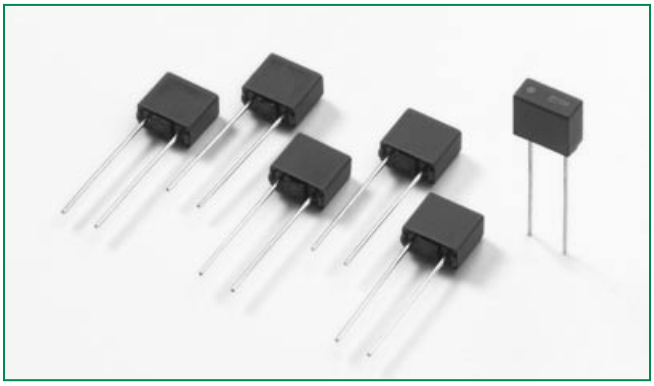
399 Series, TE5®, Inrush Protector Fuse



Description

The 399 Series are TE5®, time-Lag type, 65V rated fuses. For Short Circuit Protection of Sensitive Electronic Components and Assemblies.

Features

- Reduced PCB space requirements
- Highly defined cut-off times
- Low internal resistance
- Irreversible physical separation
- Flame resistant encapsulated casing
- Halogen free
- Available from 125mA to 4A

Agency Approvals

Agency	Agency File Number	Ampere Range
c UL us	E67006	125mA - 4A

Applications

- IC Chip Protection

Electrical Characteristics

% of Ampere Rating	Opening Time
300	20 Seconds, **Max.**

Electrical Characteristics

Amp Code	Rated Current	Marking Code*	Voltage Rating	Breaking Capacity	Cold Resistance 0.1 x I_N typ. (mΩ)	Power Disspation 1.0 x I_N max. (mW)	Melting Integral 10 x I_N typ. (A^2s)	Agency Approvals c UL us
0125	125 mA	IP13	65 V	50A / 65 VAC/DC 50-60 Hz cosφ=1.0	1600	125	0.13	x
0160	160 mA	IP16	65 V		1100	140	0.2	x
0200	200 mA	IP20	65 V		775	155	0.29	x
0250	250 mA	IP25	65 V		550	170	0.42	x
0315	315 mA	IP32	65 V		330	190	0.62	x
0400	400 mA	IP40	65 V		265	220	0.92	x
0500	500 mA	IP50	65 V		190	240	1.4	x
0630	630 mA	IP63	65 V		130	265	2	x
0800	800 mA	IP80	65 V		92	300	3	x
1100	1.00 A	IP100	65 V		65	330	4.3	x
1125	1.25 A	IP125	65 V		47	370	6.5	x
1160	1.60 A	IP160	65 V		33	420	9.8	x
1200	2.00 A	IP200	65 V		23	460	14	x
1250	2.50 A	IP250	65 V		17	520	20	x
1315	3.15 A	IP315	65 V		13	580	40	x
1400	4.00 A	IP400	65 V		10	650	75	x

* Physical Marking on top of the device

Note: 1.00 means the number one with two decimal places. 1,000 means the number one thousand.

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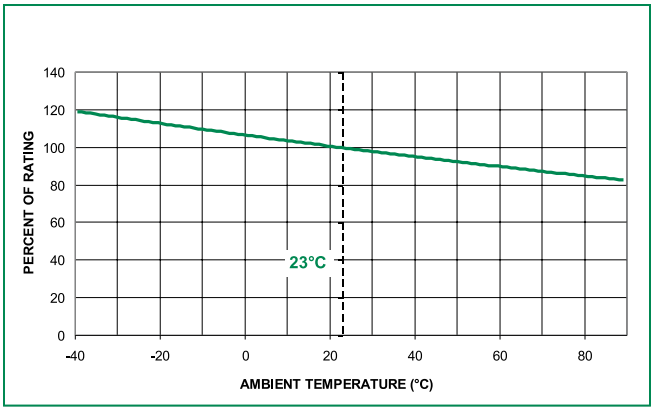
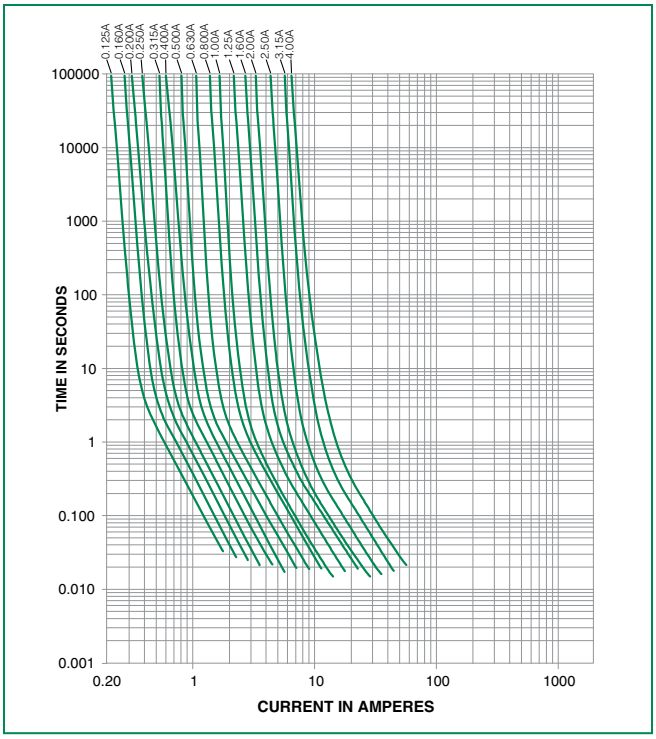
Please refer to www.littelfuse.com/series/399.html for current information.

