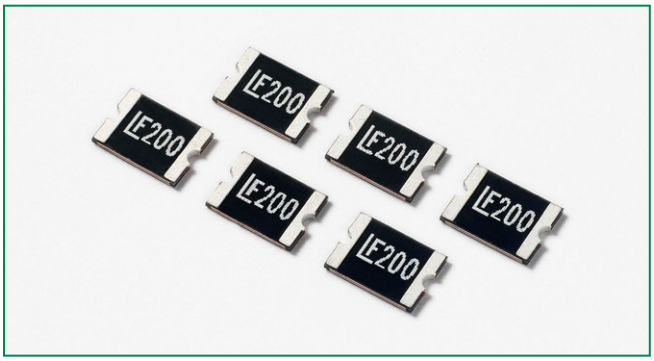
# THE DATASHEET OF

# 1812L150PRT

# POLY-FUSE® Resettable PTCs

## Surface Mount > 1812L Series

## 1812L Series




## Description

The 1812L Series PTC provides surface mount overcurrent protection for applications where resettable protection is desired.

## Features

- RoHS compliant, lead-free and halogen-free
- Fast response
- Compact design
- Low resistance
- Low-profile
- Compatible with high temperature solders

## Agency Approvals

| AGENCY | AGENCY FILE NUMBER |
|---|---|
| c UL us | E183209 |
| | R50119118 |

## Applications

- Plug and play protection for motherboards and peripherals
- USB peripherals
- PCI cards
- Game console port protection

## Electrical Characteristics

| Part Number | Marking | $I_{hold}$ (A) | $I_{trip}$ (A) | $V_{max}$ (Vdc) | $I_{max}$ (A) | $P_d$ typ. (W) | Max. Time To Trip | | Resistance | | Agency Approvals | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Current (A) | Time (Sec.) | $R_{min}$ (Ω) | $R_{1max}$ (Ω) | c UL us | |
| 1812L010 | LF010 | 0.10 | 0.30 | 30 | 100 | 0.8 | 0.50 | 1.50 | 1.600 | 15.000 | X | X |
| 1812L010/60 | LF010-60 | 0.10 | 0.30 | 60 | 10 | 0.8 | 0.50 | 1.50 | 1.600 | 15.000 | X | X |
| 1812L014 | LF014 | 0.14 | 0.34 | 60 | 10 | 0.8 | 1.50 | 0.15 | 1.500 | 6.000 | X | X |
| 1812L020 | LF020 | 0.20 | 0.40 | 30 | 100 | 0.8 | 8.00 | 0.02 | 0.800 | 5.000 | X | X |
| 1812L020/60 | LF020-60 | 0.20 | 0.40 | 60 | 40 | 0.8 | 1.00 | 2.00 | 1.400 | 4.400 | X | X |
| 1812L035/30 | LF035-30 | 0.35 | 0.75 | 30 | 40 | 0.8 | 8.00 | 0.15 | 0.400 | 1.700 | X | X |
| 1812L035/60 | LF035-60 | 0.35 | 0.70 | 60 | 10 | 1.00 | 8.00 | 0.15 | 0.400 | 1.700 | X | X |
| 1812L050 [1] | LF050 | 0.50 | 1.00 | 15 | 100 | 0.8 | 8.00 | 0.15 | 0.150 | 1.000 | X | X |
| 1812L050/30 | LF050-30 | 0.50 | 1.00 | 30 | 100 | 0.8 | 8.00 | 0.15 | 0.150 | 1.000 | X | X |
| 1812L050/60 | LF050-60 | 0.50 | 1.00 | 60 | 10 | 1.50 | 8.00 | 0.15 | 0.150 | 1.000 | X | X |
| 1812L075 [1] | LF075 | 0.75 | 1.50 | 13.2 | 100 | 0.8 | 8.00 | 0.20 | 0.100 | 0.450 | X | X |
| 1812L075/24 [2] | LF075-24 | 0.75 | 1.50 | 24 | 100 | 0.8 | 8.00 | 0.20 | 0.110 | 0.290 | X | X |
| 1812L075/33 | LF075-33 | 0.75 | 1.50 | 33 | 20 | 0.8 | 8.00 | 0.20 | 0.110 | 0.400 | X | X |
| 1812L110 [1] | LF110 | 1.10 | 2.20 | 8 | 100 | 0.8 | 8.00 | 0.30 | 0.040 | 0.210 | X | X |
| 1812L110/16 | LF110-16 | 1.10 | 1.95 | 16 | 100 | 0.8 | 8.00 | 0.30 | 0.060 | 0.180 | X | X |
| 1812L110/24 | LF110-24 | 1.10 | 1.95 | 24 | 20 | 0.8 | 8.00 | 0.50 | 0.060 | 0.200 | X | X |
| 1812L110/33 | LF110-33 | 1.10 | 1.95 | 33 | 20 | 0.8 | 8.00 | 0.50 | 0.060 | 0.200 | X | X |
| 1812L125/6 | LF125-6 | 1.25 | 2.50 | 6 | 100 | 0.8 | 8.00 | 0.40 | 0.050 | 0.140 | X | X |
| 1812L125/16 | LF125 | 1.25 | 2.50 | 16 | 100 | 0.8 | 8.00 | 0.40 | 0.050 | 0.140 | X | X |
| 1812L150 [1] | LF150 | 1.50 | 3.00 | 8 | 100 | 0.8 | 8.00 | 0.30 | 0.040 | 0.110 | X | X |
| 1812L150/12 | LF150-12 | 1.50 | 3.00 | 12 | 100 | 0.8 | 8.00 | 0.50 | 0.040 | 0.110 | X | X |
| 1812L150/16 | LF150-16 | 1.50 | 2.80 | 16 | 100 | 0.8 | 8.00 | 0.50 | 0.040 | 0.110 | X | X |
| 1812L150/24 [2] | LF150-24 | 1.50 | 3.00 | 24 | 20 | 0.8 | 8.00 | 1.50 | 0.040 | 0.120 | X | X |
| 1812L160 [1] | LF160 | 1.60 | 2.80 | 8 | 100 | 0.8 | 8.00 | 1.00 | 0.030 | 0.100 | X | X |
| 1812L160/12 | LF160-12 | 1.60 | 2.80 | 12 | 100 | 0.8 | 8.00 | 1.00 | 0.030 | 0.100 | X | X |
| 1812L200TH [1] | LF200 | 2.00 | 3.50 | 8 | 100 | 0.8 | 8.00 | 2.00 | 0.020 | 0.070 | X | X |

