

# ANTREX Electronics

Electronic Components Sourcing Information

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## Product Reference Information

**Part Number:** 1210L150PR  
**Manufacturer:** Littelfuse Inc.  
**Package:** 1210 (3225 Metric), Concave  
**Availability:** Please confirm with sales

### Product Page:

<https://antrexco.com/product/details/littelfuse-inc/1210l150pr.html>

### Request a Quote:

[Submit RFQ for this part](#)



Scan for product page

## Contact Information

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## Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

### Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

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### Description

The 1210L Series device provides surface mount overcurrent protection for applications where space is at a premium and resettable protection is desired.

### Features

- RoHS compliant and lead-free
- Fast response to fault currents
- Compact design saves board space
- Low resistance
- Low-profile
- Compatible with high temperature solders

### Applications

- USB peripherals
- Disk drives
- CD-ROMs
- PC motherboards - plug and play protection
- Mobile phones - battery and port protection
- PDAs / digital cameras
- Game console port protection

### Agency Approvals

| AGENCY                                                                            | AGENCY FILE NUMBER |
|-----------------------------------------------------------------------------------|--------------------|
|  | E183209            |
|  | R50119118          |

### Electrical Characteristics

| Part Number | Marking | $I_{hold}$<br>(A) | $I_{trip}$<br>(A) | $V_{max}$<br>(Vdc) | $I_{max}$<br>(A) | $P_d$<br>max.<br>(W) | Maximum Time To Trip |                | Resistance                |                           |                            | Agency Approvals                                                                      |                                                                                       |
|-------------|---------|-------------------|-------------------|--------------------|------------------|----------------------|----------------------|----------------|---------------------------|---------------------------|----------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|             |         |                   |                   |                    |                  |                      | Current<br>(A)       | Time<br>(Sec.) | $R_{min}$<br>( $\Omega$ ) | $R_{typ}$<br>( $\Omega$ ) | $R_{1max}$<br>( $\Omega$ ) |  |  |
| 1210L005    | A       | 0.05              | 0.15              | 30                 | 10               | 0.60                 | 0.25                 | 1.50           | 3.600                     | 25.00                     | 50.00                      | X                                                                                     | X                                                                                     |
| 1210L010    | B       | 0.10              | 0.30              | 30                 | 10               | 0.60                 | 0.50                 | 1.50           | 1.600                     | 7.000                     | 15.00                      | X                                                                                     | X                                                                                     |
| 1210L020    | C       | 0.20              | 0.40              | 30                 | 10               | 0.60                 | 8.00                 | 0.02           | 0.800                     | 2.900                     | 5.000                      | X                                                                                     | X                                                                                     |
| 1210L035    | E       | 0.35              | 0.70              | 6                  | 100              | 0.60                 | 8.00                 | 0.20           | 0.320                     | 0.810                     | 1.300                      | X                                                                                     | X                                                                                     |
| 1210L050    | F       | 0.50              | 1.00              | 13.2               | 100              | 0.60                 | 8.00                 | 0.10           | 0.250                     | 0.550                     | 0.900                      | X                                                                                     | X                                                                                     |
| 1210L075    | G       | 0.75              | 1.50              | 6                  | 100              | 0.60                 | 8.00                 | 0.10           | 0.130                     | 0.290                     | 0.400                      | X                                                                                     | X                                                                                     |
| 1210L110    | H       | 1.10              | 2.20              | 6                  | 100              | 0.60                 | 8.00                 | 0.30           | 0.060                     | 0.140                     | 0.210                      | X                                                                                     | X                                                                                     |
| 1210L150    | K       | 1.50              | 3.00              | 6                  | 100              | 0.80                 | 8.00                 | 0.50           | 0.040                     | 0.070                     | 0.110                      | 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.

