





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

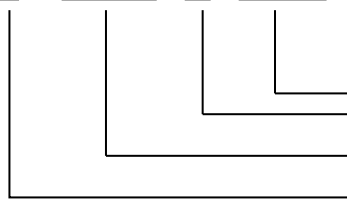
| Part Number | Current Rating (A) | Voltage Rating (V) | Interrupting Rating (V) | | Typical Cold DCR* (mΩ) | Typical I ² T** (A ² s) |
|---------------|--------------------|--------------------|---|---------------------------------|------------------------|---|
| S6125-F-1.0A | 1 | 125 | UL: 50A 125V 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 $\leq 10\%$ rated current and 25°C

** Melting I^2T at 10 times of rated current

Part Number Information

S 6125-F-1.0A



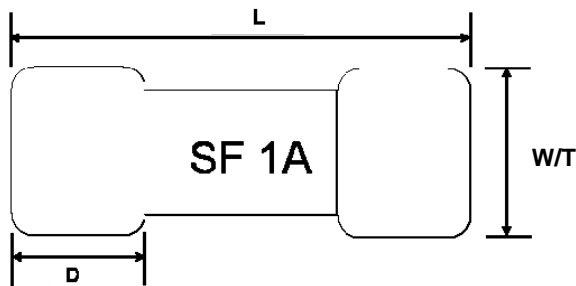
"1.0A" Ampere Rating: 1A

"F" Electrical Characteristic: F = Fast acting

"6125" Size Number

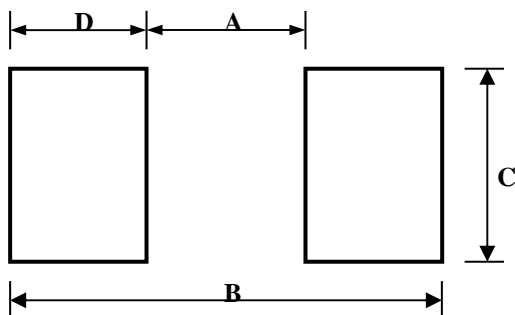
"S" Symbol of SART

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 |

