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M7060(I) Series 3.96 IDC			Issued by: Engineering Dept.

This specification is referred to HRB 3.96mm pitch M7060(I) series connector.

本规范为 HRB 3.96mm 间距 M7060(I)系列的连接器参考。

-INDEX-

1.0 Design and Construction(设计与结构)

2.0 Materials(材料)

3.0 Characteristic(产品特性)

4.0 Electrical Performance(电气性能)

5.0 Mechanical Performance(机械性能)

6.0 Environment Performance(环境性能)

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1.0 Design and Construction(设计与结构)

Product shall be of the design, construction, materials and physical dimensions specified on the applicable product drawing. 产品应该与图纸给出的设计、结构、材料、尺寸一致。

2.0 Materials(材料)

Materials used in the construction of this product shall be as specified on the applicable HRB drawing. 材料是图纸上指定的。

A. Terminal 端子: Brass, tin or tin-lead plating and gold over nickel plating

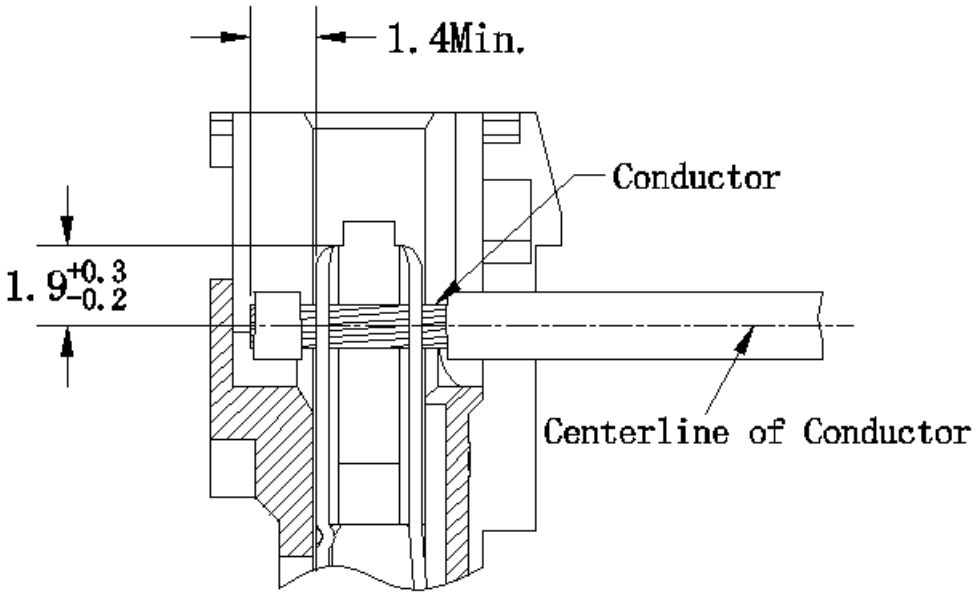
B. Housing 胶壳: Nylon 6/6, UL 94V-2

3.0 Characteristic(产品特性)

Item 项目		Standard 标准	
2.1	Rated Current 额定电流	AWG18#	5A Max.
2.2	Rated Voltage 额定电压	600V AC/DC	
2.3	Ambient Temperature Range 环境与操作温度范围	-25° C to +85° C	
		Including 30° C terminal temperature rise at rated current 包括在额定电流下，端子所产生的 30° C 以下的温升	

UL style wire	Wire wall Thickness	Approved wire size (AWG)			
		24	22	20	18
1007 PVC Insulation	0.38	√	√	√	√
1061 Semi-Rigid PVC Insulation	0.23	√	√	√	√
1180 Polytetrafluoroethylene (PTFE) Insulation — TFE	0.38		√		
1213 PTFE Insulation — TFE	0.25	√	√		√
1316 PVC/Nylon Wall	0.38		√		√
1429 Irradiated PVC — XLPVC	0.25	√	√	√	√
1430 Irradiated PVC — XLPVC	0.38	√	√	√	√

1569 PVC	0.38				√
3265 Irradiated Polyethylene — XLPE	0.25		√		
3266 Irradiated Polyethylene— XLPE	0.38	√	√	√	√



4.0 Electrical Performance（电气性能）

Item 项目		Test Condition 测试条件	Requirement 要求
4.1	(Low-signal level) Contact Resistance （低阶信号）接触电阻	A maximum voltage of 20mV and a Maximum current of 100mA are applied to the mate connectors. (Excluding the wire resistance)对组合状态下连接器的两端施以最大测试电压 20mV 及最大电流为 100mA(不包含电线的电阻)	10mΩ Max.
4.2	Insulation Resistance 绝缘电阻	Apply 500V D/C for 1 minute between adjacent contacts to measure the resistance.对两个相邻导体施以 500V DC	Initial 5000MΩ Min.

