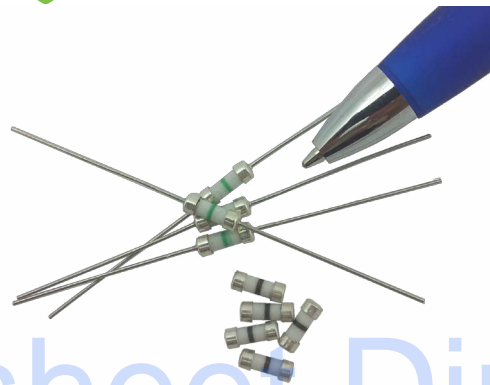


C308F

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



Datasheet.Directory

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 ² 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	Pending
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 I²t measured at 10In.

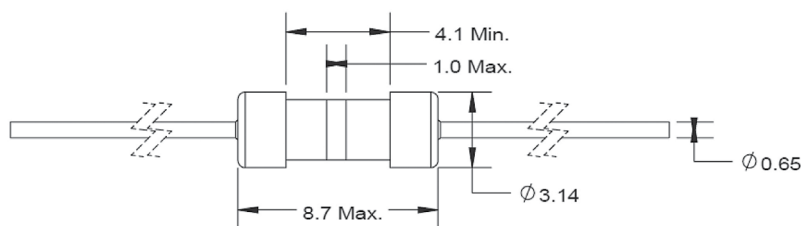
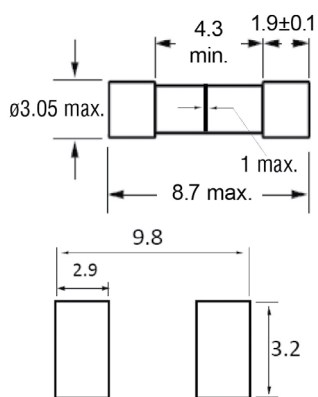
Electrical characteristics

