

## Fast-Acting Surface Mount Fuse

### SFE 125V Fast-Acting Series

#### Descriptions

SFE 125V Fast-Acting Series provide board level primary and secondary circuit protection in a wide variety of applications. With excellent inrush current withstanding capability, excellent reliability for thermal and mechanic shock, also have a high reliability and stable solder ability, end caps are available in gold/silver/nickel plated.



#### Features

- ◆ Fast-Acting.
- ◆ Small size (6.1mm\*2.5mm).
- ◆ Wide range of current rating available.
- ◆ Wide operating temperature range.
- ◆ Low temperature de-rating.
- ◆ RoHS compliant.
- ◆ Tape and Reel for automatic placement.
- ◆ Conflict free metals.

#### Standards and Agency Approvals

- ◆ Standards: In accordance with UL 248-14.
- ◆ Certification: UL/CUL.

#### Applications

- ◆ LED lighting
- ◆ Notebook PC
- ◆ Battery devices
- ◆ LCD/PDP devices
- ◆ LCD backlight inverter
- ◆ Portable Devices
- ◆ Power supply
- ◆ Networking devices
- ◆ PC server
- ◆ Cooling fan system
- ◆ Storage system
- ◆ Telecom system
- ◆ Wireless base station
- ◆ White goods
- ◆ Game console
- ◆ Office equipment
- ◆ Digital camera
- ◆ Industrial equipment
- ◆ Medical equipment
- ◆ Automotive devices

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### Electrical Characteristics

Part Number	Ampere Rating (A)	Voltage Rating Vac(V)	Breaking Capacity	Nominal Cold Resistance (Ohms)	I <sup>2</sup> T Melting Integral(A <sup>2</sup> .S)	
SFE0250	0.25	125	50A@300V <sub>AC</sub>	0.860	0.145	
SFE0300	0.30	125		0.620	0.162	
SFE0315	0.315	125		0.550	0.189	
SFE0375	0.375	125		0.470	0.200	
SFE0400	0.40	125		0.380	0.238	
SFE0500	0.50	125		0.320	0.275	
SFE0600	0.60	125		0.285	0.470	
SFE0630	0.63	125		0.256	0.566	
SFE0700	0.70	125		0.208	0.805	
SFE0750	0.75	125		0.175	1.240	
SFE0800	0.80	125		0.155	1.880	
SFE1100	1.00	125		0.148	3.500	
SFE1125	1.25	125	50A@250V <sub>AC</sub>	0.102	4.760	
SFE1150	1.50	125		0.085	6.305	
SFE1200	2.00	125		0.044	8.950	
SFE1250	2.50	125		0.043	16.025	
SFE1300	3.00	125		0.033	21.560	
SFE1315	3.15	125		0.029	22.750	
SFE1350	3.50	125		0.027	27.050	
SFE1400	4.00	125		200A@125V <sub>AC</sub>	0.025	31.808
SFE1500	5.00	125			0.019	40.250
SFE1600	6.00	125			0.018	67.245
SFE1630	6.30	125			0.017	73.550
SFE1700	7.00	125			0.016	76.280
SFE1800	8.00	125	0.015		80.750	
SFE2100	10.00	125	0.014		110.380	
SFE2120	12.00	125	0.013		158.080	
SFE2150	15.00	125	0.012		160.680	

- ◆ Cold resistance and I<sup>2</sup>t value are pending due to fuse elements shall be customized;
- ◆ DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C;
- ◆ Typical Pre-arching I<sup>2</sup>t are calculated at 10\*In Current or 8ms;
- ◆ Min Interrupting Rating: 1.35\*In.

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#### Material Details

Part Name	Material
End caps	Gold/Silver Plated Brass Cap
Body	Non-Transparent Square Ceramic Tube
Fuse element	Cu-Ag Alloy wire

#### Product Characteristics

Item	Content	Reference Standards
Product Marking	Brand, Ampere Rating	Socay marking standards
Operating Temperature	-55°C to 125°C	IEC60068-2-1/2
Solderability	T=240°C±5°C , t=3sec±0.5sec, Coverage≥95%	MIL-STD-202, Method 208
Resistance to Soldering Heat	10 sec at 260°C	MIL-STD-202, Method 210, Test condition B
Insulation Resistance (after Opening)	10,000 ohms minimum	MIL-STD-202, Method 302, Test Condition A
Thermal Shock	5 cycles, -65°C / +125°C, 15 minutes at each extreme	MIL-STD-202, Method 107, Test Condition B
Mechanical Shock	100G's peak for 6 milliseconds, 3cycles	MIL-STD-202, Method 213, Test I
Vibration	0.03"amplitude, 10-55 Hz in 1 min. 2hrs each XYZ=6hrs	MIL-STD-202, Method 201
Moisture Resistance	10 cycles	MIL-STD-202, Method 106
Salt Spray	5% salt solution, 48hrs	MIL-STD-202, Method 101, Test Condition B