		电压 1 分钟， 来测量电阻。	
4.3	Withstanding Voltage 耐电压	Apply 2200V AC for 1 minute and the leakage current shall not exceed 0.5mA to the adjacent terminal and ground of the mate connectors.对组合状下的连接器的相邻导体施以 2200V AC 1 分钟， 且漏电流必须小于 0.5mA.	No breakdown or flashover 无损毁或产生火花
4.4	Temperature rise VS current 温升	Measure Temperature rise VS current 测量电流对应的温升	30° C maximum temperature rise at specified current 在指定的电流下温升不超过 30° C

5.0 Mechanical Performance(机械性能)

Item 项目		Test Condition 测试条件	Requirement 要求	
5.1	Termination tensile strength, parallel, Unmated 电线在连接器中的水平保持力	Pull out the cable from connector at a speed rated of 25.4±3mm/minute. See figure1 对连接器上的线以 25.4±3mm/分钟的速度沿着电线同轴方向拉拔。见图 1	Wire size(AWG)	Slot Tensile(kgf)
			24	3.0kgf
			22	5.0kgf
			20	5.0kgf
			18	5.0kgf

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5.2	Termination tensile strength, perpendicular, unmated 电线在连接器中的垂直保持力	Pull out the cable from connector at a speed rated of 25.4±3mm/minute. See figure1 对连接器上的线以 25.4±3mm/分钟的速度沿着垂直方向拉拔。见图 1	Wire size(AWG)	Slot Tensile(kgf)
			24	0.585kgf
			22	1.53kgf
			20	1.8kgf
			18	2.07kgf
5.3	Vibration, sinusoidal 正弦振动	Subject mated samples to 10-55-10 Hz traversed in 1 minute at 1.5mm total excursion. 2 hours in each of 3 mutually perpendicular planes 承受 1 分钟内频率变化为 10-55-10Hz 振幅为 1.5mm 的振动。3 个垂直基准面，每个面振 2 个小时	No discontinuities of 1 microsecond or longer duration.中断小于 1 微秒	
5.4	Physical shock 物理冲击	Subject mated samples to 50 G's halfsine shock pulses of 11 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks 承受 50G 半正弦冲击，持续 11 毫秒，每个沿 3 个垂直基准面方向都受到 3 次冲击，总共 18 次	No discontinuities of 1 microsecond or longer duration. no physical damage 中断小于 1 微秒， 无物理损伤	
5.5	Durability 耐用性	Manually mate and unmate samples with friction lock header for 20 cycles 与针座插拔 20 次	After the test, contact resistance 试验后接触电阻：15mΩMax. no physical damage 无物理损伤	
5.6	Mating force 配插力	Measure force necessary to mate samples with friction lock header from point of initial contact to depth of 5mm at maximum rate of 12.7mm per minute 以 12.7mm 每分钟的速度配插针座，深入 5mm	1.2kgf maximum average per contact 每个端子平均小于 1.2kgf	
5.7	Unmating force 拔出力	Measure force necessary to unmate	0.1kgf minimum average per contact	

		samples from friction lock header at maximum rate of 12.7mm per minute 以 1.27mm 每分钟的速度拉开针座	每个端子平均大于 0.1kgf

6. Environment Performance(环境性能)

Item 项目		Test Condition 测试条件	Requirement 要求
6.1	Humidity 恒温恒湿	Mated connectors shall be placed in a chamber of the following conditions. After the test, the contact resistance, the insulation resistance and dielectric withstanding voltage shall be measured.把组合状态下的连接器放于恒定温度和湿度的空间， 按以下要求试验， 此试验后测量其接触电阻、绝缘电阻及测试耐电压。Temperature 温度：40±2° C， Relative humidity 相对湿度：90-95%, Period 周期：96 hours continuously 持续 96 小时。	After the test, contact resistance 试验后接触电阻：15mΩMax. After the test, Insulation resistance 试验后绝缘电阻：100MΩ Min. After the test, withstanding voltage test 2200V AC for 1 minute, pass.试验后测试 2200V AC 耐电压，能通过。
6.2	Thermal shock 冷热冲击	Mated connectors shall be subjected to a thermal shock test of the following conditions. After the test, the contact resistance, the insulation resistance and the dielectric withstanding voltage shall be measured. 对组合状太下的连接器按以下条件进行冷热冲击试验，在此试验后，测量接触电阻和绝缘电阻及测试耐电压。One cycle for consists of: -25+0/3° C 30 minutes ->Room temp. 5 minutes->85+0/3° C 30 minutes-> Room	Same as paragraph 6.1 同 6.1 章节

		temp 5 minutes. Total cycles: 5 cycles. 置于-25+0/3° C 温度下 30 分钟，室温 5 分钟，再置于 85+0/3° C 温度下 30 分钟，室温 5 分钟，这样为一个循环。总共 5 个循环。	
6.3	Thermal Aging 高温老化	Mated connectors shall be placed in a heat oven of the following conditions. After the test, contact resistance shall be measured. 把组合状态下的连接器放入烤箱内，按以下要求进行高温老化试验，试验后测量接触电阻。 Temperature 温度：85±2° C， Period 周期:96 hours continuously 持续 96 小时。	After the test, contact resistance 试验后接触电阻: 15mΩ Max.
6.4	Salt spray 盐水喷雾	Mated connectors shall be subjected to a salt spray test of the following conditions. After the test, the specimen shall be washed with running water and dried naturally before the measurement of contact resistance. 将组合状态下的连接器按以下要求进行盐水试验，试验后用清水冲洗并自然晾干， 然后测量接触电阻。Salt density 盐水浓度：5% in weight. Temperature 温度： 35±2° C. Period 周期: 24 hours for stamping before tin plated terminal or contact.，先冲后镀 24 小时。	After the test, contact resistance 试验后接触电阻： 15mΩ Max.

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Figure1,Termination Tensile Strength 图 1，端子对线的保持力。

