

RoHS **HF** LoRho™ Surface Mount Series



**Description**

Littelfuse LoRho™ Surface Mount PPTC (Polymer Positive Temperature Coefficient) devices provide overcurrent protection for applications where ultra low internal resistance, ultra low voltage drop and automatic resettable protection are desired. This new series allows a higher hold current device in a smaller factor and lower profile as compared to a standard PPTC. It offers ultra low internal resistance while maintaining the high level electrical characteristics and performances of standard PPTC products. All devices are UL and TUV recognized and have maximum fault current of 50A. They are available in 0402 to 2920 sizes while the hold current ranges from 100mA to 7A. Littelfuse 0402 size LoRho™ SMD PPTC is the smallest size surface mounted PPTC device available in the market.

**Agency Approvals**

| AGENCY | AGENCY FILE NUMBER |
|--------|--------------------|
|        | E10480             |
|        | R50119118          |

**Features**

- Ultra low internal resistance
- Very thin profile
- Miniature size saves board space
- Allows a higher hold current device in a smaller factor and lower profile as compared to a standard PPTC
- Fast response to fault currents
- 0402 size available - the smallest PPTC in the market
- Compatible with high temperature solders
- Broadest range of Hold Current ratings (100mA to 7A)
- RoHS compliant, Lead Free and Halogen Free
- UL and TUV recognized
- 0603L150SL ideal for USB 3.0

**Applications**

- USB peripherals including new USB 3.0 / 2.0 ports
- Li-ion / Li-Polymer battery packs
- Smart phones
- Tablet and Notebook PCs
- E-readers
- LCD / LED HDTV
- Computer peripherals
- Digital cameras and video cameras
- Hard disk drives
- Game consoles