**continues on next page.**

$I_{hold}$ = Hold current: maximum current device will pass without tripping in 20°C still air.
$I_{trip}$ = Trip current: minimum current at which the device will trip in 20°C still air.
$V_{max}$ = Maximum voltage device can withstand without damage at rated current (I max)
$I_{max}$ = Maximum fault current device can withstand without damage at rated voltage ($V_{max}$)
$P_d$ = Power dissipated from device when in the tripped state at 20°C still air.
$R_{min}$ = Minimum resistance of device in initial (un-soldered) state.
$R_{typ}$ = Typical resistance of device in initial (un-soldered) state.
$R_{1max}$ = Maximum resistance of device at 20°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

**Caution:** Operation beyond the specified rating may result in damage and possible arcing and flame.

**1** Some older references to these devices may include "**–C**" in the Part Number. The "**–C**" should be omitted when placing new orders for the device.
**2** Part Number with note 2 tested and complied with AEC Q200.

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Revised: 02/25/19

## Electrical Characteristics

| Part Number | Marking | $I_{hold}$ (A) | $I_{trip}$ (A) | $V_{max}$ (Vdc) | $I_{max}$ (A) | $P_d$ typ. (W) | Max. Time To Trip | | Resistance | | Agency Approvals | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Current (A) | Time (Sec.) | $R_{min}$ (Ω) | $R_{1max}$ (Ω) | c UL us | TÜV |
| 1812L200/12 | LF200-12 | 2.00 | 3.50 | 12 | 100 | 1.0 | 8.00 | 2.00 | 0.020 | 0.070 | X | X |
| 1812L200/16 | LF200-16 | 2.00 | 3.50 | 16 | 100 | 1.0 | 8.00 | 2.00 | 0.020 | 0.070 | X | X |
| 1812L260TH [1] | LF260 | 2.60 | 5.20 | 8 | 100 | 0.8 | 8.00 | 2.50 | 0.015 | 0.047 | X | X |
| 1812L260/12 | LF260-12 | 2.60 | 5.00 | 12 | 100 | 0.8 | 8.00 | 5.00 | 0.015 | 0.055 | X | X |
| 1812L260/16 | LF260-16 | 2.60 | 5.00 | 16 | 100 | 1.2 | 8.00 | 5.00 | 0.015 | 0.050 | X | X |
| 1812L300 | LF300 | 3.00 | 5.00 | 6 | 100 | 0.8 | 8.00 | 4.00 | 0.012 | 0.040 | X | X |

$I_{hold}$ = Hold current: maximum current device will pass without tripping in 20°C still air.
$I_{trip}$ = Trip current: minimum current at which the device will trip in 20°C still air.
$V_{max}$ = Maximum voltage device can withstand without damage at rated current (I max)
$I_{max}$ = Maximum fault current device can withstand without damage at rated voltage ($V_{max}$)
$P_d$ = Power dissipated from device when in the tripped state at 20°C still air.

