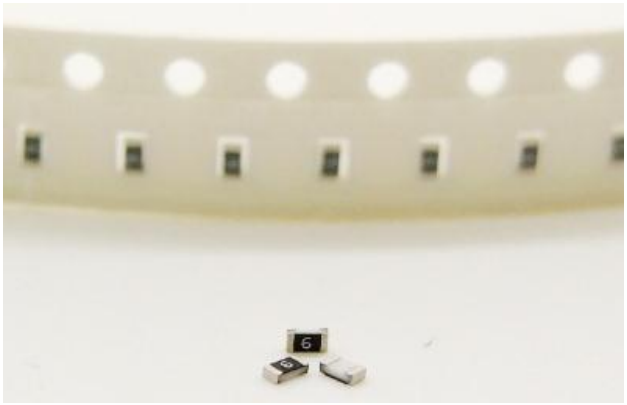


## General

- Fast acting
- 1.6mm× 0.8mm physical size
- Thick film manufacturing method, ceramic substrate, silver fusing element
- -55℃~125℃ operating temperature
- Excellent environmental integrity
- RoHS compliant
- Halogen-free
- Lead free

## Agency / Certificate Information

| Agency | File Number | Ampere Range |
|---|---|---|
| c UL us | E319512 | 0.5A~6A |

## Application

- Battery pack
- PC related equipment and peripherals (Hard driver, Printer, etc.)
- Digital camera (Digital still camera)
- Game equipment
- LCD monitor, LCD modules
- Wireless base station
- Power supply
- Medical device

## Electrical Specifications

| Part Number | Marking | Current Rating (A) | Voltage Rating (V) | Interrupting Rating (V) | Typical Cold DCR* (mΩ) | Typical $I^2T$** ($A^2s$) |
|---|---|---|---|---|---|---|
| S0603-F-0.5A | F | 0.5 | 32 | 50A 32V DC | 870 | 0.0068 |
| S0603-F-0.75A | G | 0.75 | 32 | | 389 | 0.0177 |
| S0603-F-1.0A | H | 1.0 | 32 | | 210 | 0.0230 |
| S0603-F-1.5A | K | 1. 5 | 32 | | 85 | 0.0473 |
| S0603-F-2.0A | N | 2.0 | 32 | | 47 | 0.0824 |
| S0603-F-2.5A | O | 2.5 | 32 | | 30 | 0.1313 |
| S0603-F-3.0A | P | 3.0 | 32 | | 25 | 0.1890 |
| S0603-F-3.5A | R | 3.5 | 32 | | 21.5 | 0.2511 |
| S0603-F-4.0A | S | 4.0 | 32 | 35A 32V DC | 16.0 | 0.3559 |
| S0603-F-5.0A | T | 5.0 | 32 | | 10.7 | 0.7030 |
| S0603-F-6.0A | 6 | 6.0 | 32 | | 9.5 | 1.5120 |

* Measured at≤10% rated current and 25℃
** Melting $I^2T$ at 10 times of rated current

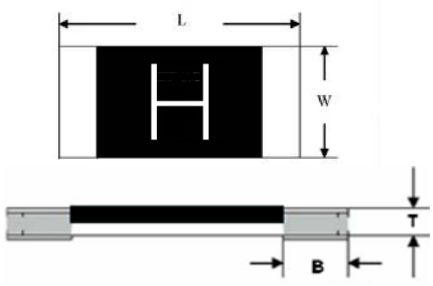
Nanjing SART Science &Technology Development Co., ltd or ANT Technology Company Limited.（A Wholly Owned Subsidiary）
ADD.:Maqun Science & Technology Park, Qingma Road 6#, Nanjing, China
TEL.:086-25-84354852-8015 FAX.:086-25-83241791 Web.: www.sartfuse.com

## Part Number Information

S 0603–F–1.0A

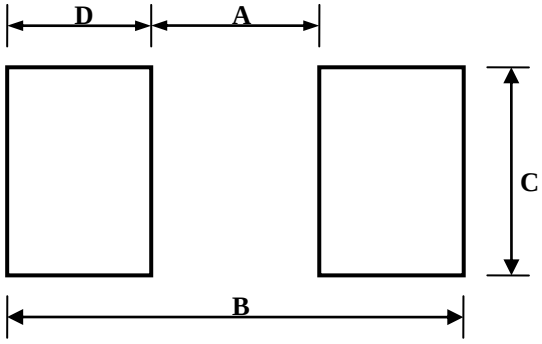
- "1.0A" Ampere Rating: 1A
- " F" Electrical Characteristic: F = Fast acting
- "0603" Size Number
- " S" Symbol of SART