# Fast-Acting Surface Mount Fuse

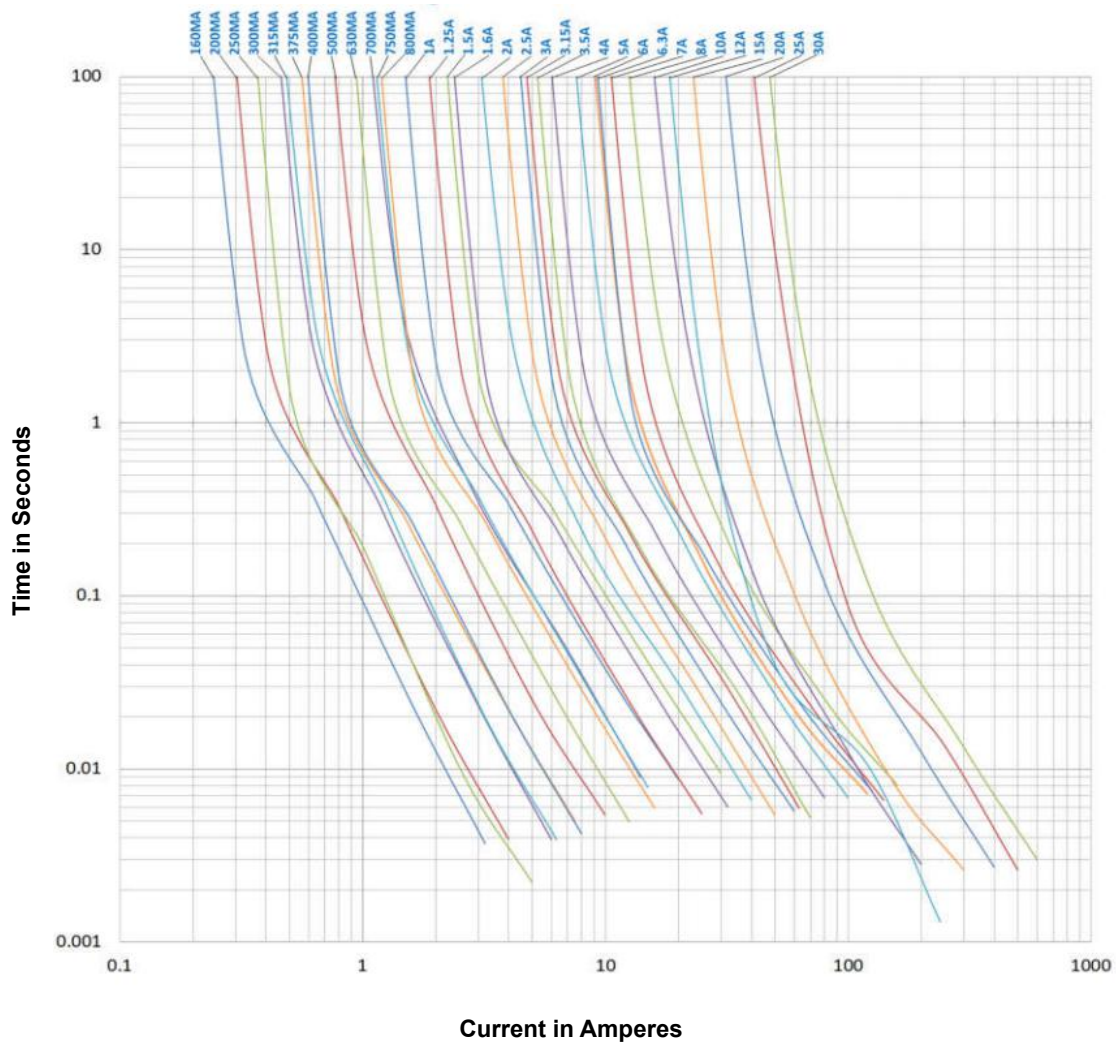
## SFE 125V Fast-Acting Series

### Electrical Characteristics

- ◆ Test Condition:  
All electrical test is to be conducted with the ambient air at a temperature of 25±5°C.
- ◆ Interrupting Rating:  
Breaking Capacity: 50A@250Vac, 200A@125Vac.
- ◆ Operating Characteristics:

% of Ampere Rating(In)	Blowing Time
100% * In	4 hours Min
200% * In	120 secs Max
1000% * In	10ms Min

### Average Time Current Curves

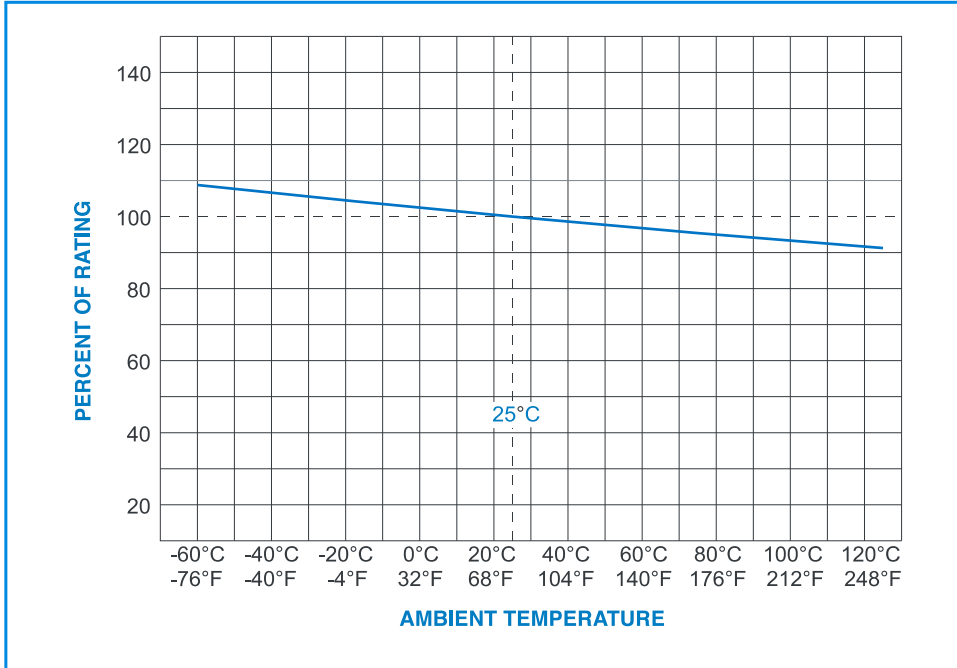


# Fast-Acting Surface Mount Fuse

## SFE 125V Fast-Acting Series

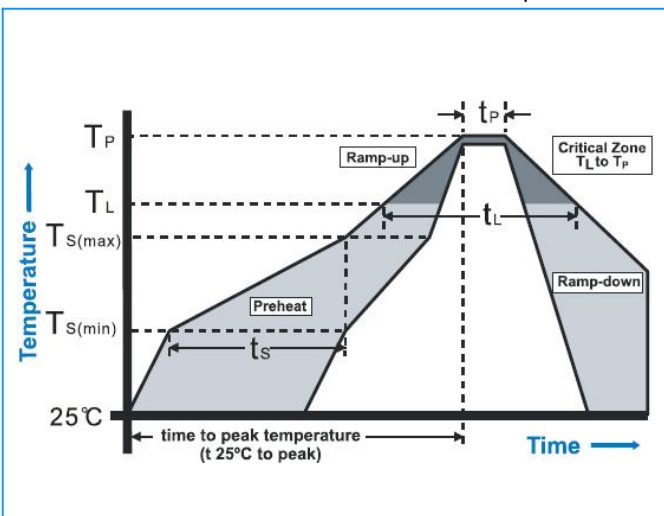
### Environmental Characteristics

When choosing the fuse's specification, if the operating environmental temperature beyond the scope from 20~30°C, engineer should consider the environmental temperature's affection to fuses. Please refer: Temperature Rerating Curve:



### Recommended Soldering Parameters

- ◆ Wave / Reflow Soldering Parameters: Solder paste process; Solder Pot Temperature: 260°C Max; Solder Dwell Time: 5 seconds max.
- ◆ Hand-Solder Parameters: Solder Iron Temperature: 300±5°C; Heating Time: 1~2s Max.

