORMANCE

Item	Description	Test Condition	Requirements
3.1	Contact Resistance	Mated connector measured as per Appendix A: Low level contact resistance @20mV, 100mA max.	10 mΩ max. (single sided PCB or Header*)
3.2	Insulation resistance	Unmated connector with 500VDC between adjacent contacts for 1 minute.	>1000 MΩ >5MΩ after salt spray 7.6
3.3	Dielectric Withstand Voltage	Unmated connector with rated Voltage eff./60sec	Rated Voltage = 1000V AC No Breakdown
3.4	Current Induced Temperature Rise	Load all circuits with the rated current	A maximum temperature rise of < 30°C

4.0 MECHANICAL PERFORMANCE

Item	Description	Test Condition	Requirements
4.1	Mating Force	10 cycles. Force measured using a polished, steel pin as per appendix E	<= 15N +4N per terminal for all 10 cycles

4.2	Unmating Force	10 cycles. Force measured using a polished, steel pin as per appendix E	1st Withdrawal >= 7N + 0.5N per terminal, 10th Withdrawal >= 5N + 0.5N per terminal
4.3	IDT Wire Retention Force	Apply a straight tensile force parallel and at 90° to the direction of the wire at a rate of 25-100mm per minute. Setup as per appendix F	Parallel to wire >= 30N 90° to the wire > =30N
4.4	Vibration	Frequency cycle: 5-500-5Hz Displacement: 7.5mm Acceleration : 2g 20 min sweep 3hrs per axis	Initial contact resistance as per 3.1. Final contact resistance <= twice the initial contact resistance. No discontinuities greater than 1.0 microsecond.
4.5	Drop Shock	1/2 sine, 50G, 11 milliseconds 3 shocks in each of 6 directions	Initial contact resistance as per 3.1. Final contact resistance <= twice the initial contact resistance. No discontinuities greater than 1.0 microsecond

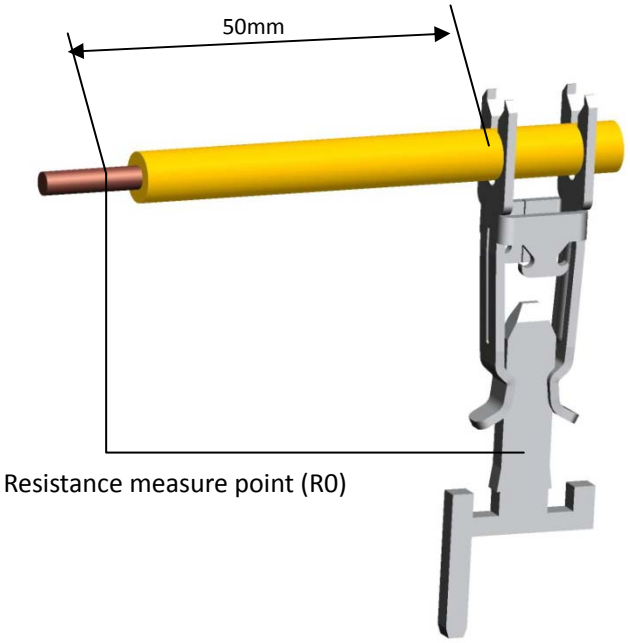
5.0 ENVIRONMENTAL PERFORMANCE

Item	Description	Test Condition	Requirements
5.1	Damp Heat Test	14 days at 40°C and 93% R.H. No current flow during exposure.	Final Rc <= 2 times initial Rc as per 3.1
5.2	Thermal Cycling	14 cycles: one cycle consists of 16 hours at 80 °C followed by 8 hours at 20 °C maximum	Final Rc <= 2 times initial Rc as per 3.1
5.3	SO_2	Tamb = +40°C SO_2 = 0.2 liter H_2O = 2 liter 8 hours exposure time 16 hours recovery time	Final Rc <= 2 times initial Rc as per 3.1
5.4	Salt Mist Spray	Tamb = 35°C Rel. Humidity = 95% NaCl concentrate =50g/ltr Duration 72 Hrs	Final Rc <= 2 times initial Rc as per 3.1 No internal corrosion traces. Insulation resistance @ 500V as per 3.2
5.5	Cold Exposure	2 hours at –40°C	Final Rc <= 2 times initial Rc as per 3. 1 No physical damage
5.6	Dry Heat	85°C for 96 hours	Final Rc < =2 times initial Rc as per 3.1
5.7	Ball Pressure Test	Test for 1 hour at+125°C	Diameter of footprint not to exceed 2 mm^2
5.8	Glow Wire Test	Connector subject to rated temp glow wire for 30 seconds on X, Y & Z	Glow wire temp = 750°C. Suitable for > or = 0.2Amps