$R_{min}$ = Minimum resistance of device in initial (un-soldered) state.
$R_{typ}$ = Typical resistance of device in initial (un-soldered) state.
$R_{1max}$ = Maximum resistance of device at 20°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

**Caution:** Operation beyond the specified rating may result in damage and possible arcing and flame.

**1** Some older references to these devices may include "**–C**" in the Part Number. The "**–C**" should be omitted when placing new orders for the device.
**2** Part Number with note 2 tested and complied with AEC Q200.

## Temperature Rerating

| | Ambient Operation Temperature | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | -40°C | -20°C | 0°C | 20°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| Part Number | Hold Current (A) | | | | | | | | |
| 1812L010 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.07 | 0.06 | 0.05 | 0.03 |
| 1812L010/60 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.07 | 0.06 | 0.05 | 0.03 |
| 1812L014 | 0.23 | 0.19 | 0.17 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 | 0.06 |
| 1812L020 | 0.29 | 0.26 | 0.23 | 0.20 | 0.17 | 0.15 | 0.14 | 0.12 | 0.10 |
| 1812L020/60 | 0.29 | 0.26 | 0.23 | 0.20 | 0.17 | 0.15 | 0.14 | 0.12 | 0.10 |
| 1812L035/30 | 0.50 | 0.45 | 0.40 | 0.35 | 0.30 | 0.26 | 0.24 | 0.20 | 0.16 |
| 1812L035/60 | 0.50 | 0.46 | 0.40 | 0.35 | 0.30 | 0.26 | 0.24 | 0.20 | 0.16 |
| 1812L050 | 0.77 | 0.68 | 0.59 | 0.50 | 0.44 | 0.40 | 0.37 | 0.33 | 0.29 |
| 1812L050/30 | 0.77 | 0.68 | 0.59 | 0.50 | 0.44 | 0.40 | 0.37 | 0.33 | 0.29 |
| 1812L050/60 | 0.77 | 0.68 | 0.59 | 0.50 | 0.44 | 0.40 | 0.37 | 0.33 | 0.29 |
| 1812L075 | 1.15 | 1.01 | 0.88 | 0.75 | 0.65 | 0.60 | 0.55 | 0.49 | 0.43 |
| 1812L075/24 | 1.06 | 0.95 | 0.84 | 0.75 | 0.60 | 0.55 | 0.50 | 0.45 | 0.37 |
| 1812L075/33 | 1.10 | 1.00 | 0.88 | 0.75 | 0.66 | 0.60 | 0.56 | 0.47 | 0.36 |
| 1812L110 | 1.59 | 1.43 | 1.26 | 1.10 | 0.95 | 0.87 | 0.80 | 0.71 | 0.60 |
| 1812L110/16 | 1.58 | 1.43 | 1.27 | 1.10 | 0.95 | 0.85 | 0.77 | 0.71 | 0.58 |
| 1812L110/24 | 1.55 | 1.40 | 1.25 | 1.10 | 0.93 | 0.83 | 0.73 | 0.63 | 0.50 |
| 1812L110/33 | 1.55 | 1.40 | 1.25 | 1.10 | 0.93 | 0.83 | 0.73 | 0.63 | 0.50 |
| 1812L125/6 | 2.00 | 1.75 | 1.52 | 1.25 | 1.00 | 0.95 | 0.90 | 0.75 | 0.53 |
| 1812L125/16 | 2.00 | 1.75 | 1.52 | 1.25 | 1.00 | 0.95 | 0.90 | 0.75 | 0.53 |
| 1812L150 | 2.06 | 1.93 | 1.79 | 1.50 | 1.28 | 1.10 | 1.02 | 0.80 | 0.68 |
| 1812L150/12 | 2.04 | 1.88 | 1.68 | 1.50 | 1.25 | 1.10 | 1.00 | 0.80 | 0.60 |
| 1812L150/16 | 2.04 | 1.88 | 1.68 | 1.50 | 1.25 | 1.10 | 1.00 | 0.80 | 0.60 |
| 1812L150/24 | 2.05 | 1.87 | 1.67 | 1.50 | 1.25 | 1.08 | 0.95 | 0.77 | 0.60 |
| 1812L160 | 2.20 | 2.06 | 1.91 | 1.60 | 1.36 | 1.17 | 1.09 | 0.85 | 0.72 |
| 1812L160/12 | 2.20 | 2.06 | 1.91 | 1.60 | 1.36 | 1.17 | 1.09 | 0.85 | 0.72 |
| 1812L200TH | 2.60 | 2.44 | 2.22 | 2.00 | 1,78 | 1.67 | 1.50 | 1.45 | 1.29 |
| 1812L200/12 | 2.60 | 2.44 | 2.22 | 2.00 | 1.78 | 1.67 | 1.50 | 1.45 | 1.29 |
| 1812L200/16 | 2.60 | 2.44 | 2.22 | 2.00 | 1.78 | 1.67 | 1.50 | 1.45 | 1.29 |
| 1812L260TH | 3.40 | 3.16 | 3.00 | 2.60 | 2.30 | 2.15 | 2.00 | 1.85 | 1.63 |
| 1812L260/12 | 3.40 | 3.16 | 3.00 | 2.60 | 2.30 | 2.15 | 2.00 | 1.85 | 1.63 |
| 1812L260/16 | 3.40 | 3.16 | 3.30 | 2.60 | 2.30 | 2.15 | 2.00 | 1.85 | 1.63 |
| 1812L300 | 4.13 | 3.75 | 3.30 | 3.00 | 2.62 | 2.43 | 2.25 | 2.00 | 1.78 |

