

RoHS HF 157 Series – Standard Nano Fuse and Clip Assembly



Agency Approvals

AGENCY	AGENCY FILE NUMBER	AMPERE RANGE
	E14721	0.062A ~ 10A
	NBK030205-E10480A NBK030205-E10480B NBK101105-E184655	1A 1.5A - 5A 6.3A - 10A

Electrical Characteristics for Series

% of Ampere Rating	Opening Time at 25°C
100%	4 hours Minimum
200%	5 secs. Maximum

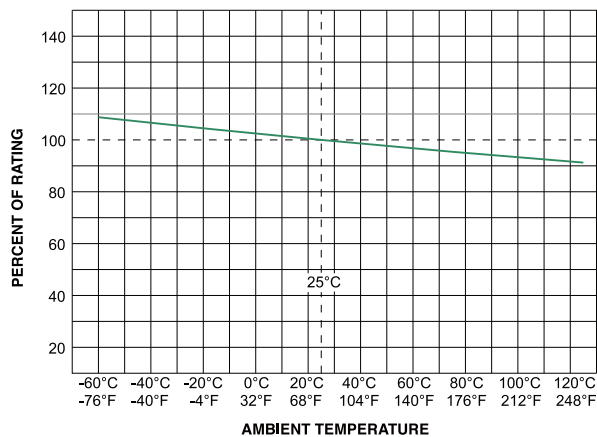
Electrical Specifications by Item

Ampere Rating (A)	Amp Code	Max Voltage Rating (V)	Interrupting Rating (A)	Fuse Furnished	Nominal Cold Resistance (Ohms)	Nominal Melting I ² t (A ² sec)	Agency Approvals	
								
0.062	.062	125	50A @ 125 VAC/VDC 300A @ 32 VDC	0451.062	5.5372	0.00019	X	
0.080	.080	125		0451.080	4.0500	0.00033	X	
0.100	.100	125		0451.100	3.1000	0.00138	X	
0.125	.125	125		0451.125	1.7059	0.00286	X	
0.160	.160	125		0453.160	1.2157	0.0048	X	
0.200	.200	125		0453.200	1.3971	0.00652	X	
0.250	.250	125		0453.250	1.0496	0.01126	X	
0.315	.315	125		0453.315	0.3881	0.0311	X	
0.375	.375	125		0453.375	0.6083	0.0425	X	
0.400	.400	125		0453.400	0.5600	0.0484	X	
0.500	.500	125		0453.500	0.4181	0.0795	X	
0.630	.630	125		0453.630	0.3050	0.143	X	
0.750	.750	125		0453.750	0.2458	0.185	X	
0.800	.800	125		0453.800	0.2120	0.271	X	
1.0	.001	125		0453001.	0.1537	0.459	X	X
1.25	1.25	125		04531.25	0.078	0.664	X	X
1.5	01.5	125		045301.5	0.0634	0.853	X	X
1.6	01.6	125		045301.6	0.0580	1.060	X	X
2.0	002.	125		0453002.	0.0373	0.530	X	X
2.5	02.5	125		045302.5	0.0288	1.029	X	X
3.0	003.	125		0453003.	0.0229	1.650	X	X
3.15	3.15	125		04533.15	0.0215	1.920	X	X
3.5	03.5	125		045303.5	0.0203	2.469	X	X
4.0	004.	125		0453004.	0.0163	3.152	X	X
5.0	005.	125		0453005.	0.0127	5.566	X	X
6.3	06.3	125		045306.3	0.0098	9.17	X	X
7.0	007.	125		0453007.	0.0092	10.32	X	X
8.0	008.	125		0453008.	0.0079	20.23	X	X
10.0	010.	125	35A @ 125 VAC / 50A @ 125 VDC 300A @ 32VDC	0453010.	0.0058	26.46	X	X

1. Cold resistance measured at less than 10% of rated current at 23°C.
 2. I²t values stated for 8ms opening time.

3. Agency Approval Table Key: X=Approved or Certified, P=Pending and Blank=Not Approved
 4. Have special electrical characteristic needs? Contact Littelfuse to learn more about application specific options.

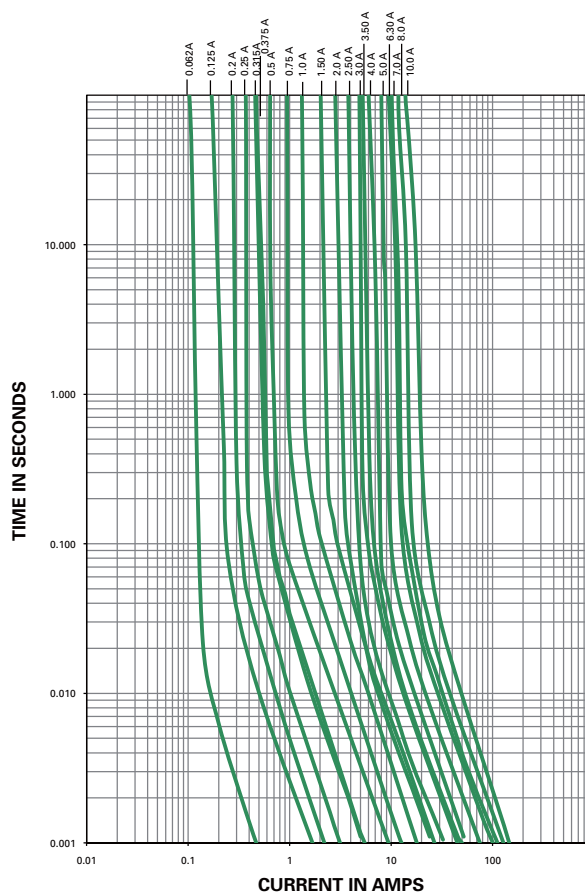
Temperature Derating Curve



Note:

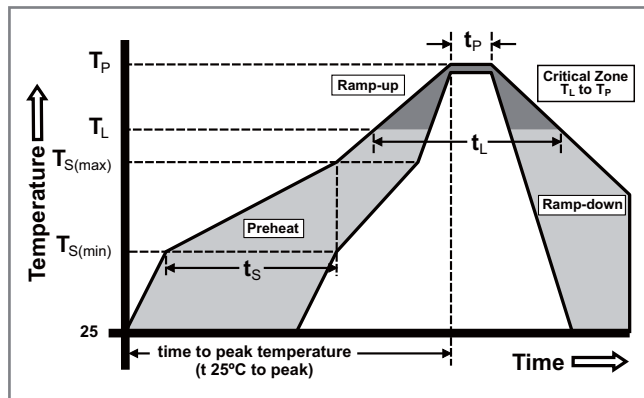
- Derating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

Average Time Current Curves



Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (Min to Max) (t_s)	60 – 120 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		5°C/second max.
$T_{s(max)}$ to T_L - Ramp-up Rate		5°C/second max.
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Temperature (t_L)	60 – 90 seconds
Peak Temperature (T_p)		250 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5°C/second max.
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

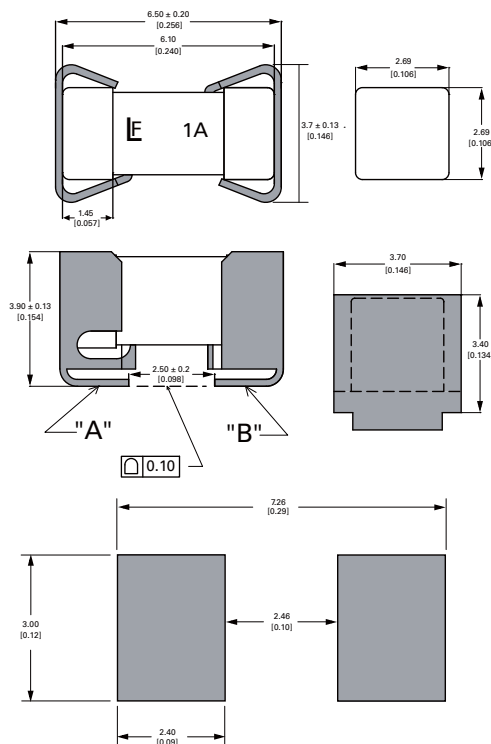


Product Characteristics

Materials	Body: Ceramic Cap: For 0.062A ~ 0.125A – Au plated Brass For 0.200A ~ 10A – Silver plated Brass Clip Plating: Matte Tin
Product Marking	Body: Brand Logo, Current Rating
Clip Retention	Force applied at fuse center, perpendicular to the long axis (@ 0.75 lbs. MIN)
Solderability	MIL-STD-202, Method 208 / IPC/ EIA / JEDEC J-STD002B, Test Condition A
Humidity Test	MIL –STD-202, Method 103 @ 85°C / 85%RH, 1000 hours
Resistance to Solvents	MIL-STD-202, Method 215 (3 solvent types)

Operating Temperature	-55°C to 125°C with proper derating
Thermal Shock	MIL-STD-202, Method 107, Test Condition B (5 cycles -65°C to +125°C)
Vibration	MIL-STD-202, Method 201 (10-55 Hz)
Moisture Resistance	MIL-STD-202, Method 106, 10 cycles
Salt Spray/ Atmosphere	MIL-STD-202, Method 101, Test Condition B (48 hrs.), 5% NaCl in De-ionized Water
Shock	MIL-STD-202, Method 213, Test Condition I (100 G's peak for 6 milliseconds)

Dimensions



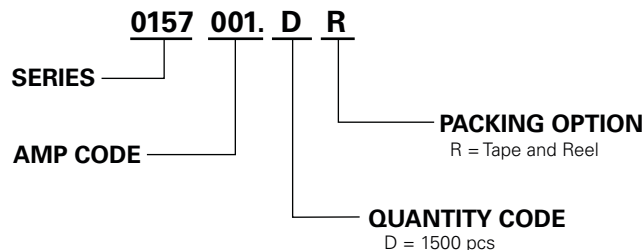
PCB Recommendation for Thermal Management

1. Minimum Copper Layer Thickness = 100µm
2. Minimum Copper Trace Width = 10mm

Note:

Alternate methods of thermal management may be used. In such cases, under normal operations, the maximum temperature of the fuse body should not exceed 80°C in a 25°C ambient environment.

Part Numbering System



Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
Tape and Reel	Surface Mount	1500	DR

