❷ 深圳市良胜电子有限公司 SHENZHEN LANSON ELECTRONICS CO., LTD.	型号 MODEL: TT	版本号 EDITION NO.: 1.0
规格书 PRODUCT SPECIFICATION	文件编号 DOCUMENT NO.: LS/C-005-42	页码 PAGE: 1/11



深圳市良胜电子有限公司 SHENZHEN LANSON ELECTRONICS CO., LTD.

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规格书 Specificatio	on for Approval	が HAN SON PRINT					
产品名称 Product Name	温度保险丝 Thermal-link	温度保险丝 Thermal-link 001					
文件编号 Document No.	LS/C-005-42	***					
版本 Edition No.	1.0	用,					
类别 Classification	□样品阶段Sample ■正式承认Qualif	fied □工程变更Changed					
产品编码 Product Code	TT150						
型号规格 Model Detail	TT150, 150°C 5A 250Vac						
认证 Agency Approval	TUV, CCC						
制造商 Manufacturer	深圳市良胜电子有限公司 Shenzhen Lans	son Electronics Co., Ltd.					
拟制 Prepared By	审核 Reviewed By	批准 Approved By					
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结论 Conclusion	□合格 Qualified □不合格 Unqualified 原因 Cause:						
经办 Prepared By	审核 Reviewed By	核准 Approved By					
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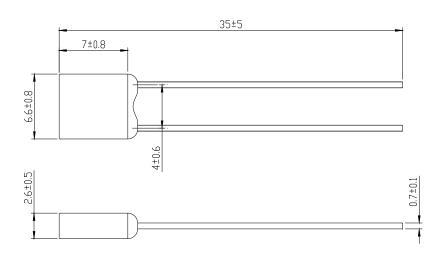
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1. 适用范围 Scope of application

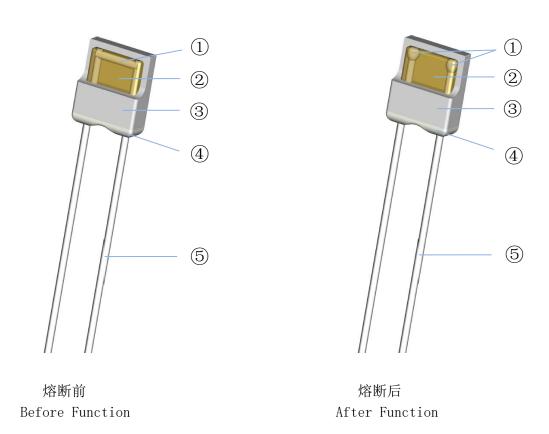
本产品适用于电源适配器、照明灯具、电动机、家电等各种电热产品的电路中,起过温保护的作用。 This product is suitable for power adapter, lighting, motor, home appliances and other electric heating products in the circuit, play the role of over temperature protection.

2. 尺寸及结构 Dimension and Structure

2.1 尺寸 Dimension (mm)



2.2 结构 Structure



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编号 No.	零件名称 Part Name	材质 Material	
1)	感温元件 Thermal element	易熔合金 Fusible alloy	
2	助熔特殊树脂 Special resin	松香 Flux resin	
3	外壳 Case	工程塑料 Thermoplastic	
4	密封树脂 Sealing resin	环氧树脂 Epoxy resin	
(5)	引线 Lead wire	镀锡铜线 Tin plated copper wire	

3. 规格参数表 Specification Parameters List

型号 Model	额定 动作 温度	实测 熔断温度 Fusing	保持 极限 额定 额定 温度 温度 电流 电压 Th Tm Ir Ur		认证 Approvals ●表示已获认证 ○表示认证中			中			
model	Tf (℃)	-Temp. (℃)	(℃)	(℃)	(A)	(Vac)	UL	CUL	TUV	PSE	CCC
TT76	76	73±2	48	180	5	250			•	0	•
TT86	86	82±2	58	180	5	250			•	0	•
TT102	102	98±2	77	180	5	250			•	0	•
TT115	115	111±2	87	180	5	250			•	0	•
TT125	125	120±2	98	180	5	250			•	0	•
TT130	130	126±2	100	180	5	250			•	0	•
TT136	136	132±2	102	180	5	250			•	0	•
TT145	145	141±2	118	180	5	250			•	0	•
TT150	150	146±2	122	180	5	250			•	0	•

