

# Bourns® SinglFuse™ SMD Fuses

## Product Selection Worksheet

Selecting the appropriate SinglFuse™ SMD Fuse for your application is easy - just follow these simple steps:



### Step 1. What is the preferred product footprint?

0402 – refer to the following data sheets:

- [SF-0402S Series](#)
- [SF-0402FP Series](#)
- [SF-0402F Series](#)
- [SF-0402S-M Series](#)
- [SF-0402FP-F Series](#)

0603 – refer to the following data sheets:

- [SF-0603S Series](#)
- [SF-0603SP-M Series](#)
- [SF-0603FP-F Series](#)
- [SF-0603S-M Series](#)
- [SF-0603SPA-R Series](#)
- [SF-0603FP-M Series](#)
- [SF-0603HIA-M Series\\*](#)
- [SF-0603SA-M Series\\*](#)
- [SF-0603F Series](#)
- [SF-0603HI-F Series](#)
- [SF-0603SP Series](#)
- [SF-0603FP Series](#)
- [SF-0603HI-M Series](#)

1206 – refer to the following data sheets:

- [SF-1206S Series](#)
- [SF-1206S-W Series](#)
- [SF-1206F Series](#)
- [SF-1206S-M Series](#)
- [SF-1206SA-W Series\\*](#)
- [SF-1206F-M Series](#)
- [SF-1206HI-M Series](#)
- [SF-1206SA-M Series\\*](#)
- [SF-1206SP Series](#)
- [SF-1206FP Series](#)
- [SF-1206HIA-M Series\\*](#)
- [SF-1206SA-R Series](#)
- [SF-1206SP-M Series](#)
- [SF-1206FP Series](#)
- [SF-1206HV-M Series](#)
- [SF-1206HH-M Series](#)

2410 – refer to the following data sheets:

- [SF-2410F-W Series](#)
- [SF-2410FP-W Series](#)
- [SF-2410SP-W Series](#)
- [SF-2410FA-W Series\\*](#)
- [SF-2410FPA-W Series\\*](#)
- [SF-2410HI-T Series](#)
- [SF-2410F-T Series](#)
- [SF-2410FP-T Series](#)

2923 – refer to the following data sheets:

- [SF-2923HC-C Series](#)

3812 – refer to the following data sheets:

- [SF-3812F-T Series](#)
- [SF-3812TL-T Series](#)
- [SF-3812SP-T Series](#)
- [SF-3812FG-T Series](#)
- [SF-3812TM-T Series](#)

\*AEC-Q200 Compliant

### Step 2. What is the normal operating current of the circuit?

**Hint:** Select a SinglFuse™ SMD fuse with a rated current greater than the operating current since a fuse is typically derated 25 % for operation at 25 °C to avoid nuisance blowing. For example, if a customer wants a 1206 surface mount one-time fuse and has an operating current of 5.5 A, a fuse with a rated current greater than 7.3 A will be recommended ( $5.5 \text{ A} / 0.75 = 7.3 \text{ A}$ ).

Series	Rated Current	Rated Voltage	Fusing Time	Typical I <sup>2</sup> t (A <sup>2</sup> s)	Operating Temperature
SF-1206SxxxM	0.5 – 8 A	32 – 63 VDC	5 sec @ 250 % I <sub>r</sub>	0.002 – 2.3	–55 to 125 °C
SF-1206SxxxW	1.5 – 15 A	32 – 65 VDC	5 sec @ 250 % I <sub>r</sub>	0.37 – 24.5	–55 to 125 °C
SF-1206SP	0.5 – 7 A	32 – 63 VDC	1 - 120 sec @ 200 % I <sub>r</sub>	0.027 – 10.17	–20 to 105 °C
SF-1206SPxxxM	1 – 8 A	24 – 63 VDC	1 - 120 sec @ 200 % I <sub>r</sub>	0.11 – 16.9	–55 to 125 °C
SF-1206F	0.5 – 7 A	32 – 63 VDC	60 sec @ 200 % I <sub>r</sub>	0.011 – 3.25	–20 to 105 °C
SF-1206FP	0.5 – 7 A	32 – 63 VDC	5 sec @ 200 % I <sub>r</sub>	0.015 – 3.3	–20 to 105 °C
SF-1206HIxxxM	1 – 8 A	24 – 63 VDC	60 sec @ 200 % I <sub>r</sub>	0.11 – 60	–55 to 125 °C
SF-1206HHxxM	10 – 30 A	24 VDC	5 sec @ 350 % I <sub>r</sub>	12 – 270	–55 to 125 °C
SF-1206HVxxM	10 – 40 A	35 VDC	5 sec @ 350 % I <sub>r</sub>	15 – 240	–55 to 125 °C

