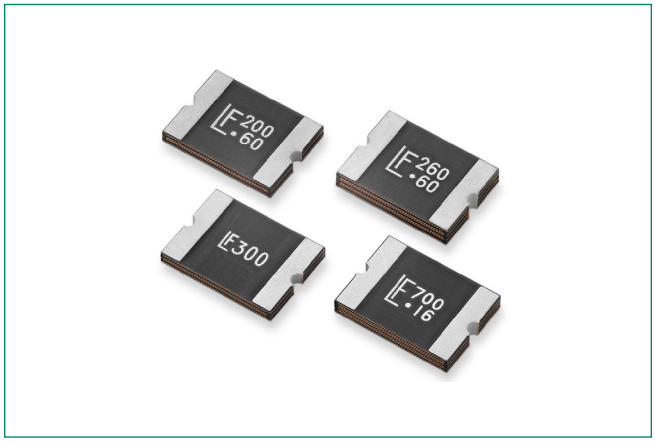
Surface Mount PPTC
3425L Series



Description

Littelfuse 3425L Series PPTC provides surface mount overcurrent protection for high voltage applications where resettable protection is desired.

Features & Benefits

- RoHS compliant and lead-free
- Halogen-free
- High voltage
- Low profile
- Fast response to fault current
- Compatible with high-volume electronics assembly
- Higher voltage ratings allow use in new applications

Applications

- Servers and computing equipment
- Portable electronics
- Automotive electronic control module protection
- Telecom equipment protection
- Robotic appliances

Additional Information

Resources | Accessories | Samples

Agency Approvals

Agency	Agency Number
c UL us	E183209
	R50119118

Electrical Characteristics

Part Number	Marking	I_{hold}	I_{trip}	V_{max}	I_{max}	$P_{d\ typ}$	Maximum Time to Trip		Resistance		Agency Approvals	
							Current	Time	R_{min}	R_{1max}		
		(A)	(A)	(Vdc)	(A)	(W)	(A)	(Sec.)	(Ω)	(Ω)	c UL us	
3425L200/60	LF200-60	2.00	4.00	60.00	20.00	2.50	8.00	10.00	0.040	0.200	X	X
3425L260/60	LF260-60	2.60	5.20	60.00	20.00	2.50	8.00	10.00	0.020	0.120	X	X
3425L300/36	LF300	3.00	6.00	36.00	20.00	2.50	8.00	20.00	0.010	0.060	X	X

Notes:

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.

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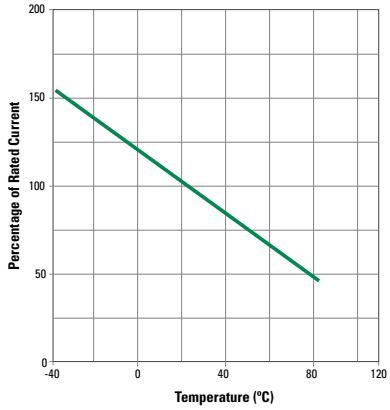
3425L Series

Temperature Rerating

Part Number	Ambient Operation Temperature								
	-40 °C	-20 °C	0 °C	20 °C	40 °C	50 °C	60 °C	70 °C	85 °C
	Hold Current (A)								
3425L200/60	3.07	2.73	2.39	2.00	1.71	1.54	1.37	1.20	0.95
3425L260/60	4.01	3.56	3.12	2.60	2.22	2.00	1.77	1.55	1.21
3425L300/36	4.43	3.98	3.52	3.00	2.61	2.39	2.16	1.93	1.59

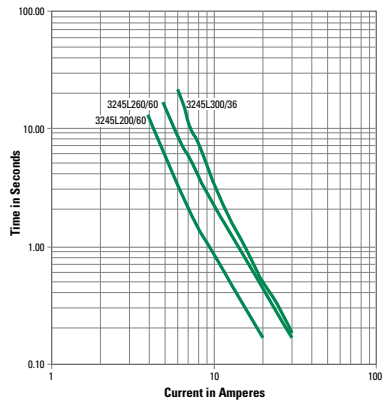
Note: Notes: The temperature rerating data is only for reference, please contact Littelfuse technical support for detail temperature rerating information.