LoRho™ Series

**Electrical Characteristics**

| Part Number   | Marking | I <sub>hold</sub><br>(A) | I <sub>trip</sub><br>(A) | V <sub>max</sub><br>(Vdc) | I <sub>max</sub><br>(A) | P <sub>d</sub><br>typ.<br>(W) | Maximum Time-To-Trip |                | Resistance              |                          | Agency Approvals  |   |
|---------------|---------|--------------------------|--------------------------|---------------------------|-------------------------|-------------------------------|----------------------|----------------|-------------------------|--------------------------|---|---|
|               |         |                          |                          |                           |                         |                               | Current<br>(A)       | Time<br>(Sec.) | R <sub>min</sub><br>(Ω) | R <sub>1max</sub><br>(Ω) |  |  |
| 0402L010SL    |         | 0.10                     | 0.30                     | 6                         | 40                      | 0.5                           | 0.50                 | 1.00           | 0.150                   | 2.000                    | X   | Pending   |
| 0402L020SL    |         | 0.20                     | 0.50                     | 6                         | 40                      | 0.5                           | 1.00                 | 1.00           | 0.100                   | 1.250                    | X   | Pending   |
| 0402L035SL    |         | 0.35                     | 0.70                     | 6                         | 50                      | 0.5                           | 8.00                 | 0.10           | 0.050                   | 0.700                    | X   | Pending   |
| 0402L050SL    |         | 0.50                     | 1.00                     | 6                         | 50                      | 0.5                           | 8.00                 | 0.10           | 0.040                   | 0.400                    | X   | Pending   |
| 0603L050SL    | K       | 0.50                     | 1.00                     | 6                         | 50                      | 0.6                           | 8.00                 | 0.10           | 0.070                   | 0.350                    | X   | X   |
| 0603L075SL    | N       | 0.75                     | 1.50                     | 6                         | 50                      | 0.6                           | 8.00                 | 0.20           | 0.005                   | 0.250                    | X   | X   |
| 0603L100SL    | S       | 1.00                     | 1.80                     | 6                         | 50                      | 0.6                           | 8.00                 | 0.30           | 0.040                   | 0.120                    | X   | X   |
| 0603L150SL    | T       | 1.50                     | 3.00                     | 6                         | 50                      | 0.6                           | 8.00                 | 0.50           | 0.007                   | 0.080                    | X   | X   |
| 0603L175SL    | V       | 1.75                     | 3.50                     | 6                         | 50                      | 0.6                           | 8.00                 | 0.60           | 0.005                   | 0.060                    | X   | X   |
| 0805L075SL    | -G      | 0.75                     | 1.50                     | 6                         | 50                      | 0.6                           | 8.00                 | 0.20           | 0.040                   | 0.160                    | X   | X   |
| 0805L110SL    | -H      | 1.10                     | 1.80                     | 6                         | 50                      | 0.6                           | 8.00                 | 0.30           | 0.030                   | 0.130                    | X   | X   |
| 0805L150SL    | -K      | 1.50                     | 3.00                     | 6                         | 50                      | 0.6                           | 8.00                 | 0.50           | 0.015                   | 0.065                    | X   | X   |
| 0805L175SL    | -V      | 1.75                     | 3.50                     | 6                         | 50                      | 0.6                           | 8.00                 | 0.60           | 0.005                   | 0.055                    | X   | X   |
| 0805L200SLTH  | -L      | 2.00                     | 4.00                     | 6                         | 50                      | 0.6                           | 8.00                 | 1.00           | 0.005                   | 0.045                    | X   | X   |
| 0805L260SLTH  | -S      | 2.60                     | 5.00                     | 6                         | 50                      | 0.6                           | 8.00                 | 4.00           | 0.003                   | 0.035                    | X   | X   |
| 0805L300SL    | -N      | 3.00                     | 6.00                     | 6                         | 50                      | 0.6                           | 8.00                 | 5.00           | 0.003                   | 0.030                    | X   | X   |
| 1206L075SL    | -G      | 0.75                     | 1.50                     | 6                         | 50                      | 0.8                           | 8.00                 | 0.30           | 0.017                   | 0.180                    | X   | X   |
| 1206L110SL    | -H      | 1.10                     | 2.20                     | 6                         | 50                      | 0.8                           | 8.00                 | 0.30           | 0.015                   | 0.100                    | X   | X   |
| 1206L150SL    | -K      | 1.50                     | 3.90                     | 6                         | 50                      | 0.8                           | 8.00                 | 0.30           | 0.010                   | 0.065                    | X   | X   |
| 1206L110/12SL | -H1     | 1.10                     | 2.20                     | 12                        | 50                      | 0.8                           | 8.00                 | 0.30           | 0.015                   | 0.130                    | X   | X   |
