

# PolySwitch® Resettable PPTC

## Battery Strap > LSP Series



### Additional Information



Resources



Accessories



Samples

### Agency Approvals

Agency	Agency File Number
	E74889*
	J50313999*

#### Note

\* LSP380 Only

### Description

Littelfuse PolySwitch®, a pioneer of polymeric positive temperature coefficient (PPTC) resettable devices, offers several material platforms to help protect battery applications. The high trip temperature, broad range of hold current ratings, and high voltage ratings available, combined with automotive qualifications are a unique combination for LSP380 and LSP550.

### Features and Benefits

- Qualified to AEC-Q200 for automotive applications
- Compact size (chip length and width)
- Hold current ratings 3.8 A and 5.5 A
- Voltage ratings 16 Vdc
- Compatible with high-volume electronics assembly
- Low-resistance devices increase battery operating time
- RoHS compliant, halogen-free, and lead-free

### Applications

- E-call module backup battery packs
- Mobile radio device battery packs
- Mobile medical device battery packs
- Intelligent vacuum cleaner battery packs

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### Electrical Characteristics

Part Description	Ordering Part Number	$I_H$	$I_T$	$V_{MAX}$	$I_{MAX}$	$P_{D MAX}$	Max Time-to-trip	$R_{MIN}$	$R_{MAX}$	$R_{1MAX}$	$R_{TYP}$	Typical Activation Temperature (°C)
		(A)	(A)	(V <sub>DC</sub> )	(DC <sub>ADC</sub> )	(W)	(A)	(s)	(Ω)	(Ω)	(Ω)	
LSP380	RF4906-000	3.8	8.0	16	50	1.5	19.0	5.0	0.013	0.028	0.037	0.021
LSP550	RF5079-000	5.5	10.2	16	50	2.8	27.5	5.0	0.008	0.018	0.026	0.013

#### Notes

Product electrical characteristics determined at 25 °C

$I_H$ — Hold current: maximum current device will pass without interruption in 20 °C still air unless otherwise specified.

$I_T$ — Trip current: minimum current that will switch the device from low-resistance to high-resistance in 20 °C still air unless otherwise specified.

$V_{MAX}$ — Maximum voltage device can withstand without damage at rated current.

$I_{MAX}$ — Maximum fault current device can withstand without damage at rated voltage.

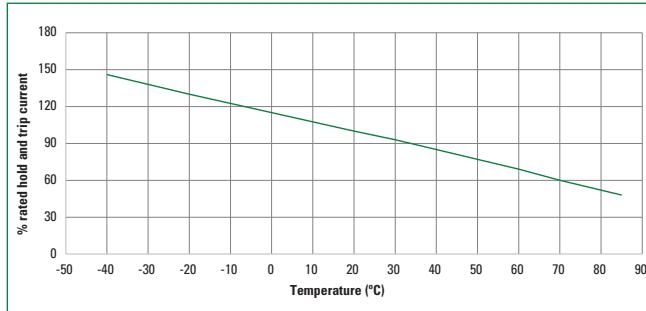
$P_D$ — Power dissipated from device when in the tripped state in 20 °C still air unless otherwise specified.

$R_{MIN}$ — Minimum resistance of device as supplied at 20 °C unless otherwise specified.

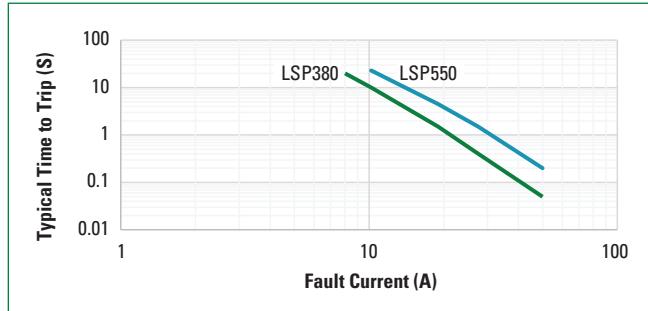
$R_{MAX}$ — Maximum resistance of device as supplied at 20 °C unless otherwise specified.