4. 相关标准及认证 Relevant Standards and Certification

日大州主文 N 证 Refevant Standards and Certification						
认证机构 Certificate authority	认证标志 Certification mark	安规标准 Safety standards	证书编号 Certification No.			
UL	<i>5</i> 11	UL60691	/			
CUL	c M us	CAN-CSA-E60691	/			
TUV		EN60691	R50525109			
PSE SET		J60691	认证中 pending			
CCC		GB/T9816	2021000205000005			

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5. 术语解释 Explanation of Glossary

序号 No.	术语 Glossary	说明 Explain
1	温度保险丝 Thermal-link	温度保险丝也称为热熔断体(TCO),为一次性动作而不可复位的装置。 Thermal-link is also called Thermal Cutoff (TCO), functioning once only, non-resettable.
2	额定动作温度(Tf) Rated Function Temperature	在规定条件下测得的使温度保险丝导电状态发生改变的温度,温度保险丝必须在上述 Tf+0/-10℃范围内动作。 The temperature of the Thermal-link which cause it to change its state of conductive when measured under specified conditions, the temperature tolerance is Tf+0/-10℃.
3	实测熔断温度 Fusing Temperature	温度保险丝以每分钟 $0.5\sim1.0$ \mathbb{C} 速率上升,检测电流小于 10 mA 条件下所测得的烤炉中发生动作时的温度。 It is the actual operating temperature when the Thermal-link is made to operate at the conditions that the temperature is raised at the rate of 0.5 $\mathbb{C}\sim1$ \mathbb{C} per minute and the detection current less than 10 mA.
4	保持温度(Th) Holding Temperature	温度保险丝在通过额定电流时,能够连续维持 24 小时而承受的最高不致其导电状态发生改变的温度。 The maximum temperature at which the Thermal-link can be maintained while conducting rated current for 24 hours without functioning.
5	极限温度(Tm) Maximum Temperature Limit	温度保险丝所能处在的最高温度,在此温度下,温度保险丝的导电状态已发生改变,但其机械性能和电气特性在10分钟内不致改变。 The maximum temperature at which mechanical and electrical properties of the Thermal-link can be maintained for 10 minutes without resuming conductivity after functioning.
6	额定电流(Ir) Rated Current	温度保险丝在所使用的电路中能承受的最大电流。 The maximum current that is allowed to apply to the circuit in which the Thermal-link is used.
7	额定电压(Ur) Rated Voltage	温度保险丝在所使用的电路中能承受的最大电压。 The maximum voltage that is allowed to apply to the circuit in which the Thermal-link is used.

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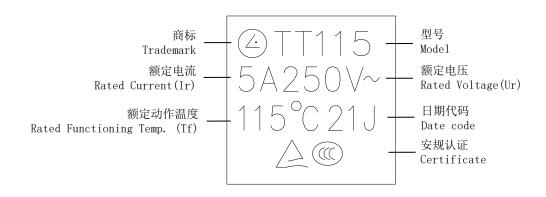
6. 检验方法及标准 Inspection Methods and Standards

