

466 Series 1206 Fast-Acting Fuse



Agency Approvals

AGENCY	AGENCY FILE NUMBER	AMPERE RANGE
	E10480	0.125A - 5A
	29862	0.125A - 5A

Electrical Characteristics for Series

% of Ampere Rating	Opening Time at 25°C
100%	4 hours, Minimum
200%	5 sec., Maximum
300%	0.2 sec., Maximum

Additional Information



Datasheet



Resources



Samples

Description

The 466 Series Fast-Acting Surface Mount Fuse (SMF) is a small (1206 size) thin-film device designed for secondary protection of circuits used in space constrained applications such as hand-held portable electronic devices.

This series is 100% lead-free and meets the requirements of the RoHS directive. New Halogen-Free 466 Series fuses are available to order using the "HF" suffix. See Part Numbering section for additional information.

Features

- Product is compatible with lead-free solders and higher temperature profiles
- Product is marked on top surface with code to allow amperage rating identification without testing
- Low profile for height sensitive applications
- Flat top surface for pick-and-place operations
- Element-covering material is resistant to industry standard cleaning operations
- Lead-free, Halogen-free and RoHS compliant

Applications

Secondary protection for space constrained applications:

- Cell phones
- Battery packs
- Digital cameras
- DVD players
- Hard disk drives

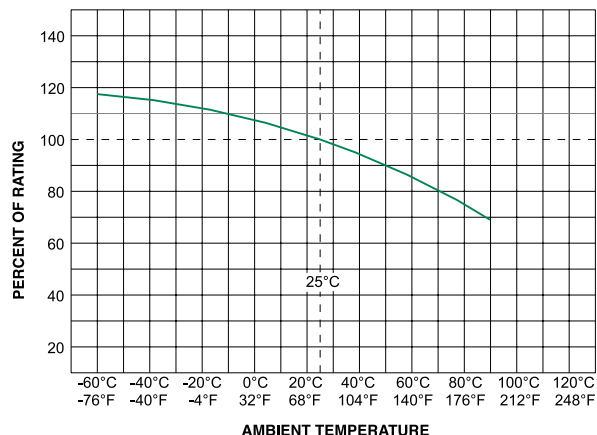
Electrical Specifications by Item

Ampere Rating (A)	Amp Code	Max Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I ² t (A ² sec)	Nom Voltage Drop (mV)	Nom Power Dissipation (W)	Agency Approvals	
0.125	.125	125	50A @125 V AC/DC	3.925	0.00064	634.37	0.0793		
0.200	.200	125		1.100	0.00055	254.28	0.0509	x	x
0.250	.250	125		0.691	0.0022	207.01	0.0518	x	x
0.375	.375	125		0.351	0.0045	169.18	0.0634	x	x
0.500	.500	63	50A @63 V AC/DC	0.248	0.0060	158.47	0.0792	x	x
0.750	.750	63		0.106	0.0276	98.65	0.0740	x	x
1.00	.001	63		0.075	0.0423	79.97	0.0800	x	x
1.25	1.25	63		0.057	0.0640	85.71	0.1071	x	x
1.50	01.5	63	50A @32 V AC/DC	0.046	0.1103	82.97	0.1244	x	x
1.75	1.75	63		0.038	0.1835	80.73	0.1413	x	x
2.00	002.	63		0.030	0.2326	78.73	0.1575	x	x
2.50	02.5	32		0.023	0.3516	76.99	0.1925	x	x
3.00	003.	32	50A @32 V AC/DC	0.019	0.5760	75.99	0.2280	x	x
4.00	004.	32		0.014	1.764	74.50	0.2980	x	x
5.00	005.	32		0.011	2.500	73.75	0.3688	x	x

1. Measured at 10% of rated current, 25°C.

2. Measured at rated voltage.

Temperature Re-rating Curve



Note:

1. Re-rating depicted in this curve is in addition to the standard re-rating of 25% for continuous operation.

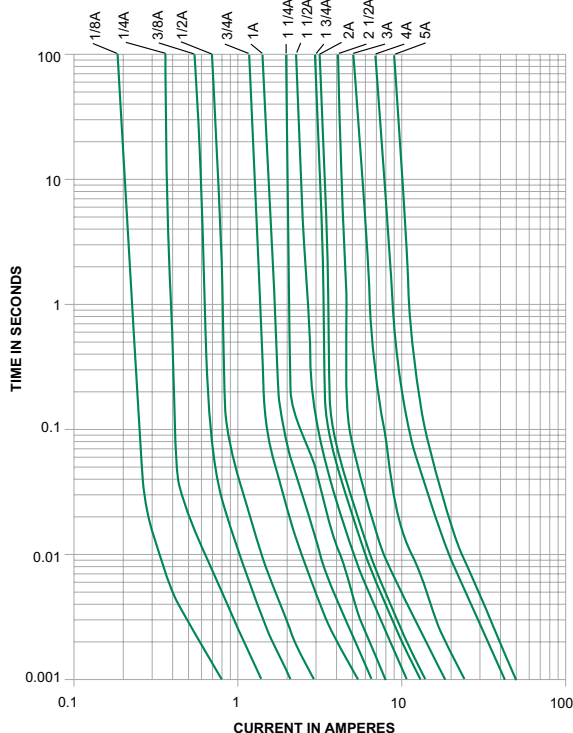
Example:

For continuous operation at 70 degrees celsius, the fuse should be rerated as follows:

$$I = (0.75)(0.80)I_{\text{RAT}} = (0.60)I_{\text{RAT}}$$

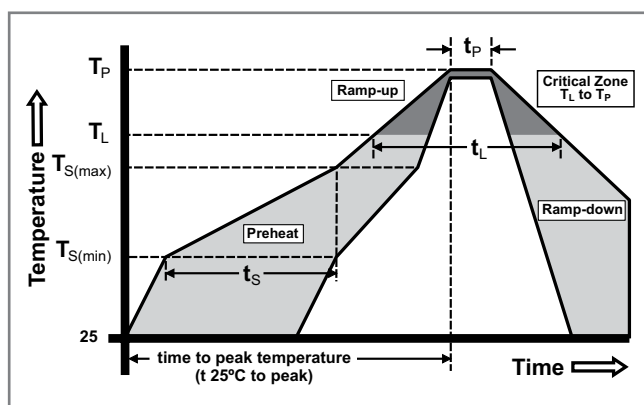
2. The temperature derating curve represents the nominal conditions. For questions about temperature derating curve, please consult Littelfuse technical support for assistance.

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 – 180 seconds
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 – 150 seconds
Peak Temperature (T_p)		260 $^{+0/-5}$ °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



Wave Soldering	260°C, 10 seconds max.
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Surface Mount Fuses

Thin Film > 1206 Size > Very Fast-Acting > 466 Series

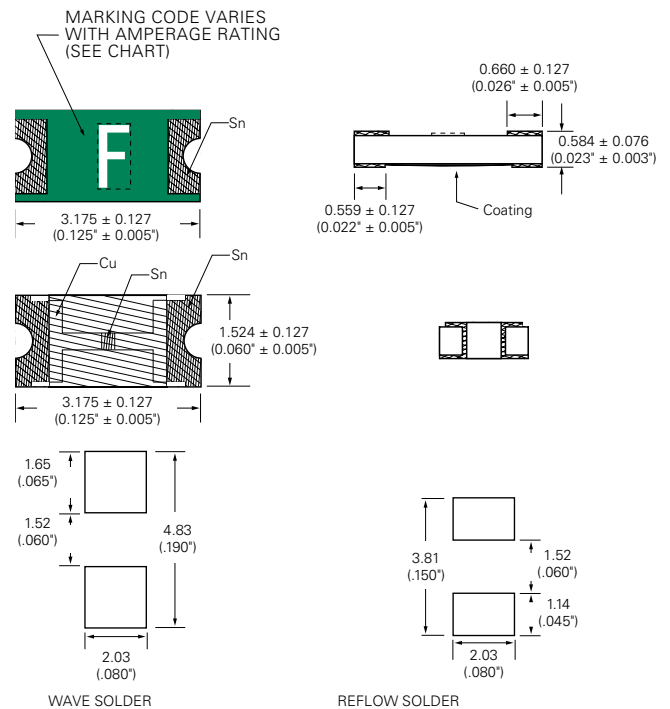
Product Characteristics

Materials	Body: Advanced High Temperature Substrate Terminations: 100% Tin over Nickel over Copper Element Cover Coat: Conformal Coating
Operating Temperature	– 55°C to 90°C. Consult temperature re-rating curve chart.
Thermal Shock	Withstands 5 cycles of –55°C to 125°C
Humidity	MIL-STD-202, Method 103, Condition D
Vibration	MIL-STD-202, Method 201
Insulation Resistance (After Opening)	Greater than 10,000 ohms
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition D

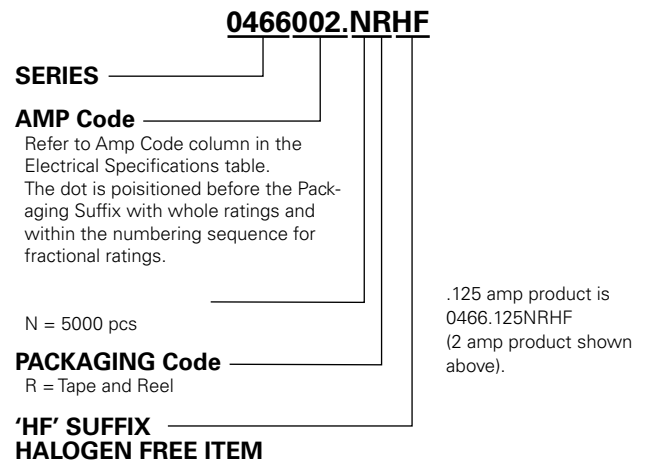
Part Marking System

Amp Code	Marking Code
.125	B
.200	C
.250	D
.375	E
.500	F
.750	G
001.	H
1.25	J
01.5	K
1.75	L
002.	N
02.5	O
003.	P
004.	S
005.	T

Dimensions



Part Numbering System



Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
8mm Tape and Reel	EIA-481 Rev. D (IEC 60286, part 3)	5000	NR