| 1206L150/12SL | -K1     | 1.50                     | 3.00                     | 12                        | 50                      | 0.8                           | 8.00                 | 0.30           | 0.010                   | 0.080                    | X   | X   |
| 1206L175SL    | -F      | 1.75                     | 3.50                     | 6                         | 50                      | 0.8                           | 8.00                 | 0.40           | 0.005                   | 0.030                    | X   | X   |
| 1206L200SL    | -L      | 2.00                     | 4.00                     | 6                         | 50                      | 0.8                           | 8.00                 | 0.50           | 0.005                   | 0.025                    | X   | X   |
| 1206L260SLTH  | -S      | 2.60                     | 5.00                     | 6                         | 50                      | 0.8                           | 8.00                 | 4.00           | 0.003                   | 0.026                    | X   | X   |
| 1206L300SLTH  | -N      | 3.00                     | 6.00                     | 6                         | 50                      | 0.8                           | 8.00                 | 4.00           | 0.003                   | 0.020                    | X   | X   |
| 1206L350SLTH  | -T      | 3.50                     | 7.00                     | 6                         | 50                      | 0.8                           | 8.00                 | 5.00           | 0.003                   | 0.018                    | X   | X   |
| 1206L380SLTH* | -V      | 2.82*                    | 8.00                     | 6                         | 50                      | 0.8                           | 8.00                 | 5.00           | 0.002                   | 0.014                    | X   | X   |
| 1206L400SL    | -Y      | 4.00                     | 8.00                     | 6                         | 50                      | 0.8                           | 20.00                | 2.00           | 0.001                   | 0.014                    | X   | X   |
| 1206L450SL    | -Z      | 4.50                     | 9.00                     | 6                         | 50                      | 0.8                           | 22.50                | 2.00           | 0.001                   | 0.014                    | X   | X   |
| 1210L175SL    | -J      | 1.75                     | 3.50                     | 6                         | 50                      | 0.8                           | 8.00                 | 2.50           | 0.006                   | 0.040                    | X   | X   |
| 1210L200SL    | -L      | 2.00                     | 4.00                     | 6                         | 50                      | 0.8                           | 8.00                 | 3.00           | 0.005                   | 0.024                    | X   | X   |
| 1210L260SL    | -S      | 2.60                     | 5.00                     | 6                         | 50                      | 0.8                           | 8.00                 | 4.00           | 0.003                   | 0.020                    | X   | X   |
| 1210L300SL    | -N      | 3.00                     | 6.00                     | 6                         | 50                      | 0.8                           | 15.00                | 2.00           | 0.003                   | 0.020                    | X   | X   |
| 1210L350SL    | -T      | 3.50                     | 7.00                     | 6                         | 50                      | 0.8                           | 17.50                | 2.00           | 0.003                   | 0.018                    | X   | X   |
| 1210L380SL    | -X      | 3.80                     | 8.00                     | 6                         | 50                      | 0.8                           | 8.00                 | 5.00           | 0.002                   | 0.016                    | X   | X   |
| 1210L400SL    | -V      | 4.00                     | 8.00                     | 6                         | 50                      | 0.8                           | 8.00                 | 5.00           | 0.001                   | 0.014                    | X   | X   |
| 1210L450SL    | -Y      | 4.50                     | 9.00                     | 6                         | 50                      | 1.0                           | 22.50                | 2.00           | 0.001                   | 0.014                    | X   | X   |
| 1812L190SL    | LF-19   | 1.90                     | 4.90                     | 6                         | 50                      | 1.0                           | 9.50                 | 4.50           | 0.003                   | 0.025                    | X   | X   |
| 1812L260SL    | LF-26   | 2.60                     | 6.00                     | 6                         | 50                      | 1.0                           | 13.00                | 2.00           | 0.003                   | 0.024                    | X   | X   |
| 1812L270SL    | LF-27   | 2.70                     | 6.20                     | 6                         | 50                      | 1.0                           | 13.50                | 2.00           | 0.003                   | 0.022                    | X   | X   |
| 1812L300SL    | LF-30   | 3.00                     | 7.00                     | 6                         | 50                      | 1.0                           | 8.00                 | 5.00           | 0.003                   | 0.021                    | X   | X   |
| 1812L350SL**  | LF-35   | 3.50                     | 8.10                     | 6                         | 50                      | 1.0                           | 8.00                 | 5.00           | 0.003                   | 0.020**                  | X   | X   |
| 1812L370SL    | LF-37   | 3.70                     | 9.10                     | 6                         | 50                      | 1.0                           | 18.50                | 2.00           | 0.003                   | 0.018                    | X   | X   |
| 2920L700SL*** | LF700   | 7.00                     | 14.00                    | 6                         | 50                      | 2.2                           | 35.00                | 0.20           | 0.001                   | 0.007                    | X   | X   |

