



Specification for approval



250V

Product Type: SEF Series 2410/6125/1808 *Fast-Acting*

Surface Mount Fuse 250V



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1. Description, Features and Applications

Descriptions:

6125 series Fast-Acting square Surface Mount fuses are ceramic tube/end cap constructions, RoHS compliant, Halogen Free and lead(Pb) exempts of the requirements of RoHS Directive(2002/95/EC), with U.S.(UL/CSA) safety agency approvals. 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 (Fast-Acting)*
- *Wide range of current rating available*
- *Low temperature de-rating*
- *Tape and Reel for automatic placement*
- *Small size(6.1mm*2.5mm)*
- *Wide operating temperature range*
- *RoHS compliant*
- *Conflict free metals*

Applications:

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

2. Standards and Agency Approvals

2.1 UL 248-14.

Standards: In accordance with UL 248-14.

2.2 Certification:

Agency	Ampere Range	Agency File Number
	50mA ~ 7A	E340427(JDYX2)
	50mA ~ 7A	E340427(JDYX8)



2.3 Catalogue No., ● Approved / ○ Pending

Catalog No.	Ampere Rating	Voltage Rating	Breaking Capacity	Nominal Cold Resistance (Ohms)	I ² TMelting Integral(A ² .S)	Agency Approvals	
						RU [®]	C RU [®]
SEF0160	160mA	250VAC	50A@300VAC 50A@250VAC 200A@125VAC	2.308	0.058	●	●
SEF0200	200mA			1.655	0.062	●	●
SEF0250	250mA			1.456	0.065	●	●
SEF0300	300mA			0.855	0.191	●	●
SEF0315	315mA			0.656	0.202	●	●
SEF0375	375mA			0.605	0.330	●	●
SEF0400	400mA			0.580	0.338	●	●
SEF0500	500mA			0.302	0.475	●	●
SEF0600	600mA			0.268	0.775	●	●
SEF0630	630mA			0.259	0.986	●	●
SEF0700	700mA			0.233	2.105	●	●
SEF0750	750mA			0.227	2.240	●	●
SEF0800	800mA			0.205	2.380	●	●
SEF1100	1A			0.129	3.690	●	●
SEF1125	1.25A			0.095	3.760	●	●
SEF1150	1.5A			0.089	6.765	●	●
SEF1160	1.6A			0.078	6.805	●	●
SEF1200	2A			0.039	12.150	●	●
SEF1250	2.5A			0.036	16.025	●	●
SEF1300	3A			0.028	21.560	●	●
SEF1315	3.15A			0.027	25.750	●	●
SEF1350	3.5A			0.026	30.050	●	●
SEF1400	4A			0.020	43.208	●	●
SEF1500	5A			0.015	55.250	●	●
SEF1600	6A			0.013	75.245	●	●
SEF1630	6.3A			0.011	93.550	●	●
SEF1700	7A			0.010	97.120	●	●
SEF1800	8A			0.0080	108.750	○	○
SEF2100	10A			0.0072	118.380	○	○
SEF2120	12A			0.0050	140.080	○	○
SEF2150	15A	0.0035	210.680	○	○		



- *: These catalog no. cold resistance and I²t 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_{2t} are calculated at 10*I_n Current or 8ms;
- Min Interrupting Rating: 1.35*I_n.

3. Product Marking

The fuses shall have the following markings

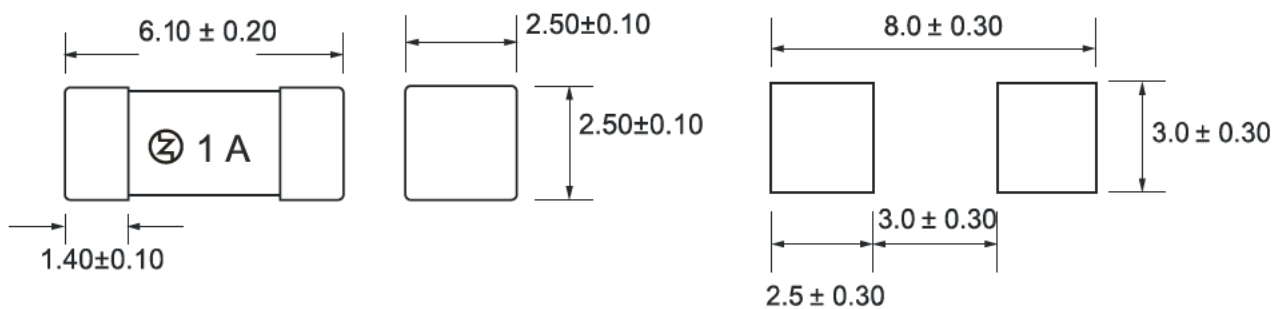
Example:

	1A	① Trade Mark: 
①	②	

Note: Size and position of the markings shall not be provided.

4. Dimensions and Structure

Unit: mm



5. Material Details

NO.	Part Name	Material
①	End caps	Gold Plated Brass Cap
②	Body	Non-Transparent Square Ceramic Tube
③	Fuse element	Cu-Ag Alloy wire

6. Product Characteristics

NO.	Item	Content	Reference standards
1	Product Marking	Brand, Ampere Rating	Marking standards



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

7. Electrical Characteristics

7.1 Test Condition

All electrical test is to be conducted with the ambient air at a temperature of 25±5°C.

7.2 Interrupting Rating:

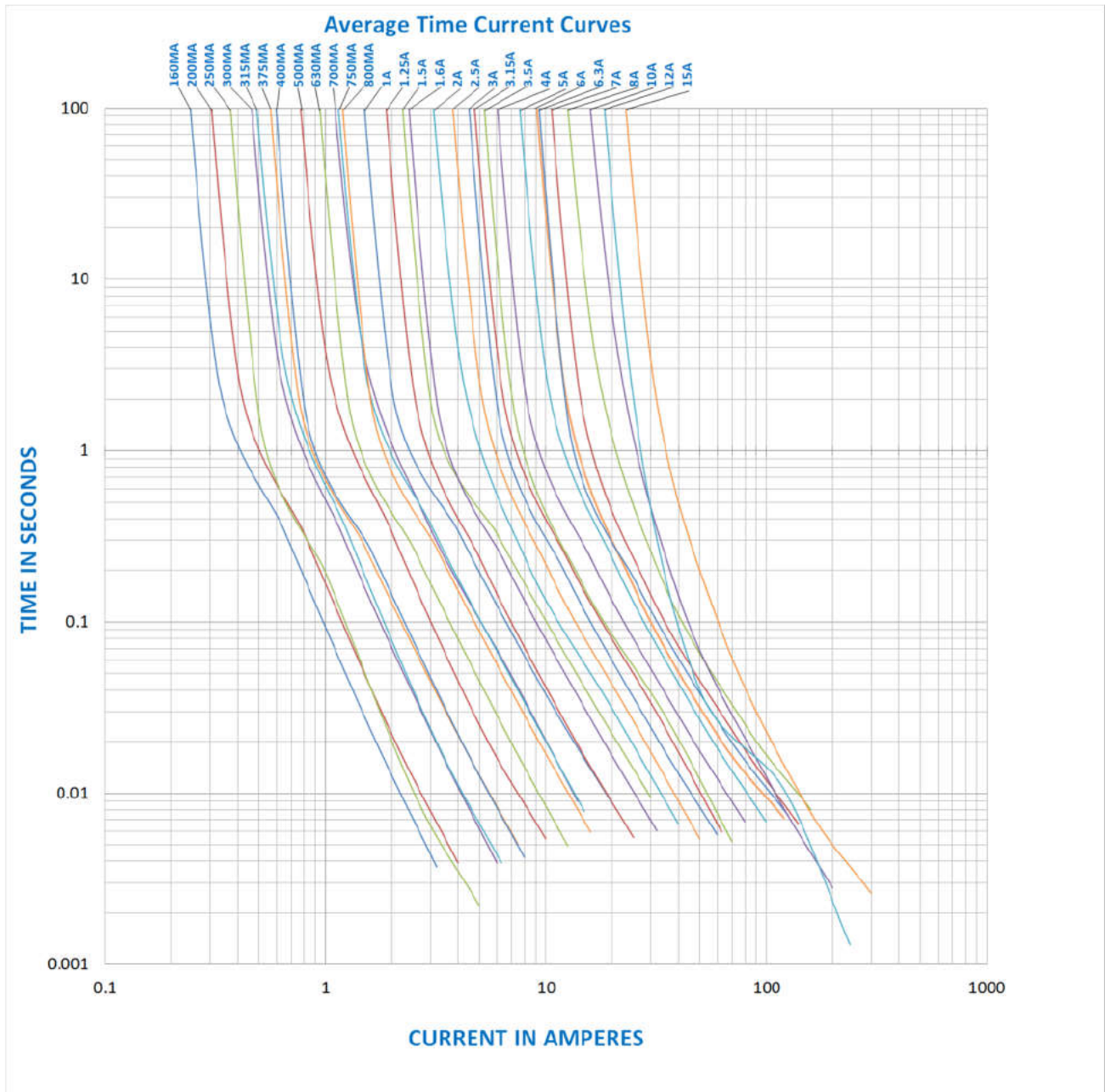
50A@250Vac, 200A@125Vac. Breaking Capacity:

50A@250Vac, 200A@125Vac.

7.3 Operating Characteristics

% of Ampere Rating(In)	Blowing Time
100% * In	(4 hours Min)
200% * In	(120 sec Max)

7.4 Average Time Current Curves

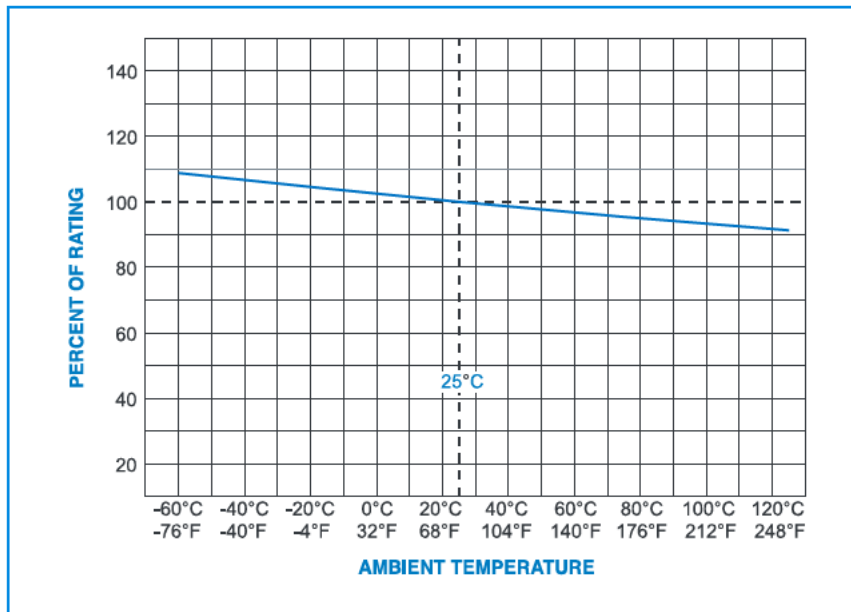


8. Environmental Characteristic

$25 \pm 5^{\circ}\text{C}$

When choosing the fuse's specification, if the operating environmental temperature is beyond the scope of $20\sim 30^{\circ}\text{C}$, the engineer should consider the environmental temperature's effect on fuses.

Please refer to: Temperature Derating Curve:



9. Recommended Soldering Parameters

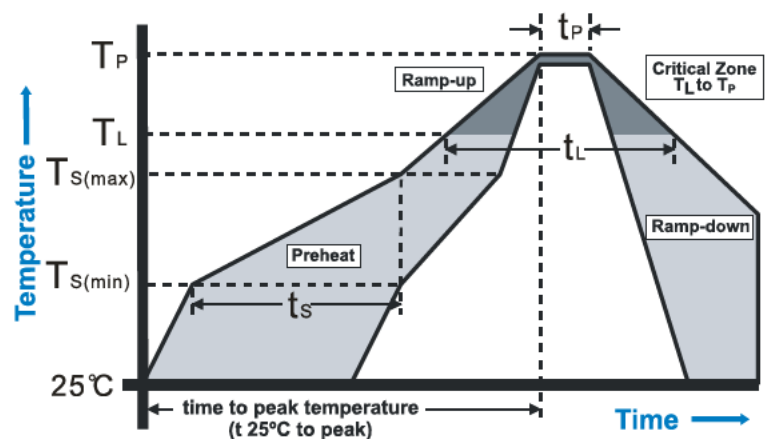
A. Reflow Soldering

Parameters: Solder paste process.

Solder Pot Temperature: 260°C Max

Solder Dwell Time: 5 seconds max

Reflow Condition	Pb-Free assembly	
Average ramp-up rate ($T_s(\max)$ to T_p)	5°C /second max.	
Preheat	Temperature Min ($T_s(\min)$)	150°C
	Temperature Max ($T_s(\max)$)	200°C
	Time (Min to Max) (t_s)	60-120 seconds
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	



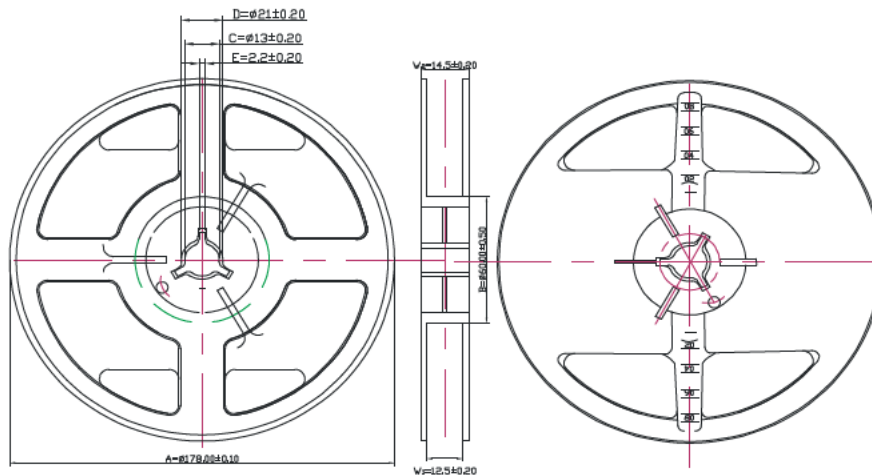
B. Hand-Solder Parameters:

Solder Iron Temperature: $300 \pm 5^\circ\text{C}$

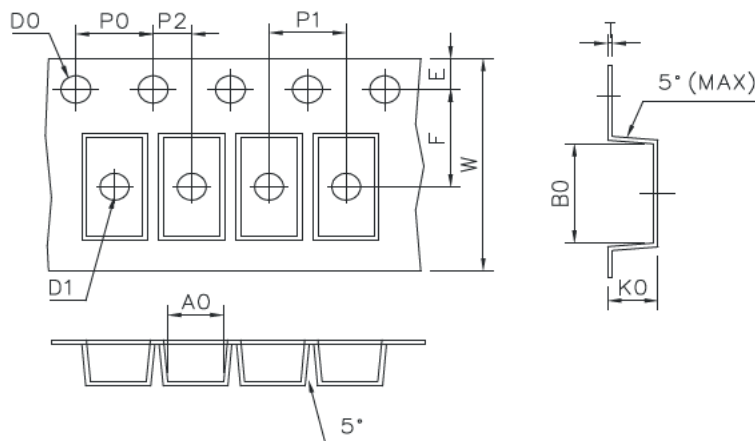
Heating Time: 1~2 s Max

10. Packaging

1,000 pcs in 7 inches dia. reel, 12mm wide tape, EIA Standard 481



Item	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



Item	A ₀	B ₀	D ₀	D ₁	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
Item	K ₀	P ₀	P ₁	P ₂	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

11. Others

In the event that an impropriety is found beyond this specification, it shall be fixed by mutual agreement between the parties.

I: Appendix I: Safety approval certificates