序号 No.	检验项目 Test items	检验工具 Inspection tools	检验标准 Inspection standards	
1	外观 Appearance	目视 Visual	标志应清晰且容易辨识,产品外观不应有明显的污点、 迹或裂纹。 Marking shall be easily legible. There shall not any remarkable stain, rust or crack on the appearances.	
2	尺寸 Dimension	游标卡尺 Caliper	尺寸需符合要求。 The dimensions shall meet the requirements.	
3	导通 Electric conduction	电阻测试仪 Resistance tester	产品必须为导通状态,阻值需符合要求。 The Thermal-link must be conductive and the resistance value must meet the requirements.	
4	拉力 Pull	推拉力测试仪 Push pull Tester	引脚承受7.7N的拉力1分钟,不能有损伤或脱落。 The lead wire can bear 4.58n tension for 1 minute without damage or falling off.	
5	扭转力 Twist	手工 Manual	距离本体10mm处将引脚弯折90°,再扭转180°,不能有断裂或松动。 The lead wire is to be bent through 90° at a location 10 mm from the body, and then twisted through 180°, it shall be no fracture or loosen.	
6	额定动作温度 (Tf) Rated function temperature	动作温度测试仪 Function temperature tester	依照IEC60691 & UL60691标准的检测方法,熔断温度需符合标准要求的Tf+0/-10℃范围内。 According to the testing method of IEC60691 and UL60691, the fusing temperature should be within the range of Tf+0/-10℃ required by the standard.	
7	电气强度 Dielectric strength	耐压测试仪 Voltage withstand tester	动作后,两引脚间: 测试电压为2×Ur(Vac),时间1分钟,不能被击穿。 After action, between the two pins: The test voltage is 2×Ur(Vac), withstanding for 1 minute, should not be broken down. 引脚与绝缘外壳间: 测试电压为2×Ur+1000(Vac),承受1分钟,不能被击穿。 Between pin and insulating case: The test voltage is 2×Ur+1000(Vac), withstanding for 1 minute, should not be broken down.	
8	绝缘电阻 Insulation resistance meter		动作后,两引脚间: 测试电压为2×Ur (Vdc),绝缘电阻≥0.2 MΩ。 After action, between the two pins: The test voltage is 2×Ur (Vdc), insulation resistance is at least 0.2 MΩ. 引脚与绝缘外壳间: 测试电压为2×Ur(Vdc),绝缘电阻≥2 MΩ。 Between pin and insulating case: The test voltage is 2×Ur(Vdc), insulation resistance is at least 2 MΩ.	

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7. 产品本体标示 Marking on Products

示例 Example:



说明 Explain:

日期代码为10年时间内不重复,用两位数字表示年份,用单个字母表示月份。

年份: "20"表示2020年, "21"表示2021年, "22"表示2022年, 以此类推;

月份: "A"表示1月份, "B"表示2月份, "C"表示3月份,以此类推。

The date code is not repeated within 10 years. The year is represented by two digits and the month is represented by a single letter.

Year: "20" means 2020, "21" means 2021, "22" means 2022, and so on;

Month: "A" means January, "B" means February, "C" means March, and so on.

8. 包装 Packaging

- 8.1 500 pcs/小袋, 4小袋/内盒, 10内盒/外箱(实际装箱依客户订单)。
 - 500 pcs per plastic bag, 4 plastic bags per inner box, 10 inner boxes per external carton (Actual packing according to customer order).
- 8.2 产品符合RoHS环保指令。

The product conforms to RoHS environmental protection directive.

9. 储存条件和保存有效期 Store Conditions and Effective Date

温度保险丝必须避免日光照射及环境污染,且须在温度10℃~30℃和相对湿度30%~70%的条件下保存。 温度保险丝的保存期为贵公司入库后的12个月内。

Thermal-link must avoid sunlight and environmental pollution, and must be stored under the conditions of temperature $10^{\circ}\text{C}\sim30^{\circ}\text{C}$ and relative humidity $30\%\sim70\%$. The storage period of Thermal-link is 12 months after your storage.

10. 使用安装说明 Installation instructions

10.1使用温度保险丝前,请认真阅读本产品使用安装注意事项。

Before using the Thermal-link, please carefully read the precautions for the use and installation of this product.

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- 10.2 安装设计 Installation Designing
 - 10.2.1 请在额定电流(Ir)及额定电压(Ur)内使用温度保险丝,请勿将温度保险丝当作电流保险丝使用,勿将本装置用于除热切断以外的其他用途。每个型号的温度保险丝都有其特定的规格参数,包括额定动作温度(Tf)、保持温度(Th)、极限温度(Tm)、额定电流(Ir)及额定电压(Ur),详细数据请见规格参数一览表。

Use the Thermal-link within rated current (Ir) and rated voltage (Ur). Do not use Thermal-link as current fuse. Don't use this device for and purpose other than as a Thermal-link. Each Thermal-link has its specific specification parameters, including Rated Functioning Temperature (Tf), Holding Temperature (Th), Maximum Temperature Limit (Tm), Rated Current (Ir) and Rated Voltage (Ur), Please refer to the specification parameters list for detailed data.