Notes: The temperature rerating data is only for reference, please contact Littelfuse technical support for detail temperature rerating information.

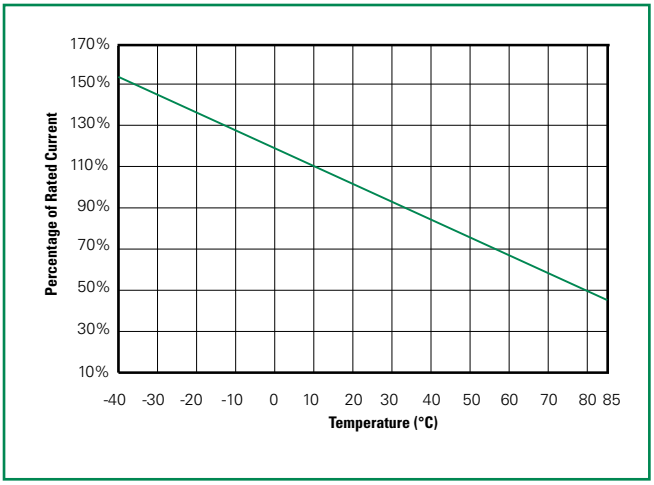

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# POLY-FUSE® Resettable PTCs

## Surface Mount > 1812L Series

### Temperature Rerating Curve




Note:
Typical Temperature rerating curve, refer to table for derating data

### Physical Specifications

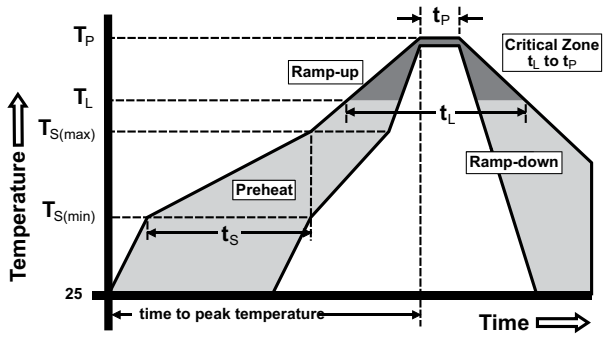
| | |
|---|---|
| **Terminal Material** | Solder-Plated Copper (Solder Material: Matte Tin (Sn)) |
| **Lead Solderability** | Meets EIA Specification RS186-9E, ANSI/ J-STD-002 Category 3. |

### Environmental Specifications

| | |
|---|---|
| **Operating/Storage Temp.** | -40°C to +85°C |
| **Max. Device Surface Temp. in Tripped State** | 125°C |
| **Passive Aging** | +85°C, 1000 hours<br>-/+5% typical resistance change |
| **Humidity Aging** | +85°C, 85% R.H.,1000 hours<br>-/+5% typical resistance change |
| **Thermal Shock** | MIL–STD–202, Method 107<br>+85°C/-40°C 20 times<br>-30% typical resistance change |
| **Solvent Resistance** | MIL–STD–202, Method 215,<br>No change |
| **Vibration** | MIL–STD–883, Method 2007,<br>Condition A, No change |
| **Moisture Level Sesitivity** | Level 1, J–STD–020 |