**Notes:**

0805L150SL and 1206L150SL are ideal for overcurrent protection in VBUS of USB 3.0 / USB 2.0 ports.

\* 1206L380SLTH has I<sub>hold</sub> 2.82A for at least 15min @ 55°C. It is ideal for overcurrent protection in Li-ion / Li-Polymer battery packs of smartphones.

\*\* 1812L350SL Typical Time-To-Trip is 50A at 0.013-0.020 seconds. R1min=0.015ohm (resistance range 0.015-0.025ohm).

\*\*\* 2920L700SL is ideal for overcurrent protection in Li-ion / Li-Polymer battery packs of tablet PC.

I<sub>hold</sub> = Hold current: maximum current device will pass without tripping in 20°C still air.

I<sub>trip</sub> = Trip current: minimum current at which the device will trip in 20°C still air.

V<sub>max</sub> = Maximum voltage device can withstand without damage at rated current (I<sub>max</sub>)

I<sub>max</sub> = Maximum fault current device can withstand without damage at rated voltage (V<sub>max</sub>)

P<sub>d</sub> = Power dissipated from device when in the tripped state at 20°C still air.

R<sub>min</sub> = Minimum resistance of device in initial (un-soldered) state.

R<sub>1max</sub> = 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 Rerating**

| Ambient Operation Temperature |                  |       |      |      |      |      |      |      |
|-------------------------------|------------------|-------|------|------|------|------|------|------|
|                               | -40°C            | -20°C | 0°C  | 20°C | 40°C | 60°C | 70°C | 85°C |
| Part Number                   | Hold Current (A) |       |      |      |      |      |      |      |
| 0402L010SL                    | 0.15             | 0.13  | 0.12 | 0.10 | 0.09 | 0.07 | 0.06 | 0.05 |
| 0402L020SL                    | 0.29             | 0.27  | 0.24 | 0.20 | 0.17 | 0.14 | 0.11 | 0.10 |
| 0402L035SL                    | 0.51             | 0.47  | 0.41 | 0.35 | 0.30 | 0.25 | 0.20 | 0.18 |
| 0402L050SL                    | 0.74             | 0.67  | 0.59 | 0.50 | 0.43 | 0.36 | 0.29 | 0.26 |
| 0603L050SL                    | 0.82             | 0.73  | 0.63 | 0.50 | 0.41 | 0.39 | 0.24 | 0.14 |
| 0603L075SL                    | 1.23             | 1.08  | 0.94 | 0.75 | 0.61 | 0.44 | 0.34 | 0.23 |
| 0603L100SL                    | 1.55             | 1.37  | 1.19 | 1.00 | 0.83 | 0.62 | 0.50 | 0.31 |
| 0603L150SL                    | 2.31             | 2.06  | 1.79 | 1.50 | 1.22 | 0.93 | 0.75 | 0.47 |
| 0603L175SL                    | 2.57             | 2.33  | 2.07 | 1.75 | 1.49 | 1.24 | 1.00 | 0.91 |
| 0805L075SL                    | 1.24             | 1.07  | 0.94 | 0.75 | 0.62 | 0.47 | 0.37 | 0.23 |
| 0805L110SL                    | 1.93             | 1.65  | 1.38 | 1.10 | 0.83 | 0.55 | 0.41 | 0.21 |
| 0805L150SL                    | 2.37             | 2.07  | 1.80 | 1.50 | 1.25 | 0.93 | 0.74 | 0.50 |
| 0805L175SL                    | 2.57             | 2.33  | 2.07 | 1.75 | 1.49 | 1.24 | 1.00 | 0.91 |
| 0805L200SLTH                  | 2.94             | 2.66  | 2.36 | 2.00 | 1.70 | 1.42 | 1.14 | 1.04 |