10.2.2 安装温度保险丝时,要确保其安装位置的正常工作环境温度及温度保险丝带载时本体的表面温度不会超过其相应规格中的保持温度(Th)。

When installing the Thermal-link, it is necessary to ensure that the normal working environment temperature of the installation position and the surface temperature of the Thermal-link itself at working are not exceeding the holding temperature (Th) in the related specification.

10.2.3 安装后,需对最终产品进行测试,以确保潜在的异常状况不会导致温度保险丝超过其极限温度(Tm)。

After installation, the final product should be tested to ensure that potential abnormal conditions do not cause ambient temperature to exceed the Maximum Temperature Limit (Tm) of the Thermal-link.

10.2.4 温度保险丝可使用锡焊、点焊、绞接或铆接的方式进行连接于电路中。应确保引脚足够长, 且其安装方式不会造成强行按压、拉伸及扭转引脚的现象。

The Thermal-link can be connected to the circuit by means of soldering, spot welding, splicing or riveting in the circuit. Ensure that the lead wire is long enough and are installed in a way that avoid actions such as press, tensile or twist.

10.2.5 请勿将温度保险丝安装在可能经常出现剧烈振动的位置。勿在水、有机溶剂液体或其他液体、以及亚硫酸气体、酸性气体或高湿度的环境中使用。

Do not install the Thermal-link in a position where severe vibration may occur frequently. Do not use the Thermal-link in water, organic solvents or other liquids, or environments containing sulfurous acid gas, acid gas, or high humidity.

10.2.6 温度保险丝是不可复位的装置。为安全起见,在更换时应使用同类别同型号的温度保险丝并且严格按照同样的方法正确安装在同一位置。

Thermal-link is a non-repairable device. For safety aspect, it shall be replaced by an equivalent Thermal-link, and it should be correctly installed in the same position in strict accordance with the same method.

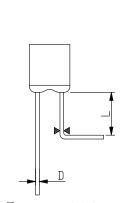
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- 10.3 安装操作 Installation operation
 - 10.3.1 如果需加工弯折引脚,则应确保弯折处与本体间的距离,如下图所示。

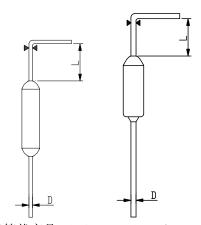
If the lead wire has to be bent, please pay attention to the distance between body and the bending point. Refer to as shown below.

引线直径 (D) Lead diameter	弯折处与本体距离(L) Distance between bend and body
D≤ ф1 mm	L≧3 mm
D> φ1 mm	L≥5 mm

请参考如下弯折加工示意图 Please refer to the following bending processing diagram:



(方壳产品Square shell products)



(管状产品Tubular products)

- 10.3.2 弯折引脚时请使用夹锭钳或其它类似工具将引脚固定,如上图所示,以避免将温度保险丝损坏。
 - When bending the lead wire, please use pincher or similar other tools to fix it as shown above, to avoid damaging the Thermal-link.
- 10.3.3 在引脚成型和安装过程中,对引脚进行裁剪、弯折加工时,勿用力过猛,以免造成产品部件断裂或本体损伤。

During forming and installation, the lead wire should not be cut and bent sharply, so as to avoid breaking the product.

- 10.3.4 应避免直接对引脚根部施加外力,或与温度保险丝的本体形成一定角度的拉力或推力,以免损伤到温度保险丝的密封树脂。
 - It should be avoided to directly apply external force on the root of the lead wire, or form a certain angle of thrust or tension with the body of the Thermal-link, so as to avoid damaging the sealing resin of the Thermal-link.
- 10.3.5 在设计终端产品时,应考虑到与引脚接触的零部件因膨胀及收缩所造成的应力、振动或其他运动对温度保险丝产生不良影响,应采用柔韧的、易弯曲的或低阻抗的引线来连接温度保险丝。

When designing the terminal product, the stress, vibration or other movement caused by the expansion and contraction of the parts in contact with the lead wires should be taken into account, and the flexible and flexible leads or low resistance leads should be used to connect the Thermal-link.

