



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

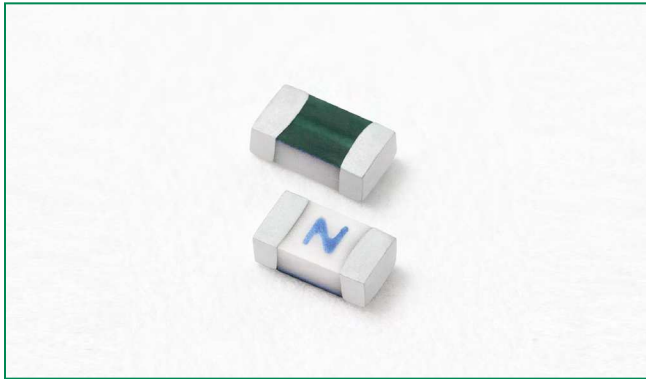
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441 Series – 0603 High I²t Fuse





Description

This 100% Lead-free, RoHS compliant and Halogen-free fuse series has been designed specifically to provide over current protection to circuits that see high working ambient temperatures (up to 150°C) and high inrush currents.

The general design ensures excellent temperature stability and performance reliability.

This high I²t fuse series is designed to have ultra high inrush current withstand capability to avoid nuisance fuse open.

Agency Approvals

AGENCY	AGENCY FILE NUMBER	AMPERE RANGE
	E10480	2A - 6A
	29862	2A - 6A

Features

- Operating Temperature from -55°C to 150°C
- Suitable for both leaded and lead-free reflow / wave soldering
- 100% Lead-free, Halogen-Free and RoHS compliant
- Ultra high I²t values



Electrical Characteristics

% of Ampere Rating	Ampere Rating	Opening Time at 25°C
100%	2A - 6A	4 Hours Minimum
350%	2A - 6A	5 Seconds Maximum

Applications

- Handheld Electronics
- LCD Displays
- Battery Packs
- Hard Disk Drives
- SD Memory Cards

Electrical Specifications by Item

Ampere Rating (A)	Amp Code	Max. Voltage Rating (V)	Interrupting Rating	Nominal Resistance (Ohms) ²	Nominal Melting I ² t (A ² Sec.) ³	Nominal Voltage Drop At Rated Current (V) ⁴	Nominal Power Dissipation At Rated Current (W)	Agency Approvals	
									
2	002.	32	50 A @ 32 VDC	0.0302	0.3103	0.0551	0.110	X	X
2.5	02.5	32		0.0200	0.5520	0.0534	0.134	X	X
3	003.	32		0.0158	0.8165	0.0531	0.159	X	X
3.5	03.5	32		0.0117	0.9438	0.0468	0.164	X	X
4	004.	32		0.0097	1.2659	0.0475	0.190	X	X
5	005.	32		0.0073	1.6287	0.0472	0.236	X	X
6	006.	32		0.0056	2.6049	0.0464	0.278	X	X

- Notes:
1. DC Interrupting Rating tested at rated voltage with time constant < 0.8 msecs.
 2. Nominal Resistance measured with < 10% rated current.
 3. Nominal Melting I²t measured at 1 msec. opening time.
 4. Nominal Voltage Drop measured at rated current after temperature has stabilized.
- Devices designed to carry out rated current for 4 hours minimum. It is recommended that devices be operated continuously at no more than 80% rated current. See "Temperature Re-rating Curve" for additional re-rating information.
- Devices designed to be mounted with marking code facing up.

Additional Information



[Datashheet](#)

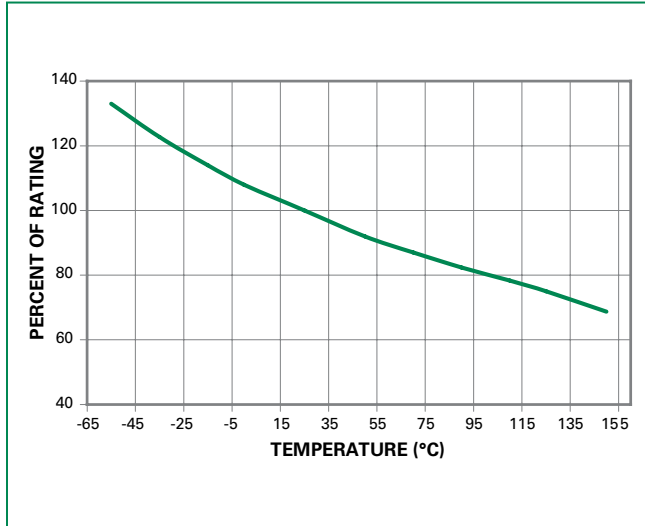


[Resources](#)



[Samples](#)

