

494 Series Fuse, NRA Special Series Integrated Circuit Protector

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Agency Approvals

AGENCY	AGENCY FILE NUMBER	AMPERE RANGE
. ¶	E10480	250mA - 5A
\$£.	LR29862	250mA - 5A

Electrical Characteristics for Series

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

Additional Information







Description

The 494 Series Fast-Acting SMF is an ultra small (0603 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 Halide-Free 494 Series fuses are available to order using the "HF" suffix. See Part Numbering section for additional information.

Features

- · Compatible with leadfree solders and higher temperature profiles
- High performance materials provide improved performance in elevated ambient temperature applications
- Marked on top surface with code to allow ampere rating identification without testing
- Low profile for height sensitive applications
- Flat top surface for pickand-place operations

- Element-covering material is resistant to industry standard cleaning operations
- Mounting pad and electrical performance are identical to Littelfuse 431 and 434 Series products
- Alloy-based element construction provides superior inrush withstand characteristics (I2t) over ceramic or glass-based 0603 fuse products

Applications

Secondary protection for space constrained applications:

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

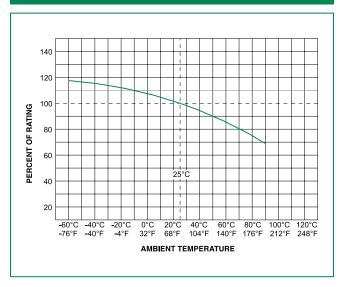
Electrical Specifications by Item

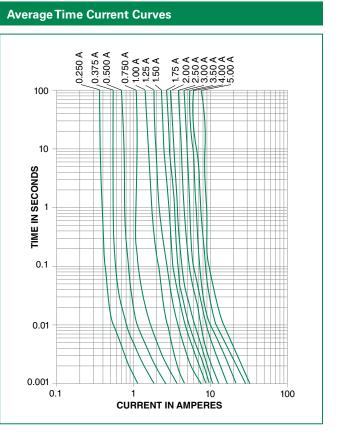
Ampere		Max		Nominal Cold	Nominal	Nom	Nom	Agency Approvals	
Rating (A)	Amp Code	Voltage Rating (V)	Interrupting Rating	Resistance (Ohms)	Melting I ² t (A ² sec)	Voltage Drop (mV)	Power Dissipation (W)	17.	۹¢
0.250	.250	32		0.5450	0.0030	158.56	0.0396	х	х
0.375	.375	32		0.2900	0.0053	128.03	0.0480	х	х
0.500	.500	32	50A @32V AC/DC	0.1870	0.0087	115.71	0.0579	х	х
0.750	.750	32		0.1170	0.0171	107.33	0.0805	х	х
1.00	001.	32		0.0710	0.0212	89.10	0.0891	х	х
1.25	1.25	32		0.0530	0.0518	84.32	0.1054	х	х
1.40	01.4	32		0.049	0.05529	74.84	0.1048	х	х
1.50	01.5	32		0.0410	0.0766	81.14	0.1217	х	х
1.75	1.75	32		0.0320	0.0903	78.75	0.1378	х	х
2.00	002.	32		0.0300	0.1103	78.22	0.1564	х	х
2.50	02.5	32	35A @32V AC/DC	0.0220	0.1440	76.10	0.1903	х	х
3.00	003.	32		0.0180	0.2403	75.04	0.2251	х	х
3.15	3.15	32		0.017	0.27405	63.78	0.2009	х	х
3.50	03.5	32		0.0150	0.4306	74.25	0.2599	x	х
4.00	004.	32		0.0130	0.5760	73.72	0.2949	х	х
5.00	005.	32		0.0090	0.9000	72.71	0.3635	x	х

1. Measured at 10% of rated current, 25°C. 2. Measured at rated voltage



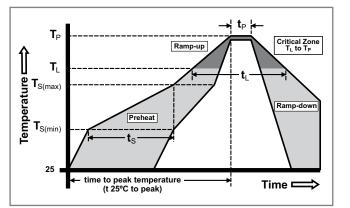
Temperature Rerating Curve





Soldering Parameters

Reflow Condition		Pb – free assembly	
	-Temperature Min (T _{s(min)})	150°C	
Pre Heat	-Temperature Max (T _{s(max)})	200°C	
	-Time (Min to Max) (t _s)	60 – 180 seconds	
Average R (T _L) to pea	amp-up Rate (LiquidusTemp k)	5°C/second max.	
T _{S(max)} to T _L - Ramp-up Rate		5°C/second max.	
D (I	-Temperature (T_L) (Liquidus)	217°C	
Reflow	-Temperature (t _L)	60 – 150 seconds	
PeakTemperature (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	

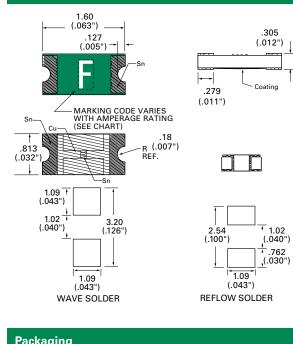




Product Characteristics

Materials	Body: 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 rerating curve chart. For operation above 90°C contact Littelfuse. 		
Humidity	MILSTD-202F, Method 103B, Condition D		

Dimensions



Tackaging				
	Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
	8mm Tape and Reel	EIA RS-481-2 (IEC 286, part 3)	5000	NR

Thermal Shock	Withstands 5 cycles of – 55°C to 125°C	
Vibration	Per MIL-STD-202F	
Insulation Resistance (After Opening)	Greater than 10,000 ohms	
Resistance to Soldering Heat	Withstands 60 seconds above 200°C and up to 260°C, maximum	

Part Marking System

Amp Code	Marking Code
.250	D
.375	E
.500	F
.750	G
001.	Н
1.25	J
01.4	
01.5	К
1.75	L
002.	N
02.5	0
003.	Р
3.15	
03.5	R
004.	S
005.	Т

Part Numbering System

O494002.NRHF
SERIES
AMP Code
Refer to Amp Code column in the
Electrical Specifications table.
NOTE: The dot is poisitioned before
the Packaging Suffix with whole
ratings and within the numbering
sequence for fractional ratings.
PACKAGING Code
NR = Tape and Reel, 5000 pcs

'HF' SUFFIX HALIDE -FREE ITEM

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Surface Mount Fuses category:

Click to view products by Littelfuse manufacturer:

Other Similar products are found below :

 FHC20402ADTP
 NFVC6125S0R50TRF
 SFT-125MA
 TF16SN2.00TTD
 TR/3216LR-500MA
 CCP2B20TTE
 FCC16501ABTP
 0308.250UR

 0308.375UR
 0308.500UR
 0308.750UR
 030801.5UR
 03081.25UR
 SKY87604-11
 3404.0110.22
 SEF 0.375A 125V (G)
 1211015
 S1206-F

 3.0A
 9321315278
 S0603-F-4.0A
 SMT1315AP
 0603TD-4A
 1240FH-30A
 R451003.L
 R451001.L
 3-103-119
 3-103-123
 3-103

 127
 0154002.DRL
 0154.000RL
 189140.1,25
 189140.0,8
 189140.0,63
 189140.0,25
 0468003.WR

 0494001.NRHF
 0494002.NRHF
 0494002.SNRHF
 049403.SNRHF
 0494.250NRHF
 0494.375NRHF
 0494.500NRHF

 CF06V3T1R60
 CF06V3T2R50
 06H1300D
 JFC0603-1200FS
 SK
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