Temperature Rerating Curve



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

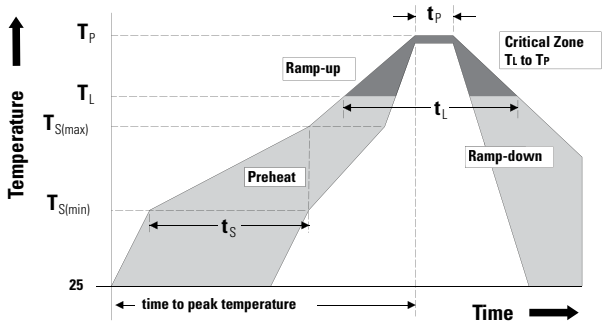
Average Time Current Curves



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

Soldering Perameters

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 °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.



Physical Specifications

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

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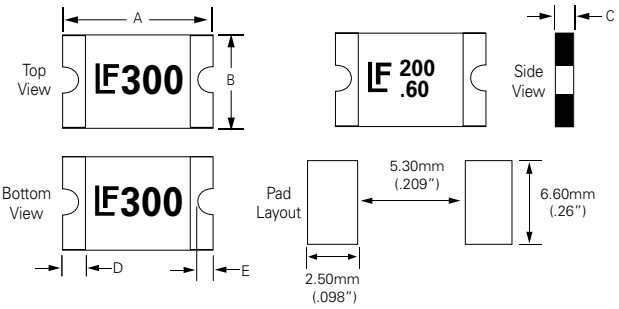
Surface Mount PPTC
3425L Series

Dimensions (mm)



MARKING CODE VARIES
WITH AMPERAGE AND VOLTAGE RATING
SEE ELECTRICAL CHARACTERISTICS CHART
SHOWN ARE:
- 3.0 A / 36 V RATING (LEFT)
- 2.0 A / 60 V RATING (RIGHT)

Part Number	A				B				C				D				E			
	Inches		mm		Inches		mm		Inches		mm		Inches		mm		Inches		mm	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3425L200/60	0.33	0.35	8.30	9.00	0.24	0.26	6.00	6.70	0.04	0.07	1.00	1.80	0.01	0.10	0.30	2.50	0.01	0.03	0.25	0.65
3425L260/60	0.33	0.35	8.30	9.00	0.24	0.26	6.00	6.70	0.06	0.12	1.50	3.00	0.01	0.10	0.30	2.50	0.01	0.03	0.25	0.65
3425L300/36	0.33	0.35	8.30	9.00	0.24	0.26	6.00	6.70	0.03	0.06	0.70	1.40	0.01	0.10	0.30	2.50	0.01	0.03	0.25	0.65

Environmental Specifications

Operating Temperature	-40 °C to +85 °C
Maximum Device Surface Temperature in Tripped State	125 °C
Passive Aging	+85 °C, 1000 hours -/+5% typical resistance change
Humidity Aging	+85 °C, 85%,R.H.,1000 hours -/+5% typical resistance change
Thermal Shock	MIL–STD–202, Method 107G +85 °C / -40 °C 20 times -30% typical resistance change
Solvent Resistance	MIL–STD–202, Method 215 No change
Vibration	MIL–STD–883C, Method 2007.1, Condition A; No change
Moisture Sensitivity Level	Level 1, J–STD–020C

Part Numbering System

3425 L 200/ 60 M R -A

- **Series**
- **Size**
  - **L: Littelfuse Surface Mount PPTC**
- **I_{HOLD} Hold Current Code** (Refer to Electrical Characteristics Table)
- **/XX: Special Voltage Rating** (Not applicable to all parts. Refer to Electrical Characteristics Table)
- **Quantity Code**
  - **M:** 1000; **U:** 500 Pieces
- **Packaging Style**
  - **R =** Tape & Reel
- **-A:** Automotive grade
  - **Blank:** Standard version

