

Product Specification

Number: L-KLS5-1206-12F-XXXL

Name: SMD Fuse (Fast-Acting)

Customer: _____

Date: 2025-04-17

Customer Signature:



WWW.KLSELE.COM

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Compi	Check	Review	Approva
Jenny	Jack.C		

250mA-30A 72Vdc/63Vdc/32Vdc/24Vdc



Description

fuses set the industry standard for performance, reliability and quality. The solder-free design provides excellent on-off and temperature cycling characteristics during use and also makes our SMD fuses more heat and shock tolerant than typical subminiature fuses.

Features

- Rapid interruption of excessive current
- Compatible with reflow and wave solder
- Ceramic and glass construction
- One time positive disconnect
- Lead free and Halogen free material

Electrical Characteristics

Rated Current	% of Amp Rating	Opening Time
250mA~30A	100%	4hours, min
1A~3A	200%	1.0s - 60 s
1A~5A	250%	5.0s max
1A~5A	300%	0.1s - 3.0 s
250mA~750mA	350%	5.0s max
6A~30A	350%	5.0s max
250mA~30A	1000%	0.2ms - 20.0 ms

Applications

- Secondary circuit protection
- Laptop, notebook, netbook
- Flat panel displays
- High definition television(HDTV)
- LCD/LED backlighting
- Computers and peripherals
- Gaming console systems
- Handheld/portable equipment
- Mobile device charges
- Automotive
- Central body control module
- Heating ventilation and air conditioning
- Doors,window lift and seat control
- Digital instrument cluster
- In-vehicle infotainment and navigation
- Electric pumps,motor control and
- Powertrain control module(PCU)/Engine
- Transimission Control Unit(TCU)

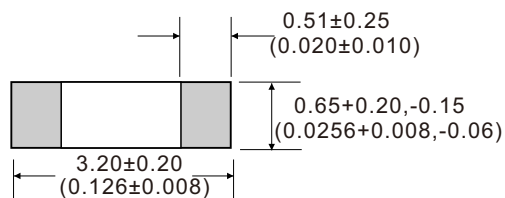
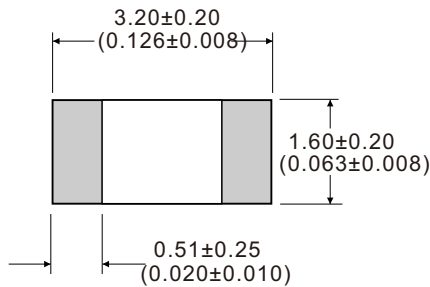
Specifications

Part No.	Rated Voltage (V)	Rated Current (A)	Breaking Capacity (A)	Typical Cold Resistance (mOhms)	Typical Voltage Drop (mV)	Typical Pre-Arching I ² t (A ² Sec)	Marking
12F-0250L	125Vdc	250mA	100A@72Vdc	3700	1350	0.00038	.25
12F-0375L		375mA		1850	720	0.00077	E
12F-0500L		500mA		1050	690	0.0019	B
12F-0750L		750mA		775	680	0.15	G
12F-010L		1A		485	550	0.18	H
12F-015L		1.5A		218	355	0.4	K
12F-020L		2A		133	310	1.1	N
12F-025L		2.5A		79	230	1.7	O
12F-030L		3A		49	185	2.2	P
12F-035L		3.5A		37	175	2.7	R
12F-040L	72Vdc	4A	100A@63Vdc	33	160	3.2	S
12F-045L		4.5A		28	150	4.2	X
12F-050L		5A		22	135	6	T
12F-060L		6A		15.5	140	12	F
12F-070L		7A		11.5	120	18	J
12F-080L		8A		8.0	100	18	V
12F-100L		10A		7.0	90	30	U
12F-120L		12A		5.9	85	45	W
12F-150L		15A		3.8	75	63	Y
12F-200L		20A		2.9	70	80	Q
12F-250L	63Vdc	25A	300A@24Vdc	1.6	60	90	25
12F-300L		30A		1.3	60	100	30

