



### General

- Slow Blow
- 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

### 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

### Agency / Certificate Information

Agency	File Number	Ampere Range
	E319512	1A~6A
	J50578923	1A~6A

### Electrical Specifications

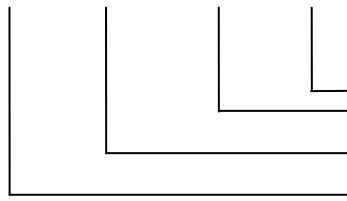
Part Number	Marking	Current Rating (A)	Voltage Rating (V)	Interrupting Rating (V)	Typical Cold DCR* (mΩ)	Typical I <sup>2</sup> T** (A <sup>2</sup> sec)
S0603-SD-1.0A	H	1.0	63	50A 63V DC	205	0.160
S0603-SD-1.5A	K	1.5	63		85	0.210
S0603-SD-2.0A	N	2.0	63		45.5	0.348
S0603-SD-2.5A	O	2.5	63		37	0.500
S0603-SD-3.0A	P	3.0	63		23	0.756
S0603-SD-3.5A	R	3.5	63		17.8	1.372
S0603-SD-4.0A	S	4.0	63		13	3.824
S0603-SD-5.0A	T	5.0	63		8.5	4.700
S0603-SD-6.0A	6	6.0	63		6	7.200

\* Measured at ≤10% rated current and 25℃; Resistance test on side electrode of protective coating

\*\* Melting I<sup>2</sup>T at 10 times of rated current

## Part Number Information

**S 0603-SD-1.0A**



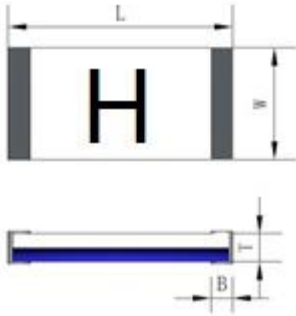
“1.0A” Ampere Rating: 1A

“SD” Electrical Characteristic: S = Slow blow, D=63V

“0603” Size Number

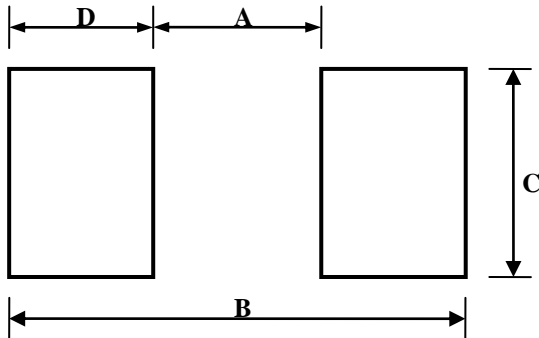
“S” Symbol of SART

## Dimensions



Type	L (mm)	W (mm)	T (mm)	B (mm)
S0603-SD	1.60±0.15	0.80±0.15	0.45±0.10	0.30±0.20

## Recommended Land Patterns



Type	A (mm)	B (mm)	C (mm)	D (mm)
S0603-SD	0.85±0.05	2.05±0.050	1.20±0.10	0.60±0.10

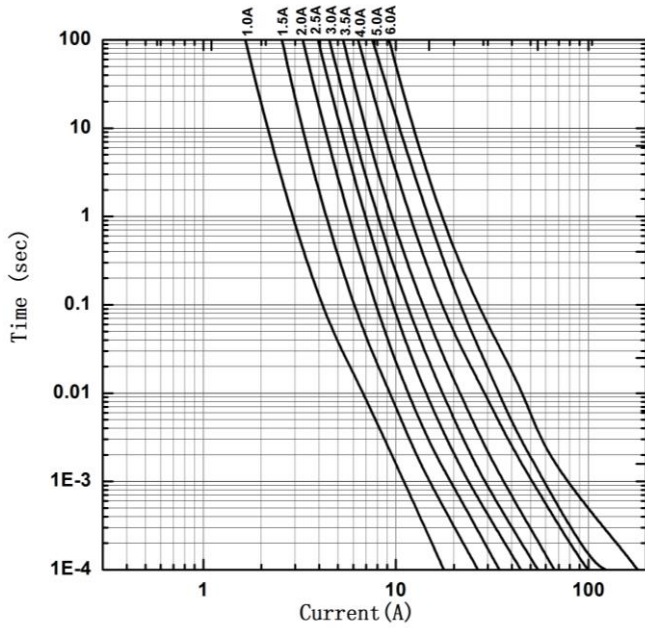
## Materials

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

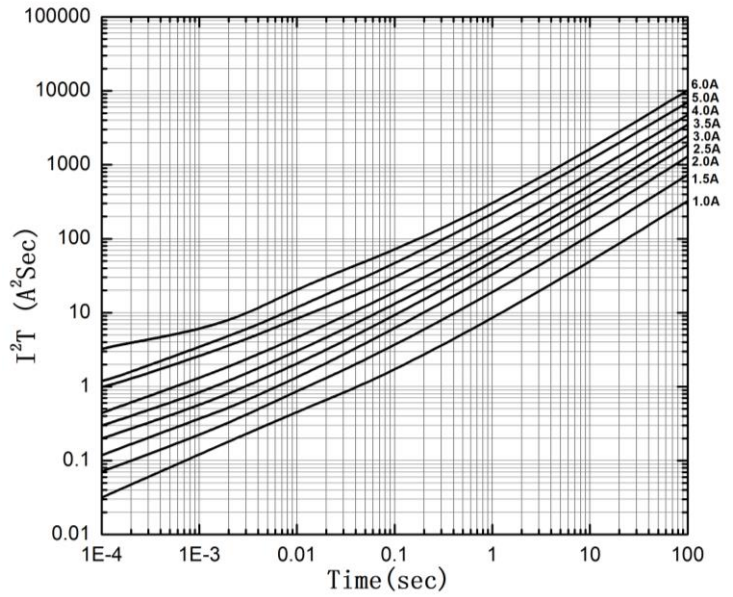
## Dimensions of Standard Test Board

Type	Ampere Rating	Board Thickness (mm)	Copper Layer Thickness (mm)	Copper Trace Width (mm)
S0603-SD	1.0A~6.0A	1.6	0.035	5.0

