





### General

- Fast acting, Inrush withstand capability
- Wire-In-Air performance
- Wide range of current rating available
- 6.1mm×2.5mm square shape surface mount
- Higher temperature profiles
- -55°C~125°C operating temperature
- Excellent environmental integrity
- RoHS compliant
- Halogen-free

### Agency / Certificate Information

Agency	File Number	Ampere Range
	E319512	1A~20A
	PSE18021410	1A~5A
	PSE18021408	6.3A~10A

### Application

- Battery pack
- Storage system
- Power supply
- PC & PC peripherals
- Game console
- PC server
- Cooling fan system
- Wireless basestation
- Industrial equipment
- Telecom system
- LCD monitor and modules
- Medical equipment

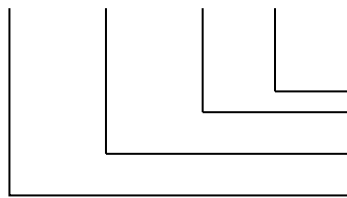
### Electrical Specifications

Part Number	Current Rating (A)	Voltage Rating (V)	Interrupting Rating (V)		Typical Cold DCR* (mΩ)	Typical I <sup>2</sup> T** (A <sup>2</sup> s)
S6125-F-1.0A	1	125	UL: 50A 125V AC 50A 160V DC	CQC/PSE: 100A 100V AC	80.0	0.56
S6125-F-1.25A	1.25	125			60.0	0.84
S6125-F-1.6A	1.6	125			38.0	1.23
S6125-F-2.0A	2	125			30.0	1.34
S6125-F-2.5A	2.5	125		27.0	1.43	
S6125-F-3.0A	3	125		/	22.0	1.88
S6125-F-3.15A	3.15	125		CQC/PSE: 100A 100V AC	21.0	2.05
S6125-F-4.0A	4	125			16.0	3.44
S6125-F-5.0A	5	125			14.0	4.84
S6125-F-6.3A	6.3	125			10.0	10.55
S6125-F-7.0A	7	125			9.4	10.58
S6125-F-8.0A	8	125			7.4	17.62
S6125-F-10.0A	10	125		5.9	30.30	
S6125-F-12.0A	12	65		UL: 50A 65V AC 50A 65V DC	4.8	42.22
S6125-F-15.0A	15	65	3.7		69.75	
S6125-F-20.0A	20	65	3		132.04	

\* Measured at ≤10% rated current and 25°C  
\*\* Melting I<sup>2</sup>T at 10 times of rated current

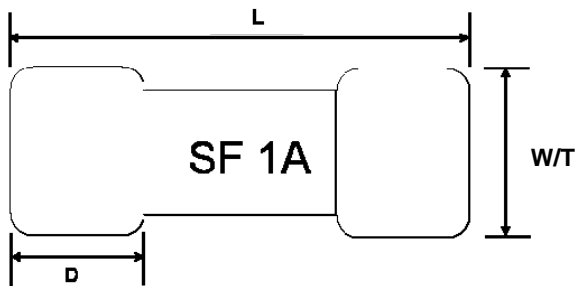
### Part Number Information

**S 6125-F-1.0A**



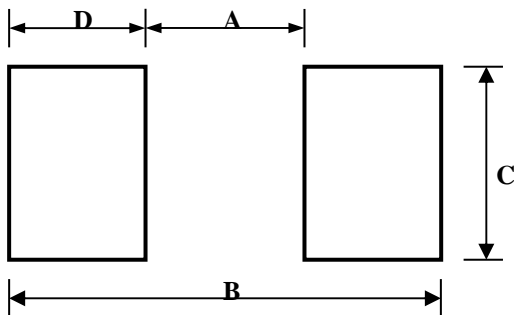
“1.0A” Ampere Rating: 1A  
“ F ” Electrical Characteristic: F = Fast acting  
“6125” Size Number  
“ S ” Symbol of SART

