




General

- High 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 | 0.5A~5A |

Application

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

Electrical Specifications

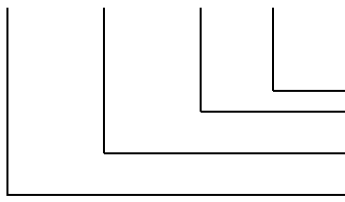
| Part Number | Current Rating (A) | Voltage Rating (V) | Interrupting Rating (V) | Typical Cold DCR* (mΩ) | Typical I ² T** (A ² s) |
|---------------|--------------------|--------------------|----------------------------------|------------------------|---|
| S6125-H-0.5A | 0.5 | 125 | UL 50A 125V AC 50A 125V DC | 250.0 | 0.312 |
| S6125-H-1.0A | 1 | 125 | | 115.0 | 3.12 |
| S6125-H-1.25A | 1.25 | 125 | | 85.0 | 4.21 |
| S6125-H-1.5A | 1.5 | 125 | | 78.0 | 4.98 |
| S6125-H-1.6A | 1.6 | 125 | | 68.0 | 5.85 |
| S6125-H-2.0A | 2 | 125 | | 52.0 | 7.20 |
| S6125-H-2.5A | 2.5 | 125 | | 36.0 | 14.05 |
| S6125-H-3.0A | 3 | 125 | | 28.0 | 16.92 |
| S6125-H-3.15A | 3.15 | 125 | | 24.0 | 18.68 |
| S6125-H-3.5A | 3.5 | 125 | | 22.0 | 21.95 |
| S6125-H-4.0A | 4 | 125 | | 20.0 | 32.80 |
| S6125-H-5.0A | 5 | 125 | | 12.0 | 37.57 |

* Measured at ≤10% rated current and 25°C

** Melting I²T at 10 times of rated current

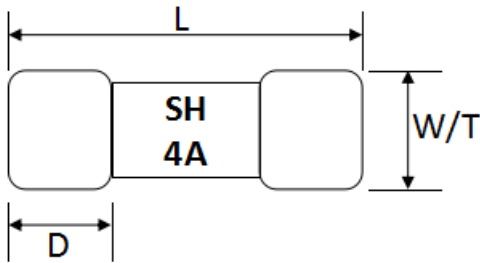
Part Number Information

S 6125 - H - 4.0A



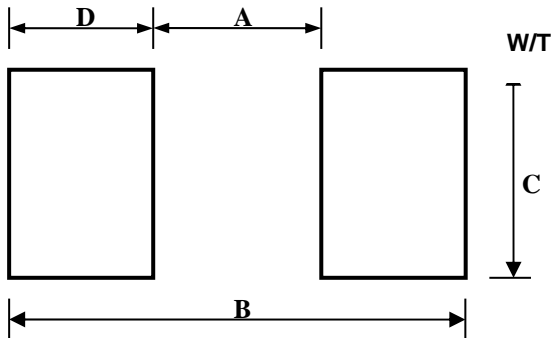
“4.0A” Ampere Rating: 4A
“H” Electrical Characteristic: H=High Inrush
“6125” Size Number
“ S” Symbol of SART

