




### Agency / Certificate Information

| Agency  | File Number | Ampere Range |
|---|-------------|--------------|
|  | E319512     | 0.5A~5A      |

### 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

### Application

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

### Electrical Specifications

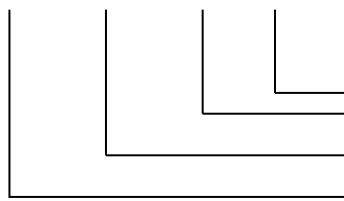
| Part Number   | Current Rating (A) | Voltage Rating (V) | Interrupting Rating (V)          | Typical Cold DCR* (mΩ) | Typical I <sup>2</sup> T** (A <sup>2</sup> s) |
|---------------|--------------------|--------------------|----------------------------------|------------------------|---|
| S6125-H-0.5A  | 0.5                | 125                | UL<br>50A 125V AC<br>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 I<sup>2</sup>T at 10 times of rated current

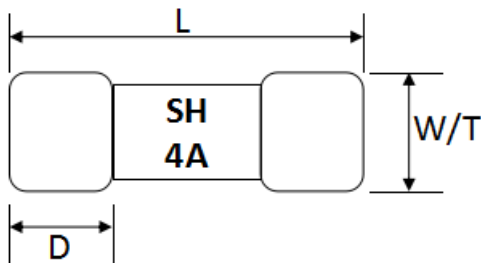
### Part Number Information

S 6125 - H - 4.0A



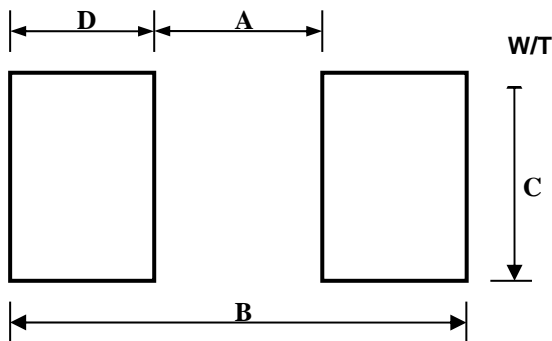
“4.0A” Ampere Rating: 4A  
“H” Electrical Characteristic: H=High Inrush  
“6125” Size Number  
“ S” Symbol of SART

