

	Product Specification		DOC. No.: 651-19863-01	Rev.: X1	Page: 1/10
	P/ N: 818019863	Approved/Date Marlin 02/24'21	Check/Date Marlin 02/24'21	Design/date PENG 02/24'21	

1. Application (应用):

The series of products are designed for Mobile Phones, Notebook, Tablet, Wireless LAN, Mini-PCI, Bluetooth, PDA, GPS,CPE, electronic measuring instruments, etc
该系列产品设计用于移动电话, 笔记本电脑, 平板, 无线LAN, 微型PCI, 蓝牙, 掌上数字助理, 全球定位系统, 客户前置设备, 电子测量仪器等等.

2.Scope(范围):

This specification covers the requirements for product performance, test methods and quality assurance provisions of USS RF Generation VII Receptacle Connectors.
本规范内容包括 USS RF 第七代母座连接器的产品性能、测试方法及品质保证方面的要求。

3. Technology Parameters (技术参数)

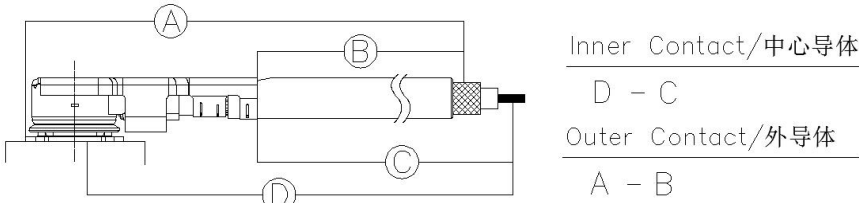
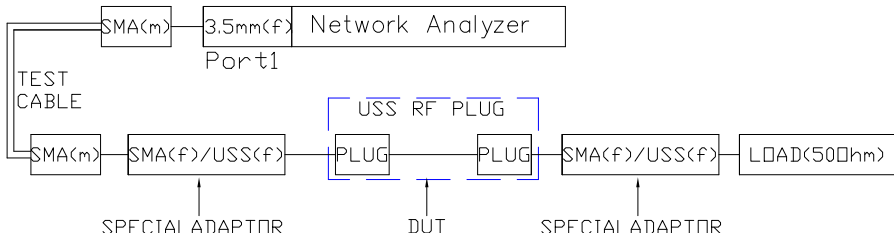
3.1 Voltage Rating (额定电压)	60VAC (R.M.S)
3.2 Frequency Range (频率范围)	DC~15GHz
3.3 Nominal Characteristic Impedance (特征阻抗)	50Ohm
3.4 Operating Temperature Range (工作温度范围)	-40℃~+90℃
3.5 Operating Humidity (工作湿度)	90% R.H.MAX

4. Ratings (额定性能要求)

4.1 Initial Insulation Resistance (绝缘电阻)	500 M ohm@100V DC
4.2 Contact Resistance (接触电阻)	
4.2.1 Inner Contact (内导体)	20 milliohm Max.(initial)
4.2.2 Outer Contact (外导体)	20 milliohm Max.(initial)
4.3 Withstand Voltage (耐电压)	200V AC 1 Min.
4.4 V .S .W. R*(电压驻波比)	1.3Max.(DC~3GHz);1.35Max.(3~6GHz); 1.4Max.(6~9GHz);1.45Max.(9~12GHz)1.5Max.(12~15GHz);

5. Electrical Performance(电性性能)

No	Items (项目)	Test Condition (测试条件)	Specifications (规格)
5.1	Contact Resistance (接触电阻)	Solder the receptacle connector to the test board and mate the plug connector together, then measure the contact resistance as shown in figure 1 by the four terminal method, apply the low level condition in accordance with EIA 364-23 将母座焊接在测试板上,并且将公头插入在焊好的母座上,采用四种端接方式(如图 1)依次测量电阻值,应用低水平条件并符合 EIA 364-23。 Open circuit voltage/开路电压: 20mV MAX Circuit current/电流: 10mA MAX	Inner contact(中心导体): Initial: 20mΩ MAX After: 40mΩ MAX Ground contact(外导体) Initial: 20mΩ MAX After: 40mΩ MAX