# Bourns® SinglFuse™ SMD Fuses

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### Step 3. What is the ambient temperature of the circuit?

**Hint:** Refer to the Operating Temperature of the data sheet and select a SinglFuse™ SMD fuse which is suitable for the ambient temperature. For example, if a customer wants a 1206 surface mount one-time fuse with a rated current greater than 7.3 A and it will be used at an ambient temperature of 115 °C, then the SF-1206SxxxM / SF-1206SxxxW / SF-1206SPxxxM / SF-1206HIxxxM / SF-1206HHxxM / SF-1206HVxxM series will be suitable as the rated current and ambient temperature requirements can be satisfied.



### Step 4. What is the maximum circuit voltage?

**Hint:** Select a SinglFuse™ SMD fuse with a rated voltage equal to or greater than the circuit voltage.

For example, if a customer wants a 1206 surface mount one-time fuse with a rated current greater than 7.3 A, an ambient temperature of 115 °C, and a maximum circuit voltage of 32 V, then part numbers SF-1206S800M-2 / SF-1206S800W-2 / SF-1206HV10M-2 will be suitable as the rated voltage is equal to or greater than the circuit voltage of 32 V while the operating current and ambient temperature requirements are also met.

Series	Part Number	Rated Current	Rated Voltage	Fusing Time	Typical I <sup>2</sup> t (A <sup>2</sup> s)	Operating Temperature
SF-1206SxxxM	SF-1206S800M-2	8 A	32 VDC	5 sec @ 250 % I <sub>r</sub>	2.3	-55 to 125 °C
SF-1206SxxxW	SF-1206S800W-2	8 A	32 VDC	5 sec @ 250 % I <sub>r</sub>	13.5	-55 to 125 °C
SF-1206SPxxxM	SF-1206SP800M-2	8 A	24 VDC	1 – 120 sec @ 250 % I <sub>r</sub>	16.9	-55 to 125 °C
SF-1206HIxxxM	SF-1206HI800M-2	8 A	24 VDC	60 sec @ 200 % I <sub>r</sub>	60	-55 to 125 °C
SF-1206HHxxM	SF-1206HH10M-2	10 A	24 VDC	5 sec @ 350 % I <sub>r</sub>	12	-55 to 125 °C
SF-1206HVxxM	SF-1206HV10M-2	10 A	35 VDC	5 sec @ 350 % I <sub>r</sub>	15	-55 to 125 °C

This model satisfies all the customer's requirements in this example

### Step 5. What is the nominal melt I<sup>2</sup>t?

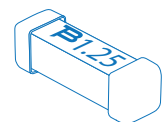
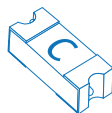
**Hint:** Refer to the Typical I<sup>2</sup>t of the data sheet and select a SinglFuse™ SMD fuse with suitable I<sup>2</sup>t to avoid blowing by pulse current in the circuit.

For example, if a customer wants a 1206 surface mount one-time fuse with a rated current greater than 7.3 A, ambient temperature of 115 °C, maximum circuit voltage of 32 V, and a nominal melt I<sup>2</sup>t of 14 A<sup>2</sup>sec, then part number SF-1206HV10M-2 would be a suitable model as the typical I<sup>2</sup>t of 15 A<sup>2</sup>sec is greater than nominal melt I<sup>2</sup>t of 14 A<sup>2</sup>sec.

### Step 6. Request samples from your nearest Bourns representative and start testing in your application.

Additional product selection support is available using the Bourns Parametric Search tool:

[www.bourns.com/parametric-search](http://www.bourns.com/parametric-search)



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