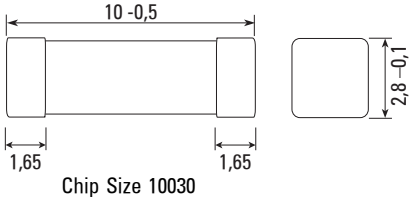
No. 457 Lead Free

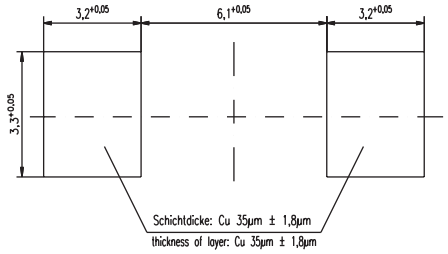
This product is not recommended for new designs. Please refer to Littelfuse No. 461.

Dimensions (mm)



Chip Size 10030

Pad Layout



Telecom Tube Protector

Overcurrent Protection for Telecom Equipment

Time-Current Characteristic

Transient Tolerant

Applicable Standards

UL-248-14
UL 60950 3rd Edition *
Telcordia GR-1089 *
FCC 47 CFR Part 68

Approvals

cULus Recognized

Features

Surge proof for telecom line applications
No need for series resistors (1.25A & 2.00A)
Reduced PCB space requirements
Lead-free construction
Flame resistant ceramic housing
Irreversible physical separation under fault
Highly defined cut-off times
Low internal resistance minimizes line losses
For Reflow Soldering or Soldering Iron

WebLinks

Further info see:
www.wickmanngroup.com

Further application info see fuseology:
www.wickmanngroup.com/download/fuseology.pdf

Specifications

Packaging

000: 2500 pcs./330mm reel (Blister Tape)
001: 500 pcs./178mm reel (Blister Tape)
Tape width 16mm

Materials

Housing: Ceramic tube
Element: Wire
Terminals: Copper, nickel & silver plated

Operating Temperature

-40 °C to +125 °C (consider de-rating)

Climatic Test

Damp heat, steady state
40 °C/ 93%/ 21 days (IEC 60068-1,-2-1,-2-2,-2-78)

Stock Conditions

+10 °C to +60 °C
relative humidity ≤ 75 % yearly average, without dew, maximum value for 30 days - 95 %

Recommended soldering

240 °C, 30 s (Reflow)

Solderability

acc. to IEC 60068-2-58
235 °C, 2 s

Soldering Heat Resistance

260 °C, 10 s (IEC 60068-2-58)
280 °C, 5 s (IEC 60068-2-58)

Minimum Cross Section, Copper

Conducting path - 0.175 mm^2
Path thickness - 0.035 mm

Mounting

Avoid circuit traces below the Fuse. Fuse should not be enclosed in potting materials.

Marking

Logo, Current Rating

Unit Weight

0.25 g (approx.)

Operating Conditions

Type (I)	100% x I	250% x I
500 mA ... 2.00 A	> 4 h	1 ... 120 s

AC Power Fault Ratings • Permissible continuous operating current is ≤ 80 % at ambient temperature of 23 °C (73.4 °F)

	UL 60950 3rd Edition *				Telcordia 1089 (2nd Level) *			
Type Code	Test M1 600V/1.5s	Test M2 600V/5s	Test M3 600V/30min	Test M3 Max. ΔT (°C)	Test 1 277V/15min	Test 2 600V/5s	Test 3 600V/5s	Test 4 600V/15min
0500	40A	7A	2.2A	--	25A	60A	7A	2.2A
1250	40A	7A	2.2A	120	25A	60A	7A	2.2A
1251	40A	7A	2.2A	50	25A	60A	7A	2.2A

Lightning Surge Specifications

Surge Specification	Surge	Repetitions	Waveform (µsec.)	Current (A)	Voltage (V)	Performance Requirement
0500 tested						
FCC 47 Part 68	Logitudinal Type A	2	10x160	70A	1500	Fuse cannot open
FCC 47 Part 68	Metallic Type A	2	10x560	45A	800	Fuse cannot open
Telcordia GR-1089-CORE	First Level Lightning	50	10x1000	30A	1000	Fuse cannot open
1250 and 1251 tested						
FCC 47 Part 68	Longitudinal Type A	2	10x160	160	1500	Fuse cannot open
FCC 47 Part 68	Metallic Type A	2	10x560	115	800	Fuse cannot open
Telcordia GR-1089-CORE	First Level Lightning	50	10x1000	100	1.000	Fuse cannot open
Telcordia GR-1089-CORE	First Level Lighting	50	2x10	500	2.500	Fuse cannot open

