

# C308F

## 3 mm x 8.4 mm fast-acting, ceramic tube fuses for hazardous applications



### Product features

A compact 3 mm x 8.4 mm fuse provides a space saving alternative to conventional fuse solutions with high interrupting rating for primary and secondary circuit protection up to 250 Vac/dc and 250 mA

- Meets electrical performance specifications for intrinsically safe (EN60079-11) applications
- Fast-acting, high interrupting rating of 4000 A at 250 Vac/dc
- Ceramic tube, silver plated brass end cap construction
- Optional axial leads (tinned copper axial leads construction)
- RoHS compliant

### Agency information

- cURus Recognition file number: E19180, Guide JDYX2/JDYX8

### Applications

- Hazardous environments
- Petrochemical processing and refining equipment
- Pulp and paper processing equipment
- Intrinsically safe network barriers

### Packaging

- Specify part number and packaging suffix.
- Package suffixes:

#### *Ferrule*

- -TR (500 fuses on tape and reel)
- -TR1 (1000 fuses on tape and reel)

#### *Axial leaded*

- TR1 (axial leaded version, 1500 fuses on tape and reel)

### Ordering

- Specify part number and packaging suffix (e.g., C308F-V-160mA-TR1)

**Product specifications**

Part number		Voltage rating Vac/dc	Color coding	Interrupting rating @ 250 Vac/dc (A)*	Typical DC cold resistance (Ω)**	Typical melting I <sup>2</sup> T***	Agency Information cURus
Ferrule	Axial lead						
C308F40mA	C308F-V-40mA	250	Grey	4000	14.2	0.00006	X
C308F50mA	C308F-V-50mA		Red		9.40	0.00010	X
C308F63mA	C308F-V-63mA		Pink		8.80	0.00012	X
C308F80mA	C308F-V-80mA		Green		5.10	0.00018	X
C308F100mA	C308F-V-100mA		Yellow		2.87	0.00087	X
C308F125mA	C308F-V-125mA		Orange		2.20	0.00134	X
C308F160mA	C308F-V-160mA		Violet		2.05	0.00166	X
C308F200mA	C308F-V-200mA		Brown		1.01	0.00237	X
C308F250mA	C308F-V-250mA		Black		0.71	0.00530	X

\* AC Interrupting Rating (4000 A, PF = 0.4); DC Interrupting Rating measured at rated voltage, time constant 4 microseconds, battery source.

\*\* DC Cold Resistance (Measured at ≤10% of rated current).

\*\*\* Typical I<sup>2</sup>t measured at 10In.

**Electrical characteristics**

Amp Rating	% of Amp Rating	Opening Time
40 mA ~ 250 mA	110%	4 hours, min
	300%	10 seconds, max
	1000%	0.002 seconds, max

**Environmental data**

- Operating temperature: -55 °C to +125 °C (with derating)
- Thermal Shock: MIL-STD-202G, Method 107G (Test Condition 5 cycles -55 °C to 125 °C)
- Resistance to Solder Heat: MIL-STD-202G Method 210F
- Vibration: MIL-STD-202G, Method 201A (10 Hz to 55 Hz) Condition A, “-V” axial leaded version IEC60068-2-6
- Solderability: J-STD-002C, Test Method C1, “-V” axial leaded version IEC60127-2/A3.3
- Component Life Reliability: +125 °C, 500 hours