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 |

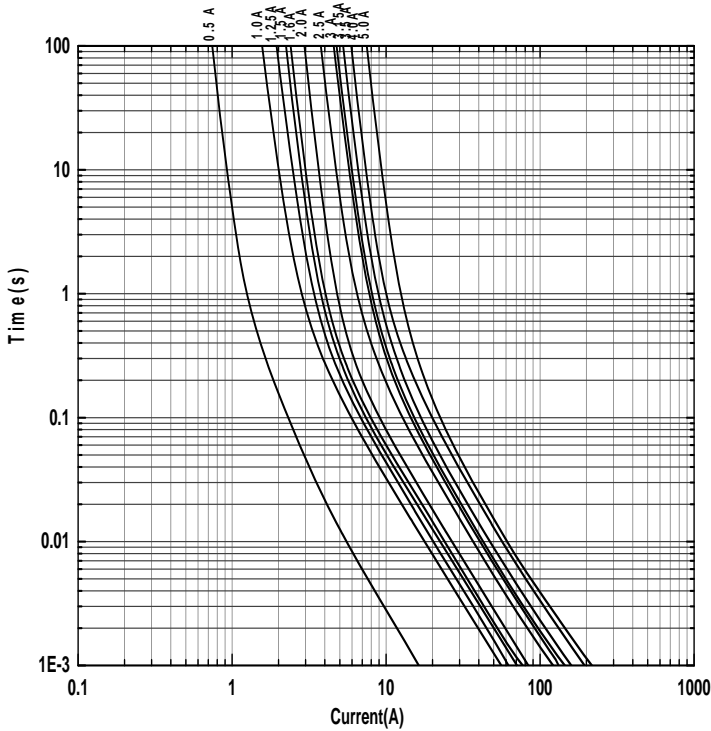
Materials

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

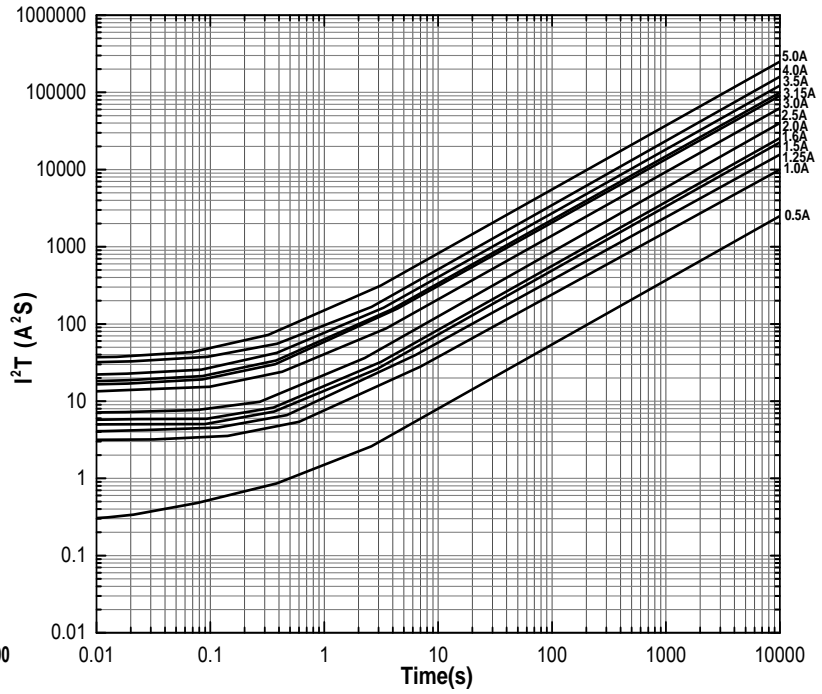
Dimensions of Standard Test Board

| Type | Ampere Rating | Board Thickness (mm) | Copper Layer Thickness (mm) | Copper Trace Width (mm) |
|-------|---------------|----------------------|-----------------------------|-------------------------|
| S6125 | 0.5A~5A | 1.6 | 0.035 | 5 |

Time Current Curve



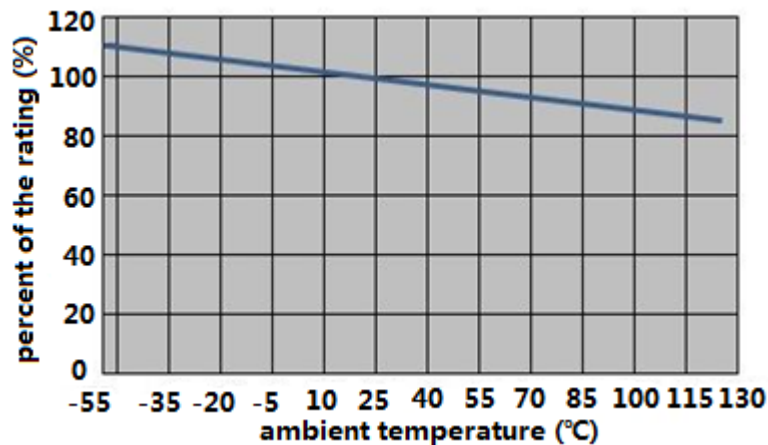
I²T VS Time Curve



Electrical Characteristics

| Type | Ampere Rating | % of Current Rating | Opening Time |
|-------|---------------|---------------------|--------------|
| S6125 | 0.5A~5A | 100 | 4hours Min. |
| | 0.5A~5A | 200 | 120sec Max. |

