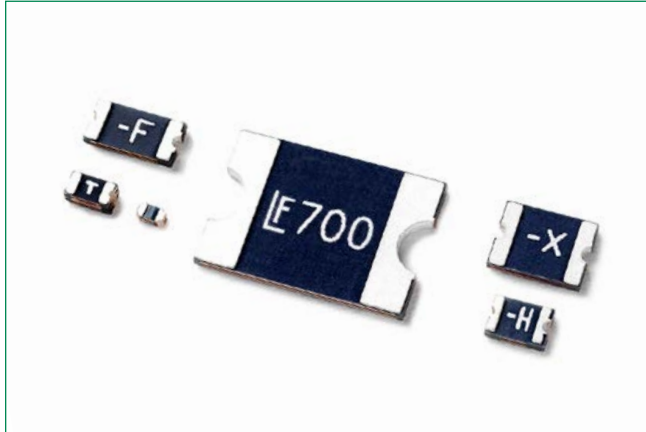


# Low Rho Series

## PolySwitch® Resettable PPTC



### Web Resources



Download ECAD models, order samples, and find technical resources at [www.littelfuse.com](http://www.littelfuse.com)

### Agency Approvals

Agency	Agency File Number
	E183209
	R50119118

### Description

Littelfuse Low Rho 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 recognized and TUV approved and have maximum fault current of 50A. They are available in 0402 to 2920 sizes while the hold current ranges from 100mA to 9A.

### Features & Benefits

- 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
- Compatible with high temperature solders
- Broadest range of Hold Current ratings (100mA to 9A)
- RoHS compliant. Lead Free and Halogen Free
- UL recognized and TUV approved



### 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

# Low Rho Series

## PolySwitch® Resettable PPTC

### Electrical Characteristics

Part Number	Marking	I <sub>hold</sub> (A)	I <sub>trip</sub> (A)	V <sub>max</sub> (Vdc)	I <sub>max</sub> (A)	P <sub>d</sub> typ. (W)	Maximum Time-To-Trip		Resistance		Agency Approvals	
							Current (A)	Time (Sec.)	R <sub>min</sub> (Ω)	R <sub>1max</sub> (Ω)		
0402L010SL	-	0.10	0.30	6	40	0.5	0.50	1.00	0.150	2.000	X	X
0402L020SL	-	0.20	0.50	6	40	0.5	1.00	1.00	0.100	1.250	X	X
0402L035SL	-	0.35	0.70	6	40	0.5	8.00	0.10	0.050	0.700	X	X
0402L050SL	-	0.50	1.00	6	40	0.5	8.00	0.10	0.040	0.400	X	X
0402L075SL	-	0.75	1.50	6	40	0.5	8.00	0.10	0.030	0.300	X	X
0402L100SL	-	1.00	2.00	6	40	0.5	8.00	0.20	0.030	0.250	X	X
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	0.020	0.165	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
0603L200SL-V	X	2.00	4.00	6	50	0.6	8.00	1.00	0.005	0.040	X	X
0603L300SL	Y	3.00	6.00	6	50	0.6	8.00	5.00	0.003	0.030	X	X
0805L075SL	-G	0.75	1.50	6	50	0.6	8.00	0.20	0.040	0.150	X	X
0805L110SL	-H	1.10	1.80	6	50	0.6	8.00	0.30	0.030	0.120	X	X
0805L150SL	-K	1.50	3.00	6	50	0.6	8.00	0.50	0.015	0.065	X	X
0805L150/12SL	●K	1.50	3.00	12	50	0.6	8.00	0.50	0.007	0.08	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	5.20	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
0805L300SLTH	-N	3.00	6.00	6	50	0.6	8.00	5.00	0.003	0.030	X	X
0805L350SL	-T	3.50	7.00	6	50	0.6	8.00	5.00	0.003	0.025	X	X
0805L400SL	-Y	4.00	9.00	6	50	0.6	20.00	2.00	0.003	0.018	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	3.00	6	50	0.8	8.00	0.30	0.010	0.055	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	0.50	0.010	0.080	X	X
1206L150/16SL	E5	1.50	3.00	16	50	0.8	8.00	0.50	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
1206L260/12SL	-S1	2.60	5.00	12	50	0.8	8.00	4.00	0.003	0.055	X	X
1206L300SLTH	-N	3.00	6.00	6	50	0.8	8.00	4.00	0.003	0.020	X	X
1206L300/12SL	-N1	3.00	6.00	12	50	0.8	8.00	4.00	0.003	0.030	X	X
1206L350SLTH	-T	3.50	7.00	6	50	0.8	8.00	5.00	0.003	0.018	X	X
1206L350/12SL	CT	3.50	7.00	12	50	0.8	8.00	5.00	0.003	0.020	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	0.016	X	X
1206L400/12SL	CY	4.00	8.00	12	50	0.8	20.00	2.00	0.003	0.016	X	X
1206L450SL	-Z	4.50	9.00	6	50	0.8	22.50	2.00	0.001	0.014	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.