		Product Specification		DOC. No.: 651-19863-01	Rev.: X1	Page: 2/10
		P/ N: 818019863	Approved/Date	Check/Date	Design/date	
			Marlin 02/24'21	Marlin 02/24'21	PENG 02/24'21	
		 Figure 1				
5.2	Insulation Resistance (绝缘电阻)	Mate the plug and receptacle connector together and then apply DC 100 V between the inner contact and the ground contact in accordance with EIA 364-21 按照 EIA364-21,将公母头配合在一起后在内导体和接地端之间施加 DC 100V 的电压, 然后进行相关的测试。			Initial 初始值: 500 MΩ Min. After test 测试后: 100 MΩ Min.	
5.3	Dielectric withstanding voltage (耐电压)	Mate the plug and receptacle connector together and then apply AC 200 V between the inner contact and the ground contact in accordance with EIA 364-20 按照 EIA364-20 标准,将公母头配合在一起后在内导体和接地外导体之间施加 AC 200V 的电压, 并进行相关测试。			No flashover, No sparkover, No excess leakage, No breakdown 无瞬断、熔闪、漏电、击穿。	
5.4	V.S.W.R (电压驻波比)	Measure the V.S.W.R as shown in figure 2 by the network analyzer Frequency: DC~15GHz 通过网络分析仪测试 V.S.W.R, 频率范围为 DC~15GHz.如图 2 所示。			DC~3GHz: 1.3MAX 3~6GHz: 1.35MAX 6~9GHz: 1.4MAX 9~12GHz: 1.45MAX 12~15GHz: 1.5MAX	
		 Figure 2				

	Product Specification		DOC. No.: 651-19863-01	Rev.: X1	Page: 3/10
	P/ N:		Approved/Date	Check/Date	Design/date
	818019863		Marlin 02/24'21	Marlin 02/24'21	PENG 02/24'21

6. Mechanical Performance(机械性能)

No	Items (项目)	Test Condition (测试条件)	Specifications (规格)
6.1	Un-mating Force and mating Force (拔出力 and 插入力)	Solder the receptacle connector to the test board and mate the plug connector, then measure the un-mating force at speed of 25 ± 3 mm/minutes along by the push-push machine in accordance with EIA-364-13 根据 EIA-364-13 的规范将公母座完全配合到位后,将公母座分离到完全分开位置并测试要求的拔出力, 速率: 每分钟 25 ± 3 毫米。	Mating force: 30 N Max. Un-mating Force Initial(初值): 5N Min. 20N Max. After 30 cycles: (30 次插拔后): 3N Min. 20N Max.
6.2	Durability (机械寿命)	Mate and un-mate the receptacle connector(soldered to the test board) and plug connector 30 cycles at the speed of 25 ± 3 mm/minutes along the mating direction by the push-push machine 将母座焊接在测试板上, 然后, 通过插拔力测试仪沿配合方向以每分钟 25 ± 3 毫米的速度插拔公母头 30 个循环, 然后测试参数。	Appearance: No abnormality Contact Resistance: Shall meet 5.5.1 requirements Un-mating force: Shall meet 6.6.1 requirements 外观: 无损伤 接触电阻: 满足节 5.5.1 要求 拔出力: 满足节 6.6.1 要求
6.3	Vibration (振动)	In accordance with EIA-364-28, then mate the plug and receptacle together, apply the following vibration to the mated connector. During the test, run 100mA DC to check momentary discontinuity. Frequency: 10Hz → 100Hz → 10Hz/ approx 20 minutes. Half amplitude, Peak value of acceleration: 1.5mm or 59m/s² (6G) Directions: 3 mutually perpendicular direction, Cycles: 3 cycles in each direction	Appearance: No abnormality Contact Resistance: Shall meet 5.5.1 requirements No momentary discontinuity longer than 1 μs

	Product Specification		DOC. No.: 651-19863-01	Rev.: X1	Page: 4/10
	P/ N:		Approved/Date	Check/Date	Design/date
	818019863		Marlin 02/24'21	Marlin 02/24'21	PENG 02/24'21