| 0805L260SLTH                  | 3.82             | 3.46  | 3.07 | 2.60 | 2.21 | 1.85 | 1.48 | 1.35 |
| 0805L300SL                    | 4.41             | 3.99  | 3.54 | 3.00 | 2.55 | 2.13 | 1.71 | 1.56 |
| 1206L075SL                    | 1.10             | 1.00  | 0.89 | 0.75 | 0.64 | 0.53 | 0.43 | 0.39 |
| 1206L110SL                    | 2.00             | 1.70  | 1.40 | 1.10 | 0.83 | 0.56 | 0.44 | 0.36 |
| 1206L150SL                    | 2.67             | 2.32  | 1.95 | 1.50 | 1.15 | 0.78 | 0.64 | 0.52 |
| 1206L110/12SL                 | 1.62             | 1.46  | 1.30 | 1.10 | 0.94 | 0.78 | 0.63 | 0.57 |
| 1206L150/12SL                 | 2.21             | 2.00  | 1.77 | 1.50 | 1.28 | 1.07 | 0.86 | 0.78 |
| 1206L175SL                    | 2.57             | 2.33  | 2.07 | 1.75 | 1.49 | 1.24 | 1.00 | 0.91 |
| 1206L200SL                    | 3.30             | 2.90  | 2.50 | 2.00 | 1.62 | 1.16 | 0.90 | 0.52 |
| 1206L260SLTH                  | 3.71             | 3.42  | 3.01 | 2.60 | 2.08 | 1.49 | 1.30 | 0.89 |
| 1206L300SLTH                  | 4.41             | 3.99  | 3.54 | 3.00 | 2.55 | 2.13 | 1.71 | 1.56 |
| 1206L350SLTH                  | 5.15             | 4.66  | 4.13 | 3.50 | 2.98 | 2.49 | 2.00 | 1.82 |
| 1206L380SLTH                  | 5.59             | 5.05  | 4.48 | 3.80 | 3.23 | 2.70 | 2.17 | 1.98 |
| 1206L400SL                    | 5.71             | 5.26  | 4.63 | 4.00 | 3.20 | 2.29 | 2.00 | 1.37 |
| 1206L450SL                    | 6.62             | 5.99  | 5.31 | 4.50 | 3.83 | 3.20 | 2.57 | 2.34 |
| 1210L175SL                    | 2.57             | 2.33  | 2.07 | 1.75 | 1.49 | 1.24 | 1.00 | 0.91 |
| 1210L200SL                    | 3.26             | 2.87  | 2.50 | 2.00 | 1.70 | 1.29 | 1.09 | 0.78 |
| 1210L260SL                    | 3.82             | 3.46  | 3.07 | 2.60 | 2.21 | 1.85 | 1.48 | 1.35 |
| 1210L300SL                    | 4.41             | 3.99  | 3.54 | 3.00 | 2.55 | 2.13 | 1.71 | 1.56 |
| 1210L350SL                    | 5.00             | 4.60  | 4.05 | 3.50 | 2.80 | 2.00 | 1.60 | 1.00 |
| 1210L380SL                    | 6.00             | 5.28  | 4.52 | 3.80 | 3.15 | 2.39 | 2.09 | 1.60 |
| 1210L400SL                    | 5.71             | 5.26  | 4.63 | 4.00 | 3.20 | 2.29 | 2.00 | 1.37 |
| 1210L450SL                    | 6.62             | 5.99  | 5.31 | 4.50 | 3.83 | 3.20 | 2.57 | 2.34 |
| 1812L190SL                    | 3.00             | 2.58  | 2.22 | 1.90 | 1.49 | 1.14 | 0.93 | 0.61 |
| 1812L260SL                    | 3.82             | 3.46  | 3.07 | 2.60 | 2.21 | 1.85 | 1.48 | 1.35 |
| 1812L270SL                    | 3.86             | 3.55  | 3.12 | 2.70 | 2.16 | 1.54 | 1.35 | 0.93 |
| 1812L300SL                    | 4.41             | 3.99  | 3.54 | 3.00 | 2.55 | 2.13 | 1.71 | 1.56 |
| 1812L350SL                    | 5.43             | 4.73  | 4.13 | 3.50 | 2.80 | 2.10 | 1.75 | 1.12 |
| 1812L370SL                    | 5.44             | 4.92  | 4.37 | 3.70 | 3.15 | 2.63 | 2.11 | 1.92 |
| 2920L700SL                    | 10.00            | 9.20  | 8.10 | 7.00 | 5.60 | 4.00 | 3.50 | 2.40 |

