LP-MSM260/12

Polymer PTC Devices

Surface Mount Thermistor

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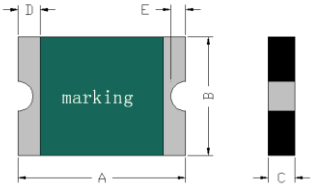
Features

- Small size 1812
- Lead-free and compliant with the European Union RoHS Directive(EU)2015/863
- Fast tripping resettable circuit protection
- Surface mount packaging for automated assembly



Product Dimension (mm)

Part Number	A	B	C	D	E	Part Marking
	Max.	Max.	Max.	Min.	Min.	
LP-MSM260/12	4.95	3.52	1.70	0.30	0.30	W 260

Electrical Characteristics

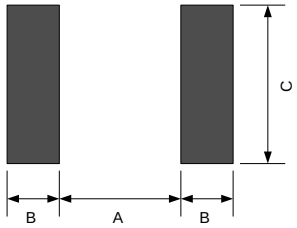
Part Number	I_H	I_T	V_{max}	I_{max}	T_{trip}		Pd_{typ}	R_{min}	R_{1max}
	(A)	(A)	(V)	(A)	Current(A)	Time(S)	(W)	(Ω)	(Ω)
LP-MSM260/12	2.60	5.20	12	40	8.0	2.50	1.0	0.015	0.047

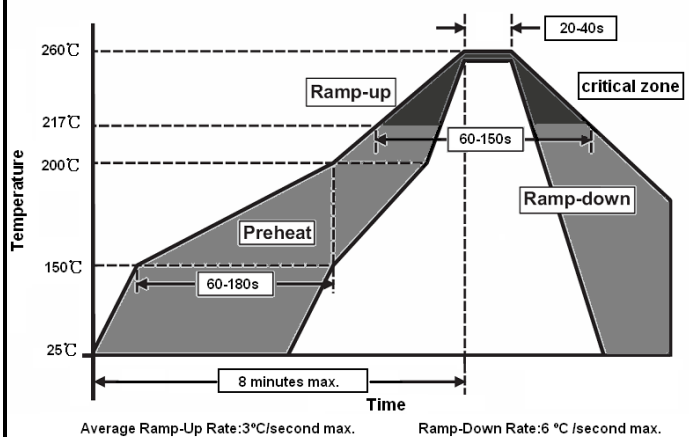
I_H=Hold current: maximum current at which the device will not trip at 25°C still air.
I_T=Trip current: minimum current at which the device will always trip at 25°C still air.
V_{max}=Maximum voltage device can withstand without damage at rated current.
I_{max}=Maximum fault current device can withstand without damage at rated voltage.
T_{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°C prior to tripping.
R_{1max}=Maximum device resistance measured in the nontripped state 1 hour post reflow.

Thermal Derating

LP-MSM260/12	Maximum ambient operating temperatures(°C)								
	-40	-20	0	25	40	50	60	70	85
Hold Current (A)	3.80	3.51	3.12	2.60	2.28	2.10	1.85	1.61	1.29
Trip Current (A)	7.60	7.02	6.24	5.20	4.56	4.20	3.70	3.22	2.58

Solder Reflow Recommendation





Average Ramp-Up Rate:3°C/second max. Ramp-Down Rate:6 °C /second max.

Solder Pad Layout

Part Number	A	B	C
	(mm)	(mm)	(mm)
LP-MSM260/12	3.45	1.78	3.15

* Recommended reflow methods: IR, vapor phase, hot air oven.

Notes:

- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
- Devices are not designed to be wave soldered to the bottom side of the board.

Package Information

Tape & Reel: 1000pcs per reel.

Effectivity: Reference documents shall be the issue in effect on the date of invitation for bid.
Caution: Operation beyond the rated voltage or current may result in rupture electrical arcing or flame. Specifications are subject to change without notice.

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SMD PTC 使用注意事项
Cautions for SMD 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 经过一次回流焊接得出的常规性能，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 reflow welding. 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，均是基于在维安指定测试板经过一次回流焊之后的测试。如果客户有二次回流焊或者注塑点胶等其他热工序，会对上述参数有一定程度的衰减。所以需要验证其适用性。
   All resistance and the electronic characteristics specified in the datasheet are based on the test tested on the specified testing board which is after one reflow welding. The applicability needs to be verified because above parameters may be attenuated if customer has other processes, like twice soldering or injection.
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. PTC 贴片产品是为 SMT 工艺设计的封装形式，焊接工艺为回流焊。焊接工艺可参考维安推荐的回流焊曲线。如果回流焊温度超过推荐的值，PTC 将有可能受到损伤。禁止使用手工焊接 PTC，禁止对线路板其他元件或端子返工时使用热风枪。
   SMD PTC is designed for SMT technology, and its reflow soldering. Please refer to the Wayon recommended soldering curve. If the soldering temperature exceeds the recommended value, the PTC might be damaged. Manual PTC welding is prohibited. Heat gun is not allowed to use in the rework of other components on the board.
6. PTC 贴装或应用过程中,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 贴装或使用过程中，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。
   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.
8. 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.
9. 在产品应用中，PTC 焊接至保护板后，如需注塑或打胶，须在尽量短的时间内完成，如贴装与注塑打胶时间间隔超过 1 个月，则需密闭保存，可避免 PTC 长时间暴露于空气环境中。
   In the application, after the PTC soldered in the board, please finish the injection or glue as soon as possible. IF the time lag between the injection and glue more than 1 month, PTC needs to reserve in the closed space so as to avoid PTC expose to the air too long.
10. PTC 为自恢复保护元件，但并不能当做开关使用，重复多次的保护会降低 PTC 的维持电流。
    PTC is resettable protector, which shall not be used as switch. The hold current will reduced after repeated tripping.
11. PTC 在充电线端应用中，建议使用 PP 类材料做内膜，禁止使用 TPE 类与 PVC 类等材料做内膜。
    If PTC applied in the charging terminal, the PP material is recommended as inner membrane, TPE or PVC materials are prohibited.
12. 维安 SMD PTC 湿敏等级为 1 级，为密封包装。客户如在库存中发现有包装破损的，立即将产品隔离处理；使用时如有余料，需恢复之前包装状态，做密封保存。
    The MSL level of SMD PTC is 1, which is sealed packed. If any damaged package is found by customer, please isolate them. If there is rest parts, needs repack it as the previous package and reserve hermetically.
13. 产品报废时，可随着终端的产品，按照当地的法律法规回收报废，具体原材料组成可参见 MSDS
    When the product is finally discarded, it can be treated recycled in accordance with local laws and regulations, and raw material compositions of PPTC can be referred to MSDS.