Packaging

Part Number	Ordering Number	Halogen Free	I_{hold} (A)	I_{hold} Code	Voltage Option	Packaging Option	Quantity	Quantity & Packaging Codes
3425L200/60	3425L200/60MR	Yes	2.00	200	/60	Tape and Reel	1000	MR
3425L260/60	3425L260/60UR	Yes	2.60	260	/60	Tape and Reel	500	UR
3425L300/36	3425L300/36MR	Yes	3.00	300	/36	Tape and Reel	1000	MR

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Surface Mount PPTC
3425L Series

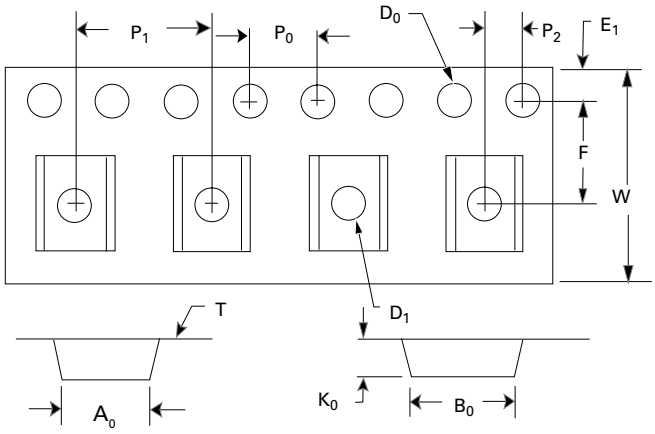
Tape and Reel Specifications

TAPE SPECIFICATIONS: EIA-481-1 (mm)		
	3425L200/60 3425L300/36	**3425L260/60**
W	16.0+/- 0.30	16.0+/- 0.30
F	7.50+/- 0.10	7.50+/- 0.10
E1	1.75+/- 0.10	1.75+/- 0.10
D0	1.50+ 0.10	1.50+0.10
D1	1.50 (MIN)	1.50 (MIN)
P0	4.0+/- 0.10	4.0+/- 0.10
P1	8.0+/- 0.10	8.0+/- 0.10
P2	2.0+/- 0.10	2.0+/- 0.10
A0	6.70+/- 0.10	6.70+/- 0.10
B0	9.50+/- 0.10	9.50+/- 0.10
T	0.30+/- 0.05	0.30+/- 0.05
KO	1.55+/-0.10	2.20+/-0.10
Leader Min.	390	390
Trailer Min.	160	160

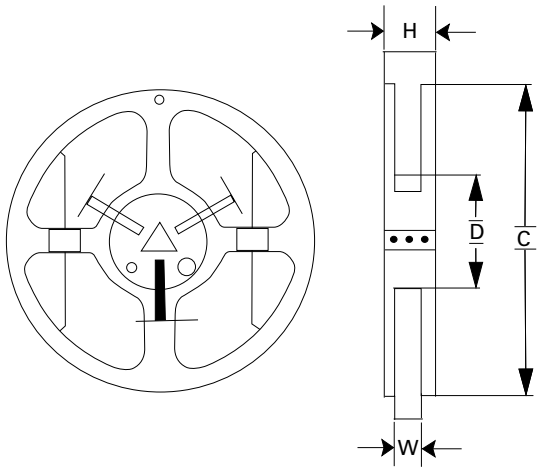
REEL DIMENSIONS: EIA-481-1 (mm)	
C	Ø180.0+/- 3.0
D	Ø60+/–0.5
H	19.5+/- 1.0
W	17+/- 0.2

Tape and Reel Diagram

Tape Specifications



Reel Specifications



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.

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.

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