DOCUMENT: R21074
REV LETTER: B
PAGE NO: 1 OF 3
REV DATE: 2019-11-27
PART NUMBER:

LP33-090F

**Polymer
PTC Devices**

R-line resettable fuses

Wayon Electronics Co., Ltd.
No.1001,Shiwan 7th Road,Pudong,Shanghai 201202,P.R.China
Tel: 86-21-50968308   Fax: 86-21-50968310
E-mail: market@way-on.com   *Http://www.way-on.com*
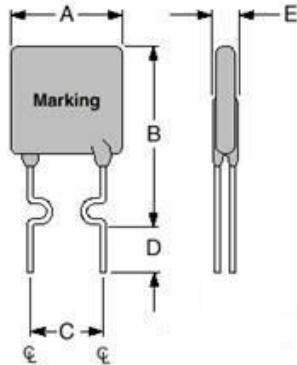
WAYON

Features

- Radial leaded devices
- Rated voltage up to 33V
- UL94 V-0 insulating material
- Agency Recognition: UL、CSA
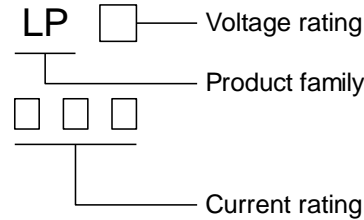- Lead-free and compliant with the European Union RoHS Directive 2011/65/EU

Product Dimensions (mm)

Part number	A	B	C		D	E	Lead
	Max.	Max.	Min.	Max.	Min.	Max.	Size(ϕ)
LP33-090F	6.0	13.0	4.4	5.8	7.6	3.0	0.6

Marking system

LP ☐ — Voltage rating

☐☐☐ — Product family

— Current rating

* Lead materials: Tin-plate metal wire.

* Lead-free devices are available,
  the right logo is lead-free mark of wayon.

Electrical Characteristics

Part number	I_H	I_T	Max. Time-to-trip		V_{max}	I_{max}	Pd_{typ}	R_{min}	R_{max}	R_{1max}
	(A)	(A)	Current(A)	Time(s)	(V)	(A)	(W)	(Ω)	(Ω)	(Ω)
LP33-090F	0.90	1.80	4.50	7.1	33	40	0.91	0.070	0.120	0.220

I_H=Hold current: maximum current at which the device will not trip at 25℃ still air.

I_T=Trip current: minimum current at which the device will always trip at 25℃ still air.

V_{max}=Maximum voltage device can withstand without damage at rated current.

I_{max}=Maximum fault current device can withstand without damage at rated voltage.

Max.Time-to-trip =Maximum time to trip(s) at assigned current.

Pd_{typ}=Typical power dissipation: typical amount of power dissipated by the device when in state air environment.

R_{min}=Minimum device resistance at 25℃ prior to tripping.

R_{max}=Maximum device resistance at 25℃ prior to tripping.

R_{1max}= Maximum resistance of device when measured one hour post trip at 25℃.
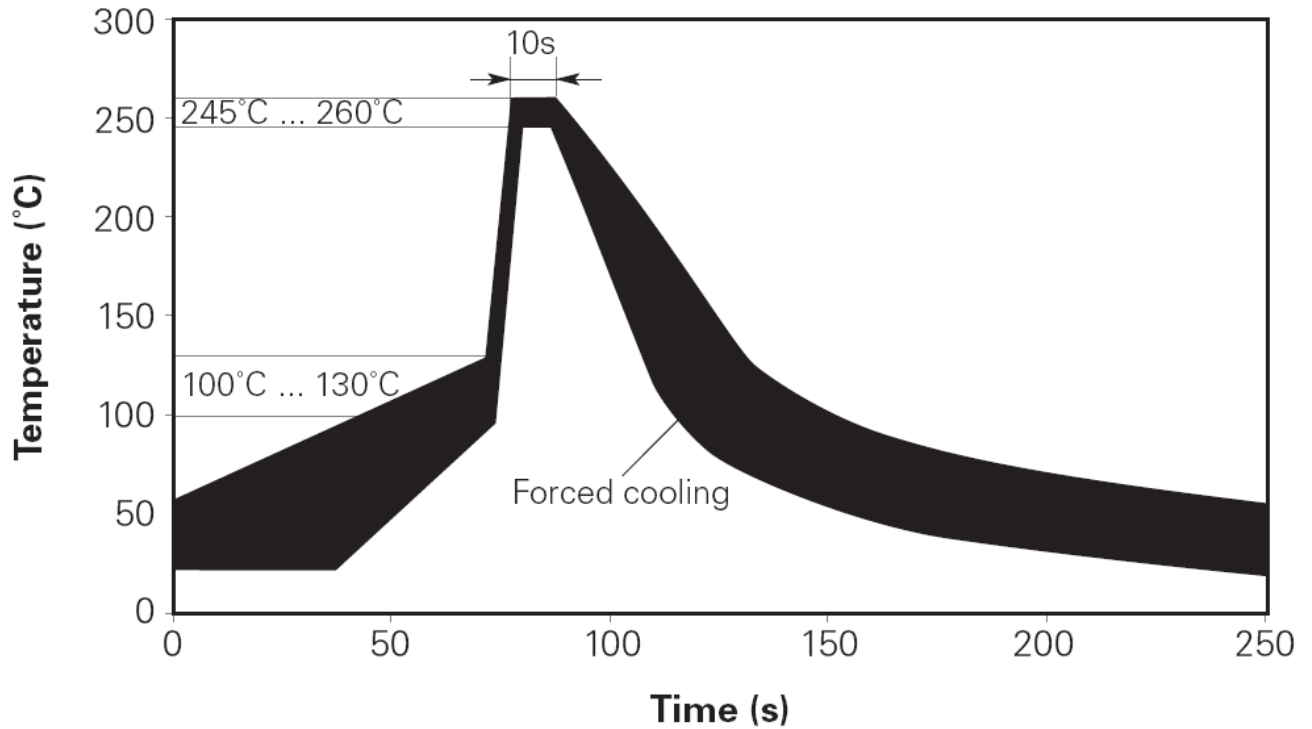
Thermal Derating Chart-IH(A)