# Low Rho Series

## PolySwitch® Resettable PPTC

### Electrical Characteristics (Continued)

Part Number	Marking	I <sub>hold</sub> (A)	I <sub>trip</sub> (A)	V <sub>max</sub> (Vdc)	I <sub>max</sub> (A)	P <sub>d</sub> typ. (W)	Maximum Time-To-Trip		Resistance		Agency Approvals	
							Current (A)	Time (Sec.)	R <sub>min</sub> (Ω)	R <sub>1max</sub> (Ω)		
1206L450/12SL	CZ	4.50	9.00	12	50	1.0	22.50	2.00	0.003	0.014	X	X
1206L500SL-V	-M	5.00	10.00	6	50	1.0	25.00	2.00	0.001	0.012	X	X
1206L500/12SL	CM	5.00	10.00	12	50	1.0	25.00	2.00	0.001	0.012	X	X
1206L600SL	-W	6.00	12.00	6	50	1.0	30.00	2.00	0.001	0.010	X	X
1206L700SL	-X	7.00	14.00	6	50	1.2	35.00	2.00	0.001	0.007	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
1210L400SL	-V	4.00	8.00	6	50	1.0	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
1210L450/12SL	CY	4.50	9.00	12	50	1.2	22.50	2.00	0.001	0.014	X	X
1210L500SL	-M	5.00	10.00	6	50	1.2	25.00	2.00	0.001	0.012	X	X
1210L500/12SL	CM	5.00	10.00	12	50	1.2	25.00	2.00	0.001	0.012	X	X
1210L550SL	-R	5.50	11.00	6	50	1.2	27.50	2.00	0.001	0.011	X	X
1210L600SL	-W	6.00	12.00	6	50	1.2	30.00	2.00	0.001	0.010	X	X
1210L700SL	I70	7.00	14.00	6	50	1.2	35.00	2.00	0.001	0.008	X	X
1210L900SL	-Z	9.00	18.00	6	50	1.4	45.00	2.00	0.001	0.0055	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
1812L300SL	LF-30	3.00	7.00	6	50	1.0	8.00	5.00	0.003	0.021	X	X
1812L300/24SL	LF30J	3.00	6.00	24	50	2.0	15.00	2.00	0.001	0.030	X	X
1812L350SL**	LF-35	3.50	8.10	6	50	1.0	8.00	5.00	0.003	0.020**	X	X
1812L750/12SL	LF75C	7.50	15.00	12	50	1.5	37.50	2.00	0.001	0.006	X	Pending
2920L500/24SL	LF50J	5.00	10.00	24	50	2.2	25.00	2.00	0.001	0.018	X	X
2920L600/24SL	LF60J	6.00	12.00	24	50	2.5	30.00	2.00	0.001	0.012	X	X
2920L700SL***	LF700	7.00	14.00	6	50	2.2	35.00	2.0	0.001	0.007	X	X
2920L700/24SL	LF70J	7.00	14.00	24	50	2.5	35.00	2.00	0.001	0.010	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.

# Low Rho Series

## PolySwitch® Resettable PPTC

### Temperature Rerating

Part Number	Ambient Operation Temperature							
	-40°C	-20°C	0°C	20°C	40°C	60°C	70°C	85°C
	Hold Current (A)							
0402L010SL	0.14	0.13	0.11	0.10	0.09	0.07	0.06	0.05
0402L020SL	0.29	0.26	0.23	0.20	0.18	0.15	0.13	0.09
0402L035SL	0.50	0.45	0.40	0.35	0.31	0.26	0.22	0.16
0402L050SL	0.71	0.64	0.57	0.50	0.44	0.37	0.31	0.23
0402L075SL	1.05	0.95	0.85	0.75	0.65	0.55	0.45	0.30
0402L100SL	1.40	1.25	1.10	1.00	0.85	0.70	0.60	0.40
0603L050SL	0.81	0.71	0.62	0.50	0.41	0.30	0.24	0.16
0603L075SL	1.23	1.08	0.94	0.75	0.61	0.45	0.36	0.23
0603L100SL	1.35	1.25	1.10	1.00	0.82	0.65	0.52	0.35
0603L150SL	2.40	2.10	1.80	1.50	1.25	0.95	0.80	0.50
0603L175SL	2.50	2.25	2.00	1.75	1.55	1.30	1.10	0.80
0603L200SL-V	2.85	2.60	2.30	2.00	1.70	1.45	1.25	1.05
0603L300SL	4.70	4.15	3.60	3.00	2.50	2.00	1.65	1.20
0805L075SL	1.15	1.00	0.85	0.75	0.55	0.40	0.30	0.20
0805L110SL	1.70	1.50	1.30	1.10	0.85	0.60	0.50	0.30
0805L150SL	2.25	2.00	1.75	1.50	1.15	0.85	0.65	0.45
0805L150/12SL	2.10	1.90	1.70	1.50	1.30	1.00	0.85	0.60
0805L175SL	2.60	2.30	2.00	1.75	1.30	0.95	0.75	0.50
0805L200SLTH	3.10	2.75	2.40	2.00	1.65	1.15	0.95	0.65
0805L260SLTH	3.80	3.30	2.90	2.60	2.20	1.75	1.50	1.05
0805L300SL	4.70	4.15	3.60	3.00	2.50	2.00	1.65	1.20
0805L300SLTH	3.90	3.60	3.30	3.00	2.60	2.10	1.90	1.60
0805L350SL	5.05	4.55	4.00	3.50	3.00	2.55	2.25	1.90
0805L400SL	5.80	5.20	4.60	4.00	3.40	3.00	2.60	2.20
1206L075SL	1.30	1.13	0.92	0.75	0.58	0.38	0.31	0.14
1206L110SL	1.90	1.65	1.35	1.10	0.85	0.55	0.45	0.20
1206L150SL	2.65	2.30	1.90	1.50	1.15	0.70	0.50	0.25
1206L110/12SL	1.65	1.45	1.30	1.10	0.85	0.65	0.55	0.30
1206L150/12SL	2.25	2.00	1.80	1.50	1.20	0.90	0.75	0.55
1206L150/16SL	2.15	1.95	1.70	1.50	1.30	1.10	1.00	0.80
1206L175SL	2.60	2.45	2.00	1.75	1.35	1.05	0.90	0.60
1206L200SL	2.95	2.80	2.30	2.00	1.55	1.20	1.00	0.70
1206L260SLTH	4.05	3.60	3.12	2.60	2.15	1.70	1.40	1.00
1206L260/12SL	3.70	3.40	3.00	2.60	2.20	1.75	1.55	1.05
1206L300SLTH	4.70	4.15	3.60	3.00	2.50	2.00	1.65	1.20
1206L300/12SL	4.25	3.90	3.45	3.00	2.50	2.00	1.75	1.20
1206L350SLTH	5.50	4.85	4.15	3.50	2.85	2.25	1.90	1.40
1206L350/12SL	5.25	4.65	4.20	3.50	2.80	2.10	1.75	1.25
1206L380SLTH	5.59	5.05	4.48	3.80	3.23	2.70	2.17	1.98
1206L400SL	5.75	5.25	4.65	4.00	3.40	2.75	2.40	1.65
1206L400/12SL	6.00	5.30	4.80	4.00	3.20	2.40	2.00	1.40
1206L450SL	6.50	5.95	5.25	4.50	3.85	3.10	2.70	1.90