6.4	Mechanical Shock (机械冲击)	根据 EIA-364-28 测试规范要求，将公母头配合在一起，并对连接器施加如下振动测试条件，在测试期间,施加 100mA 直流电用于检测振动测试过程中的瞬断。 频率：10Hz→ 100Hz→ 10Hz/约 20 分钟。 半振幅、峰值加速度：1.5mm 或者 59 m/s² (6G) 方向：3 个相互垂直的方向 次数：每个方向 3 次	shall occur 外观：无损伤 接触电阻：满足节 5.5.1 的要求，瞬断不超过 1 μ s。
		This test procedure is aimed to have a detailed test standard to estimate the ability of the connector to withstand a specified severity of mechanical shock. Apply the following shock to the mated connector in accordance with EIA 364-27 Condition A: Peak value of acceleration: 735m/s² (75G) Duration :11ms Wave form : half sinusoidal Directions : 6 mutually perpendicular direction, Cycles: 3 cycles in each direction 此测试流程目的是有一个详细的测试标准来评估连接器承受特定严格机械冲击的能力，根据 EIA 364-27 条件 A 的要求，对配合的公母连接器施以下述的冲击条件： 最大振幅: 735m/s² (75G) 持续时间：11 毫秒 波型：半正弦波 方向：6 个相互垂直方向 次数：每个方向上 3 次	Appearance: No abnormality Contact Resistance: Shall meet 5.5.1 requirements No momentary discontinuity longer than 1 μ s shall occur 外观：无损伤 接触电阻：满足节 5.5.1 要求 瞬断不超过 1 μ s

7. Environmental Performance(环境性能)

No	Items (项目)	Test Condition (测试条件)	Specifications (规格)
7.1	Humidity (湿度试验)	Apply the following environment to the mating connector in accordance with EIA 364-31 Method III Test Condition B Temperature : 25~65℃ Humidity : 90~95%R.H Duration: 96 hours 根据 EIA364-31 方法 III 的试验条件 B,对已配合的连接器施加下列条件测试.	Appearance: No abnormality; Contact resistance shall meet 5.5.1 requirements; Insulation resistance shall meet 5.5.2; Dielectric withstand voltage shall meet 5.5.3 外观：无损伤

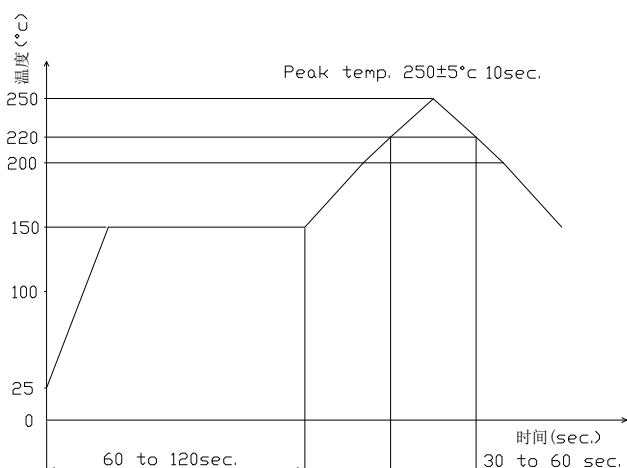
		Product Specification		DOC. No.: 651-19863-01	Rev.: X1	Page: 5/10
		P/ N:		Approved/Date	Check/Date	Design/date
		818019863		Marlin 02/24'21	Marlin 02/24'21	PENG 02/24'21
			温度: 25~65℃ 湿度: 90~95%R.H 持续时间: 96 小时		接触电阻: 满足 5.5.1 绝缘电阻: 满足 5.5.2 耐电压: 满足 5.5.3	
	7.2	Thermal Shock (冷热冲击)	Apply the following environment to the mating connector in accordance with EIA 364-32 Test Condition I Temperature : -55~85℃ Transition time: : 5min. MAX Cycles: 5 Cycles 根据 EIA364-32 试验条件 I 中的要求,对已配合的连接器施加下列测试环境: 温度: -55~85℃ 转换时间: 不超过 5 分钟 循环次数: 5 次数		Appearance: No abnormality Contact Resistance: Shall meet 5.5.1 Insulation Resistance: Shall meet 5.5.2 Dielectric withstanding voltage Shall meet 5.5.3 外观: 无损伤 接触电阻: 满足节 5.5.1 中的要求 绝缘电阻: 满足节 5.5.2 中的要求 耐电压: 满足节 5.5.3 中的要求	
	7.3	High Temperature Life (高温测试)	Apply the following environment to the mating connector Temperature : 90±2℃ Duration : 96 hours 按下列条件对已配合的连接器进行测试. 温度: 90+/-2℃ 持续时间: 96 小时.		Appearance: No abnormality Contact Resistance: Shall meet 5.5.1 Insulation Resistance: Shall meet 5.5.2 外观: 无损伤 接触电阻阻: 满足节 5.5.1 中的要求 绝缘电阻: 满足节 5.5.2 中的要求	
	7.4	Resistance to soldering heat (耐焊接热试验)	According to 8.8.1,Apply reflow soldering condition. 按 8.8.1 中曲线条件进行回流焊接实验 Cycles: 2 cycles 次数: 2 次 Measurement after 24h+/-2h. 在 24 小时后进行相关测试.		Appearance: No abnormality Contact Resistance: Shall meet 5.5.1 Insulation Resistance: Shall meet 5.5.2 Dielectric withstanding voltage Shall meet 5.5.3 外观: 无损伤 接触电阻: 满足节 5.5.1 中的要求 绝缘电阻: 满足节 5.5.2 中的要求	