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10.3.6 应确保连接处的接触电阻为最小值,且对连接点进行检查以确保引脚与被连接物连接可靠。 不正确的连接安装可能会造成温度保险丝提前失效,或引起密封树脂处或其他部件的损伤, 并且不良的连接会产生较高阻抗,可能会导致元器件过热而引起断路或损坏。

Contact resistance should be minimal, and check the connection point to ensure that the connection between the lead and the connected object is reliable. Improper connection may cause premature failure of the Thermal-link, causing damage to the sealing resin or other components, and improper connection may cause high resistance, which may cause overheating of components and cause open circuit or damage.

10.4引脚焊接 Soldering

10.4.1 温度保险丝为热敏感组件,若安装时采用焊接的方式,建议采用手工烙铁或过锡焊锡,不建议使用波峰焊。

Thermal-link is a heat sensitive device, If soldering is used during installation, it is recommended to use manual soldering iron, wave soldering is not recommended.

10.4.2 由于温度保险丝中的感温体是可熔化的,因此不正确的焊接操作(例如:温度过高、焊锡时间过长、引脚过短等)可能会导致保险丝内部的感温体被引脚传导的过高热量而受到影响,从而致使温度保险丝提前熔断。

Because the thermal element in the Thermal-link is fusible, improper soldering (for example, too high soldering temperature, too long soldering time, or too short lead wire etc.) will cause the thermal element inside to be affected by the excessive heat conducted by the lead wire, thus causing the Thermal-link to melt in advance.

10.4.3 为防止焊接时的热量引发温度保险丝动作,建议焊接时视需要在焊接点和温度保险丝主体间的引脚上增加辅助散热装置(如散热夹),以便热量散发,并在规定的焊锡时间内完成。焊接依下表所列的条件进行。

In order to prevent the fusing of Thermal-link caused by the heat during soldering, it is recommended to add auxiliary heat dissipation device (such as heat-radiating clip) between solder point and Thermal-link body as necessary, so as to dissipate the heat and complete the soldering within the specified soldering time. Soldering should be carried out according to the conditions listed in the table below.

额定动作温度 Rated Function Temperature	距离本体的引线长度及最大允许焊接时间 Lead length from the body and the maximum allowable soldering time		焊锡条件 Soldering Conditions	
(Tf)	10mm	15mm	20mm	
76℃≤Tf≤100℃	1 s	2 s	3 s	焊锡温度: 300℃
101℃≤Tf≤130℃	2 s	3 s	4 s	Soldering Temperature:
Tf>130℃	3 s	4 s	5 s	300℃

10.4.4 焊接时应小心谨慎,以避免温度保险丝主体和引脚遭受到拉力、推力以及扭力的损伤。

Perform the soldering operation carefully, avoid the damage of the pull, thrust and twist tensions to the body and leads of Thermal-link.

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10.4.5 焊接后应让温度保险丝自然冷却20秒以上,冷却期间请勿移动温度保险丝的本体及引脚。
After soldering, allow the Thermal-link to cool naturally for more than 20 seconds.

Do not move the body and leads of the Thermal-link during cooling time.

11. 规格书的修订和有效性 Revision and validity of specifications

11.1修订协议 Agreement of revision

以上所有参数均可以客户订单要求订制。本规格书的内容若有不充分或有必要修订时,须由双方协商确认并由本公司修改。

All the above parameters can be customized according to customer's order requirements. If the content of this specification is insufficient or necessary to be revised, it shall be confirmed by mutual agreement between the parties and modified by our company.

11.2有效性 Validity

贵司承认期间本规格书可暂时使用,若1个月后贵司无异议或无签回承认,则将之视为有效文件运行。 This specification can be used temporarily during your acceptance period. If you have no any objection or sign back after one month, it will be regarded as a valid document.

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履历表 Revision History

序号 No.	发行日期 Date of Issue	版本号 Version number	修订内容 Revised content
1	2021. 9. 2	1.0	初始版本 First edition