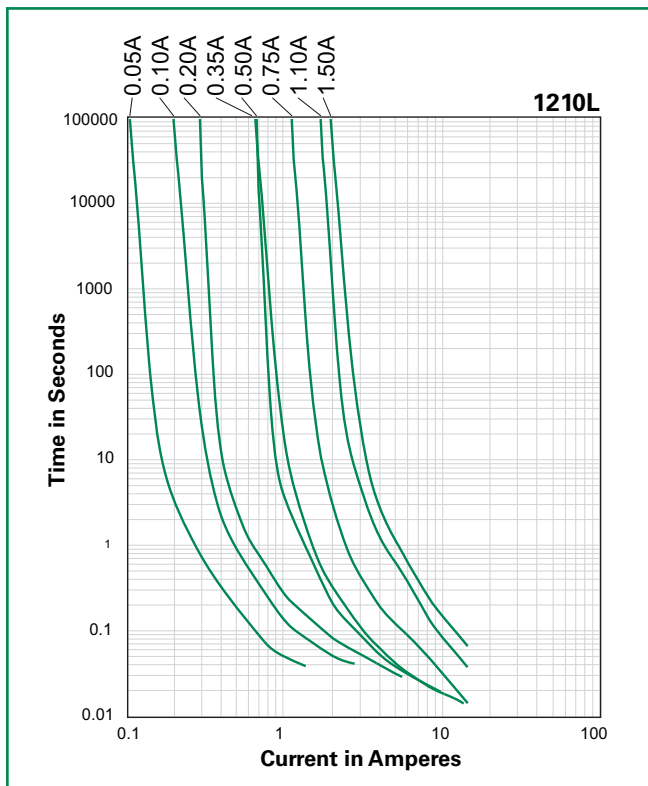
$R_{1max}$  = Maximum resistance of device at 20°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

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

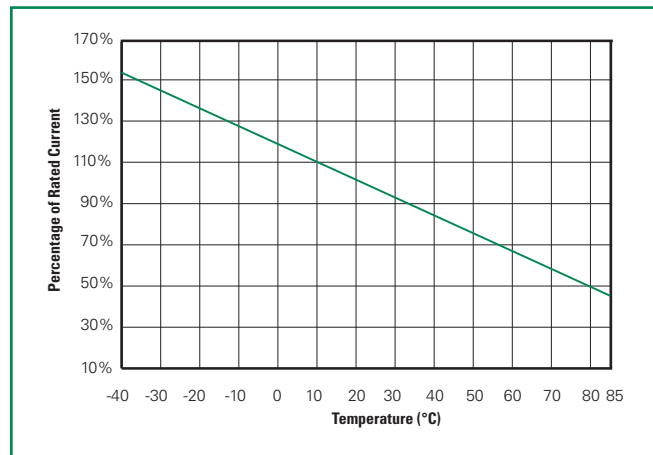
## Temperature Derating

| Part Number      | Ambient Operation Temperature |       |      |      |      |      |      |      |      |
|------------------|-------------------------------|-------|------|------|------|------|------|------|------|
|                  | -40°C                         | -20°C | 0°C  | 23°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| Hold Current (A) |                               |       |      |      |      |      |      |      |      |
| 1210L005         | 0.08                          | 0.07  | 0.06 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 | 0.02 |
| 1210L010         | 0.16                          | 0.14  | 0.12 | 0.10 | 0.08 | 0.07 | 0.06 | 0.05 | 0.03 |
| 1210L020         | 0.29                          | 0.26  | 0.22 | 0.20 | 0.16 | 0.14 | 0.13 | 0.11 | 0.08 |
| 1210L035         | 0.47                          | 0.45  | 0.40 | 0.35 | 0.33 | 0.28 | 0.24 | 0.21 | 0.18 |
| 1210L050         | 0.76                          | 0.67  | 0.58 | 0.50 | 0.43 | 0.40 | 0.36 | 0.32 | 0.28 |
| 1210L075         | 1.00                          | 0.97  | 0.86 | 0.75 | 0.64 | 0.59 | 0.54 | 0.48 | 0.40 |
| 1210L110         | 1.69                          | 1.48  | 1.29 | 1.10 | 0.88 | 0.76 | 0.65 | 0.57 | 0.43 |
| 1210L150         | 2.13                          | 1.92  | 1.71 | 1.50 | 1.26 | 1.14 | 1.01 | 0.89 | 0.71 |