### Dimensions



Type	L (mm)	W/ T (mm)	D (mm)
S6125	6.10±0.20	2.50±0.10	1.40±0.10

### Recommended Land Patterns



Dimensions	A(mm)	B(mm)	C(mm)	D(mm)
Spec	3.00±0.30	8.00±0.30	3.00±0.30	2.50±0.30

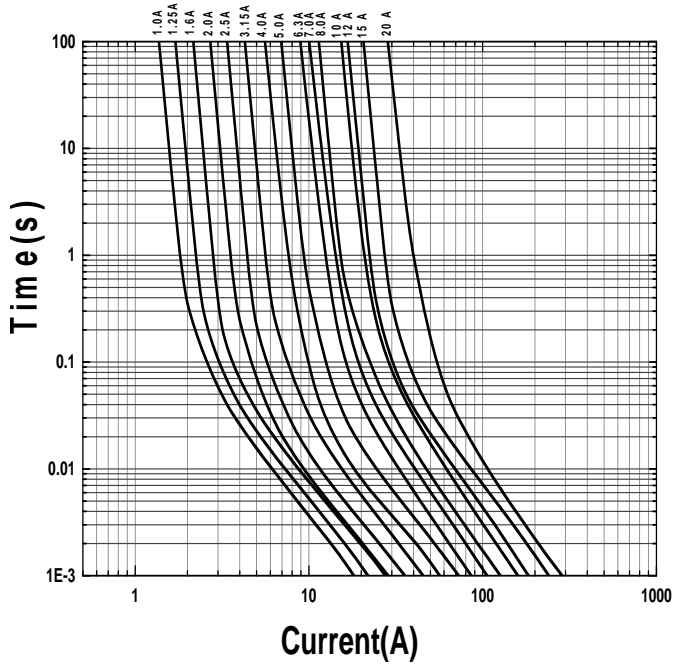
### Materials

Components	Material
Body	Ceramic
Terminations	Au Plated Brass Cap
Element	Nickel alloy or Copper Alloy

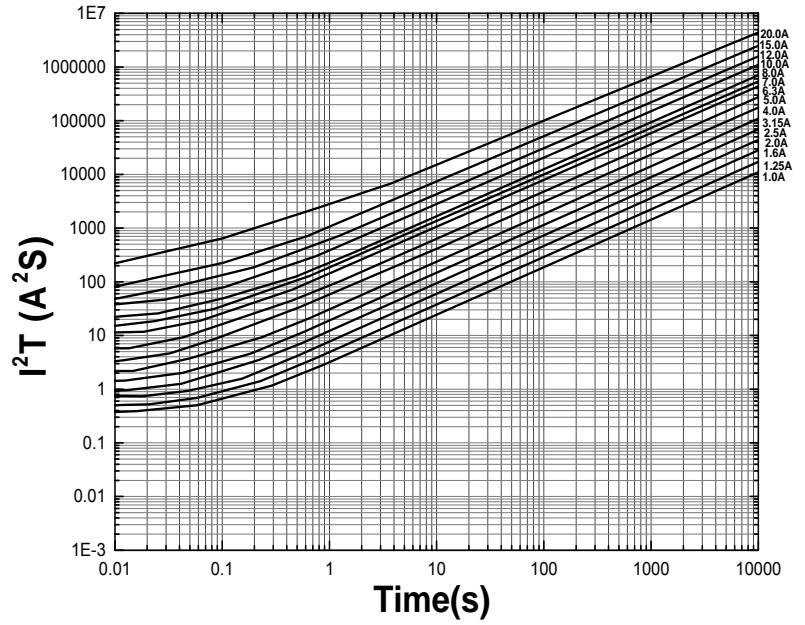
### Dimensions of Standard Test Board

Type	Ampere Rating	Board Thickness (mm)	Copper Layer Thickness (mm)	Copper Trace Width (mm)
S6125	1A~6.3A	1.6	0.035	5
	7A~10A	1.6	0.070	7.5
	12A~20A	1.6	0.080	10