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

# Low Rho Series

## PolySwitch® Resettable PPTC

### Temperature Derating (Continued)

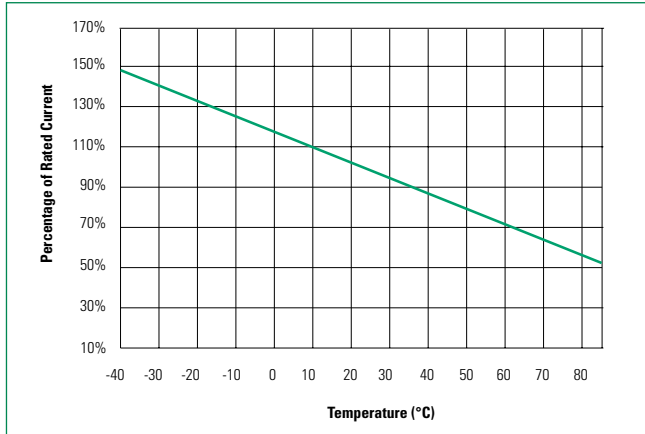
Part Number	Ambient Operation Temperature							
	-40°C	-20°C	0°C	20°C	40°C	60°C	70°C	85°C
	Hold Current (A)							
1206L450/12SL	6.75	5.95	5.40	4.50	3.60	2.70	2.25	1.60
1206L500SL-V	7.20	6.50	5.85	5.00	4.45	3.75	3.40	2.85
1206L500/12SL	7.20	6.60	5.80	5.00	4.25	3.40	3.00	2.10
1206L600SL	8.65	7.80	7.00	6.00	5.30	4.50	4.05	3.40
1206L700SL	9.50	8.65	7.80	7.00	5.95	5.05	4.45	3.90
1210L200SL	3.30	2.80	2.40	2.00	1.90	1.60	1.40	1.00
1210L260SL	4.20	3.75	3.30	2.60	2.20	1.70	1.45	1.05
1210L300SL	4.70	4.15	3.60	3.00	2.50	1.90	1.70	1.20
1210L350SL	5.00	4.60	4.05	3.50	2.80	2.00	1.75	1.20
1210L400SL	5.70	5.25	4.60	4.00	3.20	2.25	1.90	1.30
1210L450SL	7.15	6.25	5.30	4.50	3.45	2.50	2.00	0.85
1210L450/12SL	6.45	5.85	5.15	4.50	3.95	3.30	3.00	2.45
1210L500SL	7.20	6.50	5.85	5.00	4.45	3.75	3.40	2.85
1210L500/12SL	7.20	6.50	5.75	5.00	4.40	3.75	3.35	2.75
1210L550SL	8.00	7.15	6.35	5.50	4.90	4.10	3.70	3.05
1210L600SL	8.65	7.80	7.00	6.00	5.30	4.50	4.05	3.40
1210L700SL	10.15	9.10	8.10	7.00	6.25	5.25	4.70	3.90
1210L900SL	13.05	11.70	10.40	9.00	8.00	6.75	6.05	5.00
1812L190SL	2.91	2.57	2.20	1.90	1.78	1.50	1.40	1.05
1812L260SL	4.00	3.65	2.90	2.60	1.90	1.60	1.20	0.85
1812L300SL	4.35	3.90	3.45	3.00	2.65	2.25	2.00	1.65
1812L300/24SL	4.95	4.35	3.75	3.00	2.45	1.85	1.55	1.05
1812L350SL	5.40	4.95	3.90	3.50	2.60	2.15	1.65	1.20
1812L750/12SL	10.25	9.25	8.45	7.50	6.40	5.00	4.20	3.15
2920L500/24SL	8.20	7.25	6.25	5.00	4.25	3.25	2.80	2.05
2920L600/24SL	10.15	8.90	7.65	6.00	5.15	3.90	3.25	2.35
2920L700SL	10.00	9.20	8.10	7.00	5.60	4.00	3.50	2.40
2920L700/24SL	11.52	10.08	8.65	7.00	5.78	4.35	3.63	2.55