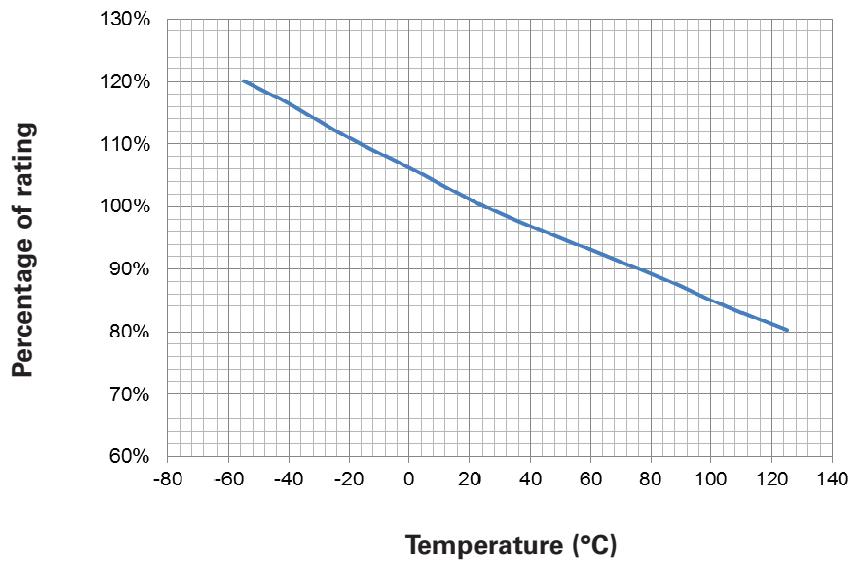
**Dimensions—mm**



**Average time-current curves**



**Temperature derating curve**



### Surface mounting soldering parameters (Ferrule)

- Reflow solder: JEDEC J-STD-020  $T_c = 250^\circ\text{C}$ .  $T_p = 30\text{s}$
- Wave and manual solder is not recommended



**Table 1 - Standard SnPb Solder ( $T_C$ )**

Package Thickness	Volume $\text{mm}^3$ <350	Volume $\text{mm}^3$ $\geq 350$
<2.5mm	235°C	220°C
$\geq 2.5\text{mm}$	220°C	220°C

**Table 2 - Lead (Pb) Free Solder ( $T_C$ )**

Package Thickness	Volume $\text{mm}^3$ <350	Volume $\text{mm}^3$ 350 - 2000	Volume $\text{mm}^3$ >2000
<1.6mm	260°C	260°C	260°C
1.6 - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

### Reference JDEC J-STD-020

Profile Feature	Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak		
• Temperature min. ( $T_{smin}$ )	100 °C	150 °C
• Temperature max. ( $T_{smax}$ )	150 °C	200 °C
• Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	60-120 Seconds	60-120 Seconds
Average ramp up rate $T_{smax}$ to $T_p$	3 °C/ Second Max.	3 °C/ Second Max.
Liquidous temperature ( $T_L$ )	183 °C	217 °C
Time at liquidous ( $t_L$ )	60-150 Seconds	60-150 Seconds
Peak package body temperature ( $T_p$ )*	Table 1	Table 2
Time ( $t_p$ )** within 5 °C of the specified classification temperature ( $T_C$ )	20 Seconds**	30 Seconds**
Average ramp-down rate ( $T_p$ to $T_{smax}$ )	6 °C/ Second Max.	6 °C/ Second Max.
Time 25 °C to Peak Temperature	6 Minutes Max.	8 Minutes Max.

\* Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

\*\* Tolerance for time at peak profile temperature ( $t_p$ ) is defined as a supplier minimum and a user maximum.

### Through hole wave solder profile (Axial lead)

Reflow soldering not recommended



### Reference EN 61760-1:2006

Profile Feature	Standard SnPb Solder	Lead (Pb) Free Solder
Preheat		
• Temperature min. ( $T_{smin}$ )	100°C	100°C
• Temperature typ. ( $T_{styp}$ )	120°C	120°C
• Temperature max. ( $T_{smax}$ )	130°C	130°C
• Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	70 seconds	70 seconds
$\Delta$ preheat to max Temperature	150°C max.	150°C max.
Peak temperature ( $T_p$ )*	235°C – 260°C	250°C – 260°C
Time at peak temperature ( $t_p$ )	10 seconds max 5 seconds max each wave	10 seconds max 5 seconds max each wave
Ramp-down rate	~ 2 K/s min ~3.5 K/s typ ~5 K/s max	~ 2 K/s min ~3.5 K/s typ ~5 K/s max
Time 25°C to 25°C	4 minutes	4 minutes

### Manual solder

350 °C, 4-5 seconds. (by soldering iron), generally manual, hand soldering is not recommended.

Life Support Policy: Eaton does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

Eaton reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Eaton also reserves the right to change or update, without notice, any technical information contained in this bulletin.

**Eaton**  
**Electronics Division**  
1000 Eaton Boulevard  
Cleveland, OH 44122  
United States  
[www.eaton.com/electronics](http://www.eaton.com/electronics)

© 2019 Eaton  
All Rights Reserved  
Printed in USA  
Publication No. 4405 — BU-MC15048  
March 2019



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.