	Product Specification		DOC. No.: 651-19863-01	Rev.: X1	Page: 6/10
	P/ N:		Approved/Date	Check/Date	Design/date
	818019863		Marlin 02/24'21	Marlin 02/24'21	PENG 02/24'21

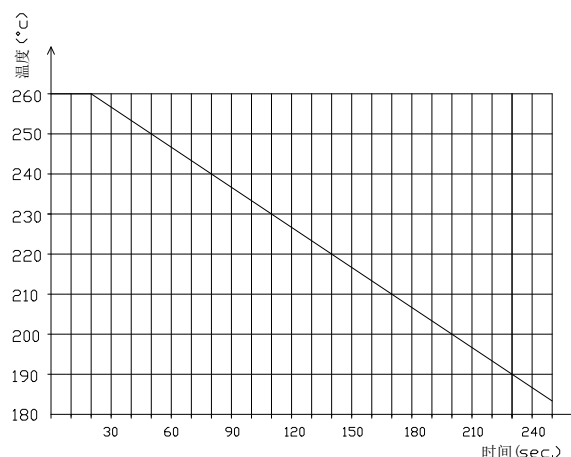
			耐电压：满足节 5.5.3 中的要求
7.5	Salt Spray (盐雾测试)	Apply the following environment to the mating connector in accordance with EIA 364-26 Test Condition A Temperature : $35 \pm 2^{\circ}\text{C}$ Relative Humidity : $90 \sim 98\% \text{R.H}$ Salt solution concentration: $5 \pm 1\%$ Duration: 48 hours 根据 EIA364-26 试验条件 A 中的要求,对已配合的连接器的施加下列条件测试. 温度: $35 \pm 2^{\circ}\text{C}$ 相对湿度: $90 \sim 98\% \text{R.H}$ 盐水浓度: $5 \pm 1\%$ 持续时间: 48 hours	Appearance: No abnormality Contact Resistance: Shall meet 5.5.1 外观：无损伤 接触电阻： 满足节 5.5.1 中的要求
7.6	solder-ability (可焊试验)	Apply the following environment to the mating connector Temperature : $250 \pm 2^{\circ}\text{C}$ Duration : 3~5 second Test sample should be observed by the magnification of 10times after the test. 按下列条件对已配合的连接器的进行测试. 温度: $250 \pm 2^{\circ}\text{C}$ 持续时间: 3~5 秒钟. 观测: 10 倍放大镜	At least 95% covered by a continuous new solder coating. 吃锡面积大于 95% 以上。