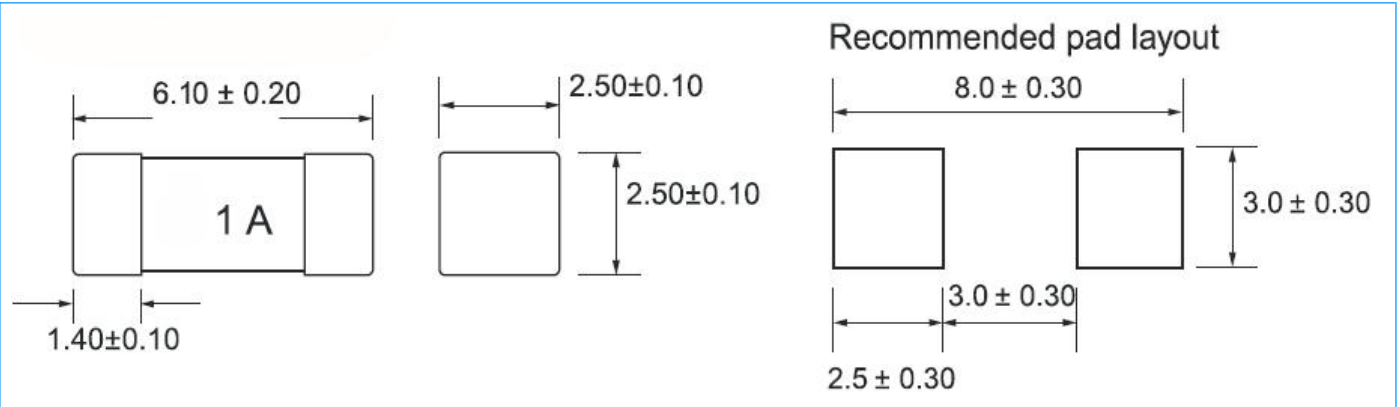


Reflow Condition		Pb-free assembly
Pre Heat	- Temperature Min ( $T_{s(min)}$ )	150°C
	- Temperature Max ( $T_{s(max)}$ )	200°C
	- Time (min to max) (ts)	60 -120 seconds
Average ramp up rate ( $T_{s(max)}$ to $T_p$ )		5°C /second max.
Reflow	- Temperature ( $T_L$ )	220°C
	- Time Max ( $T_L$ )	60 seconds
Peak Temperature ( $T_P$ )		260°C max
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes max

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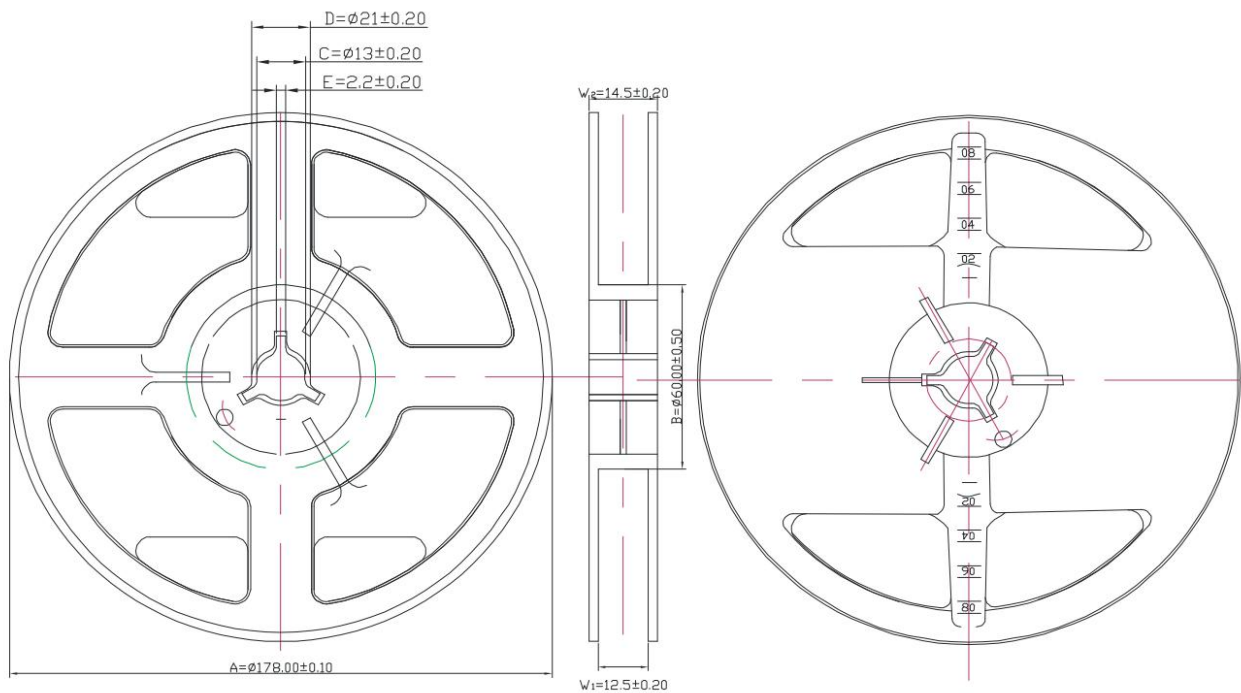
## SFE 125V Fast-Acting Series