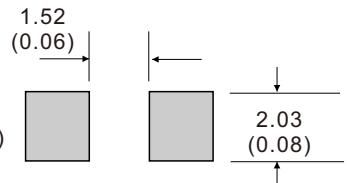
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Dimensions

(Unit: mm/inch)



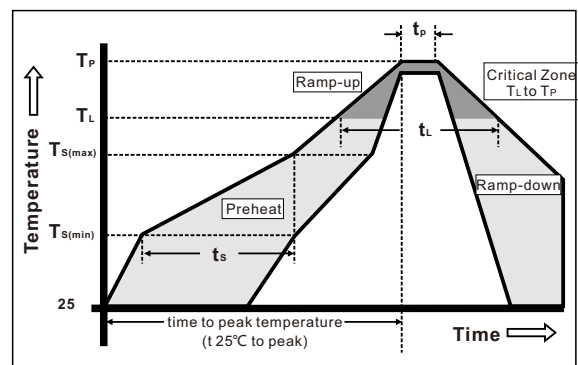
Pad layout



Installation Recommendations

1 Wave Soldering Parameters

Reflow Condition		Pb-free assembly
Pre Heat	- Temperature Min (T_{smin})	150°C
	- Temperature Max (T_{smax})	200°C
	- Time (Min to Max) (t_s)	60 – 120 seconds
Average Ramp-up Rate (Liquidus Temp (TL) to peak)		3°C/second max.
TS(max) to TL - Ramp-up Rate		5°C/second max.
Reflow	- Temperature (TL) (Liquidus)	217°C
	- Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260±0/-5°C
Time within 5°C of actual peak Temperature (t_p)		30 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C