Temperature Derating Curve



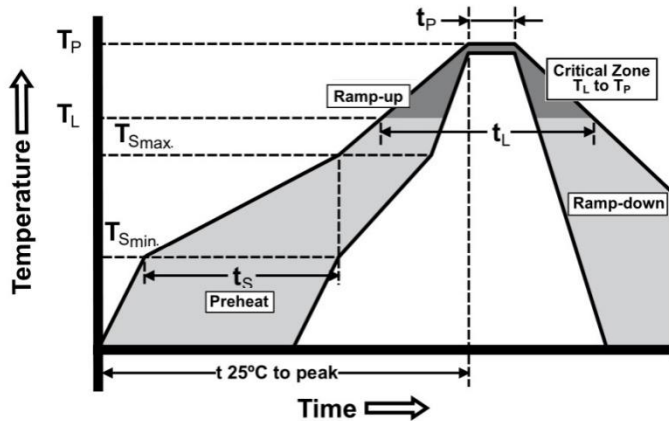
Product Characteristics

| Item | Test condition/ Methods | Performance | Standard |
|---------------------------------|---|--|---|
| Time/Current | 100% of current rating | No Fusing, 4hours Min. | UL248-14 |
| | 200% of current rating | < 120sec | SART SPEC |
| | 1000% of current rating | >10ms | IEC60127-4 |
| Voltage Drop | 100% of current rating | <300mV | 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. | $ \Delta R < 10\%$ $\Delta T < 75^\circ\text{C}$ | IEC-60127-4 |
| Interrupting Ability | 50A 125V AC 50A 125V DC | without permanent arcing, ignition and bursting of fuse link | UL248-14 IEC60127-4 |
| Solderability | $240^\circ\text{C} \pm 5^\circ\text{C}$, 3sec ± 0.5 sec | 95% coverage Min. | IEC60127-4 IEC60068-2-20; MIL-STD-202 |
| Resistance to Soldering | $260^\circ\text{C} \pm 5^\circ\text{C}$, 10sec ± 0.5 sec | $ \Delta R < 10\%$ | MIL-STD-202 Method 210 |
| High Temperature Operating Life | $T = 70^\circ\text{C} \pm 2^\circ\text{C}$, 60% of current rating, 96 hours | $ \Delta R < 10\%$ | MIL-STD-202 Method 108 |
| Humidity (Steady State) | $T = 40^\circ\text{C} \pm 2^\circ\text{C}$, RH=90%~95%, 1000 hours | $ \Delta R < 10\%$ | MIL-STD-202 Method 103 |
| Low Temperature Storage | $T = -55^\circ\text{C} \pm 3^\circ\text{C}$, 96 hours | $ \Delta R < 10\%$ | IEC60068-2-1 |
| High Temperature Storage | $T = 125^\circ\text{C} \pm 2^\circ\text{C}$, 96 hours | $ \Delta R < 10\%$ | IEC60068-2-2 |
| Salt Spray | 5% salt solution, 48 hours | $ \Delta R < 10\%$ | MIL-STD-202 Method 101 |
| Thermal Shock | 100 cycles, -65°C to $+125^\circ\text{C}$, 30 minutes@each extreme | $ \Delta R < (10\%R + 0.005\Omega)$ | IEC 60068-2-14 |

Recommended Solder Curve

1. Infrared Reflow:

- Temperature: 260°C
- Time: 5sec Max.
- Thickness of solder paste: 0.2mm 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

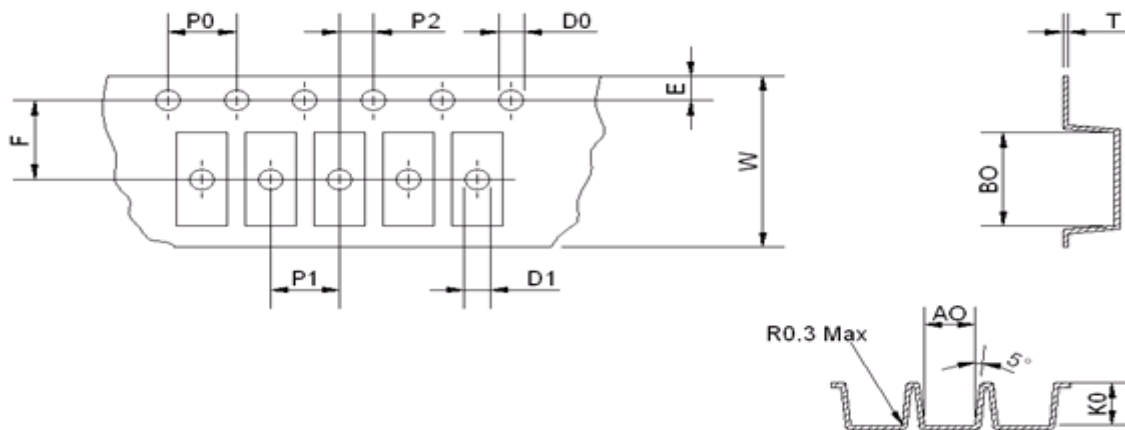
- Reservoir Temperature: 260°C
- Time in Reservoir: 10sec Max.

3. Hand Soldering

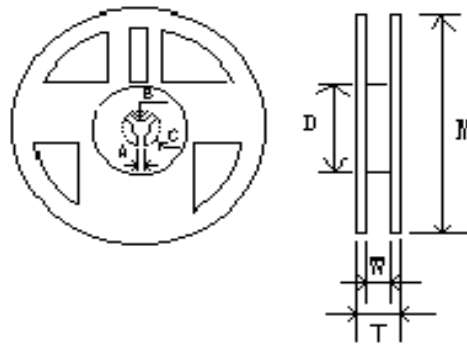
- Temperature: 300°C
- Time: 2sec Max.
- Soldering iron avoid touch Brass Cap.

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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