Electrical Specifications

Type Code	Current	Voltage Rating AC	Interrupting Rating 250VAC 50/60 Hz	Interrupting Rating 600VAC cosφ=1	Voltage Drop 1.0 x I_N max. (mV)	Cold Resistance 0.1 x I_N max. (mΩ)	Melting Integral 10 x I_N typ. (A^2s)	Approvals cURus
0500	500mA	250V	50A	60A	450	640	2	•
1250	1.25A	250V	50A	60A	250	150	16	•
1251	2.00A	250V	50A	60A	375	115	18	•

*** UL60950 3rd edition and Telcordia 1089 (2nd Level) are device standards, which require a testing of the complete device.**

Order Information

Qty.	Order-Number	Series	Type Code	Packaging
		457		

Specifications are subject to change without notice

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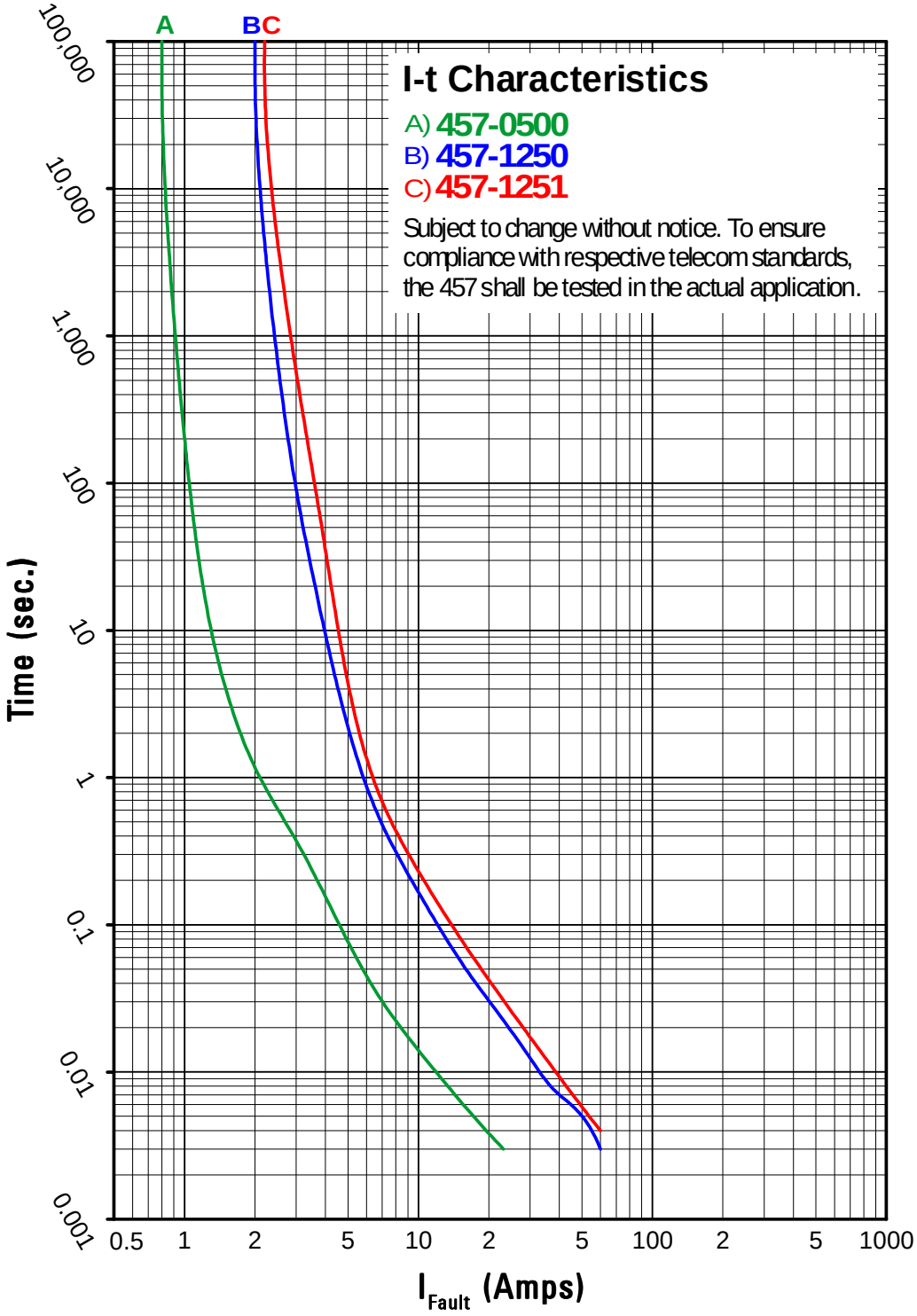
TTP / No. 457


A
B C
I-t Characteristics
A) 457-0500
B) 457-1250
C) 457-1251
Subject to change without notice. To ensure compliance with respective telecom standards, the 457 shall be tested in the actual application.
Time (sec.)
100,000
10,000
1,000
100
10
1
0.1
0.01
0.001
0.5
1
2
5
10
2
5
100
2
5
1000
I Fault (Amps)