		axis. See appendix D.	
5.9	Solder-ability Test	Solder Temp =260Deg C. Immersion & Withdrawal speed = 25mm/min +/-10%. Immersion time = 2s	Solder Tail completely wetted. Smooth bright solder. Pin-holes and voids should not be concentrated in one section of wetted area

APPENDIX A

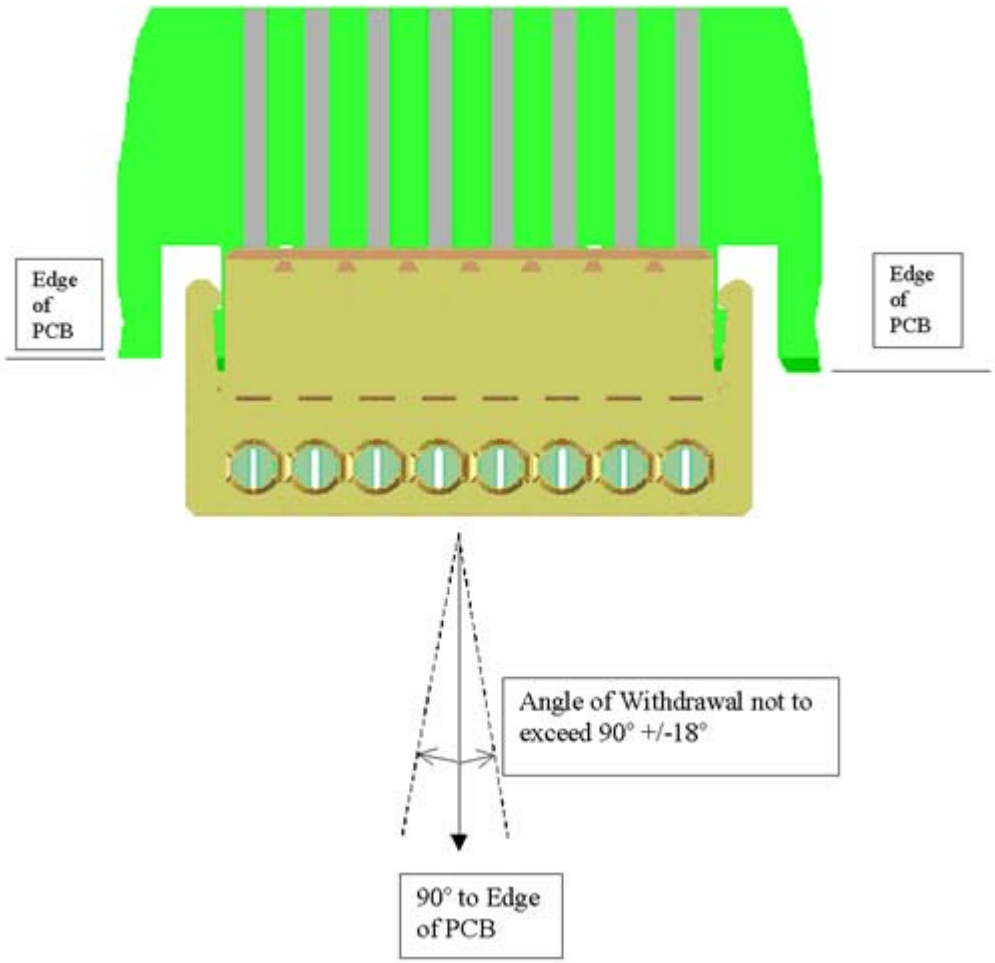
CONTACT RESISTANCE MEASUREMENT