Temperature Re-rating Curve



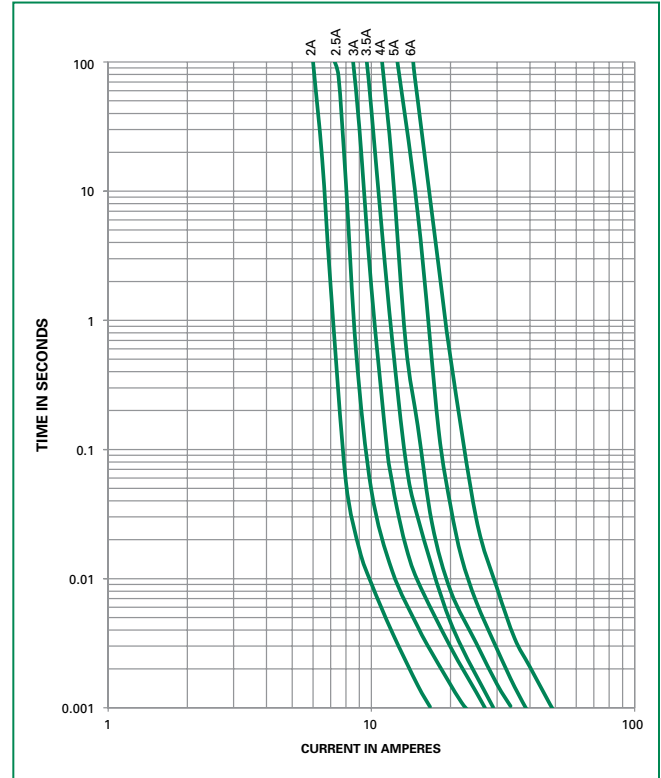
Note:

1. Re-rating depicted in this curve is in addition to the standard re-rating of 20% for continuous operation.

For continuous operation at 75 degrees celsius, the fuse should be rerated as follows:

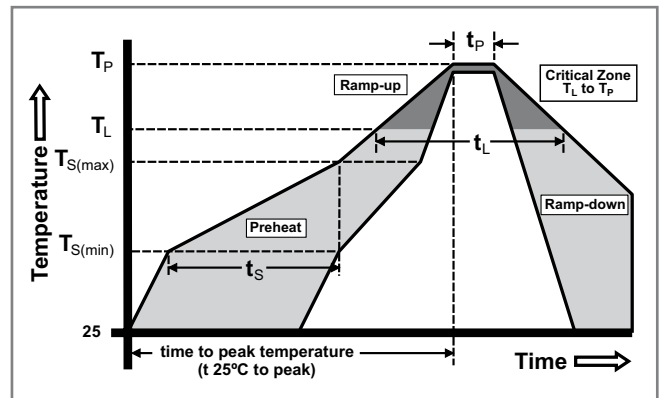
$$I = (0.80)(0.85)I_{RAT} = (0.68)I_{RAT}$$

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 (LiquidusTemp (T_L) to peak)		3°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)		10 – 30 seconds
Ramp-down Rate		6°C/second max.
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C



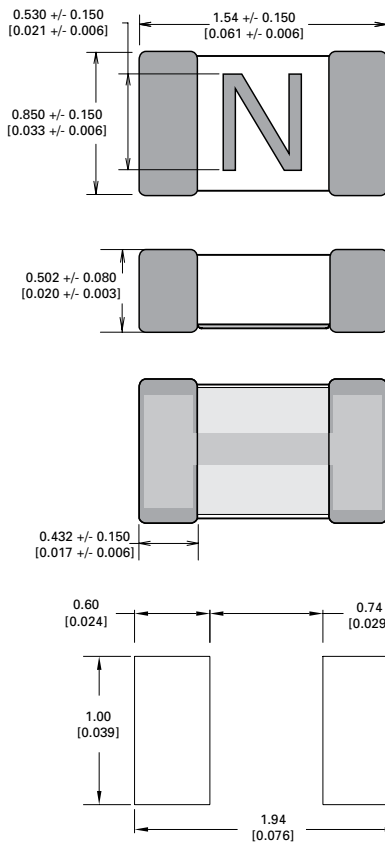
Wave Soldering	260°C, 10 seconds max.
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Product Characteristics

Materials	Body: Advanced Ceramic Terminations: Ag / Ni / Sn (100% Lead-free) Element Cover Coating: Lead-free Glass
Moisture Sensitivity Level	IPC/JEDEC J-STD-020, Level 1
Solderability	IPC/ECA/JEDEC J-STD-002, Condition C
Humidity	MIL-STD-202, Method 103, Conditions D
Resistance to Solder Heat	MIL-STD-202, Method 210, Condition B

Moisture Resistance	MIL-STD-202, Method 106
Thermal Shock	MIL-STD-202, Method 107, Condition B
Mechanical Shock	MIL-STD-202, Method 213, Condition A
Vibration	MIL-STD-202, Method 201
Vibration, High Frequency	MIL-STD-202, Method 204, Condition D
Dissolution of Metallization	IPC/ECA/JEDEC J-STD-002
Terminal Strength	IEC 60127-4

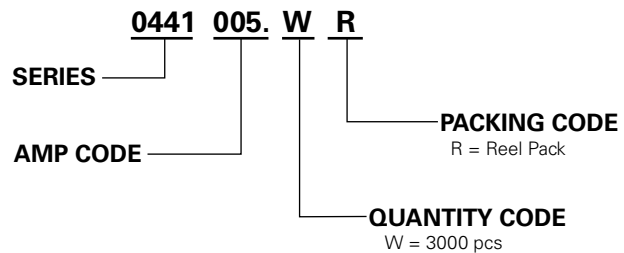
Dimensions



Part Marking System

Amp Code	Marking Code
002.	N
02.5	O
003.	P
03.5	R
004.	S
005.	T
006.	U

Part Numbering System



Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
8mm Tape and Reel	EIA-481, IEC 60286, Part 3	3000	WR