$R_{1MAX}$ — Maximum resistance, measured at 20 °C unless otherwise specified, of device one hour after being gripped the first time.

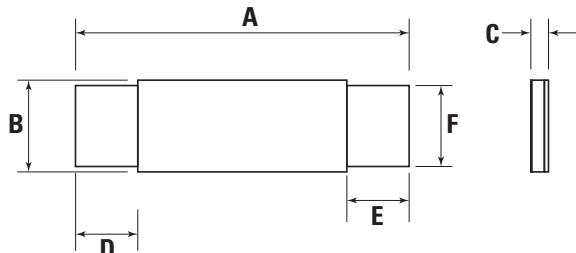
### Temperature Re-rating Curve



### Typical Time-to-Trip Curve at 20°C



### Dimensions in Millimeters (Inches)



Part Description	Ordering Part Number	Dimensions in Millimeters (Inches)											
		A		B		C		D		E		F	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
LSP380	RF4906-000	18.5 (0.730)	21.5 (0.85)	4.9 (0.19)	5.5 (0.22)	0.5 (0.02)	0.9 (0.04)	4.0 (0.16)	6.0 (0.24)	4.0 (0.16)	6.0 (0.24)	3.9 (0.15)	4.1 (0.16)
LSP550	RF5079-000	18.5 (0.730)	21.5 (0.85)	9.9 (0.39)	10.5 (0.41)	0.5 (0.02)	0.9 (0.04)	4.0 (0.16)	6.0 (0.24)	4.0 (0.16)	6.0 (0.24)	3.9 (0.15)	4.1 (0.16)

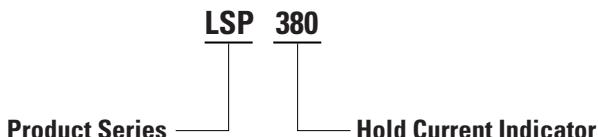
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### Physical Characteristics

<b>Lead Material</b>	0.125 mm nominal thickness, quarter-hard Nickel
<b>Tape Material</b>	Polyester

### Part Numbering System



### Packaging and Marking Information/Agency Recognition

Part Description	Ordering Part Number	Bag Quantity	Standard Package Quantity	Part Marking	Agency Recognition
LSP380	RF4906-000	1,000	10,000	L38	UL, TUV
LSP550	RF5079-000	1,000	10,000	L55	UL, TUV

### Installation Guidelines for Strap Devices

- PPTC devices operate by thermal expansion of the conductive polymer. If devices are placed under pressure or installed in spaces that would prevent thermal expansion, they may not properly protect against damage caused by fault conditions. Designs must be selected in such a manner that adequate space is maintained over the life of the product.
- Twisting, bending, or placing the PPTC device in tension will decrease the ability of the device to protect against damage caused by electrical faults. No residual force should remain on device after installation. Mechanical damage to the PPTC device may affect device performance and should be avoided.
- Chemical contamination of PPTC devices should be avoided. Certain greases, solvents, hydraulic fluids, fuels, industrial cleaning agents, volatile components of adhesives, silicones, and electrolytes can have an adverse effect on device performance.

### Environmental Specifications

Test	Conditions	Resistance Change
<b>Passive Aging</b>	70 °C, 1000 hrs	±10% typ
<b>Humidity Aging</b>	85 °C/85% RH, 7 days	±5% typ
<b>Vibration</b>	MIL-STD-883D, Method 2026	No change

#### Notes

Storage conditions: 40 °C max., 70% RH max.; devices should remain in original sealed bags prior to use.

Devices may not meet specified values if these storage conditions are exceeded.

**Disclaimer Notice** - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <http://www.littelfuse.com/disclaimer-electronics>.