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

### Temperature Derating Curve



### Physical Specifications

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

### Environmental Specifications

|  |  |
|--|--|
| <b>Operating 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>-/+10% typical resistance change                              |
| <b>Humidity Aging</b>                                      | +85°C, 85% R.H., 100 hours<br>-/+15% 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,<br>Condition A No change                              |
| <b>Moisture Sensitivity Level</b>                          | Level 1, J-STD-020C  |

### 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 <sup>+0/-5</sup> °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<sub>2</sub> environment for lead
- Recommended maximum paste thickness is 0.25mm (0.010 inch)
- Devices can be cleaned using standard industry methods and solvents
- Devices can be reworked using the standard industry practices



**Packaging**

| Part Number   | Ordering Number | I <sub>hold</sub> (A) | I <sub>hold</sub> Code | Packaging Option | Quantity | Quantity & Packaging Codes |
|---------------|-----------------|-----------------------|------------------------|------------------|----------|----------------------------|
| 0402L010SL    | 0402L010SLKR    | 0.10                  | 010                    | Tape & Reel      | 10,000   | KR                         |
| 0402L020SL    | 0402L020SLKR    | 0.20                  | 020                    |                  | 10,000   | KR                         |
| 0402L035SL    | 0402L035SLKR    | 0.35                  | 035                    |                  | 10,000   | KR                         |
| 0402L050SL    | 0402L050SLKR    | 0.50                  | 050                    |                  | 10,000   | KR                         |
| 0603L050SL    | 0603L050SLYR    | 0.50                  | 050                    |                  | 4,000    | YR                         |
| 0603L075SL    | 0603L075SLYR    | 0.75                  | 075                    |                  | 4,000    | YR                         |
| 0603L100SL    | 0603L100SLYR    | 1.00                  | 100                    |                  | 4,000    | YR                         |
| 0603L150SL    | 0603L150SLYR    | 1.50                  | 150                    |                  | 4,000    | YR                         |
| 0603L175SL    | 0603L175SLYR    | 1.75                  | 175                    |                  | 4,000    | YR                         |
| 0805L075SL    | 0805L075SLYR    | 0.75                  | 075                    |                  | 4,000    | YR                         |
| 0805L110SL    | 0805L110SLYR    | 1.10                  | 110                    |                  | 4,000    | YR                         |
| 0805L150SL    | 0805L150SLYR    | 1.50                  | 150                    |                  | 4,000    | YR                         |
| 0805L175SL    | 0805L175SLYR    | 1.75                  | 175                    |                  | 4,000    | YR                         |
| 0805L200SLTH  | 0805L200SLTHYR  | 2.00                  | 200                    |                  | 4,000    | YR                         |
| 0805L260SLTH  | 0805L260SLTHYR  | 2.60                  | 260                    |                  | 4,000    | YR                         |
| 0805L300SL    | 0805L300SLWR    | 3.00                  | 300                    |                  | 3,000    | WR                         |
| 1206L075SL    | 1206L075SLYR    | 0.75                  | 075                    |                  | 4,000    | YR                         |
| 1206L110SL    | 1206L110SLYR    | 1.10                  | 110                    |                  | 4,000    | YR                         |
| 1206L150SL    | 1206L150SLYR    | 1.50                  | 150                    |                  | 4,000    | YR                         |
| 1206L110/12SL | 1206L110/12SLYR | 1.10                  | 110                    |                  | 4,000    | YR                         |
| 1206L150/12SL | 1206L150/12SLYR | 1.50                  | 150                    |                  | 4,000    | YR                         |
| 1206L175SL    | 1206L175SLYR    | 1.75                  | 175                    |                  | 4,000    | YR                         |
| 1206L200SL    | 1206L200SLYR    | 2.00                  | 200                    |                  | 4,000    | YR                         |
| 1206L260SLTH  | 1206L260SLTHYR  | 2.60                  | 260                    |                  | 4,000    | YR                         |
| 1206L300SLTH  | 1206L300SLTHYR  | 3.00                  | 300                    |                  | 4,000    | YR                         |
| 1206L350SLTH  | 1206L350SLTHYR  | 3.50                  | 350                    |                  | 4,000    | YR                         |
| 1206L380SLTH* | 1206L380SLTHYR  | 2.82*                 | 380                    |                  | 4,000    | YR                         |
| 1206L400SL    | 1206L400SLWR    | 4.00                  | 400                    |                  | 3,000    | WR                         |
| 1206L450SL    | 1206L450SLWR    | 4.50                  | 450                    |                  | 3,000    | WR                         |
| 1210L175SL    | 1210L175SLYR    | 1.75                  | 175                    |                  | 4,000    | YR                         |
| 1210L200SL    | 1210L200SLYR    | 2.00                  | 200                    |                  | 4,000    | YR                         |
| 1210L260SL    | 1210L260SLYR    | 2.60                  | 260                    |                  | 4,000    | YR                         |
| 1210L300SL    | 1210L300SLYR    | 3.00                  | 300                    |                  | 4,000    | YR                         |
| 1210L350SL    | 1210L350SLWR    | 3.50                  | 350                    |                  | 3,000    | WR                         |
| 1210L380SL    | 1210L380SLYR    | 3.80                  | 380                    |                  | 4,000    | YR                         |
| 1210L400SL    | 1210L400SLWR    | 4.00                  | 400                    |                  | 3,000    | WR                         |
| 1210L450SL    | 1210L450SLWR    | 4.50                  | 450                    |                  | 3,000    | WR                         |
| 1812L190SL    | 1812L190SLPR    | 1.90                  | 190                    |                  | 2,000    | PR                         |
| 1812L260SL    | 1812L260SLPR    | 2.60                  | 260                    |                  | 2,000    | PR                         |
| 1812L270SL    | 1812L270SLPR    | 2.70                  | 270                    |                  | 2,000    | PR                         |
| 1812L300SL    | 1812L300SLPR    | 3.00                  | 300                    | 2,000            | PR       |                            |
| 1812L350SL    | 1812L350SLPR    | 3.50                  | 350                    | 2,000            | PR       |                            |
| 1812L370SL    | 1812L370SLPR    | 3.70                  | 370                    | 2,000            | PR       |                            |
| 2920L700SL    | 2920L700SLPR    | 7.00                  | 700                    | 2,000            | PR       |                            |

Notes: \*1206L380SLTH has I<sub>hold</sub> 2.82A for at least 15min @ 55°C.