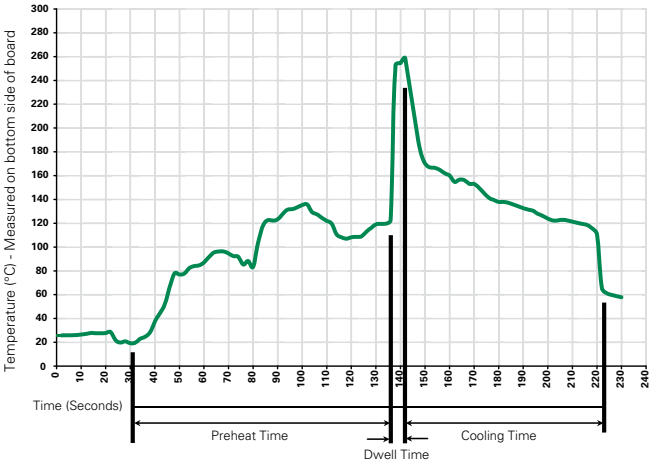
Temperature Rerating Curve



Average Time Current Curves



Soldering Parameters - Wave Soldering



Recommended Process Parameters:

Wave Parameter	Lead-Free Recommendation
Preheat: (Depends on Flux Activation Temperature)	(Typical Industry Recommendation)
Temperature Minimum:	100° C
Temperature Maximum:	150° C
Preheat Time:	60-180 seconds
Solder Pot Temperature:	260° C Maximum
Solder Dwell Time:	2-5 seconds

Recommended Hand-Solder Parameters:

Solder Iron Temperature: 350° C +/- 5°C
Heating Time: 5 seconds max.

Note: These devices are not recommended for IR or Convection Reflow process.

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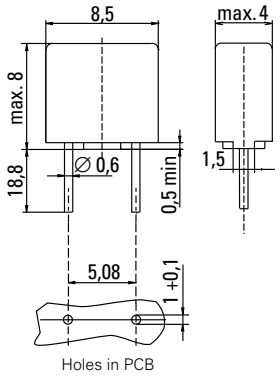
Product Characteristics

Materials	Base/Cap: Brown Thermoplastic Polyamide PA 6.6, UL 94V-0 Round Pins: Copper, Tin-plated
Lead Pull Strength	10 N (EN 60068-2-21)
Solderability	260°C, ≤ 3s. (Wave) 350°C, ≤ 1s. (Soldering Iron)
Soldering Heat Resistance	260°C, 10s. (IEC 60068-2-20) 350°C, 3s. (Soldering Iron)

Operating Temperature	-40°C to +85°C (consider de-rating)
Climatic Category	-40°C to +85°C/21 days (EN 60068-1,-2-1,-2-2,-78)
Stock Conditions	+10 °C to +60 °C RH, ≤ 75% yearly average, without dew, maximum value for 30 days-95%
Vibration Resistance	24 cycles at 15 min. each (EN 60068-6) 10 - 60 Hz at 0.75 mm amplitude 60 - 2000 Hz at 10 g acceleration

Dimensions



Holes in PCB

Part Numbering System

399 xxxx 000

Series

Amp. Code
Refer to Amp Code column of Electrical Characteristic Table

Packaging Code
000 Tape/Ammopack (1,400 pcs.)

Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Reel Size
399 Series				
Tape & Ammopack	N/A	1,400	000	N/A

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