**LP-MSM020**

# Polymer PTC Devices

***Surface mount fuses***

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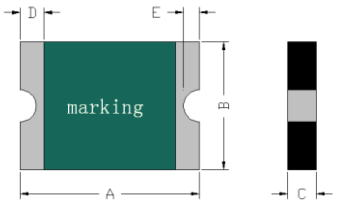
## Features

- ☐ Small size of 1812
- ☐ Lead-free and compliant with the European Union RoHS Directive 2011/65/EU
- ☐ Fast tripping resettable circuit protection
- ☐ Surface mount packaging for automated assembly
- ☐ Agency Recognition: UL、CSA、TUV




## Product Dimensions (mm)

| Part number | A | B | C | D | E |
|---|---|---|---|---|---|
| | Max. | Max. | Max. | Min. | Min. |
| LP-MSM020 | 4.73 | 3.41 | 1.00 | 0.30 | 0.30 |

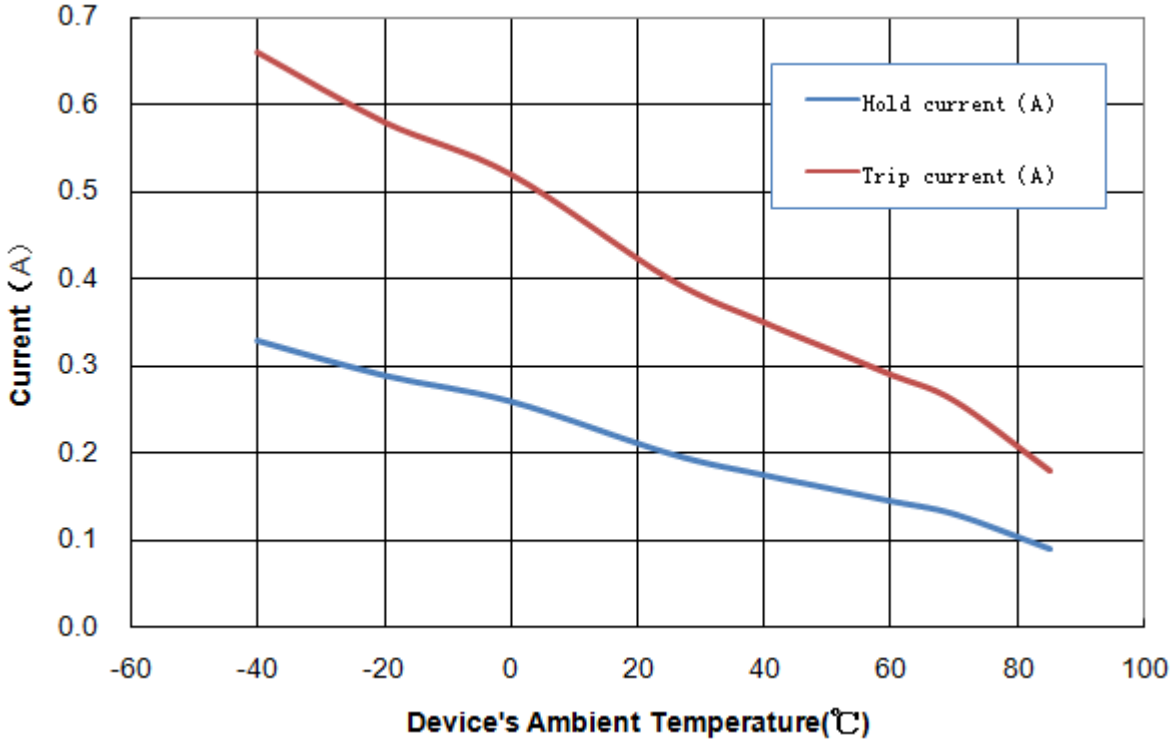

## Electrical Characteristics

| 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-MSM020 | 0.20 | 0.40 | 30 | 10 | 6.0 | 0.02 | 1.0 | 0.60 | 5.00 |

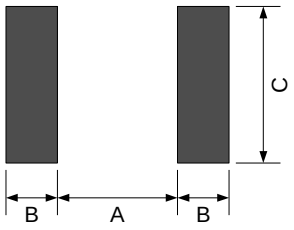
$I_H$=Hold current: maximum current at which the device will not trip at 25℃ still air.
$I_T$=Trip current: minimum current at which the device will always trip at 25℃ still air.
$V_{max}$=Maximum voltage device can withstand without damage at rated current.
$I_{max}$=Maximum fault current device can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

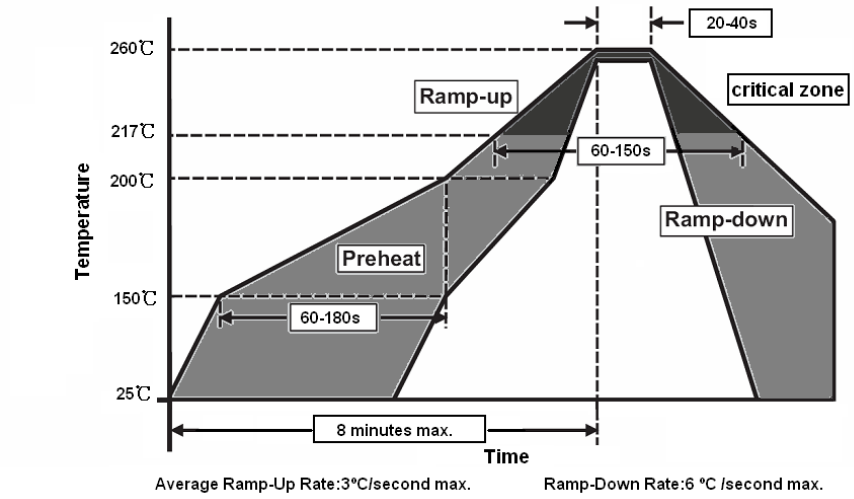
## Thermal Derating

| LP-MSM020 | Maximum ambient operating temperature(℃) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | -40 | -20 | 0 | 20 | 25 | 40 | 50 | 60 | 70 | 85 |
| Hold Current (A) | 0.33 | 0.29 | 0.26 | 0.22 | 0.20 | 0.175 | 0.16 | 0.15 | 0.13 | 0.09 |
| Trip Current (A) | 0.66 | 0.58 | 0.52 | 0.44 | 0.40 | 0.34 | 0.32 | 0.30 | 0.26 | 0.18 |



## Solder Reflow Recommendations




### Solder Pad Layouts

| Part number | A | B | C |
|---|---|---|---|
| | (mm) | (mm) | (mm) |
| LP-MSM020 | 3.45 | 1.78 | 3.15 |

* Recommended reflow methods: IR, Vapor phase, hot air oven.
* Devices can be cleaned using standard industry methods and solvents.

**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: 2000pcs per reel.
Moisture Sensitivity Level：1

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.