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

# Low Rho Series

## PolySwitch® Resettable PPTC

### Temperature Derating Curve



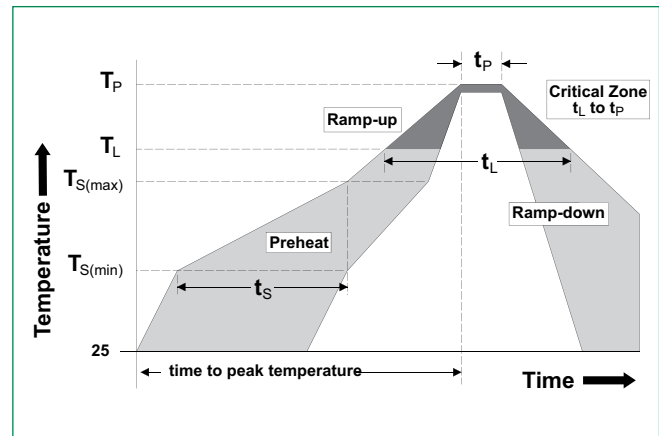
### Environmental Specifications

<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 -/+10% typical resistance change
<b>Humidity Aging</b>	+85°C, 85% R.H., 100 hours -/+15% typical resistance change
<b>Thermal Shock</b>	MIL-STD-202, Method 107 +85°C/-40°C 20 times -30% typical resistance change
<b>Solvent Resistance</b>	MIL-STD-202, Method 215 No change
<b>Vibration</b>	MIL-STD-883, Method 2007, Condition A No change
<b>Moisture Sensitivity Level</b>	Level 1, J-STD-020

Note: MSL level 2a for 2920 size product

### Soldering Parameters

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



### 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.

### Dimension Figures

Figure 1

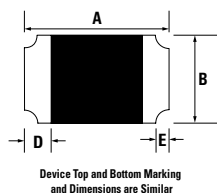


Figure 2

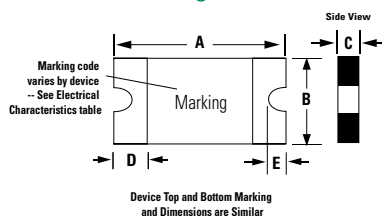
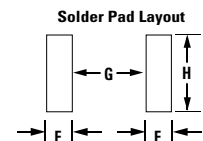
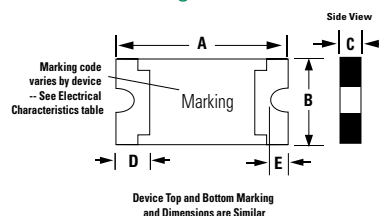


