






General

- Inrush withstand capability
- Wire-In-Air technology
- 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
- Halogen-free

Agency / Certificate Information

| Agency | File Number | Ampere Range |
|---|----------------|--------------|
|  | E319512 | 0.5A~5A |
|  | J50260452 | 0.5A~5A |
|  | SU05049-15003A | 0.5A |
| | SU05049-15001 | 1A~2.5A |
| | SU05049-15002 | 3A~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

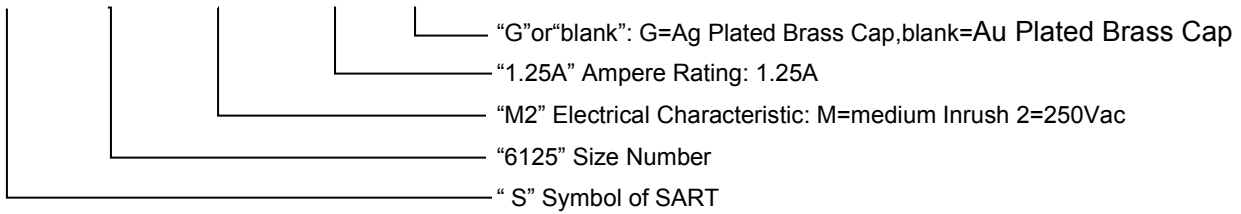
| Part Number | Current Rating (A) | Voltage Rating (V) | Interrupting Rating (V) | Typical Cold DCR* (mΩ) | Typical I ² T** (A ² sec) |
|------------------|--------------------|--------------------|---|------------------------|---|
| S6125-M2-0.5A G | 0.5 | 250 | UL/TUV/KC 35A 250V AC 50A 125V DC | 260.0 | 0.285 |
| S6125-M2-1.0A G | 1 | 250 | UL/TUV/KC 50A 250V AC 50A 125V DC | 119.0 | 1.54 |
| S6125-M2-1.25A G | 1.25 | 250 | | 84.0 | 2.42 |
| S6125-M2-1.5A G | 1.5 | 250 | | 76.0 | 3.03 |
| S6125-M2-1.6A G | 1.6 | 250 | | 70.0 | 3.99 |
| S6125-M2-2.0A G | 2 | 250 | | 55.0 | 4.86 |
| S6125-M2-2.5A G | 2.5 | 250 | | 38.0 | 7.58 |
| S6125-M2-3.0A G | 3 | 250 | | 27.0 | 10.62 |
| S6125-M2-3.15A G | 3.15 | 250 | | 24.0 | 12.40 |
| S6125-M2-3.5A G | 3.5 | 250 | | 22.0 | 16.17 |
| S6125-M2-4.0A G | 4 | 250 | | 20.0 | 20.00 |
| S6125-M2-5.0A G | 5 | 250 | | 13.0 | 27.50 |

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

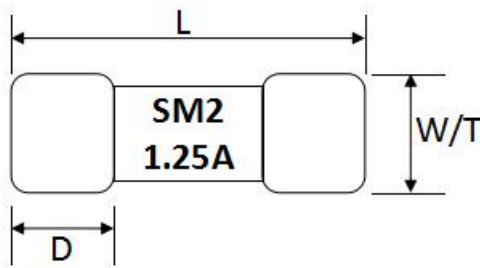
** Melting I²T at 10 times of rated current