### Soldering Parameters

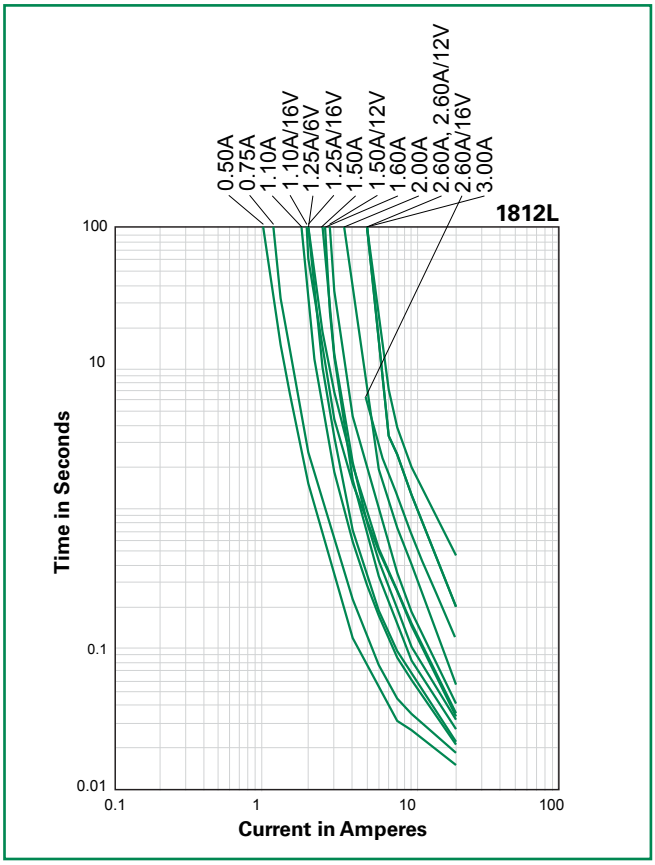
| | | |
|---|---|---|
| Profile Feature | | Pb-Free Assembly |
| Average Ramp-Up Rate ($T_{S(max)}$ to $T_P$) | | 3°C/second max |
| Pre Heat: | Temperature Min ($T_{s(min)}$) | 150°C |
| | Temperature Max ($T_{s(max)}$) | 200°C |
| | Time (Min to Max) ($t_s$) | 60 – 180 secs |
| Time Maintained Above: | Temperature ($T_L$) | 217°C |
| | Temperature ($t_L$) | 60 – 150 seconds |
| Peak / Classification Temperature ($T_P$) | | $260^{+0/-5}$ °C |
| Time within 5°C of actual peak Temperature ($t_p$) | | 20 – 40 seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature ($T_P$) | | 8 minutes Max. |

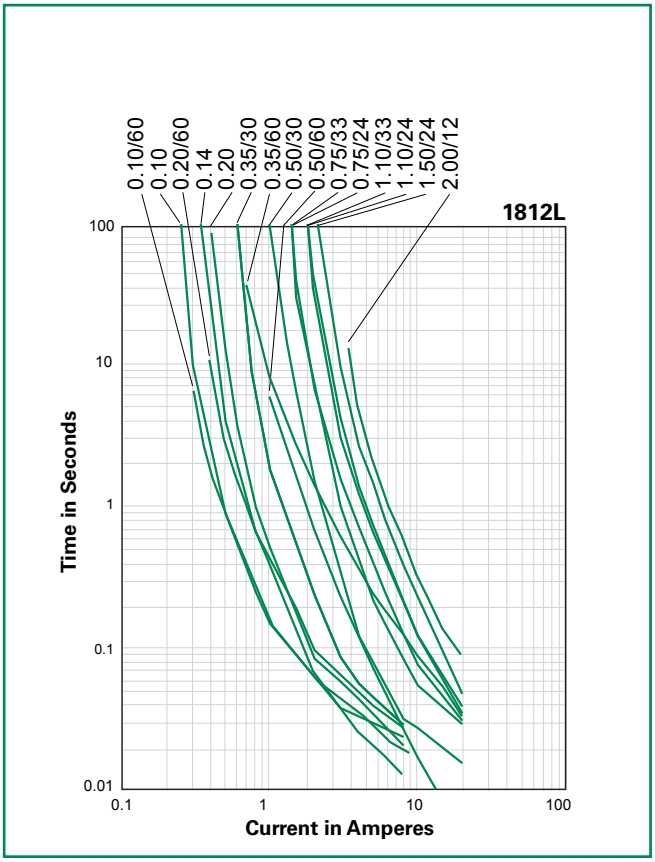



- All temperature refer to topside of the package, measured on the package body surface
- If reflow temperature exceeds the recommended profile, devices may not meet the performance requirements
- Recommended reflow methods: IR, vapor phase oven, hot air oven, $N_2$ environment for lead
- Recommended maximum paste thickness is 0.25mm (0.010inch)
- Devices can be cleaned using standard industry methods and solvents
- Devices can be reworked using the standard industry practices

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## Average Time Current Curves




The average time current curves and Temperature Rerating curve performance is affected by a number or variables, and these curves provided as guidance only. Customer must verify the performance in their application.