## Average Time Current Curves



## Temperature Derating Curve



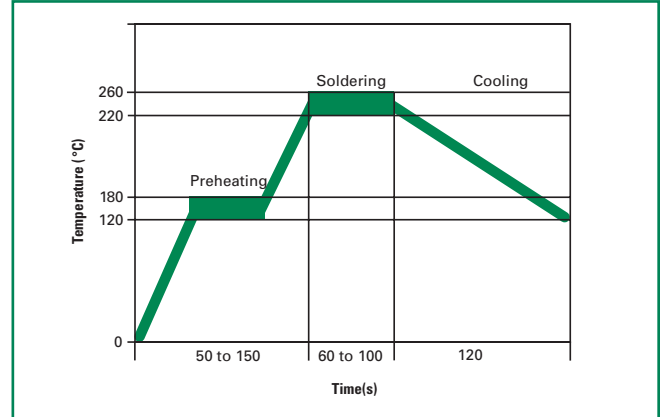
The average time current curves and Temperature Derating curve performance is affected by a number of variables, and these curves provided as guidance only. Customer must verify the performance in their application.

### Soldering Parameters

|                                |                  |
|--------------------------------|------------------|
| Condition                      | Reflow           |
| Peak Temp/ Duration Time       | 260°C / 10 Sec   |
| Time above liquids (TAL) 220°C | 60 Sec ~ 100 Sec |
| Preheat 120°C~ 180°C           | 50 Sec ~ 150 Sec |
| Storage Condition              | 0°C~35°C, ≤70%RH |

- Recommended reflow methods: IR, vapor phase oven, hot air oven, N<sub>2</sub> environment for lead-free
- Recommended maximum paste thickness is 0.25mm (0.010 inch)
- Devices can be cleaned using standard industry methods and solvents.

**Note:** If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.



### Physical Specifications

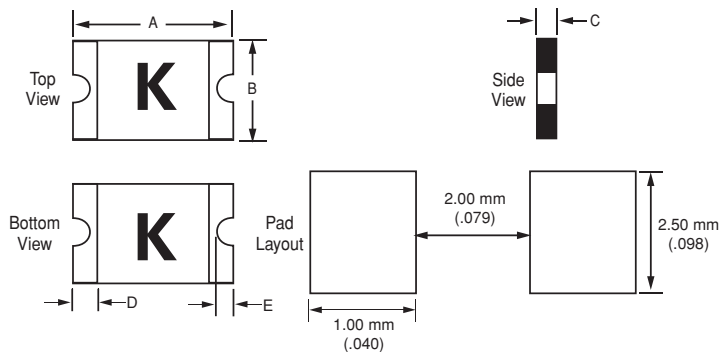
|                           |                                                              |
|---------------------------|--------------------------------------------------------------|
| <b>Terminal Material</b>  | Solder-Plated Copper (Solder Material: Matte Tin (Sn))       |
| <b>Lead Solderability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

### Environmental Specifications

|                                                            |                                                                                     |
|------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Operating/Storage Temperature</b>                       | -40°C to +85°C                                                                      |
| <b>Maximum Device Surface Temperature in Tripped State</b> | 125°C                                                                               |
| <b>Passive Aging</b>                                       | +85°C, 1000 hours<br>-/+5% typical resistance change                                |
| <b>Humidity Aging</b>                                      | +85°C, 85, R.H., 1000 hours<br>-/+5% typical resistance change                      |
| <b>Thermal Shock</b>                                       | MIL-STD-202, Method 107G<br>+85°C/-40°C, 20 times<br>-30% typical resistance change |
| <b>Solvent Resistance</b>                                  | MIL-STD-202, Method 215<br>No change                                                |
| <b>Vibration</b>                                           | MIL-STD-883C, Method 2007.1, Condition A<br>No change                               |
| <b>Moisture Level Sensitivity</b>                          | Level 2, J-STD-020C                                                                 |