Solder Pot Temperature: 260°C max

Solder Dwell Time: 10 Seconds max

2 Hand-Solder Parameters

Solder Iron Temperature: 280±5°C

Heating Time: 5 Seconds min

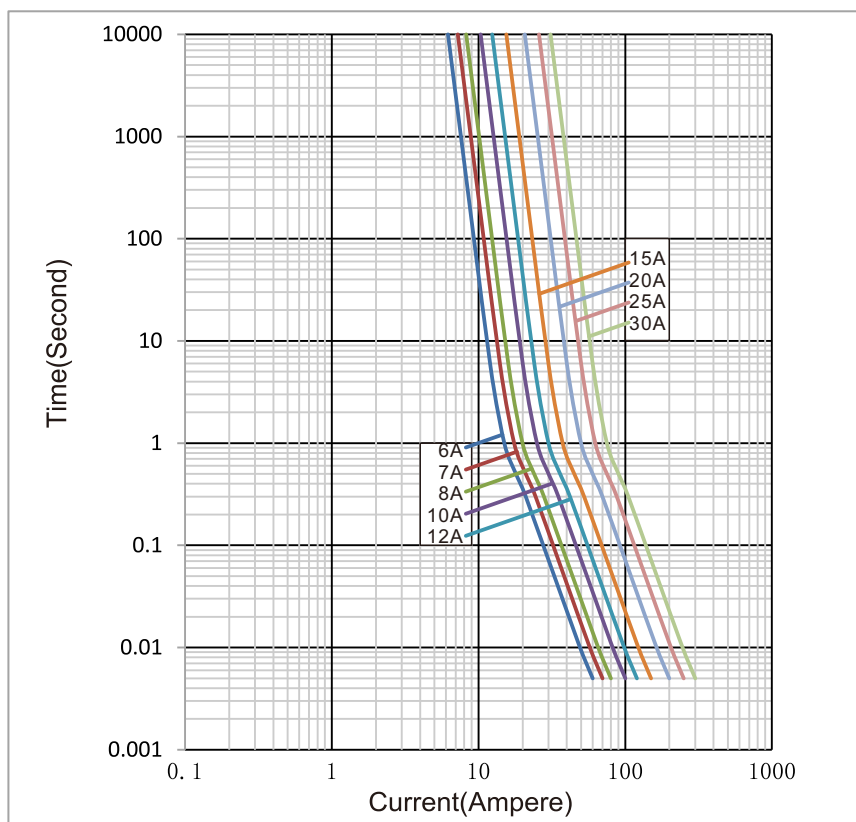
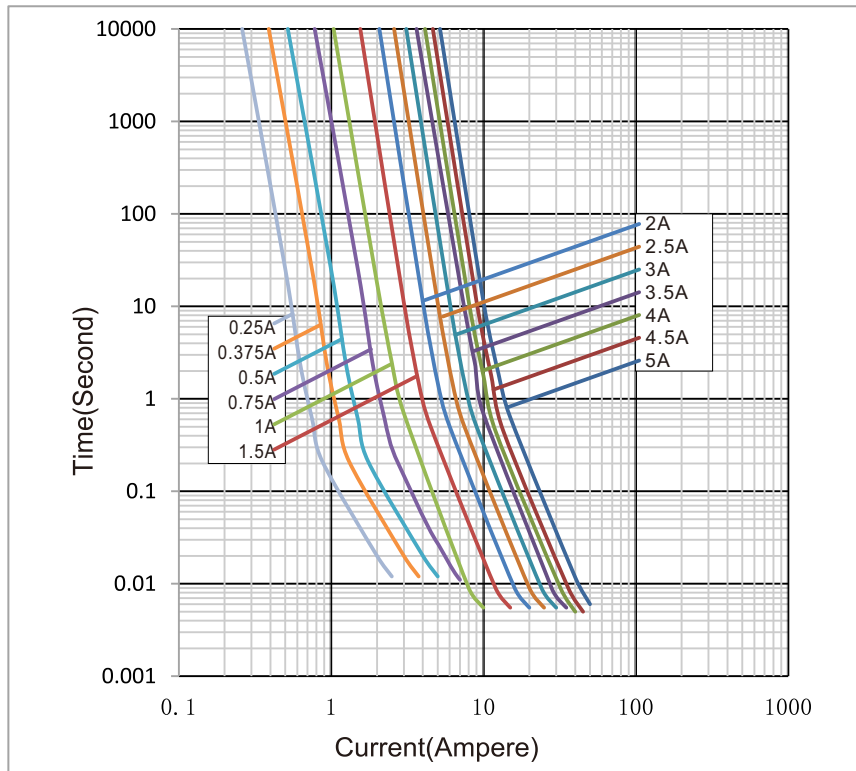
Generally, hand-soldering is not recommended

Product Characteristics

Materials	Body: Ceramic Terminations: Silver over-plated with tin Element: Alloy(Ag,Cu,Zn) Cover Coat: Glass
Operating Temperature	-55°C to 125°C Consult temperature derating curve chart.
Thermal Shock	300 cycles -55°C to 125°C
Humidity	MIL-STD-202F, Method 103B, Condition D
Vibration	Per MIL-STD-202F, Method 201A
Insulation Resistance (After Opening)	Greater than 10,000 ohms
Resistance to Soldering Heat	MIL-STD-202G, Method 210F, Condition D

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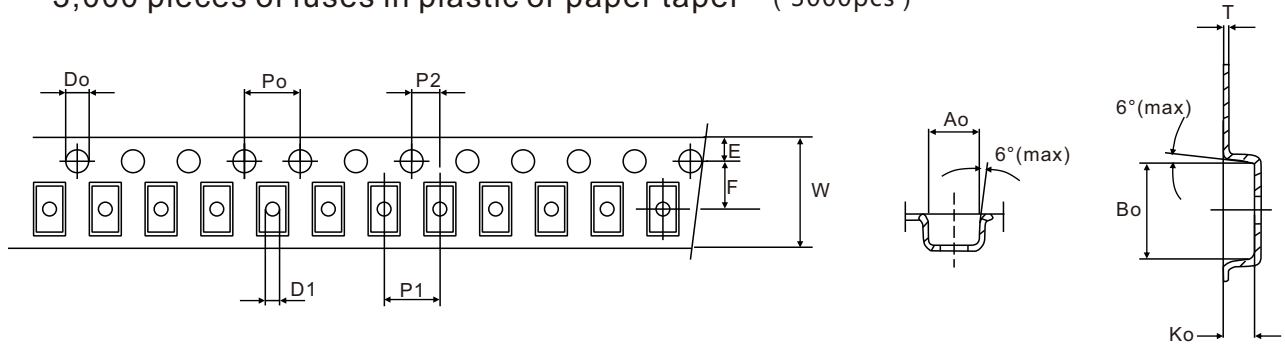
Time Current Curve



