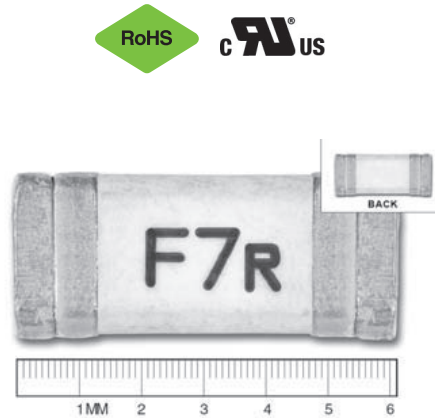


# Bussmann 6125FF Family

## Fast-acting subminiature fuses



### Product description

- Fast-acting surface mount fuse
- Overcurrent protection of systems up to 125Vac/72Vdc
- High inrush withstand capability
- Solder immersion compatible

### Applications

- Power supplies
- Servers
- LED/LCD televisions
- Appliances and white goods
- LCD monitor/backlight inverters
- Laptops and notebooks

### Agency information

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

### Ordering

- Specify part number and packaging prefix (e.g., TR2/ 3216FF1-R)

### Packaging prefixes

- TR2/ (Tape and reel, 5000 parts per 13" diameter reel)

**Bussmann**  
by **EATON**



The Bussmann brand of circuit protection products (formerly of the Bussmann Division of Cooper Industries) is now part of Eaton's Electrical Group, Electronics Division.

**Bussmann is now part of Eaton**  
**Same great products plus even more.**

**Electrical characteristics**

% of Amp Rating	Opening Time
100%	4 Hours Minimum
200%	5 Second Maximum

**Product specifications**

Part Number <sup>3</sup>	Current rating (amps)	Voltage rating		Interrupting rating <sup>1</sup> (amps)			DC cold resistance (mΩ) Typ.	Melting <sup>2</sup> I <sup>2</sup> t (A <sup>2</sup> second)	Typical voltage drop (mV)
		Vac	Vdc	125Vac	72Vdc	32Vdc			
6125FF500-R	500mA	125	72	50	50	300	750	0.08	605
6125FF750-R	750mA	125	72	50	50	300	350	0.152	433
6125FF1-R	1	125	72	50	50	300	260	0.22	415
6125FF1.25-R	1.25	125	72	50	50	300	171	0.355	410
6125FF1.5-R	1.5	125	72	50	50	300	112	0.456	365
6125FF2-R	2	125	72	50	50	300	49	1.67	160
6125FF2.5-R	2.5	125	72	50	50	300	45	5.20	155
6125FF3-R	3	125	72	50	50	300	35	6.24	153
6125FF3.5-R	3.5	125	72	50	50	300	27	7.28	150
6125FF4-R	4	125	72	50	50	300	26	7.4	145
6125FF5-R	5	125	72	50	50	300	17	9.5	141
6125FF6.3-R	6.3	125	72	50	50	300	14	15.1	135
6125FF7-R	7	125	72	50	50	300	11	37.25	112
6125FF8-R	8	125	72	50	50	300	8.7	70	110
6125FF10-R	10	125	72	50	50	300	7.3	67.75	110
6125FF12-R	12	125	72	50	50	300	5.3	210.59	106
6125FF15-R	15	125	72	50	50	300	4.2	296.10	104

1 AC Interrupting Rating (Measured at designated voltage, 100% power factor); DC Interrupting Rating (Measured at designated voltage, time constant of less than 50 microseconds, battery source)