## Dimensions




| Type | L (mm) | W (mm) | T (mm) | B (mm) |
|---|---|---|---|---|
| S0603-F | 1.60±0.15 | 0.80±0.15 | 0.40±0.10 | 0.30±0.20 |

## Recommended Land Patterns




| Dimensions | A(mm) | B(mm) | C(mm) | D(mm) |
|---|---|---|---|---|
| Spec | 1.00±0.20 | 3.00±0.50 | 1.40±0.20 | 1.00±0.30 |

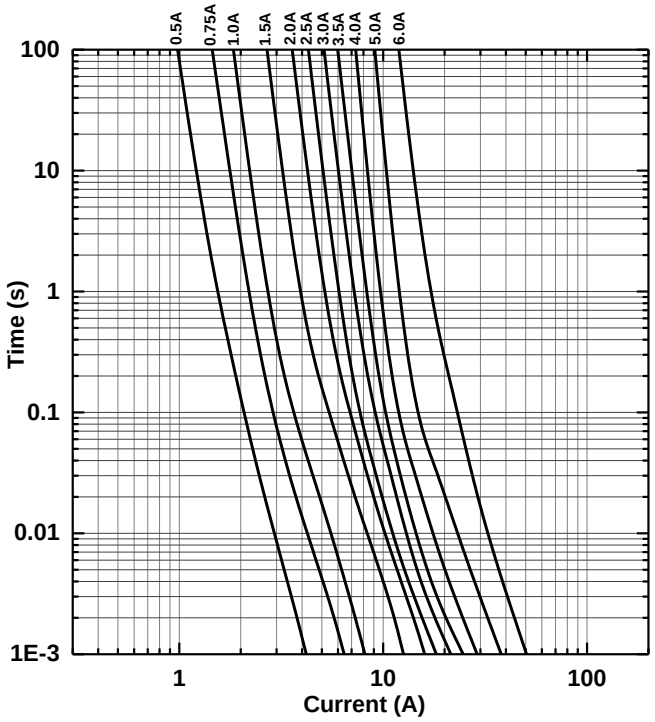
## Materials

| Components | Material |
|---|---|
| Body | Ceramic |
| Terminations | Silver over plated with tin (100%) |
| Element | Silver or Silver/Palladium |

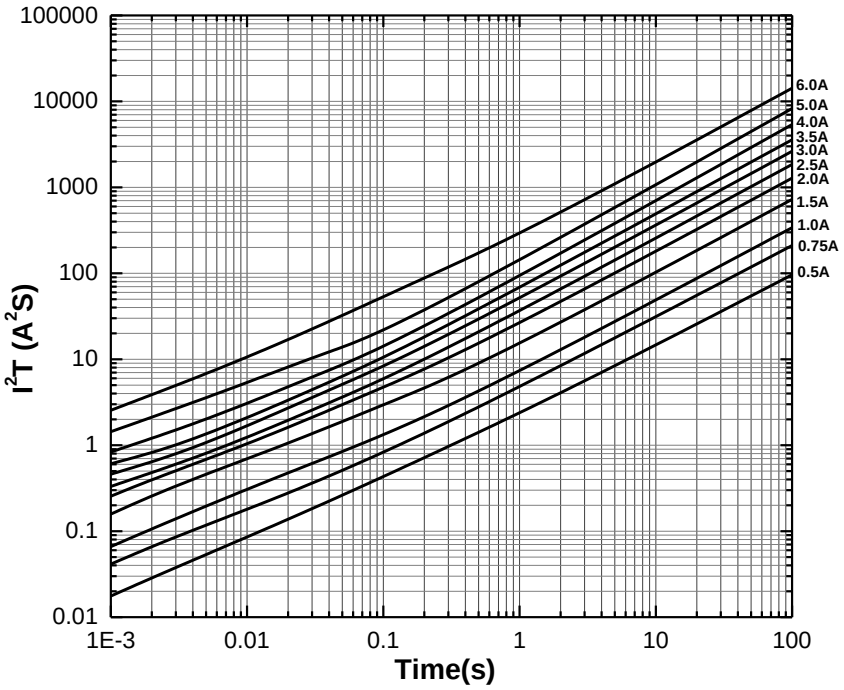
## Dimensions of Standard Test Board

| Type | Ampere Rating | Board Thickness (mm) | Copper Layer Thickness (mm) | Copper Trace Width (mm) |
|---|---|---|---|---|
| S0603-F | 0.5A~6.0A | 1.6 | 0.035 | 5.0 |