**Part Ordering Number System**



**Tape and Reel Specifications**

|  |  |
|--|--|
|  | 0402L010SL<br>0402L020SL<br>0402L035SL<br>0402L050SL |
| <b>TAPE DIMENSIONS: EIA-481-1 (mm)</b> |  |

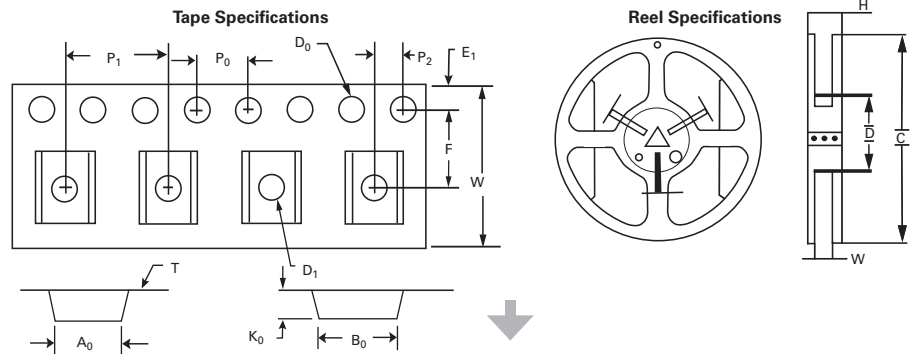
|                      |             |
|----------------------|-------------|
| <b>C<sub>t</sub></b> | 0.05 ± 0.01 |
| <b>D<sub>d</sub></b> | 1.5 ± 0.1   |
| <b>D<sub>s</sub></b> | 4.0 ± 0.1   |
| <b>P<sub>d</sub></b> | 0.41 ± 0.1  |
| <b>P<sub>h</sub></b> | 1.12 ± 0.1  |
| <b>P<sub>s</sub></b> | 2.0 ± 0.1   |
| <b>P<sub>w</sub></b> | 0.62 ± 0.1  |
| <b>T<sub>t</sub></b> | 0.61 ± 0.1  |
| <b>T<sub>w</sub></b> | 8.0 ± 0.1   |
| Leader min.          | 390         |
| Trailer min.         | 160         |

|  |             |
|--|-------------|
| <b>REEL DIMENSIONS: EIA-481-1 (mm)</b> |             |
| <b>H</b>                               | 12.0 ± 0.5  |
| <b>W</b>                               | 9.0 ± 0.5   |
| <b>D</b>                               | Ø60 ± 0.5   |
| <b>F</b>                               | Ø13.0 ± 0.2 |
| <b>C</b>                               | Ø178 ± 1    |
| <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   |

**Dimensions for 0402 size product** (see table at left)



**Dimensions for 0603, 0805, 1206, 1210, 1812 and 2920 size product** (see table below)



|  |                          |  |            |  |                          |  |  |  |            |
|--|--------------------------|--|------------|--|--------------------------|--|--|--|------------|
| 0603L050SL<br>0603L075SL<br>0603L100SL | 0603L150SL<br>0603L175SL | 0805L075SL<br>0805L110SL<br>0805L150SL<br>0805L175SL<br>0805L200SLTH<br>0805L260SLTH | 0805L300SL | 1206L075SL<br>1206L110SL<br>1206L150SL<br>1206L110/12SL<br>1206L150/12SL<br>1206L175SL<br>1206L200SL<br>1206L260SLTH<br>1206L300SLTH<br>1206L350SLTH<br>1206L380SLTH | 1206L400SL<br>1206L450SL | 1210L175SL<br>1210L200SL<br>1210L260SL<br>1210L300SL<br>1210L380SL | 1210L350SL<br>1210L400SL<br>1210L450SL | 1812L190SL<br>1812L260SL<br>1812L270SL<br>1812L300SL<br>1812L350SL<br>1812L370SL | 2920L700SL |
|--|--------------------------|--|------------|--|--------------------------|--|--|--|------------|