## Additional Information

**Datasheet** | **Resources** | **Samples**


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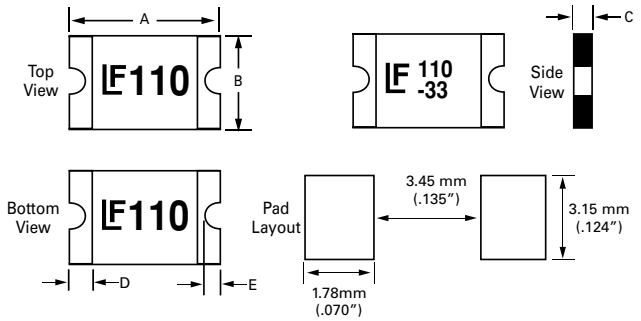

Revised: 02/25/19

# POLY-FUSE® Resettable PTCs

## Surface Mount > 1812L Series

## Dimensions

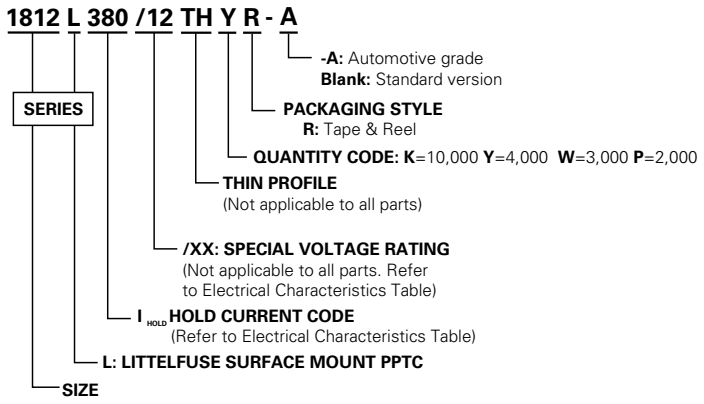
MARKING CODE VARIES
WITH AMPERAGE AND VOLTAGE RATING
(See Electrical Characteristics Table)
SHOWN ARE:
- 1.1A/6V RATING (LEFT)
- 1.1A/33V RATING (RIGHT)




| Part Number | A | | | | B | | | | C | | | | D | | | | E | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches | | mm | | Inches | | mm | | Inches | | mm | | Inches | | mm | | Inches | | mm | |
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| 1812L010 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.75 | 1.25 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L010/60 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.75 | 1.25 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L014 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.08 | 0.75 | 1.95 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L020 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.04 | 0.55 | 1.00 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L020/60 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.75 | 1.25 | 0.01 | 0.05 | 0.3 | 1.20 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L035/30 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.04 | 0.6 | 1.25 | 0.01 | 0.05 | 0.3 | 1.20 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L035/60 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.05 | 0.07 | 1.2 | 1.8 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L050 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.03 | 0.5 | 0.75 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.02 | 0.15 | 0.50 |
| 1812L050/30 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.04 | 0.5 | 1.00 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L050/60 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.05 | 0.07 | 1.2 | 1.8 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L075 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.03 | 0.5 | 0.75 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.02 | 0.15 | 0.50 |
| 1812L075/24 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.75 | 1.20 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L075/33 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.06 | 0.75 | 1.55 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L110 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.03 | 0.50 | 0.71 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.02 | 0.15 | 0.65 |
| 1812L110/24 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.04 | 0.50 | 1.07 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L110/16 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.75 | 1.25 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L110/33 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.05 | 0.08 | 1.20 | 2.00 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L125/6 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.03 | 0.45 | 0.75 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L125/16 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.75 | 1.25 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.02 | 0.15 | 0.65 |
| 1812L150 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.03 | 0.30 | 0.71 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L150/12 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.75 | 1.25 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L150/16 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.75 | 1.25 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L150/24 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.07 | 0.80 | 1.8 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L160 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.03 | 0.40 | 0.75 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L160/12 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.75 | 1.25 | 0.01 | 0.05 | 0.3 | 1.2 | 1.2 | 0.01 | 0.15 | 0.65 |
| 1812L200TH | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.008 | 0.024 | 0.20 | 0.6 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.02 | 0.15 | 0.65 |
| 1812L200/12 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.80 | 1.20 | 0.012 | 0.047 | 0.3 | 1.2 | 0.01 | 0.026 | 0.15 | 0.65 |
| 1812L200/16 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.80 | 1.20 | 0.012 | 0.047 | 0.3 | 1.2 | 0.01 | 0.026 | 0.15 | 0.65 |
| 1812L260TH | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.04 | 0.50 | 1.00 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.02 | 0.15 | 0.65 |
| 1812L260/12 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.03 | 0.05 | 0.80 | 1.34 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |
| 1812L260/16 | 0.18 | 0.19 | 4.54 | 4.90 | 0.12 | 0.14 | 3.16 | 3.50 | 0.05 | 0.08 | 1.20 | 2.00 | 0.012 | 0.047 | 0.3 | 1.2 | 0.006 | 0.03 | 0.15 | 0.65 |
| 1812L300 | 0.17 | 0.19 | 4.37 | 4.73 | 0.12 | 0.13 | 3.07 | 3.41 | 0.02 | 0.06 | 0.50 | 1.50 | 0.01 | 0.05 | 0.3 | 1.2 | 0.01 | 0.03 | 0.15 | 0.65 |