Figure 3





# Low Rho Series

## PolySwitch® Resettable PPTC

### Dimensions (Continued)

Part Number	Device Dimension																		Solder Pad						Figure		
	A				B				C				D				E				F		G			H	
	inch		mm		inch		mm		inch		mm		inch		mm		inch		mm		In	mm	In	mm		In	mm
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max							
1206L450SL	0.12	0.13	3.00	3.40	0.06	0.07	1.50	1.80	0.02	0.06	0.60	1.40	0.01	0.03	0.25	0.75	0.002	0.02	0.05	0.45	0.04	1.00	0.07	1.80	0.07	1.80	2
1206L450/12SL	0.12	0.13	3.00	3.40	0.06	0.07	1.50	1.80	0.03	0.06	0.80	1.40	0.01	0.03	0.25	0.75	0.002	0.02	0.05	0.45	0.04	1.00	0.07	1.80	0.07	1.80	3
1206L500SLV	0.12	0.13	3.00	3.40	0.06	0.07	1.50	1.80	0.02	0.04	0.60	1.00	0.01	0.03	0.25	0.75	0.002	0.02	0.05	0.45	0.04	1.00	0.07	1.80	0.07	1.80	3
1206L500/12SL	0.12	0.13	3.00	3.40	0.06	0.07	1.50	1.80	0.03	0.06	0.80	1.40	0.01	0.03	0.25	0.75	0.002	0.02	0.05	0.45	0.04	1.00	0.07	1.80	0.07	1.80	3
1206L600SL	0.12	0.13	3.00	3.40	0.06	0.07	1.50	1.80	0.02	0.05	0.60	1.20	0.01	0.03	0.25	0.75	0.002	0.02	0.05	0.45	0.04	1.00	0.07	1.80	0.07	1.80	3
1206L700SL	0.12	0.13	3.00	3.40	0.06	0.07	1.50	1.80	0.04	0.06	1.00	1.40	0.01	0.03	0.25	0.75	0.002	0.02	0.05	0.45	0.04	1.00	0.07	1.80	0.07	1.80	3
1210L200SL	0.12	0.14	3.00	3.43	0.09	0.11	2.35	2.80	0.02	0.03	0.40	0.70	0.01	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	2
1210L260SL	0.12	0.14	3.00	3.43	0.09	0.11	2.35	2.80	0.02	0.03	0.40	0.70	0.01	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	2
1210L300SL	0.12	0.14	3.00	3.43	0.09	0.11	2.35	2.80	0.02	0.05	0.60	1.20	0.01	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	2
1210L350SL	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	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	2
1210L400SL	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	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	2
1210L450SL	0.12	0.14	3.00	3.43	0.09	0.11	2.35	2.80	0.02	0.05	0.60	1.20	0.01	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	2
1210L450/12SL	0.12	0.14	3.00	3.43	0.09	0.11	2.35	2.80	0.03	0.06	0.80	1.40	0.01	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	3
1210L500SL	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	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	3
1210L500/12SL	0.12	0.14	3.00	3.43	0.09	0.11	2.35	2.80	0.03	0.06	0.80	1.40	0.01	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	3
1210L550SL	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	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	3
1210L600SL	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	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	3
1210L700SL	0.12	0.14	3.00	3.43	0.09	0.11	2.35	2.80	0.02	0.05	0.60	1.20	0.01	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	3
1210L900SL	0.12	0.14	3.00	3.43	0.09	0.11	2.35	2.80	0.04	0.06	1.00	1.40	0.01	0.03	0.25	0.75	0.004	0.02	0.10	0.50	0.04	1.00	0.08	2.00	0.10	2.50	3
1812L190SL	0.17	0.19	4.37	4.73	0.12	0.13	3.07	3.41	0.02	0.03	0.40	0.70	0.01	0.05	0.30	1.20	0.01	0.03	0.15	0.65	0.07	1.78	0.14	3.45	0.12	3.15	2
1812L260SL	0.17	0.19	4.37	4.73	0.12	0.13	3.07	3.41	0.02	0.03	0.40	0.70	0.01	0.05	0.30	1.20	0.01	0.03	0.15	0.65	0.07	1.78	0.14	3.45	0.12	3.15	2
1812L300SL	0.17	0.19	4.37	4.73	0.12	0.13	3.07	3.41	0.02	0.03	0.40	0.70	0.01	0.05	0.30	1.20	0.01	0.03	0.15	0.65	0.07	1.78	0.14	3.45	0.12	3.15	2
1812L300/24SL	0.17	0.19	4.37	4.73	0.12	0.13	3.07	3.41	0.06	0.10	1.50	2.50	0.01	0.05	0.30	1.20	0.01	0.03	0.15	0.65	0.07	1.78	0.14	3.45	0.12	3.15	3
1812L350SL	0.17	0.19	4.37	4.73	0.12	0.13	3.07	3.41	0.02	0.03	0.40	0.70	0.01	0.05	0.30	1.20	0.01	0.03	0.15	0.65	0.07	1.78	0.14	3.45	0.12	3.15	2
1812L750/12SL	0.17	0.19	4.37	4.73	0.12	0.13	3.07	3.41	0.02	0.04	0.60	1.10	0.01	0.05	0.30	1.20	0.01	0.03	0.15	0.65	0.07	1.78	0.14	3.45	0.12	3.15	3
2920L500/24SL	0.26	0.31	6.73	7.98	0.19	0.21	4.80	5.44	0.02	0.05	0.40	1.20	0.01	0.10	0.30	2.50	0.01	0.08	0.25	2.00	0.08	2.00	0.18	4.60	0.21	5.30	3
2920L600/24SL	0.26	0.31	6.73	7.98	0.19	0.21	4.80	5.44	0.06	0.10	1.50	2.50	0.01	0.10	0.30	2.50	0.01	0.08	0.25	2.00	0.08	2.00	0.18	4.60	0.21	5.30	3
2920L700SL	0.26	0.31	6.73	7.98	0.19	0.21	4.80	5.44	0.02	0.03	0.40	0.65	0.01	0.10	0.30	2.50	0.01	0.08	0.25	2.00	0.08	2.00	0.18	4.60	0.21	5.30	2
2920L700/24SL	0.26	0.31	6.73	7.98	0.19	0.21	4.80	5.44	0.06	0.10	1.50	2.50	0.01	0.10	0.30	2.50	0.01	0.08	0.25	2.00	0.08	2.00	0.18	4.60	0.21	5.30	3