Contact Resistance=R0-Resistance of 50mm wire

APPENDIX C

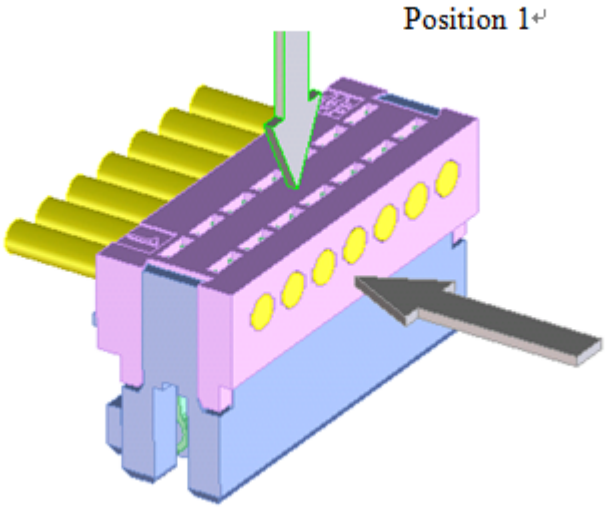
Un-mating force test set-up of Side latch



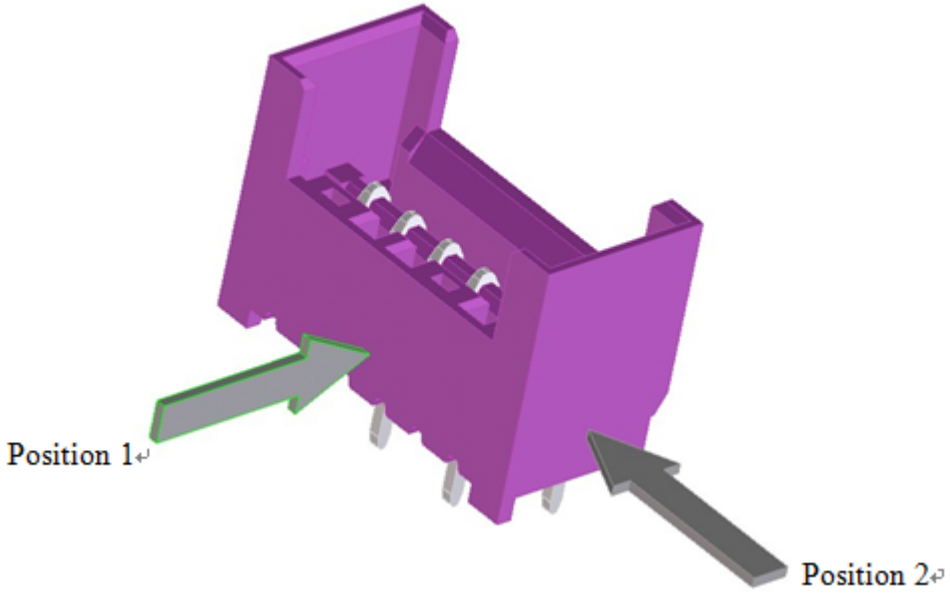
APPENDIX D

Glow wire test points

Female Connector

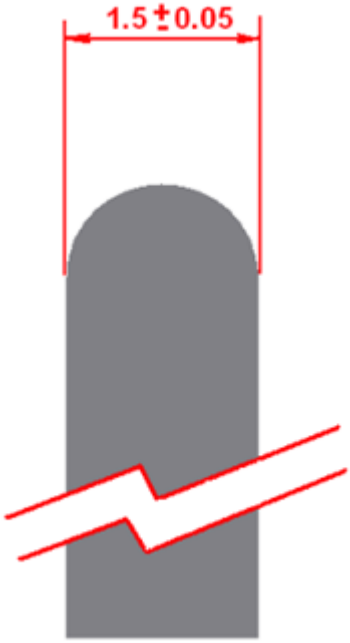


Male Connector



APPENDIX E

Gauge for mating/unmating test



APPENDIX F

IDT wire retention test