### Dimensions and Structure (Unit: mm)



### Packaging (Unit: mm)

1000 pcs in 7 inches dia. reel, 12mm wide tape, EIA Standard 481

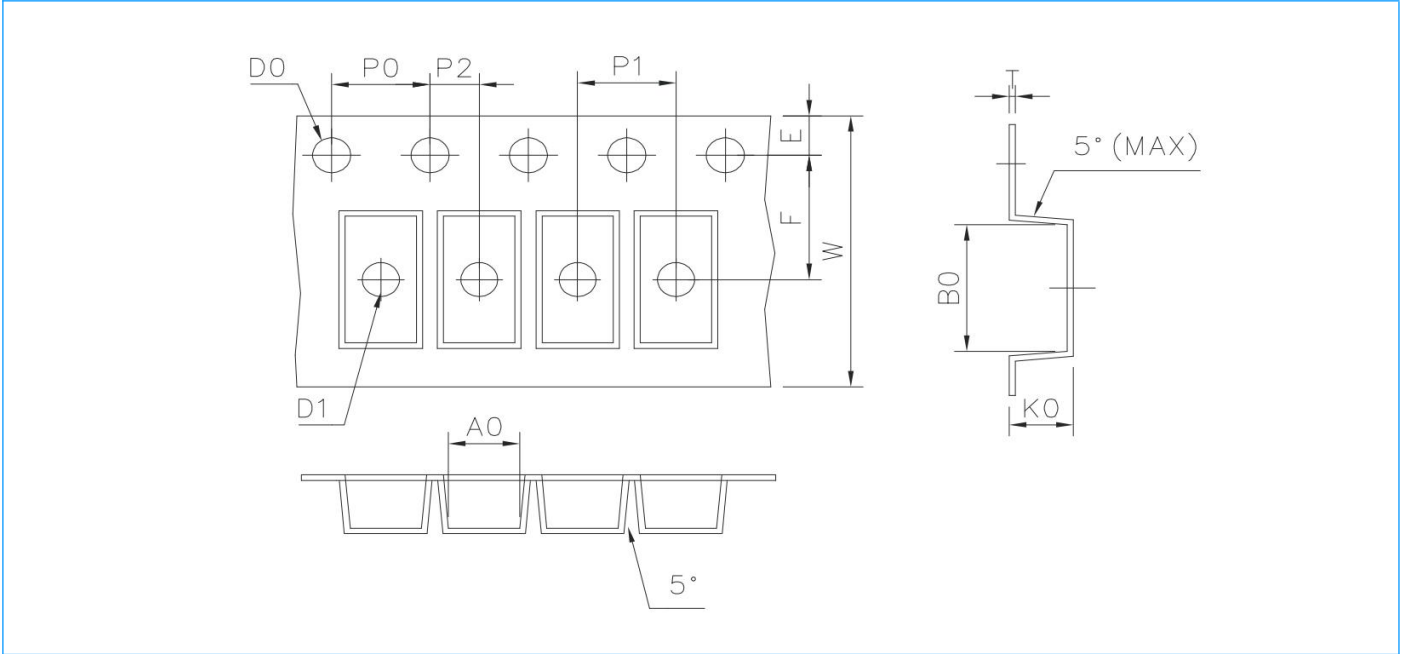


Symbol	A	B	C	D	E	W1	W2
Spec.(mm)	178±0.10	60±0.50	13±0.20	21±0.20	2.2±0.20	12.5±0.20	14.5±0.20

# Fast-Acting Surface Mount Fuse

## SFE 125V Fast-Acting Series

### Packaging (Unit: mm) (Continue)



Symbol	A0	B0	D0	D1	E	F
Spec.(mm)	2.70±0.10	6.40±0.10	1.50+0.10	1.50+0.25	1.75±0.10	5.50±0.10
Symbol	K0	P0	P1	P2	W	t
Spec.(mm)	2.70±0.10	4.00±0.10	4.00±0.10	2.00±0.10	12.00±0.15	0.25±0.05