# Low Rho Series

## PolySwitch® Resettable PPTC

### 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
0402L075SL	0402L075SLKR	0.75	075		10,000	KR
0402L100SL	0402L100SLKR	1.00	100		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
0603L200SL-V	0603L200SL-VYR	2.00	200		4,000	YR
0603L300SL	0603L300SLYR	3.00	300		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
0805L150/12SL	0805L150/12SLYR	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
0805L300SLTH	0805L300SLTHYR	3.00	300		4,000	YR
0805L350SL	0805L350SLYR	3.50	350		4,000	YR
0805L400SL	0805L400SLWR	4.00	400		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
1206L150/16SL	1206L150/16SLWR	1.50	150		3,000	WR
1206L175SL	1206L175SLYR	1.75	175		4,000	YR
1206L200SL	1206L200SLYR	2.00	200		4,000	YR
1206L260SLTH	1206L260SLTHYR	2.60	260		4,000	YR
1206L260/12SL	1206L260/12SLYR	2.60	260		4,000	YR
1206L300SLTH	1206L300SLTHYR	3.00	300		4,000	YR
1206L300/12SL	1206L300/12SLYR	3.00	300		4,000	YR
1206L350SLTH	1206L350SLTHYR	3.50	350		4,000	YR
1206L350/12SL	1206L350/12SLWR	3.50	350		3,000	WR
1206L380SLTH*	1206L380SLTHYR	2.82*	380		4,000	YR
1206L400SL	1206L400SLWR	4.00	400		3,000	WR
1206L400/12SL	1206L400/12SLWR	4.00	400	3,000	WR	
1206L450SL	1206L450SLWR	4.50	450	3,000	WR	
1206L450/12SL	1206L450/12SLWR	4.50	450	3,000	WR	
1206L500SL-V	1206L500SL-VWR	5.00	500	3,000	WR	
1206L500/12SL	1206L500/12SLPR	5.00	500	2,000	PR	

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

# Low Rho Series

## PolySwitch® Resettable PPTC

### Packaging (Continued)

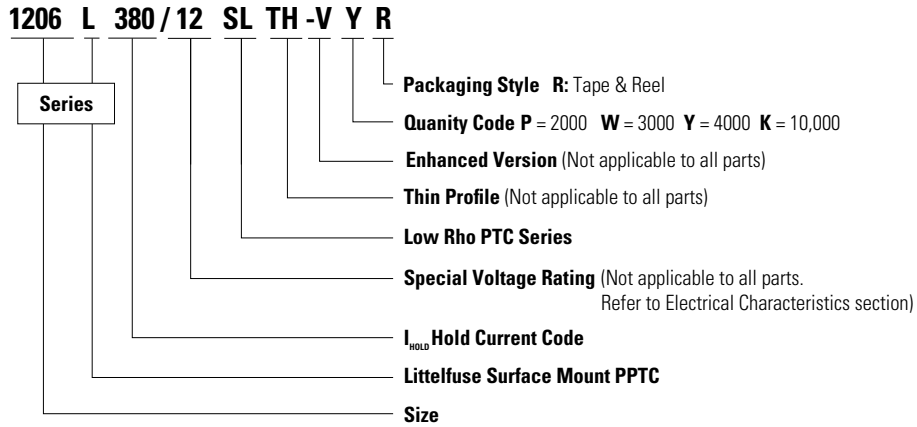
Part Number	Ordering Number	$I_{hold}$ (A)	$I_{hold}$ Code	Packaging Option	Quantity	Quantity & Packaging Codes
1206L600SL	1206L600SLWR	6.00	600	Tape & Reel	3,000	WR
1206L700SL	1206L700SLPR	7.00	700		2,000	PR
1210L200SL	1210L200SLYR	2.00	200		4,000	YR
1210L260SL	1210L260SLYR	2.60	260		4,000	YR
1210L300SL	1210L300SLWR	3.00	300		3,000	WR
1210L350SL	1210L350SLWR	3.50	350		3,000	WR
1210L400SL	1210L400SLWR	4.00	400		3,000	WR
1210L450SL	1210L450SLWR	4.50	450		3,000	WR
1210L450/12SL	1210L450/12SLWR	4.50	450		3,000	WR
1210L500SL	1210L500SLWR	5.00	500		3,000	WR
1210L500/12SL	1210L500/12SLWR	5.00	500		3,000	WR
1210L550SL	1210L550SLWR	5.50	550		3,000	WR
1210L600SL	1210L600SLWR	6.00	600		3,000	WR
1210L700SL	1210L700SLWR	7.00	700		3,000	WR
1210L900SL	1210L900SLPR	9.00	900		2,000	PR
1812L190SL	1812L190SLPR	1.90	190		2,000	PR
1812L260SL	1812L260SLPR	2.60	260		2,000	PR
1812L300SL	1812L300SLPR	3.00	300		2,000	PR
1812L300/24SL	1812L300/24SLER	3.00	300		2,500	ER
1812L350SL	1812L350SLPR	3.50	350		2,000	PR
1812L750/12SL	1812L750/12SLDR	7.50	750		1,500	DR
2920L500/24SL	2920L500/24SLDR	5.00	500		1,500	DR
2920L600/24SL	2920L600/24SLER	6.00	600		2,500	ER
2920L700SL	2920L700SLPR	7.00	700		2,000	PR
2920L700/24SL	2920L700/24SLER	7.00	700		2,500	ER

Notes: \*1206L380SLTH has  $I_{hold}$  2.82A for at least 15min @ 55°C.