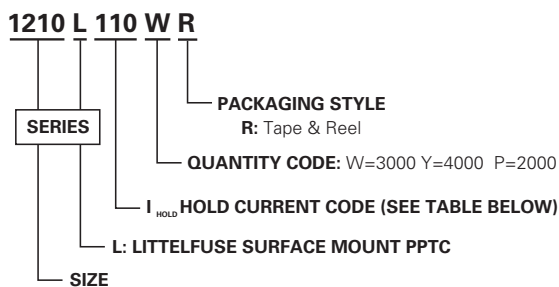
## Dimensions

MARKING CODE VARIES  
WITH AMPERAGE RATING  
(See Electrical Characteristics Table)  
SHOWN IS 1.5AMP RATING



| 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.   | Min. | Min.   | Max. | Min. | Max. |
| 1210L005    | 0.12   | 0.14 | 3.00 | 3.43 | 0.09   | 0.11 | 2.35 | 2.80 | 0.03   | 0.05 | 0.75 | 1.25 | 0.01   | 0.25 | 0.008  | 0.02 | 0.20 | 0.50 |
| 1210L010    | 0.12   | 0.14 | 3.00 | 3.43 | 0.09   | 0.11 | 2.35 | 2.80 | 0.03   | 0.05 | 0.75 | 1.25 | 0.01   | 0.25 | 0.008  | 0.02 | 0.20 | 0.50 |
| 1210L020    | 0.12   | 0.14 | 3.00 | 3.43 | 0.09   | 0.11 | 2.35 | 2.80 | 0.02   | 0.04 | 0.60 | 1.00 | 0.01   | 0.25 | 0.008  | 0.02 | 0.20 | 0.50 |
| 1210L035    | 0.12   | 0.14 | 3.00 | 3.43 | 0.09   | 0.11 | 2.35 | 2.80 | 0.02   | 0.03 | 0.50 | 0.85 | 0.01   | 0.25 | 0.008  | 0.02 | 0.20 | 0.50 |
| 1210L050    | 0.12   | 0.14 | 3.00 | 3.43 | 0.09   | 0.11 | 2.35 | 2.80 | 0.02   | 0.03 | 0.50 | 0.85 | 0.01   | 0.25 | 0.008  | 0.02 | 0.20 | 0.50 |
| 1210L075    | 0.12   | 0.14 | 3.00 | 3.43 | 0.09   | 0.11 | 2.35 | 2.80 | 0.02   | 0.03 | 0.50 | 0.85 | 0.01   | 0.25 | 0.008  | 0.02 | 0.20 | 0.50 |
| 1210L110    | 0.12   | 0.14 | 3.00 | 3.43 | 0.09   | 0.11 | 2.35 | 2.80 | 0.04   | 0.05 | 0.90 | 1.30 | 0.01   | 0.25 | 0.008  | 0.02 | 0.20 | 0.50 |
| 1210L150    | 0.12   | 0.14 | 3.00 | 3.43 | 0.09   | 0.11 | 2.35 | 2.80 | 0.03   | 0.07 | 0.80 | 1.80 | 0.01   | 0.25 | 0.008  | 0.02 | 0.20 | 0.50 |