2 Typical Melting I<sup>2</sup>t (Measured at 72Vdc, 10X rated current (not exceed 50A - IR @ 72Vdc)

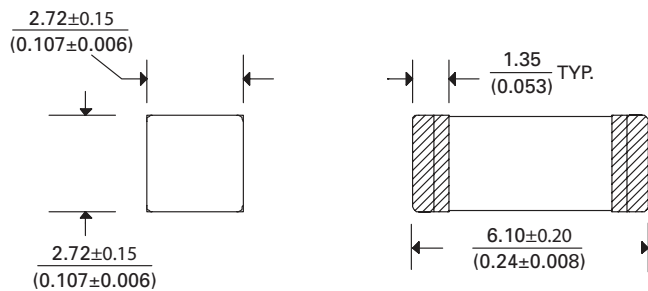
3 Part number definition: 6125FFxxx-R

6125FF= Product code and size

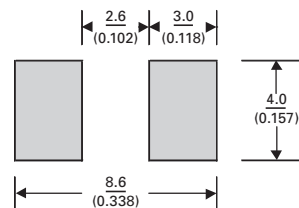
xxx= Ampere

-R= RoHS compliant

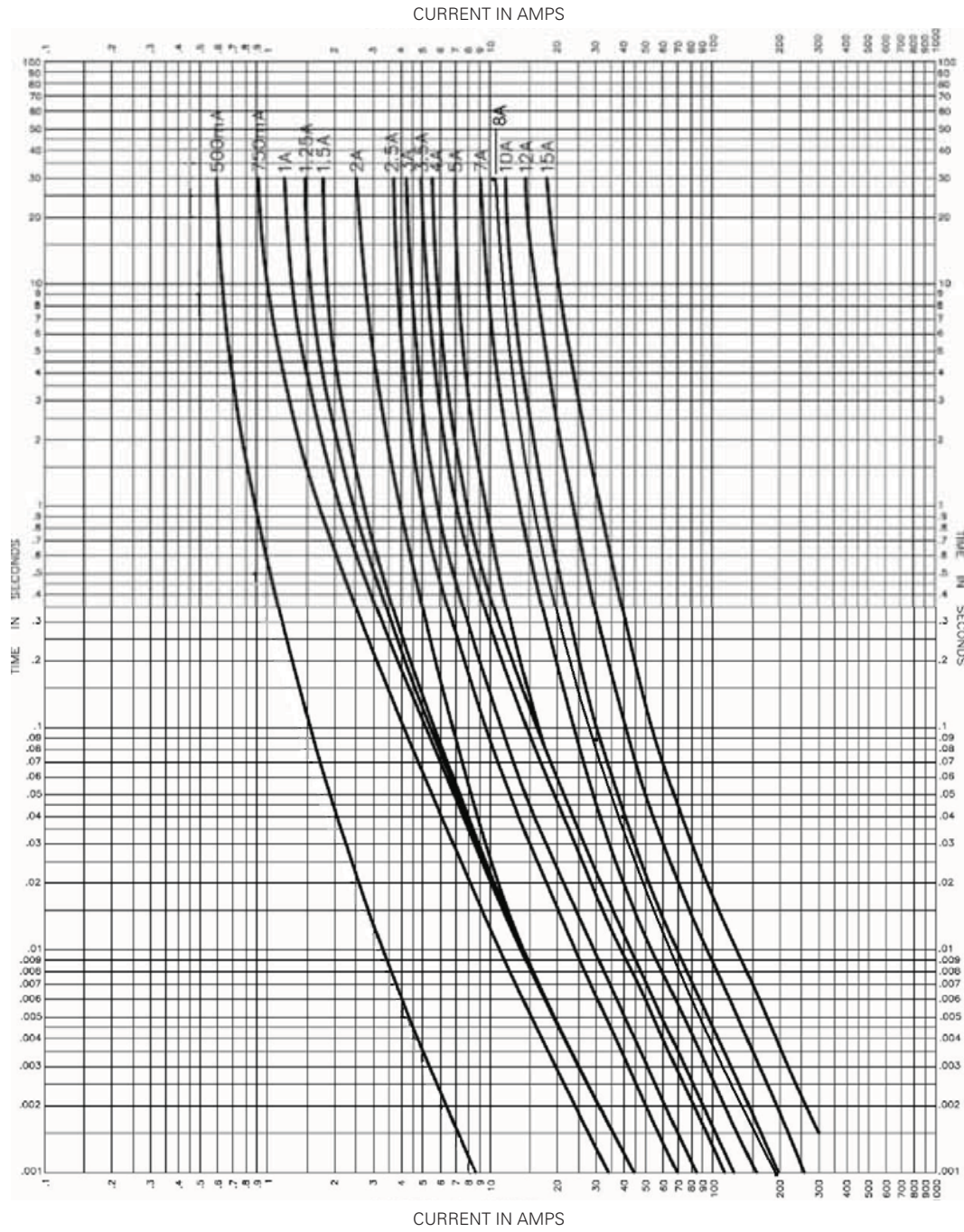
**Dimensions—mm (in)**



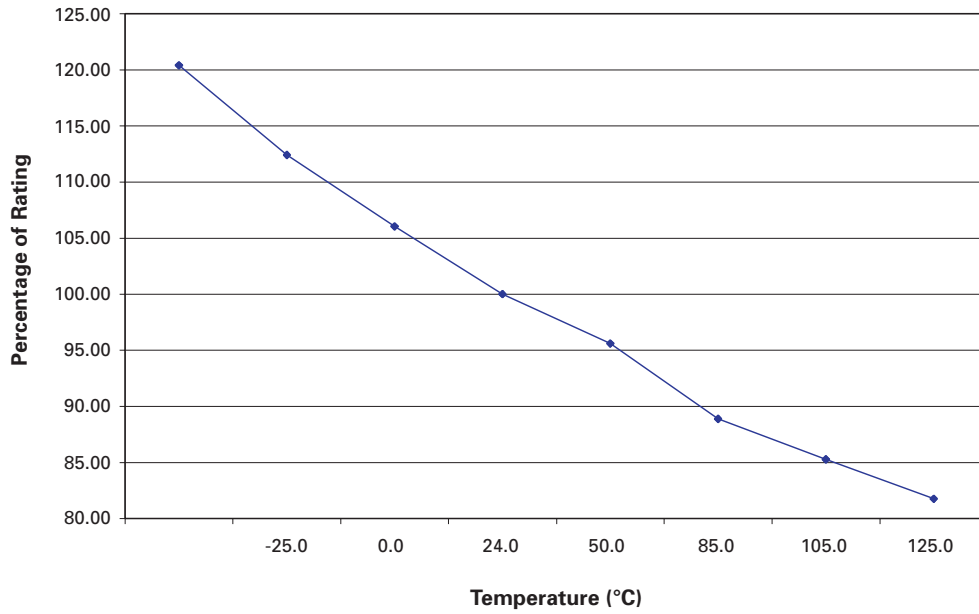
**Recommended pad layout—mm (in)**



Time vs. current curve



### Temperature derating curve



### Environmental data

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Operating temperature: -55°C to 125°C (with derating)

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Storage temperature: -55°C to 125°C

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Mechanical shock: MIL-STD-202, method 213

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High frequency vibration: MIL-STD-202, method 204

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Load humidity: MIL-STD-202, method 103

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Moisture resistance: MIL-STD-202, method 106

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Resistance to solvents: MIL-STD-202, method 215

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Thermal shock: MIL-STD-202, Method 107