### 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 |

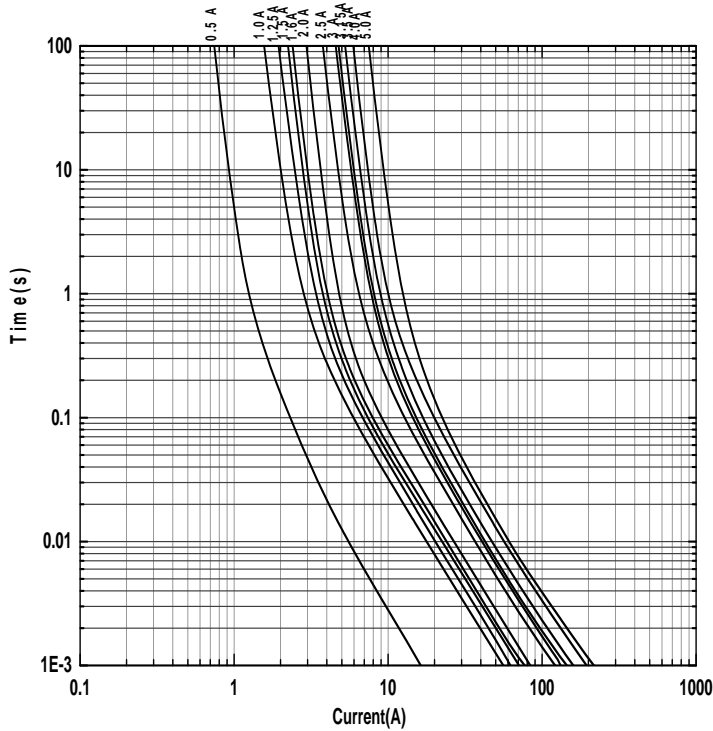
### Materials

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

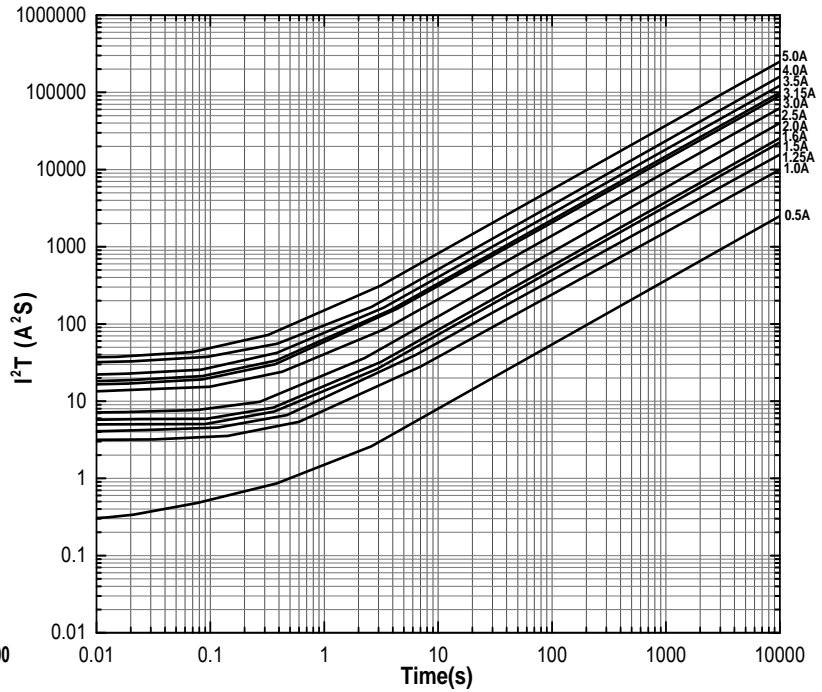
### Dimensions of Standard Test Board

| 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



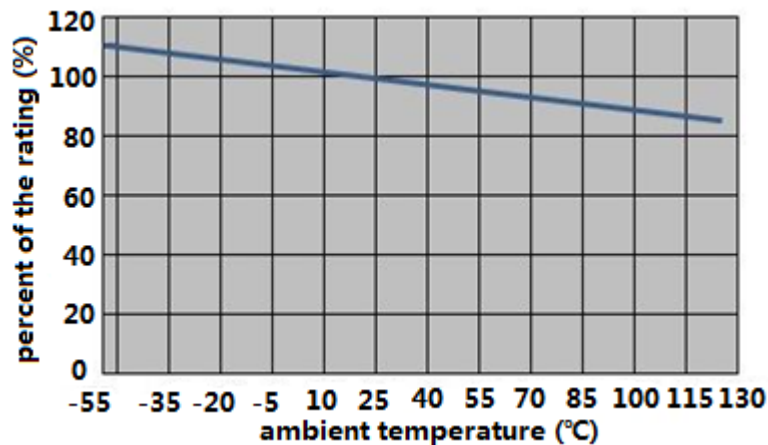
### I<sup>2</sup>T VS Time Curve



### 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



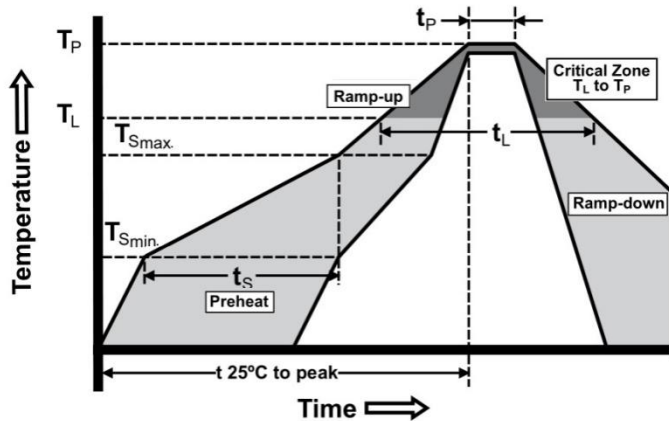
## Product Characteristics

| 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\%$<br>$\Delta T < 75^\circ\text{C}$         | IEC-60127-4                                 |
| Interrupting Ability            | 50A 125V AC<br>50A 125V DC  | without permanent arcing, ignition and bursting of fuse link | UL248-14<br>IEC60127-4                      |
| Solderability                   | $240^\circ\text{C} \pm 5^\circ\text{C}$ , 3sec $\pm 0.5$ sec  | 95% coverage Min.  | IEC60127-4<br>IEC60068-2-20;<br>MIL-STD-202 |