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## Part Ordering Number System




## Packaging

| Part Number | Ordering Number | Halogen Free | $I_{hold}$ (A) | $I_{hold}$ Code | Voltage Option | Packaging Option | Quantity | Quantity & Packaging Code |
|---|---|---|---|---|---|---|---|---|
| 1812L010 | 1812L010DR | Yes | 0.10 | 010 | | Tape and Reel | 1500 | DR |
| 1812L010/60 | 1812L010/60DR | Yes | 0.10 | 010 | /60 | | 1500 | DR |
| 1812L014 | 1812L014DR | Yes | 0.14 | 014 | | | 1500 | DR |
| 1812L020 | 1812L020PR | Yes | 0.20 | 020 | | | 2000 | PR |
| 1812L020/60 | 1812L020/60DR | Yes | 0.20 | 020 | /60 | | 1500 | DR |
| 1812L035/30 | 1812L035/30DR | Yes | 0.35 | 035 | /30 | | 1500 | DR |
| 1812L035/60 | 1812L035/60 | Yes | 0.35 | 035 | /60 | | 1000 | MR |
| 1812L050 | 1812L050PR | Yes | 0.50 | 050 | | | 2000 | PR |
| 1812L050/30 | 1812L050/30PR | Yes | 0.50 | 050 | /30 | | 2000 | PR |
| 1812L050/60 | 1812L050/60 | Yes | 0.50 | 050 | /60 | | 1000 | MR |
| 1812L075 | 1812L075PR | Yes | 0.75 | 075 | | | 2000 | PR |
| 1812L75/24 | 1812L075/24DR | Yes | 0.75 | 075 | /24 | | 1500 | DR |
| 1812L75/33 | 1812L075/33DR | Yes | 0.75 | 075 | /33 | | 1500 | DR |
| 1812L110 | 1812L110PR | Yes | 1.10 | 110 | | | 2000 | PR |
| 1812L110/16 | 1812L110/16DR | Yes | 1.10 | 110 | /16 | | 1500 | DR |
| 1812L110/24 | 1812L110/24DR | Yes | 1.10 | 1.10 | /24 | | 1500 | DR |
| 1812L110/33 | 1812L110/33MR | Yes | 1.10 | 110 | /33 | | 1000 | MR |
| 1812L125/6 | 1812L125/6PR | Yes | 1.25 | 125 | /6 | | 2000 | PR |
| 1812L125/16 | 1812L125/16DR | Yes | 1.25 | 125 | /16 | | 1500 | DR |
| 1812L150 | 1812L150ZR | Yes | 1.50 | 150 | | | 2000 | ZR |
| 1812L150/12 | 1812L150/12DR | Yes | 1.50 | 150 | /12 | | 1500 | DR |
| 1812L150/16 | 1812L150/16DR | Yes | 1.50 | 150 | /16 | | 1500 | DR |
| 1812L150/24 | 1812L150/24MR | Yes | 1.50 | 150 | /24 | | 1000 | MR |
| 1812L160 | 1812L160PR | Yes | 1.60 | 160 | | | 2000 | PR |
| 1812L160/12 | 1812L160/12DR | Yes | 1.60 | 160 | /12 | | 1500 | DR |
| 1812L200TH | 1812L200THPR | Yes | 2.00 | 200 | | | 2000 | PR |
| 1812L200/12 | 1812L200/12DR | Yes | 2.00 | 200 | /12 | | 1500 | DR |
| 1812L200/16 | 1812L200/16DR | Yes | 2.00 | 200 | | | 1500 | DR |
| 1812L260TH | 1812L260THDR | Yes | 2.60 | 260 | | | 1500 | DR |
| 1812L260/12 | 1812L260/12MR | Yes | 2.60 | 260 | /12 | | 1000 | MR |
| 1812L260/16 | 1812L260/16MR | Yes | 2.60 | 260 | | | 1000 | MR |
| 1812L300 | 1812L300MR | Yes | 3.00 | 300 | | | 1000 | MR |

**WARNING**

- Users shall independently assess the suitability of these devices for each of their applications
- Operation of these devices beyond the stated maximum ratings could result in damage to the devices and lead to electrical arcing and/or fire
- These devices are intended to protect against the effects of temporary over-current or over-temperature conditions and are not intended to perform as protective devices where such conditions are expected to be repetitive or prolonged in duration
- Exposure to silicon-based oils, solvents, electrolytes, acids, and similar materials can adversely affect the performance of these PPTC devices
- These devices undergo thermal expansion under fault conditions, and thus shall be provided with adequate space and be protected against mechanical stresses
- Circuits with inductance may generate a voltage (L di/dt) above the rated voltage of the PPTC device.