|  |             |             |             |             |                  |                  |             |             |              |              |
|--|-------------|-------------|-------------|-------------|------------------|------------------|-------------|-------------|--------------|--------------|
| <b>TAPE DIMENSIONS: EIA-481-1 (mm)</b> |             |             |             |             |                  |                  |             |             |              |              |
| <b>W</b>                               | 8.00 ± 0.30 | 8.00 ± 0.30 | 8.00 ± 0.10 | 8.00 ± 0.30 | 8.20 +0.10/-0.30 | 8.15 +0.15/-0.30 | 8.00 ± 0.30 | 8.00 ± 0.30 | 12.00 ± 0.30 | 16.00 ± 0.30 |
| <b>F</b>                               | 3.50 ± 0.05 | 3.50 ± 0.05 | 3.50 ± 0.05 | 3.50 ± 0.05 | 3.50 ± 0.05      | 3.50 ± 0.05      | 3.50 ± 0.05 | 3.50 ± 0.05 | 5.50 ± 0.05  | 7.50 ± 0.10  |
| <b>E<sub>1</sub></b>                   | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10      | 1.75 ± 0.10      | 1.75 ± 0.10 | 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 | 1.55 ± 0.05 | 1.55 ± 0.05      | 1.55 ± 0.05      | 1.55 ± 0.05 | 1.55 ± 0.05 | 1.55 ± 0.05  | 1.55 ± 0.05  |
| <b>D<sub>1</sub></b>                   | 0.50 ± 0.10 | 0.50 ± 0.10 | 1.00 (Min.) | 1.00 ± 0.10 | 1.00 ± 0.10      | 1.00 ± 0.10      | 1.00 (Min.) | 1.00 (Min.) | 1.55 (Min.)  | 1.50 ± 0.10  |
| <b>P<sub>0</sub></b>                   | 4.00 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.08 | 4.00 ± 0.10 | 4.00 ± 0.10      | 4.00 ± 0.10      | 4.00 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.10  | 4.00 ± 0.10  |
| <b>P<sub>1</sub></b>                   | 4.00 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.10      | 4.00 ± 0.10      | 4.00 ± 0.10 | 4.00 ± 0.10 | 8.00 ± 0.10  | 8.00 ± 0.10  |
| <b>P<sub>2</sub></b>                   | 2.00 ± 0.05 | 2.00 ± 0.05 | 2.00 ± 0.05 | 2.00 ± 0.05 | 2.00 ± 0.05      | 2.00 ± 0.05      | 2.00 ± 0.05 | 2.00 ± 0.05 | 2.00 ± 0.05  | 2.00 ± 0.10  |
| <b>A<sub>0</sub></b>                   | 1.10 ± 0.10 | 1.10 ± 0.10 | 1.60 ± 0.10 | 1.65 ± 0.10 | 1.95 ± 0.10      | 1.92 ± 0.10      | 2.82 ± 0.10 | 2.82 ± 0.10 | 3.58 ± 0.10  | 5.74 ± 0.10  |
| <b>B<sub>0</sub></b>                   | 1.92 ± 0.10 | 1.92 ± 0.10 | 2.30 ± 0.10 | 2.35 ± 0.10 | 3.65 ± 0.10      | 3.65 ± 0.10      | 3.46 ± 0.10 | 3.50 ± 0.10 | 4.93 ± 0.10  | 8.02 ± 0.10  |
| <b>T</b>                               | 0.20 ± 0.10 | 0.20 ± 0.10 | 0.25 ± 0.10 | 0.25 ± 0.10 | 0.20 ± 0.10      | 0.25 ± 0.10      | 0.25 ± 0.10 | 0.20 ± 0.10 | 0.25 ± 0.10  | 0.30 ± 0.10  |
| <b>K<sub>0</sub></b>                   | 0.72 ± 0.10 | 0.96 ± 0.10 | 0.90 ± 0.10 | 1.50 ± 0.10 | 0.87 ± 0.10      | 1.30 ± 0.10      | 1.00 ± 0.10 | 1.30 ± 0.10 | 0.87 ± 0.06  | 0.91 ± 0.10  |
| Leader min.                            | 390         |             |             |             |                  |                  |             |             |              |              |
| Trailer min.                           | 160         |             |             |             |                  |                  |             |             |              |              |

|  |             |  |  |             |            |
|--|-------------|--|--|-------------|------------|
| <b>REEL DIMENSIONS: EIA-481-1 (mm)</b> |             |  |  |             |            |
| <b>H</b>                               | 11.0 ± 0.5  |  |  | 16.0 ± 0.5  | 19.5 ± 1.0 |
| <b>W</b>                               | 9.0 ± 1.5   |  |  | 13.2 ± 1.5  | 17 ± 0.2   |
| <b>C</b>                               | Ø178 ± 1.0  |  |  | Ø178 ± 1.0  | Ø180 ± 3.0 |
| <b>D</b>                               | Ø60.2 ± 0.5 |  |  | Ø60.2 ± 0.5 | Ø60 ± 0.5  |

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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