## Part Ordering Number System



## Packaging

| Part Number | Ordering Number | I <sub>hold</sub> (A) | I <sub>hold</sub> Code | Packaging Option | Quantity | Quantity & Packaging Codes |
|-------------|-----------------|-----------------------|------------------------|------------------|----------|----------------------------|
| 1210L005    | 1210L005WR      | 0.05                  | 005                    | Tape and Reel    | 3000     | WR                         |
| 1210L010    | 1210L010WR      | 0.10                  | 010                    | Tape and Reel    | 3000     | WR                         |
| 1210L020    | 1210L020WR      | 0.20                  | 020                    | Tape and Reel    | 3000     | WR                         |
| 1210L035    | 1210L035YR      | 0.35                  | 035                    | Tape and Reel    | 4000     | YR                         |
| 1210L050    | 1210L050YR      | 0.50                  | 050                    | Tape and Reel    | 4000     | YR                         |
| 1210L075    | 1210L075YR      | 0.75                  | 075                    | Tape and Reel    | 4000     | YR                         |
| 1210L110    | 1210L110WR      | 1.10                  | 110                    | Tape and Reel    | 3000     | WR                         |
| 1210L150    | 1210L150PR      | 1.50                  | 150                    | Tape and Reel    | 2000     | PR                         |

## Tape and Reel Specifications

| TAPE SPECIFICATIONS: EIA-481-1 (mm) |                                    |                                                 |             |
|-------------------------------------|------------------------------------|-------------------------------------------------|-------------|
|                                     | 1210L035,<br>1210L050,<br>1210L075 | 1210L005,<br>1210L010,<br>1210L020,<br>1210L110 | 1210L150    |
| <b>W</b>                            | 8.0+/-0.30                         | 8.0+/-0.30                                      | 8.0+/-0.30  |
| <b>F</b>                            | 3.5+/-0.05                         | 3.5+/-0.05                                      | 3.5+/-0.05  |
| <b>E<sub>1</sub></b>                | 1.75+/-0.10                        | 1.75+/-0.10                                     | 1.75+/-0.10 |
| <b>D<sub>0</sub></b>                | 1.55+/-0.05                        | 1.55+/-0.05                                     | 1.55+/-0.05 |
| <b>D<sub>1</sub></b>                | 1.0 (min)                          | 1.0 (min)                                       | 1.0 (min)   |
| <b>P<sub>0</sub></b>                | 4.0+/-0.10                         | 4.0+/-0.10                                      | 4.0+/-0.10  |
| <b>P<sub>1</sub></b>                | 4.0+/-0.10                         | 4.0+/-0.10                                      | 4.0+/-0.10  |
| <b>P<sub>2</sub></b>                | 2.0+/-0.05                         | 2.0+/-0.05                                      | 2.0+/-0.05  |
| <b>A<sub>0</sub></b>                | 2.82+/-0.10                        | 2.82+/-0.10                                     | 2.67+/-0.10 |
| <b>B<sub>0</sub></b>                | 3.46+/-0.10                        | 3.46+/-0.10                                     | 3.36+/-0.10 |
| <b>T</b>                            | 0.25+/-0.10                        | 0.25+/-0.10                                     | 0.25+/-0.10 |
| <b>K<sub>0</sub></b>                | 1.00+/-0.10                        | 1.30+/-0.10                                     | 1.65+/-0.10 |
| Leader min.                         | 390                                | 390                                             | 390         |
| Trailer min.                        | 160                                | 160                                             | 160         |

| REEL DIMENSIONS:<br>EIA-481-1 (mm) |              |
|------------------------------------|--------------|
| <b>H</b>                           | 12.0+/-0.05  |
| <b>W</b>                           | 9.0+/-0.5    |
| <b>D</b>                           | Ø 60+0.5     |
| <b>F</b>                           | Ø 13.0+/-0.2 |
| <b>C</b>                           | Ø 178+/-1.0  |
| <b>H<sub>1</sub></b>               | 11+/-0.5     |
| <b>W<sub>1</sub></b>               | 2.2+/-0.5    |
| <b>W<sub>2</sub></b>               | 3.0+0.5      |
| <b>W<sub>3</sub></b>               | 4.0+0.5      |
| <b>W<sub>4</sub></b>               | 5.5+0.5      |

## Tape and Reel Diagram