Part Number Information

S 6125–M2–1.25A G

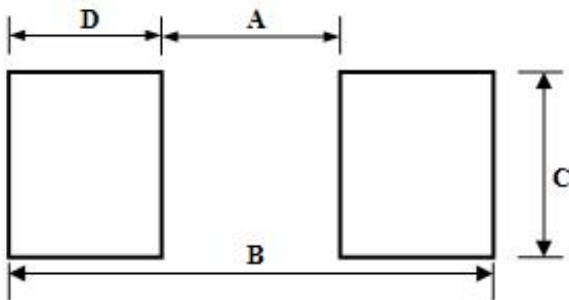


Dimensions



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

Recommended Land Patterns



Materials

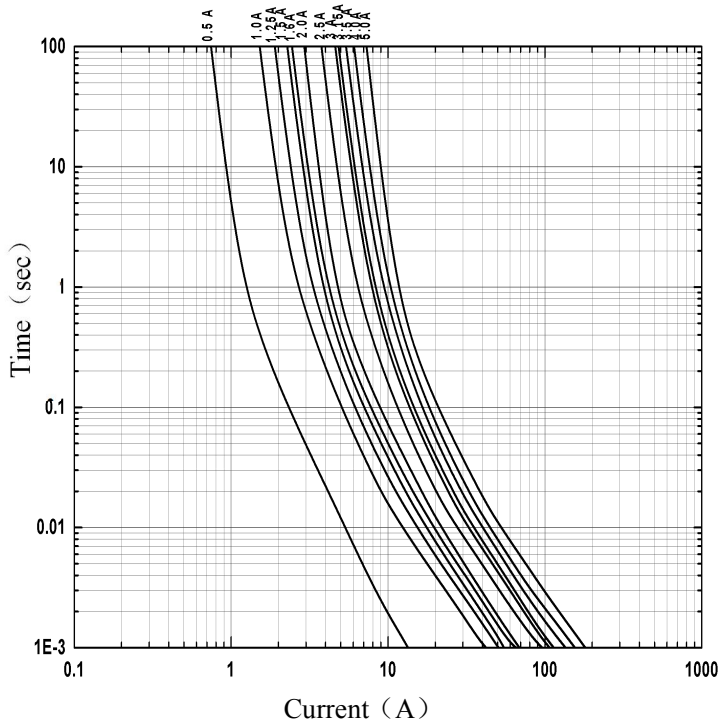
| Components | Material |
|--------------|--|
| Body | Ceramic |
| Terminations | Au Plated Brass Cap or Ag Plated Brass Cap |
| Element | Nickel alloy or Copper Alloy |

| Type | A(mm) | B(mm) | C(mm) | D(mm) |
|-------|-----------|-----------|-----------|-----------|
| S6125 | 3.00±0.30 | 8.00±0.30 | 3.00±0.30 | 2.50±0.30 |