## Time Current Curve



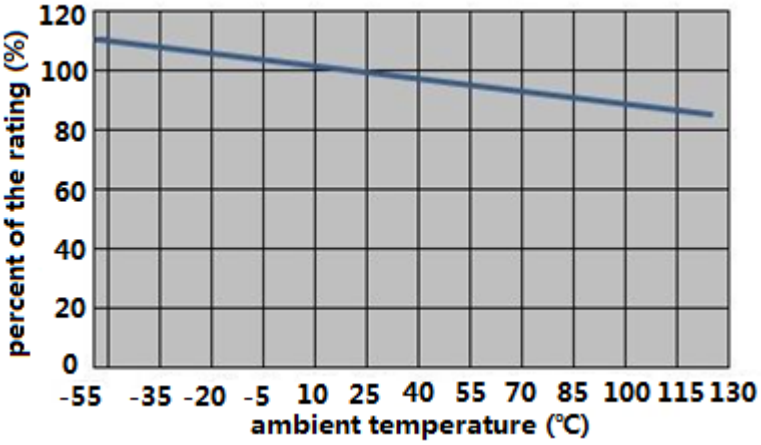

## $I^2T$ VS Time Curve




## Electrical Characteristics

| Type | Ampere Rating | % of Current Rating | Opening Time |
|---|---|---|---|
| S0603-F | 0.5A~6.0A | 100 | ＞4hours |
| | 0.5A~0.75A | 250 | ≤20sec |
| | 1.0A~6.0A | 250 | ≤5sec |
| | 0.5A~6.0A | 1000 | ＞0.1ms |

## Temperature Derating Curve

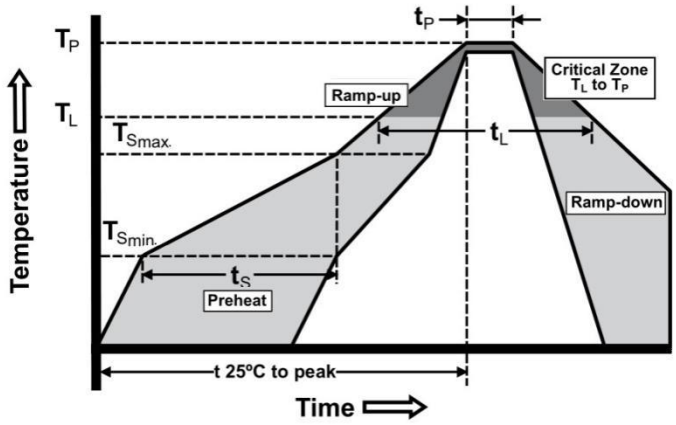


## Product Characteristics

| Item | Test condition/ Methods | Performance | Standard |
|---|---|---|---|
| Time/Current | 100% of current rating | No Fusing, 4hours Min. | UL248-14 |
| | 250% of current rating | 0.5A~0.75A:≤20sec<br>1.0A~6.0A:≤5sec | SART SPEC. |
| | 1000% of current rating | ＞0.1ms | |
| Voltage Drop | 100% of current rating | Deviation between the mean value: ＜15% | IEC60127-4 |
| Temperature Rise | 100% of current rating | ΔT＜75℃ | UL248-14 |
| Endurance Test | 100 cycles of 1In for 1h “ON”, for 15min “OFF”, then following by 1h at 125%In | \|ΔR\|:＜10% | IEC60127-4 |
| Interrupting Ability | 0.5A~3.5A: 50A 32V DC<br>4.0A~6.0A: 35A 32V DC | without permanent arcing, ignition and bursting of fuse link | UL248-14<br>IEC60127-4 |
| Solderability | 240℃±5℃, 3sec±0.5sec | 95% coverage Min. | IEC60127-4<br>MIL-STD-202<br>Method 208 |
| Resistance to Soldering | 260℃±5℃, 10sec±0.5sec | \|ΔR\|:＜10%<br>Legible appearance | MIL-STD-202<br>Method 210 |
| Bending Test | Distance between holding points: 90mm<br>Bending: 1mm, time: 10s | \|ΔR\|:＜10%<br>No mechanical damages | IEC60127-4 |
| High Temperature Operating Life | T=70℃±2℃, 60%In, 96hours | \|ΔR\|: ＜10%; No fusing | MIL-STD-202<br>Method 108 |
| Humidity (Steady State) | T=40℃±2℃, 90%～95%RH, 1000hours | \|ΔR\|: ＜10% | MIL-STD-202<br>Method 103 |
| Low Temperature Storage | T=-55℃±3℃，96hours | \|ΔR\|: ＜10% | IEC60068-2-1 |
| High Temperature Storage | T=125℃±2℃，96hours | \|ΔR\|: ＜10% | IEC60068-2-2 |
| Salt Spray | 5% salt solution，48hours | \|ΔR\|: ＜10%<br>Legible appearance | MIL-STD-202<br>Method 101 |
| Thermal Shock | 100 cycles between -65℃/+125℃<br>60 minutes, each extreme | \|ΔR\|: ＜10%<br>No mechanical damages | MIL-STD-202<br>Method 107 |