8、SMT Temperature Curve （SMT 温度曲线图）

8.1 Recommended Tem.&time relative curve of Re-flow.
建议回流焊温度与时间条件

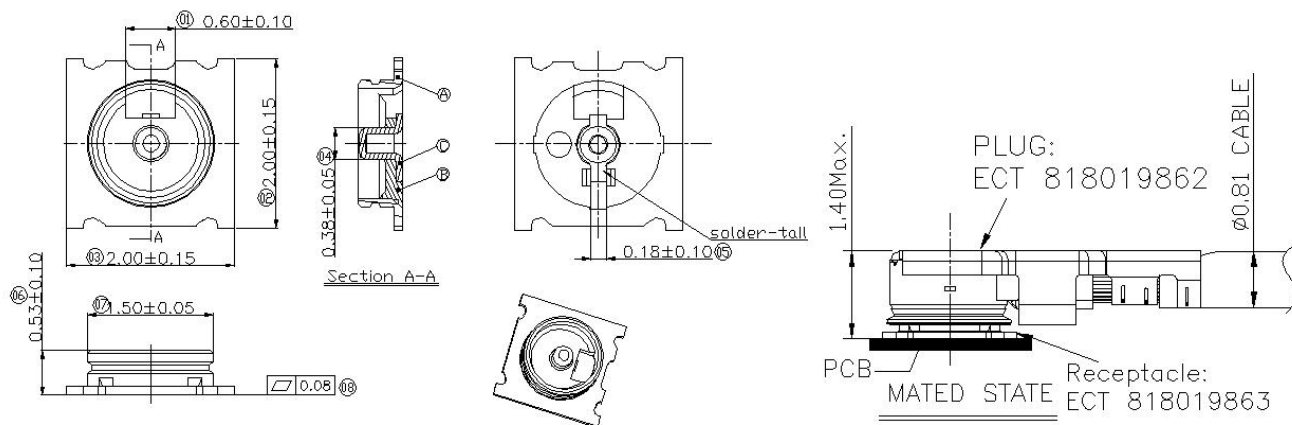


8.2 Extremed Tem.&time curve of Re-flow
回流焊极限温度与时间条件



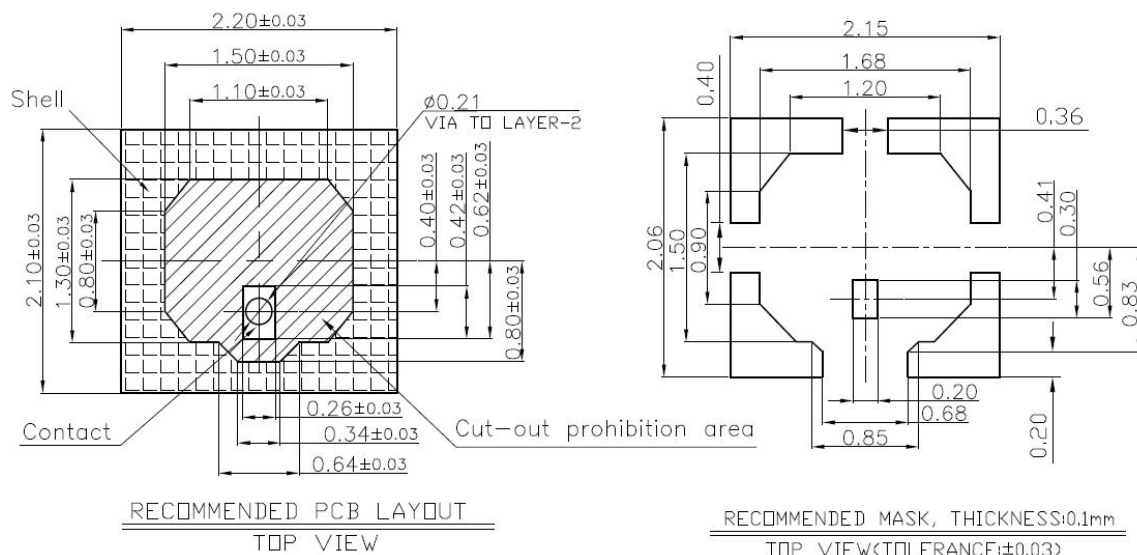
	Product Specification		DOC. No.: 651-19863-01	Rev.: X1	Page: 7/10
	P/ N:		Approved/Date	Check/Date	Design/date
	818019863		Marlin 02/24'21	Marlin 02/24'21	PENG 02/24'21