# Low Rho Series

PolySwitch® Resettable PPTC

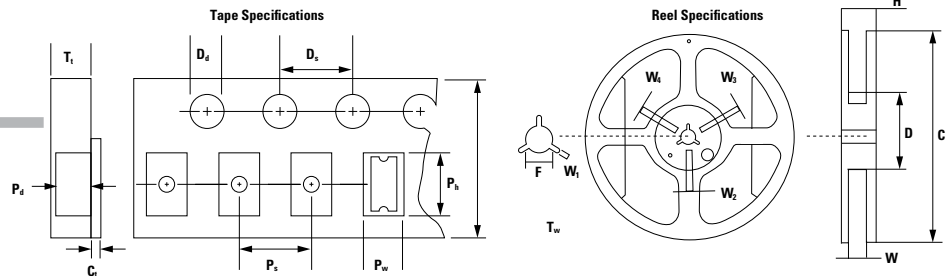
## Part Ordering Number System



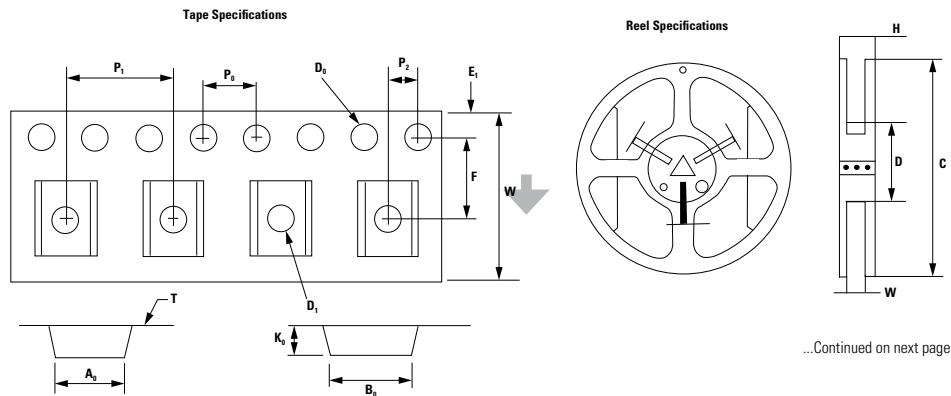
## Tape & Reel Specifications

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

Symbol	0402L010SL 0402L020SL 0402L035SL 0402L050SL 0402L075SL 0402L100SL
<b>Tape Dimensions: EIA-481-1 (mm)</b>	
C <sub>t</sub>	0.05 ± 0.01
D <sub>d</sub>	1.5 ± 0.1
D <sub>s</sub>	4.0 ± 0.1
P <sub>d</sub>	0.41 ± 0.1
P <sub>h</sub>	1.12 ± 0.1
P <sub>s</sub>	2.0 ± 0.1
P <sub>w</sub>	0.65 ± 0.03
T <sub>t</sub>	0.61 ± 0.1
T <sub>w</sub>	8.0 ± 0.1
Leader min.	390
Trailer min.	160
<b>Reel Dimensions: EIA-481-1 (mm)</b>	
H	12.0 ± 0.5
W	9.0 ± 0.5
D	Ø60 ± 0.5
F	Ø13.0 ± 0.2
C	Ø178 ± 1
W <sub>1</sub>	2.2 ± 0.5
W <sub>2</sub>	3.0 ± 0.5
W <sub>3</sub>	4.0 ± 0.5
W <sub>4</sub>	5.5 ± 0.5



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



...Continued on next page.

# Low Rho Series

## PolySwitch® Resettable PPTC

Dimensions for 0603, 0805, 1206, 1210, size product  
(see tabel below)

Symbol	0603L050SL 0603L075SL 0603L100SL	0603L150SL 0603L175SL 0603L200SL-V 0603L300SL	0805L075SL 0805L110SL 0805L150SL 0805L150/12SL 0805L175SL 0805L200SLTH 0805L260SLTH 0805L300SLTH	0805L350SL	0805L300SL 0805L400SL	1206L075SL 1206L110SL 1206L150SL 1206L110/12SL 1206L150/12SL 1206L175SL 1206L200SL	1206L260SLTH 1206L260/12SL 1206L300SLTH 1206L300/12SL 1206L350SLTH 1206L380SLTH	1206L150/16SL 1206L350/12SL 1206L400SL 1206L400/12SL 1206L450SL 1206L450/12SL 1206L500SL-V 1206L600SL	1206L500/12SL 1206L700SL	1210L200SL 1210L260SL 1210L300SL
<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	8.00 ± 0.30	8.20 +0.10/-0.30	8.15 +0.15/-0.30	8.20 +0.10/-0.30	8.00 ± 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	3.50 ± 0.05	3.50 ± 0.05
<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 ± 0.10	1.00 ± 0.10	1.00 ± 0.10	1.00 (Min.)
<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	4.00 ± 0.10	4.00 ± 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 ± 0.05
<b>A<sub>0</sub></b>	1.10 ± 0.10	1.10 ± 0.10	1.60 ± 0.10	1.65 ± 0.10	1.65 ± 0.10	1.95 ± 0.10	1.92 ± 0.10	1.95 ± 0.10	2.82 ± 0.10	
<b>B<sub>0</sub></b>	1.92 ± 0.10	1.92 ± 0.10	2.30 ± 0.10	2.35 ± 0.10	2.35 ± 0.10	3.65 ± 0.10	3.65 ± 0.10	3.65 ± 0.10	3.46 ± 0.10	
<b>T</b>	0.20 ± 0.10	0.20 ± 0.10	0.25 ± 0.10	0.20 ± 0.10	0.25 ± 0.10	0.20 ± 0.10	0.25 ± 0.10	0.25 ± 0.10	0.25 ± 0.10	0.25 ± 0.10
<b>K<sub>0</sub></b>	0.72 ± 0.10	0.96 ± 0.10	0.90 ± 0.10	1.05 ± 0.10	1.50 ± 0.10	0.87 ± 0.10	1.30 ± 0.10	1.70 ± 0.10	1.00 ± 0.10	
<b>Leader min.</b>	390									
<b>Trailer min.</b>	160									
<b>Reel Dimensions: EIA-481-1 (mm)</b>										
<b>H</b>	11.0 ± 0.5									
<b>W</b>	9.0 ± 1.5									
<b>C</b>	Ø178 ± 1.0									
<b>D</b>	Ø60.2 ± 0.5									