## Recommended Solder Curve

1. Infrared Reflow:
   - Temperature: 260℃
   - Time: 5sec Max.
   - Recommend Reflow profile



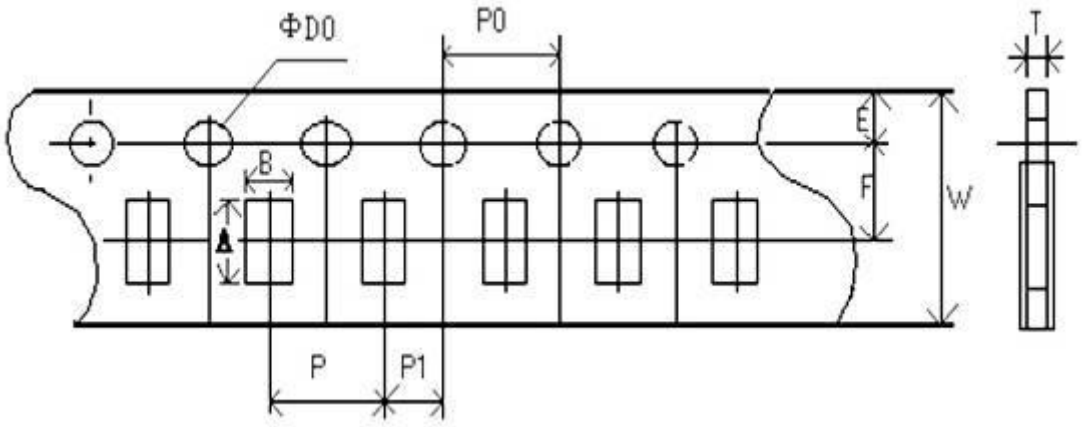

| Profile Feature | Pb-Free Assembly |
|---|---|
| Average Ramp-up Rate($Ts_{max}$ to Tp) | 3℃/sec Max. |
| Preheat<br>Temperature Min.($Ts_{min}$)<br>Temperature Max.($Ts_{max}$)<br>Time($Ts_{min}$ to $Ts_{max}$) | 150℃<br>200℃<br>60sec~120sec |
| Peak Temperature(Tp) | 260℃ |
| Time within 5℃ of actual Peak Temperature(Tp) | 5sec |
| Melting tin time($T_L$) | 20sec~30sec |
| Ramp-down Rate | 6℃/sec Max. |
| Time 25℃ to peak Temperature | 8minutes Max. |

2. Wave soldering
   - Reservoir Temperature: 260℃
   - Time in Reservoir: 10secMax.

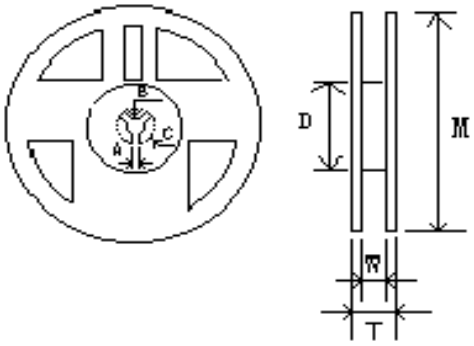
3.Hand Soldering
   - Temperature: 350℃
   - Time: 5secMax.

## Packaging

- 5000 pieces of fuses in emboss taper and reeled on a 178mm(7 inch) reel.




| Type | A(mm) | B(mm) | W(mm) | E(mm) | F(mm) |
|---|---|---|---|---|---|
| Spec | 1.85±0.10 | 1.10±0.10 | 8.00±0.20 | 1.75±0.10 | 3.50±0.05 |
| Type | P(mm) | P0(mm) | P1(mm) | D0(mm) | T(mm) |
| Spec | 4.00±0.10 | 4.00±0.10 | 2.00±0.05 | 1.50±0.10 | 0.60±0.10 |




| Type | M(mm) | W(mm) | T(mm) | A(mm) | B(mm) | C(mm) | D(mm) |
|---|---|---|---|---|---|---|---|
| Spec | 178.00±2.00 | 9.50±1.00 | 12.50±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℃~30℃
- 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