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

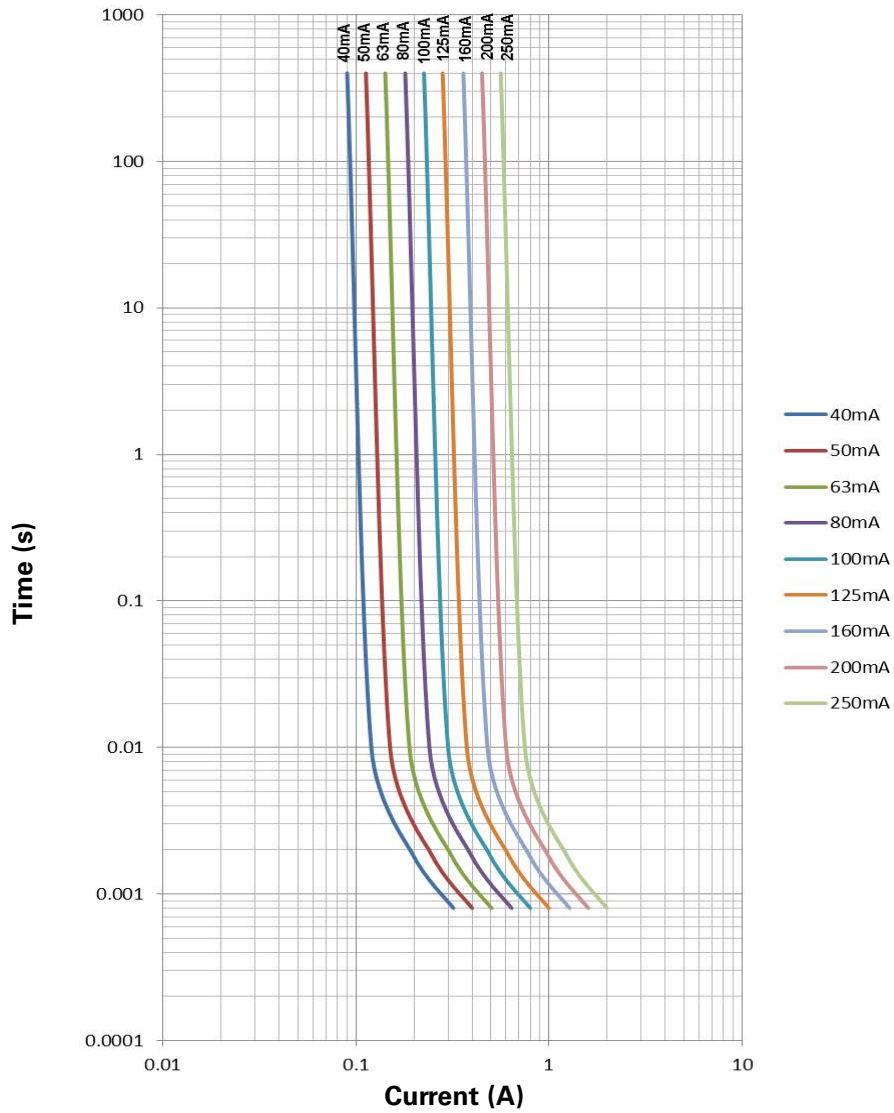
Environmental data

- 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

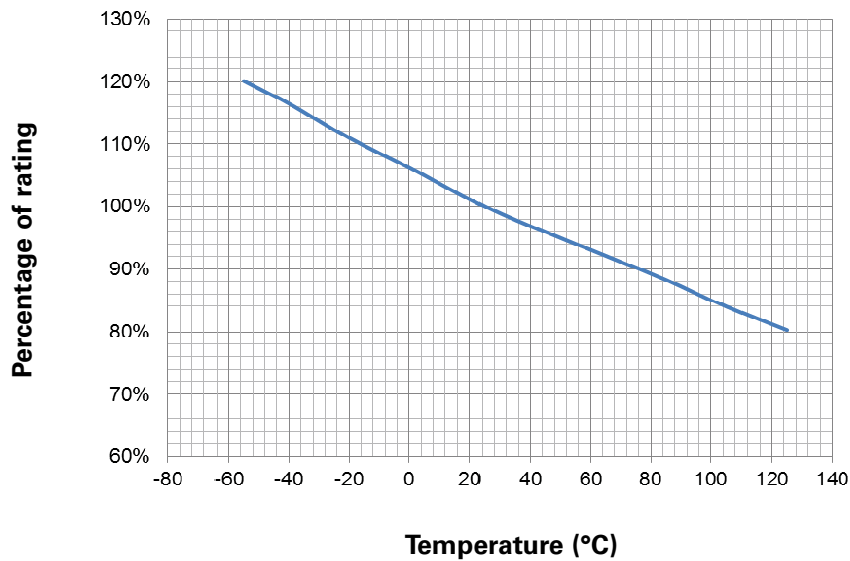
Dimensions—mm



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

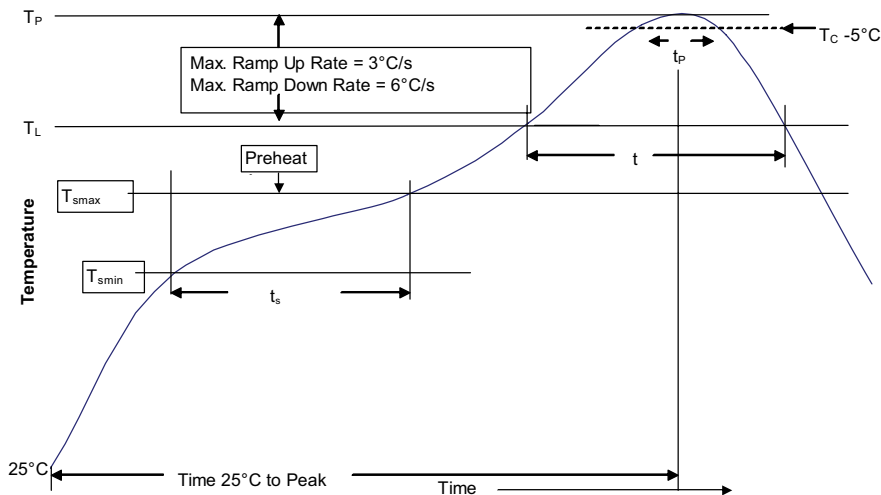


Table 1 - Standard SnPb Solder (T_c)

Package Thickness	Volume mm^3 <350	Volume mm^3 ≥ 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 mm^3 <350	Volume mm^3 350 - 2000	Volume 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 JEDEC J-STD-020

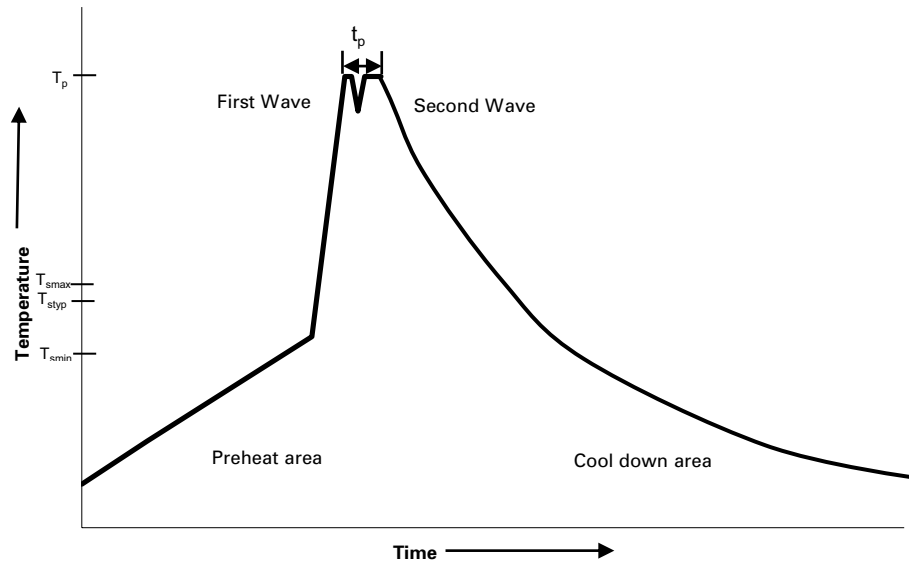
Profile Feature	Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. (T_{smin})	100 °C
	• Temperature max. (T_{smax})	150 °C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 Seconds
Average ramp up rate T_{smax} to T_p	3 °C/ Second Max.	3 °C/ Second Max.
Liquidous temperature (T_L)	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
	• Temperature typ. (T_{styp})	120°C
	• Temperature max. (T_{smax})	130°C
	• Time (T_{smin} to T_{smax}) (t_s)	70 seconds
Δ 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

© 2018 Eaton
All Rights Reserved
Printed in USA
Publication No. 4405 — BU-MC15048
August 2018