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**Solder Reflow Profile**



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

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> ≥350
<2.5mm)	235°C	220°C
≥2.5mm	220°C	220°C

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

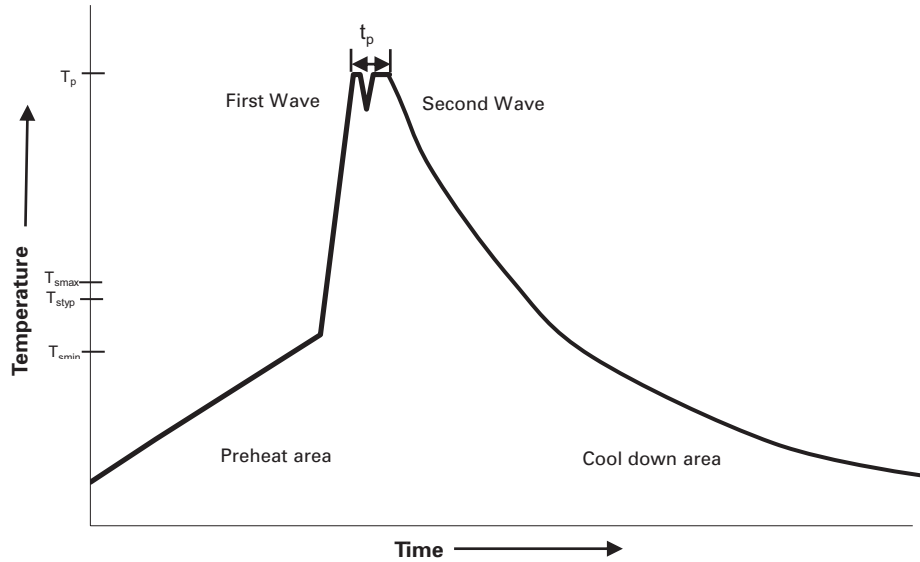
Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350 - 2000	Volume mm <sup>3</sup> >2000
<1.6mm	260°C	260°C	260°C
1.6 - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

**Reference JDEC J-STD-020D**

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.

**Wave solder profile**



**Reference EN 61760-1:2006**

Profile feature	Standard SnPb solder	Lead (Pb) free solder
Preheat and soak	• Temperature min. ( $T_{smin}$ )	100°C
	• Temperature typ. ( $T_{styp}$ )	120°C
	• Temperature max. ( $T_{smax}$ )	130°C
	• Time max. ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	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
Peak package body temperature ( $T_p$ )*	Table 1	Table 2
Time at peak temperature ( $t_p$ )	10 seconds max 5 seconds max each wave	10 seconds max 5 seconds max each
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

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