# Low Rho Series

## PolySwitch® Resettable PPTC

Dimensions for 1210, 1812 & 2920 size product  
(see tabel below)

Symbol	1210L350SL 1210L400SL 1210L450SL 1210L450/12SL 1210L500SL 1210L500/12SL 1210L550SL 1210L600SL 1210L700SL	1210L900SL	1812L190SL 1812L260SL 1812L300SL 1812L350SL	1812L750/12SL	1812L300/24SL	2920L500/24SL	2920L700SL	2920L600/24SL 2920L700/24SL
<b>Tape Dimensions: EIA-481-1 (mm)</b>								
<b>W</b>	8.00 ± 0.30	8.00 ± 0.30	12.00 ± 0.30	12.00 ± 0.30	12.00 ± 0.30	16.00 ± 0.30	16.00 ± 0.30	16.00 ± 0.30
<b>F</b>	3.50 ± 0.05	3.50 ± 0.05	5.50 ± 0.05	5.50 ± 0.05	5.50 ± 0.05	7.50 ± 0.10	7.50 ± 0.10	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
<b>D<sub>0</sub></b>	1.55 ± 0.05	1.55 ± 0.05	1.55 ± 0.05	1.55+/- 0.05	1.50 +0.10/-0	1.55 ± 0.05	1.55 ± 0.05	1.50 +0.10/-0
<b>D<sub>1</sub></b>	1.00 (Min.)	1.00 (Min.)	1.55 (Min.)	1.50+/- 0.10	1.50 +0.10/-0	1.50 ± 0.10	1.50 ± 0.10	1.50 (Min.)
<b>P<sub>0</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
<b>P<sub>1</sub></b>	4.00 ± 0.10	4.00 ± 0.10	8.00 ± 0.10	8.00 ± 0.10	8.00 ± 0.10	8.00 ± 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 ± 0.10	2.00 ± 0.10	2.00 ± 0.10
<b>A<sub>0</sub></b>	2.82 ± 0.10	2.80 ± 0.10	3.58 ± 0.10	3.50 ± 0.10	3.55 ± 0.10	5.74 ± 0.10	5.74 ± 0.10	5.60 ± 0.10
<b>B<sub>0</sub></b>	3.50 ± 0.10	3.50 ± 0.10	4.93 ± 0.10	4.85 ± 0.10	4.88 ± 0.10	8.02 ± 0.10	8.02 ± 0.10	7.95 ± 0.10
<b>T</b>	0.20 ± 0.10	0.25 ± 0.10	0.25 ± 0.05	0.25 ± 0.10	0.30 ± 0.05	0.30 ± 0.10	0.30 ± 0.10	0.30 ± 0.05
<b>K<sub>0</sub></b>	1.30 ± 0.10	1.60 ± 0.10	0.87 ± 0.06	1.25 ± 0.10	2.45 ± 0.10	1.30 ± 0.10	0.91 ± 0.10	2.55 ± 0.10
<b>Leader min.</b>	390							
<b>Trailer min.</b>	160							
<b>Reel Dimensions: EIA-481-1 (mm)</b>								
<b>H</b>	11.0 ± 0.5	16.0 ± 0.5	16.0 ± 0.5	17.4 ± 1.0	19.5 ± 1.0	21.4 ± 1.0		
<b>W</b>	9.0 ± 1.5	13.2 ± 1.5	13.2 ± 1.5	13.4 ± 1.0	17 ± 0.2	17.4 ± 1.0		
<b>C</b>	Ø178 ± 1.0	Ø178 ± 1.0	Ø178 ± 1.0	Ø330 ± 1.0	Ø180 ± 3.0	Ø330 ± 1.0		
<b>D</b>	Ø60.2 ± 0.5	Ø60.2 ± 0.5	Ø60.2 ± 0.5	Ø99 ± 0.5	Ø60 ± 0.5	Ø99 ± 0.5		

### Warning

- Users should independently evaluate the suitability of and test each product selected for their own application.
- Operation beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- These devices are intended for protection against damage caused by occasional overcurrent or overtemperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
- Contamination of the PPTC material with certain silicone-based oils or some aggressive solvents can adversely impact the performance of the devices.
- Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.
- PPTC devices are not recommended for installation in applications where the device is constrained such that its PTC properties are inhibited, for example in rigid potting materials or in rigid housings, which lack adequate clearance to accommodate device expansion.
- Operation in circuits with a large inductance can generate a circuit voltage (Ldi/dt) above the rated voltage of the device.

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