9. Profile Dimensions(外形规格)



818019863	CONTACT	1	COPPER ALLOY/Au PLATED OVER NI
	HOUSING	1	HIGH TEMP. PLASTIC /BLACK
	SHELL	1	COPPER ALLOY/Au PLATED OVER NI
	ITEM	PART NAME	Q'TY
PROD. NO.	BOM LIST		

10.Recommanned PCB LAYOUT(推荐的 PCB 安装焊盘规格)

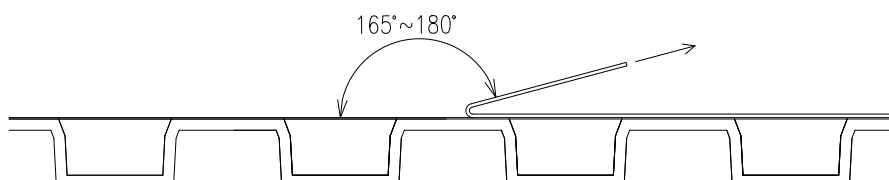


	Product Specification	DOC. No.: 651-19863-01	Rev.: X1	Page: 8/10
	P/ N:	Approved/Date	Check/Date	Design/date
	818019863	Marlin 02/24'21	Marlin 02/24'21	PENG 02/24'21

11.Packaging (包装)

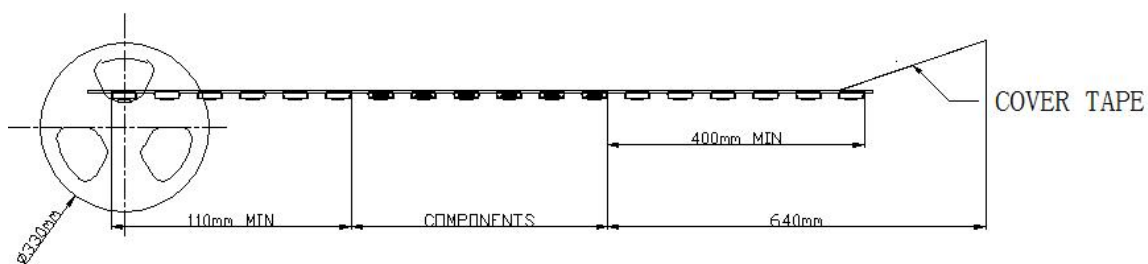
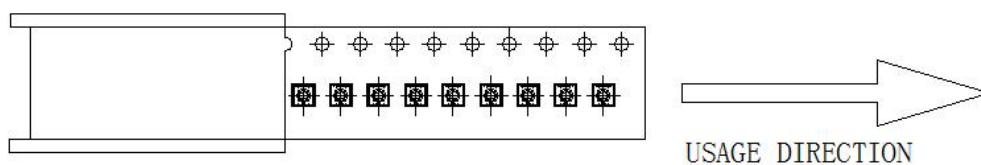
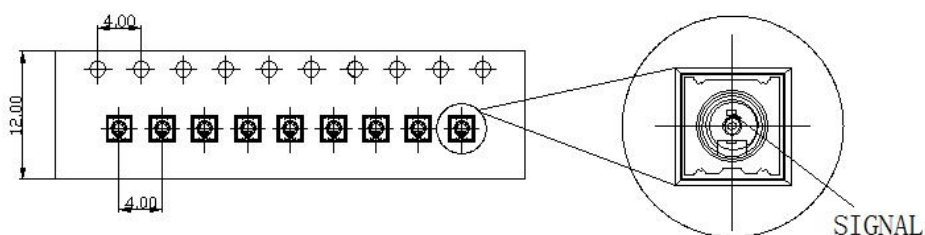
11.1 上带的剥离力度: 300mm/min 的速度进行剥离, 力度 1.3 N 最大

Peeling off Force of Cover Tape: When cover tape is peeled off as in right figure by a speed of 300mm/minute. The peeling off force should be less than 1.3 N.