Time Current Curve



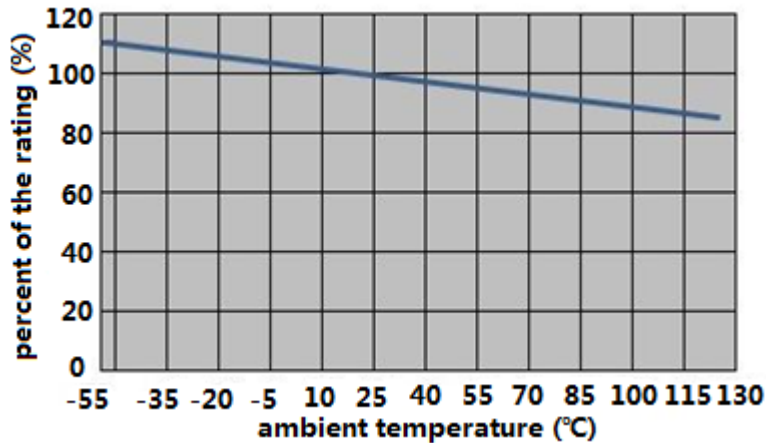
I<sup>2</sup>T VS Time Curve



Electrical Characteristics

Type	Ampere Rating	% of Current Rating	Opening Time
S6125	1A~20A	100	4hours Min.
	1A~10A	200	5sec Max.
	1A~10A	125	1hour Min.
	12A~20A	200	20sec Max.

Temperature Derating Curve



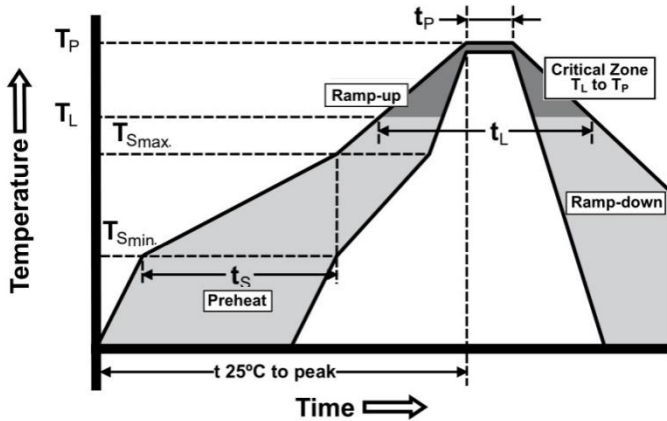
## Product Characteristics

Item	Test condition/ Methods	Performance	Standard
Time/Current	100% of current rating	No Fusing, 4hours Min.	UL248-14
	200% of current rating	1A~10A: <5sec 12A~20A: <20sec	SART SPEC
	1000% of current rating	1ms~10ms	IEC60127-4
Voltage Drop	100% of current rating	1A~6.3A: <300mV 7A~10A: <220mV 12A~20A: <150mV	IEC-60127-4
Endurance Test	Repeating 100 cycles of 100% of current rating for 1hour "ON", for 15min "OFF", then following by 1hour of 125% of current rating and testing Temperature rise	ΔR : <10% 1A~6.3A: ΔT<75℃ 7A~10A: ΔT <95℃	IEC-60127-4
	100% of current rating for 4hours, then testing Temperature rise	ΔR : <10% 12A~20A: ΔT <105℃	UL248-14
Interrupting Ability	1A~10A: 50A 125V AC 50A 160V DC 100A 100V AC 12A~20A: 50A 65VAC 50A 65VDC	without permanent arcing, ignition and bursting of fuse link	UL248-14 IEC60127-4
Solderability	240℃±5℃, 3sec±0.5sec	95% coverage Min.	IEC60127-4 IEC60068-2-20; MIL-STD-202
Resistance to Soldering	260℃±5℃, 10sec±0.5sec	ΔR : <10%	MIL-STD-202 Method 210
High Temperature Operating Life	T=70℃±2℃, 60% of current rating, 96 hours	ΔR : <10%	MIL-STD-202 Method 108
Humidity (Steady State)	T=40℃±2℃, RH=90%~95%, 1000 hours	ΔR : <10%	MIL-STD-202 Method 103
Low Temperature Storage	T=-55℃±3℃, 96 hours	ΔR : <10%	IEC60068-2-1
High Temperature Storage	T=125℃±2℃, 96 hours	ΔR : <10%	IEC60068-2-2
Salt Spray	5% salt solution, 48 hours	ΔR : <10%	MIL-STD-202 Method 101
Thermal Shock	100 cycles,-65℃ to +125℃,30 minutes@each extreme	ΔR : <(10%R+0.005Ω)	IEC 60068-2-14