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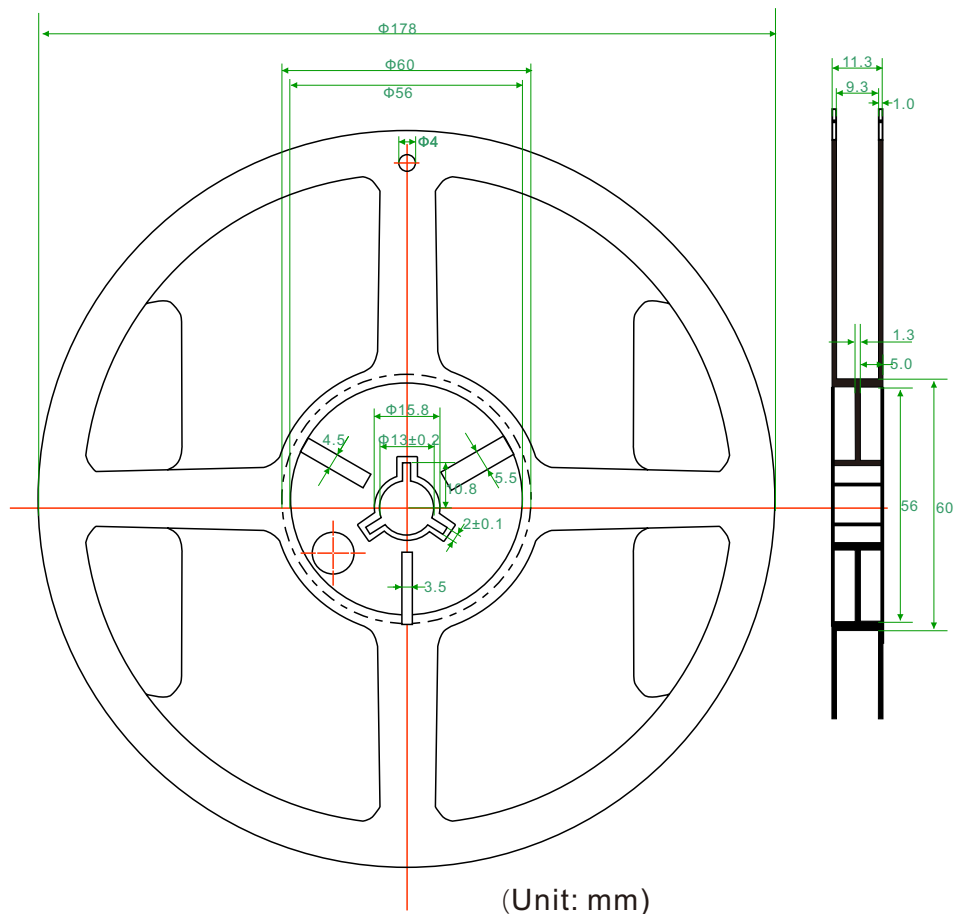
Packaging

3,000 pieces of fuses in plastic or paper taper (3000pcs)



Symbol	Ao	Bo	Ko	Po	P1	P2
Spec	1.80±0.10	3.50±0.10	1.27±0.10	4.00±0.10	4.00±0.10	2.00±0.10
Symbol	E	F	Do	D1	W	T
Spec	1.75±0.10	3.50±0.10	1.50±0.10	1.00(Max)	8.00±0.10	0.25±0.05

(Unit: mm)



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