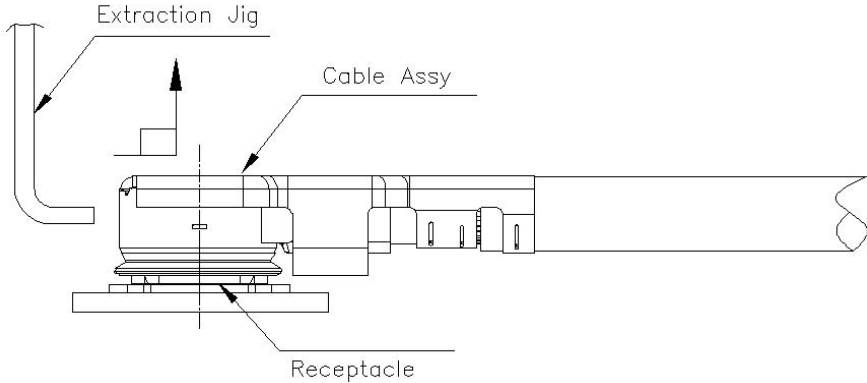
11.2 包装方式: 载带包装, 5000Pcs/卷 (Φ330mm)

The way of package : TAPE&REEL Packing, 5000Pcs/Reel (Φ330mm)



	Product Specification		DOC. No.: 651-19863-01	Rev.: X1	Page: 9/10
	P/ N: 818019863		Approved/Date	Check/Date	Design/date
			Marlin 02/24'21	Marlin 02/24'21	PENG 02/24'21

12. Usage Precaution (使用禁忌或注意事项)

No	Items (项目)	Test Condition (测试条件)	Specifications (规格)
12.1	Mating/ Un-mating connectors 连接器的连接和断开	1) Mate the connectors: Align the center of the opening of plug and receptacle and then plug in vertically. A clear “click” means both of the plug and receptacle have been mated completely. Please do not try to mate the connector with an extreme oblique angle. 1) 插入连接器：对齐公头和母座的口部的中心然后垂直地插入，一声清脆的“咔嗒”声表示两者已完全配合在一起。请不要试着以一极偏的角度插配连接器。 2) Un-mate the connectors: insert the end portion of ECT Extraction jig under the connector flanges and pull off vertically in the mating direction of the connectors until the plug removed from the receptacle. 2) 断开连接器：将 ECT 的去配工具的末端部分插入到连接器法兰端面下，并沿连接器配合的方向垂直的施加拉力直到公头从母座中分开。	 Figure 3
12.2	Stockpile condition (存储条件)	Temperature(温度): -10 ~ +35 °C Relative Humidity(湿度): 15 ~ 85 % RH Life(有效期): Manufacturing date + 12 months	

	Product Specification	DOC. No.: 651-19863-01	Rev.: X1	Page: 10/10
	P/ N:	Approved/Date	Check/Date	Design/date
	818019863	Marlin 02/24'21	Marlin 02/24'21	PENG 02/24'21

13. Test Sequence and Sample Quantity(测试顺序及样品数量)

Test Item (测试项目)	Group (测试分组)								
	A	B	C	D	E	F	G	H	I
Examination of product (外观检测)	1,	1,6	1,5	1,5	1,6	1,6	1,5	1,4	1,3
Contact Resistance (接触电阻)		2,7	2,4	2, 4	2,7	2,7	2,6	2,5	
Insulation Resistance (绝缘电阻)					3,8	3,8	3,7	3	
Dielectric Withstanding Voltage (耐电压)					4,9	4,9			
V.S.W.R (电压驻波比)	2,								
Mating and un-mating Force (插入和拔出力)		3,5							
Durability (机械寿命)		4,							
Vibration (振动)			3,						
Mechanical Shock (机械冲击)				3,					
Humidity (湿度试验)					5,				
Thermal Shock (冷热冲击)						5,			
High Temperature Life (高温测试)							4,		
Resistance to soldering heat (耐焊锡热测试)							5,		
Salt Spray (盐雾测试)								3,	
Solder-ability (可焊试验)									2,
Sample QTY(PCS) 样品数量	5	5	5	5	5	5	5	5	5

The number of group is test sequence 测试分组中的序号为试验顺序。