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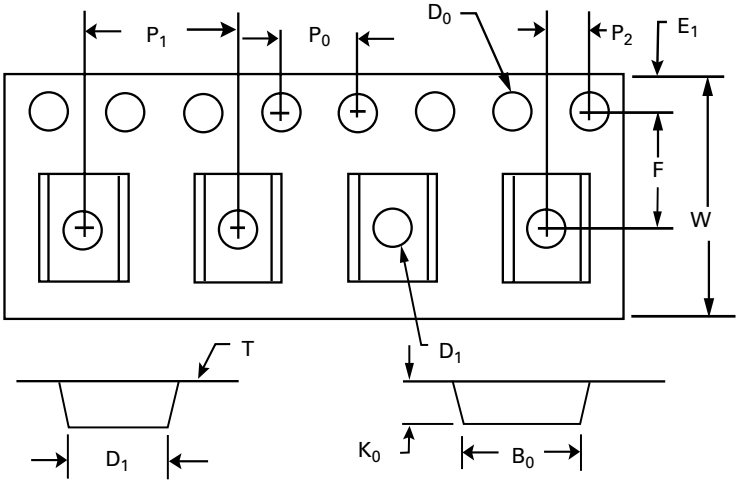
## Tape and Reel Specifications

| TAPE SPECIFICATIONS: EIA-481-1 (mm) | | | |
|---|---|---|---|
| | 1812L020<br>1812L050/30<br>1812L050<br>1812L075<br>1812L110<br>1812L125/6<br>1812L150<br>1812L160<br>1812L200 | 1812L010<br>1812L010/60<br>1812L014<br>1812L020/60<br>1812L035/30<br>1812L075/24<br>1812L075/33<br>1812L110/16<br>1812L110/24<br>1812L125/16<br>1812L150/12<br>1812L150/16<br>1812L160/12<br>1812L200/12<br>1812L200/16<br>1812L260 | 1812L035/60<br>1812L050/60<br>1812L110/33<br>1812L150/24<br>1812L260/12<br>1812L260/16<br>1812L300 |
| **W** | 12.00 ± 0.30 | 12.00 ± 0.30 | 12.00 ± 0.30 |
| **F** | 5.50 ± 0.05 | 5.50 ± 0.05 | 5.50 ± 0.05 |
| **$E_1$** | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 |
| **$D_0$** | 1.55 ± 0.10 | 1.55+/-0.05 | 1.55 ± 0.05 |
| **$D_1$** | 1.55 (min) | 1.50+/-0.10 | 1.50 (MIN) |
| **$P_0$** | 4.00 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.08 |
| **$P_1$** | 8.00 ± 0.10 | 8.00 ± 0.10 | 8.00 ± 0.10 |
| **$P_2$** | 2.00 ± 0.05 | 2.00 ± 0.05 | 2.00 ± 0.05 |
| **$A_0$** | 3.58 ± 0.10 | 3.50 ± 0.10 | 3.58 ± 0.10 |
| **$B_0$** | 4.93 ± 0.10 | 4.85± 0.10 | 4.93 ± 0.10 |
| **T** | 0.25 ± 0.10 | 0.25 ± 0.10 | 0.25 ± 0.10 |
| **$K_0$** | 0.87± 0.06 | 1.25 ± 0.10 | 2.10 ±0.10 |
| **Leader min.** | 390 | 390 | 390 |
| **Trailer min.** | 160 | 160 | 160 |

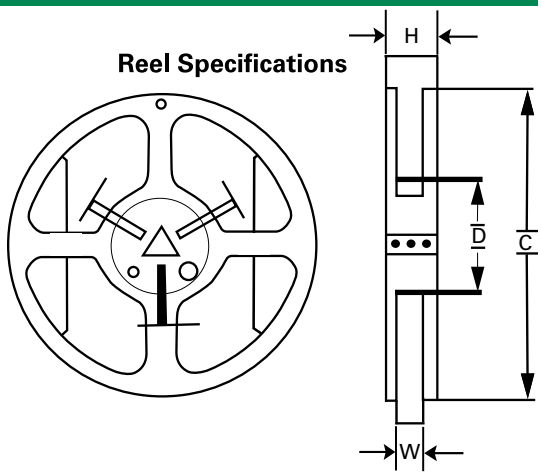
| REEL DIMENSIONS: EIA-481-1 (mm) | |
|---|---|
| **C** | Ø178 ± 1.0 |
| **D** | Ø60.2 ± 0.5 |
| **H** | 16.0 ± 0.5 |
| **W** | 13.2 ±1.5 |

## Tape and Reel Diagram

**Tape Specifications**




**Reel Specifications**




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