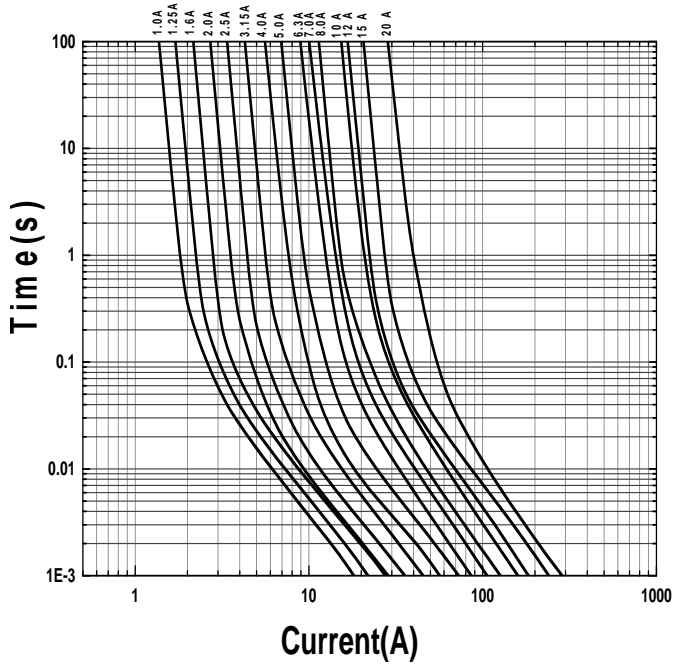
Materials

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

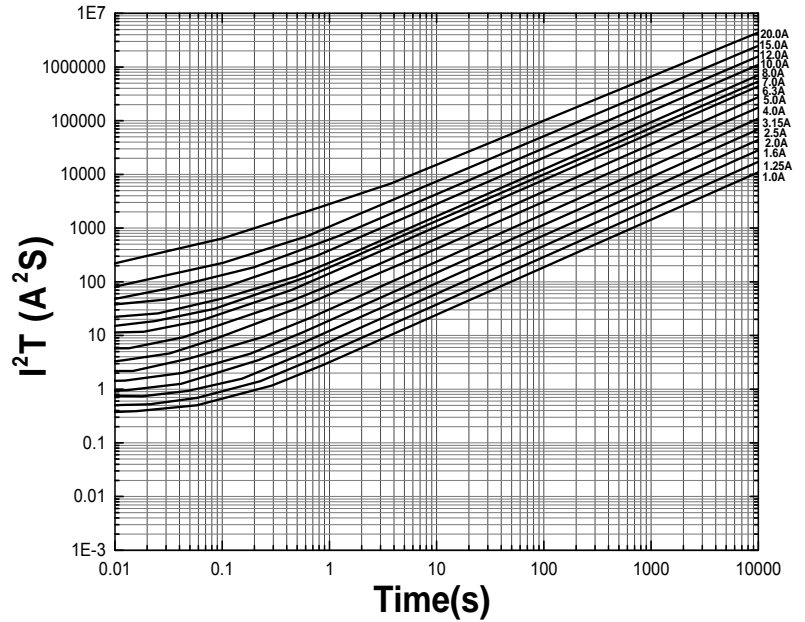
Dimensions of Standard Test Board

| 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



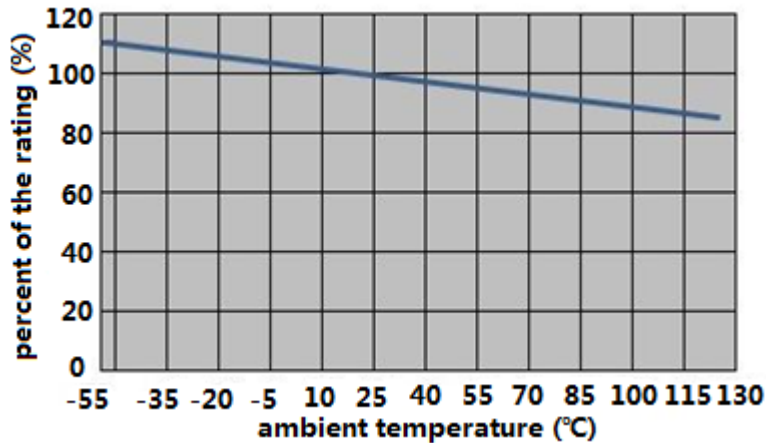
I²T VS Time Curve



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



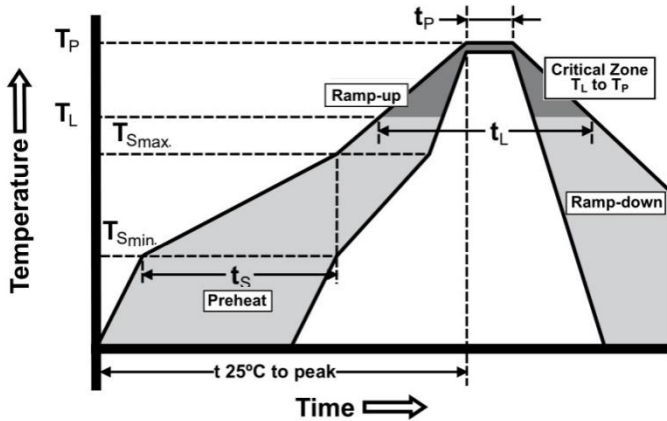
Product Characteristics

| 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

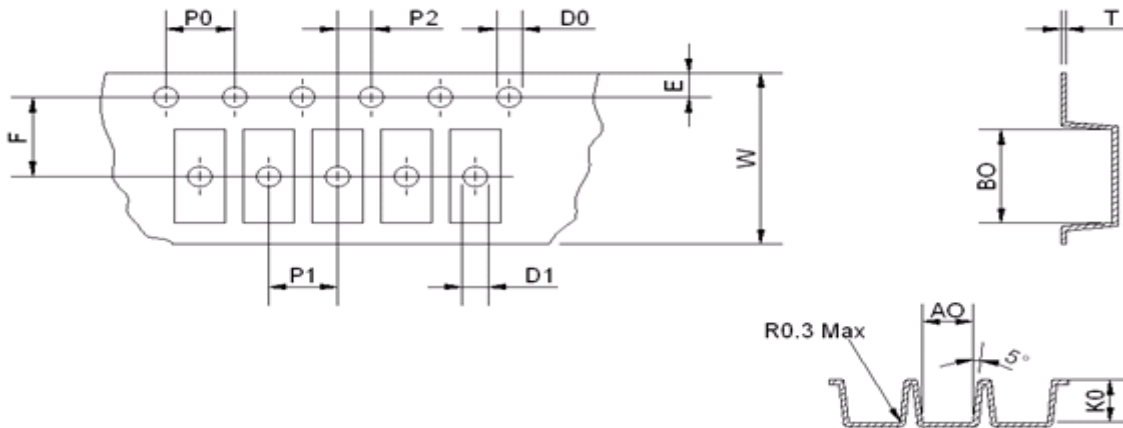
- Reservoir Temperature: 260°C
- Time in Reservoir: 10sec Max.

3. Hand Soldering

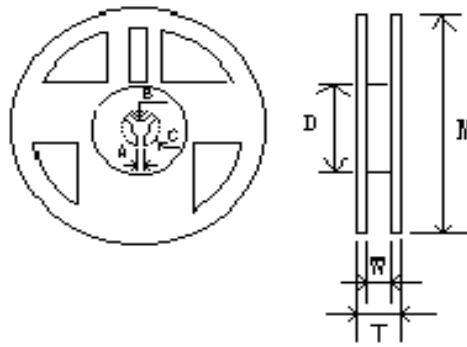
- Temperature: 300°C
- Time: 2sec Max.
- Soldering iron avoid touch Brass Cap.

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.

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