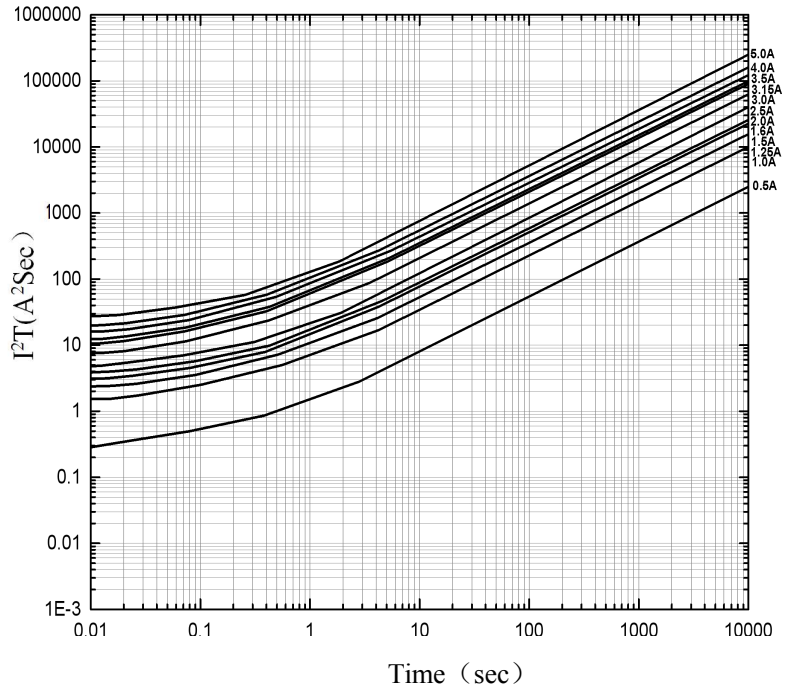
Dimensions of Standard Test Board

| 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



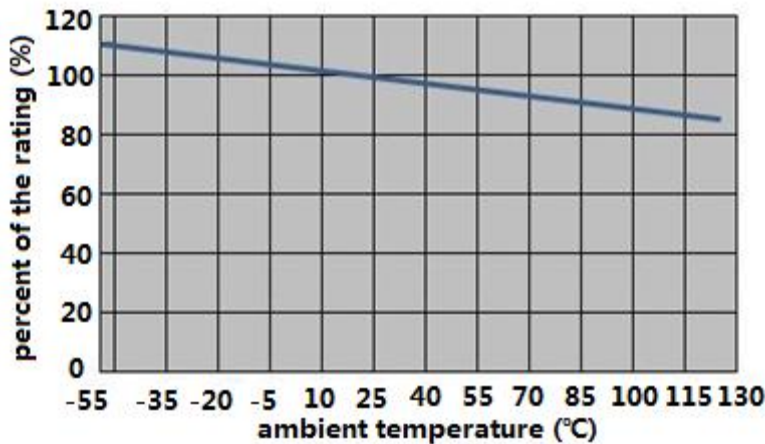
I²T VS Time Curve



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



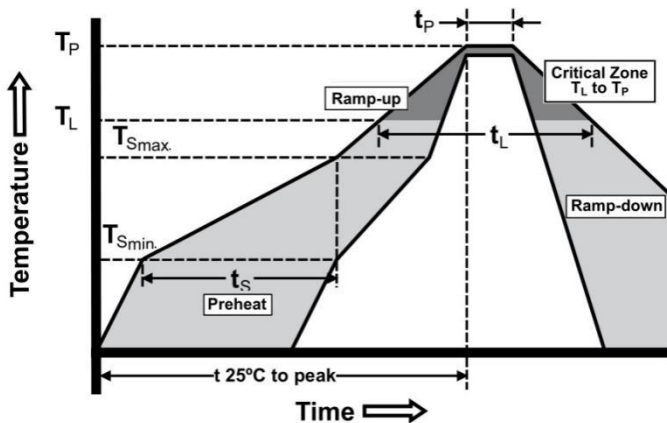
Product Characteristics

| 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 | > 10msec | 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 | 0.5A: 35A 250V AC 50A 125V DC 1A~5A: 50A 250VAC 50A 125VDC | without permanent arcing, ignition and bursting of fuse link | UL248-14 IEC60127-4 |
| Solder ability | $240^\circ\text{C} \pm 5^\circ\text{C}$, 3sec \pm 0.5sec | 95% coverage Min. | IEC60127-4 IEC60068-2-20; MIL-STD-202 |
| Resistance to Soldering | $260^\circ\text{C} \pm 5^\circ\text{C}$, 10sec \pm 0.5sec | $ \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:

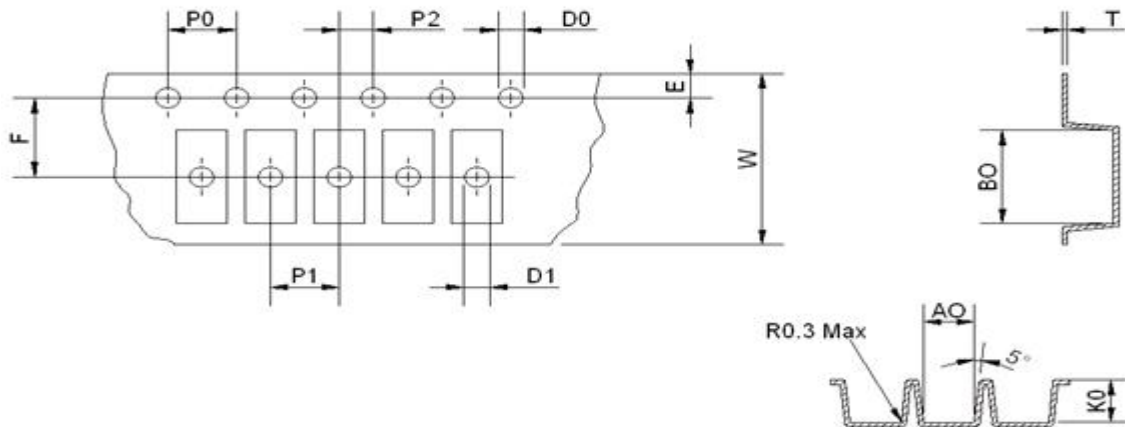
- Temperature: 260°C
- Time: 20sec Max.
- Thickness of solder paste: 0.2mm Max
- Recommend Reflow profile



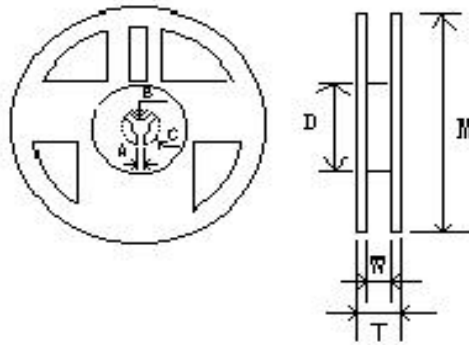
| Profile Feature | Pb-Free Assembly |
|---|--------------------------------|
| Average Ramp-up Rate(T_{Smax} to T_p) | 3°C/sec Max. |
| Preheat Temperature Min.(T_{Smin}) Temperature Max.(T_{Smax}) Time(T_{Smin} to T_{Smax}) | 150°C 200°C 60sec~120sec |
| Peak Temperature(T_p) | 260°C |
| Time within 5°C of actual Peak Temperature(t_p) | 20sec |
| Melting tin time(t_L) | 60sec~150sec |
| Temperature (T_L) | 217°C |
| Ramp-down Rate | 6°C/sec Max. |
| Time 25°C to peak Temperature | 8minutes Max. |

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) |
| S6125 | 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) |
| S6125 | 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) |
|-------|-------------|------------|------------|-----------|------------|------------|------------|
| S6125 | 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.