| Resistance to Soldering         | $260^\circ\text{C} \pm 5^\circ\text{C}$ , 10sec $\pm 0.5$ sec   | $ \Delta R  < 10\%$  | MIL-STD-202<br>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<br>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<br>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<br>Method 101                   |
| Thermal Shock                   | 100 cycles, $-65^\circ\text{C}$ 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. ( $T_{smin}$ )              | 150°C            |
| Preheat Temperature Max. ( $T_{smax}$ )              | 200°C            |
| Preheat Time ( $T_{smin}$ to $T_{smax}$ )            | 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

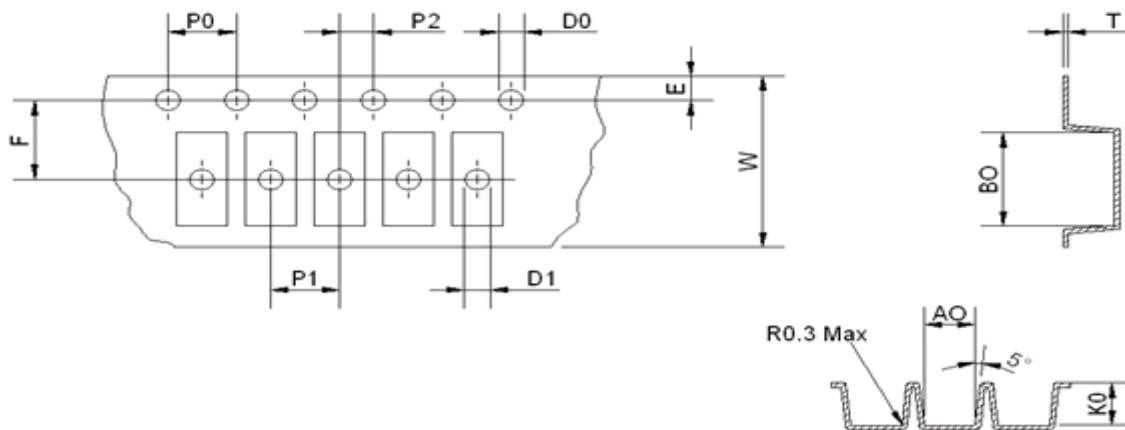
- Reservoir Temperature: 260°C
- Time in Reservoir: 10sec Max.

### 3. Hand Soldering

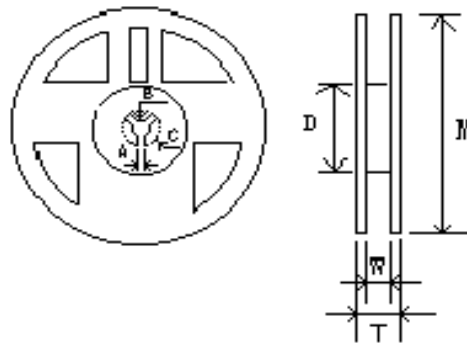
- Temperature: 300°C
- Time: 2sec Max.
- Soldering iron avoid touch Brass Cap.

## 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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