Part number	Maximum ambient operating temperatures(℃)								
	-40	-20	0	25	40	50	60	70	85
LP33-090F	1.40	1.25	1.10	0.90	0.75	0.69	0.65	0.60	0.50

Package Information

Bulk: 1000pcs per bag.

Specifications are subject to change without notice

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Soldering Recommendations

Wave Soldering

Hand Soldering

Soldering temperature：350℃±5℃.

Soldering time：no more than 5s.

Soldering position：at least 4 mm away from PTC chip.

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插件 PTC 使用注意事项
Cautions for R-line PTC Use

1. 请在规格书规定的最大电压和最大电流下使用，超出 PTC 最大电压或最大电流规格值的操作，可能会导致 PTC 出现电弧，阻值升高，甚至烧片。

   Operation beyond the maximum voltage or current may result in device damage, PTC arcing, resistance increasing, even burning.

2. 规格书所规定的各温度下的 Hold current 均是 PTC 经过一次波峰焊或手工焊后的常规性能，PTC 能够在不同温度对应的电流条件下保持 1 小时。该电流并不是该型号 PTC 能够适用的长期充电或放电电流的条件。

   The Hold current specified at different temperatures in the datasheet is the conventional performance of after one wave-soldering or manual soldering. PTC can hold 1 hour at the current corresponding to different temperatures. But this current is not the condition that PTC can charging or discharging current for long time.

3. 规格书所规定的电阻以及电气特性，均是基于在维安实验室测试所得。用户应独立评估和测试为其应用选择合适的产品。

   All resistance and the electronic characteristics specified in the datasheet are based on the test tested on Wayon Lab. The applicability needs to be verified because above parameters may be attenuated if customer has other processes, like twice soldering or injection. Customer needs to independently evaluate and test to select appropriate products for their applications.

4. PTC 为热敏元件，对环境温度比较敏感，建议在 PTC 周围不要设计热源元件，尽量减少外部热源的影响。

   PTC is thermal sensitive device. It is recommended that no heat source devices be designed to around in order to reduce the outside heat source impact.

5. 插件 PTC 产品焊接工艺推荐波峰焊或手工焊。焊接工艺可参考维安推荐的回流焊曲线。如果温度超过推荐的值，PTC 将有可能受到损伤。

   Wave Soldering or Hand Soldering are recommended for R-line PTC. Please refer to the Wayon recommended soldering curve. If the soldering temperature exceeds the recommended value, the PTC might be damaged.

6. PTC 组装或应用过程中,所使用到的各类注塑料、单组份、双组份固化胶粘剂、硅胶，需要对注塑料胶料等材料牌号以及应用参数（如温度、时间等）进行验证，以确保产品及工艺的匹配性，确认不会影响 PTC 性能之后方可使用。

   When assembling and applying PTC, the material mark and application parameters (Temperature, Time, and etc.) of all injection or plastic materials, like dhesives, silica gels and etc. should be verified to ensure the consistency between the products and the processing technology. Only it is confirmed that would not influent PTC then can be used.

7. PTC 组装或使用过程中,不建议使用洗板水或其他清洗剂进行清洗。如必须使用，需要验证各类清洗剂、洗板水以及溶剂的适用性，确认不会影响 PTC 性能之后方可使用。已知对 PTC 有影响的化学药品包括但不仅限于醚类、苯类、酮类以及脂类等较强溶解性、破坏性的有机化合物。清洗后将产品放置于敞开的环境中至少 24 小时，将残留的溶剂进行充分的挥发。

8. When assembling and applying PTC, it is not recommended that using washer water or other cleaner to clean PTC. If it is required, it is necessary to verify the applicability of various cleaner, washer water and solvents, it is also confirmed that they will not affect the PTC performance. Chemicals that are known to have an effect on PTC include, but are not limited to, highly solubility and destructive organic compounds such as ethers, benzenes, ketones, and lipids. Placing the product in open environment for at least 24 hours to volatilize the residual solvents.

9. 装配过程中，避免用暴力砸、挤、压、拉、扭、刺等方式作用 PTC 本体，以免引起 PTC 性能衰减。

   Please do not smash, clamp, pull, dent, twist and etc. to PTC during assembling process to avoid the performance degradation.

10. PTC 是二级保护元件，仅用于零星、意外过流或过温等情况，持续或重复的故障情况不得使用。

    PTC is a secondary protector, which is only can be used as sporadic, accidental over-current or over-temperature, the continuous or repeated failure can not use PTC.

11. 不建议将 PTC 安装在空间受到限制的环境中，这将会抑制其 PTC 性能。

    PTC is not recommend installation in space-constrained environments, which can inhibit its performance.