## Recommended Solder Curve

### 1. Infrared Reflow:

- Temperature: 260°C
- Time: 5sec Max.
- Recommend Reflow profile



Profile Feature	Pb-Free Assembly
Average Ramp-up Rate( $T_{Smax}$ to $T_p$ )	3°C/sec Max.
Preheat Temperature Min.( $T_{Smin}$ ) Temperature Max.( $T_{Smax}$ ) Time( $T_{Smin}$ to $T_{Smax}$ )	150°C 200°C 60sec~120sec
Peak Temperature( $T_p$ )	260°C
Time within 5°C of actual Peak Temperature( $T_p$ )	5sec
Melting tin time( $T_L$ )	20sec~40sec
Ramp-down Rate	6°C/sec Max.
Time 25°C to peak Temperature	8min Max.

### 2. Wave soldering

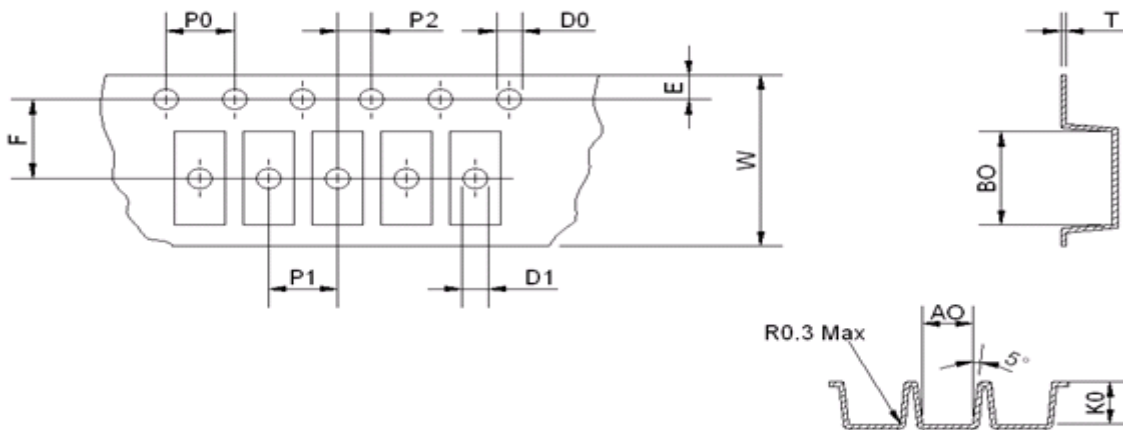
- Reservoir Temperature: 260°C
- Time in Reservoir: 10sec Max.

### 3. Hand Soldering

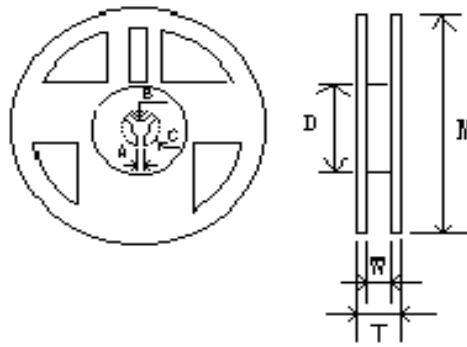
- Temperature: 300°C
- Time: 2sec Max.
- Soldering iron avoid touch Brass Cap.

## Packaging

- 1000 pieces of fuses in emboss taper and reeled on a 178mm(7 inch) reel.



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



Type	M(mm)	W(mm)	T(mm)	A(mm)	B(mm)	C(mm)	D(mm)
Spec	178.00±2.00	12.50±1.00	14.50±1.50	2.00±0.50	13.00±0.50	21.00±0.50	58.00±2.00

## Storage

- The ambient temperature recommended for storage shall be between 5°C~30°C.
- The relative humidity recommended for storage shall be between 25%RH~60%RH.
- Sealed plastic bags with desiccant shall be used to reduce the oxidation of the termination and shall only be opened prior to use.
- The products shall not be stored in areas where harmful gases containing sulfur or chlorine are present.