**Time Current Curve**



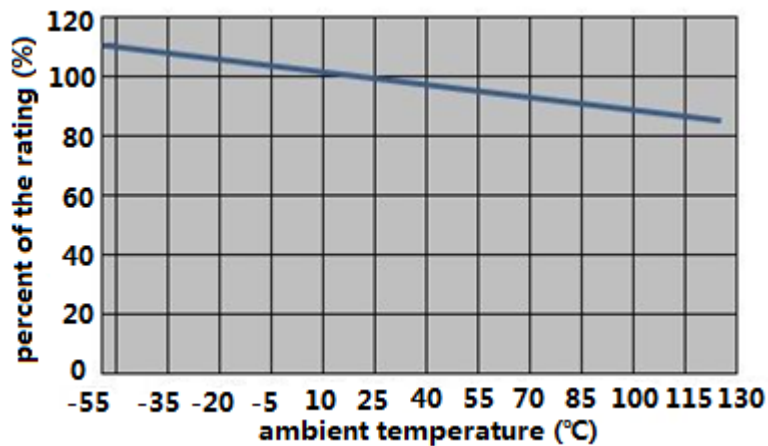
**I<sup>2</sup>T VS Time Curve**



**Electrical Characteristics**

Type	Ampere Rating	% of Current Rating	Opening Time
S0603-SD	1.0A~6.0A	100	4hours Min.
	1.0A~6.0A	200	60sec Max.
	1.0A~3.5A	1000	0.3msec Min.
	4.0A~6.0A	1000	0.6msec Min.

**Temperature Derating Curve**



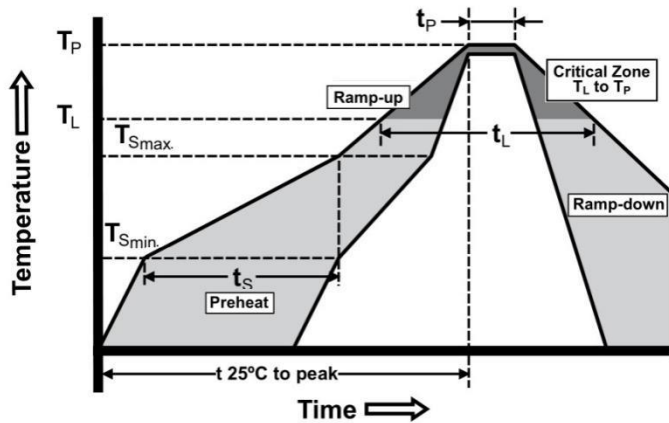
## Product Characteristics

Item	Test condition/ Methods	Performance	Standard
Time/Current	100% of current rating	No Fusing, 4hours Min.	UL248-14
	200% of current rating	≤60sec	SART SPEC
	1000% of current rating	1.0A~3.5A: >0.3msec 4.0A~6.0A: >0.6msec	
Voltage Drop	100% of current rating	Deviation between the mean value: <15% <300mV	SART SPEC
Endurance Test	Repeating 100 cycles of 1In for 1h "ON", for 15min "OFF", then following by 1h of 1.25In and testing Temperature rise	ΔR :<10% ΔT<75°C	IEC-60127-4
Interrupting Ability	50A 63V DC	without permanent arcing, ignition and bursting of fuse link	UL248-14 IEC60127-4
Solderability	240°C±5°C, 3sec±0.5sec	95% coverage Min.	IEC60127-4 IEC60068-2-20; MIL-STD-202
Resistance to Soldering	260°C±5°C, 10sec±0.5sec	ΔR :<10% Legible appearance	MIL-STD-202 Method 210
Bending Test	Distance between holding points: 90mm Bending: 1mm, time: 10sec	ΔR :<10% No mechanical damages	IEC60127-4
High Temperature Operating Life	T=70°C±2°C, 60%In, 96hours	ΔR : <10%; No fusing	MIL-STD-202 Method 108
Humidity (Steady State)	T=40°C±2°C, 90%~95%RH, 1000hours	ΔR : <10%	MIL-STD-202 Method 103
Low Temperature Storage	T=-55°C±3°C, 96hours	ΔR : <10%	IEC60068-2-1
High Temperature Storage	T=125°C±2°C, 96hours	ΔR : <10%	IEC60068-2-2
Salt Spray	5% salt solution, 48hours	ΔR : <10% Legible appearance	MIL-STD-202 Method 101
Thermal Shock	100 cycles between -65°C/+125°C 60 minutes, each extreme	ΔR : <10%R No mechanical damages	MIL-STD-202 Method 107

## Recommended Solder Curve

### 1. Infrared Reflow:

- Temperature: 260°C
- Time: 20sec 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
Ramp-down Rate	6°C/sec Max.
Time 25°C to peak Temperature	8minutes Max.

### 2. Wave soldering

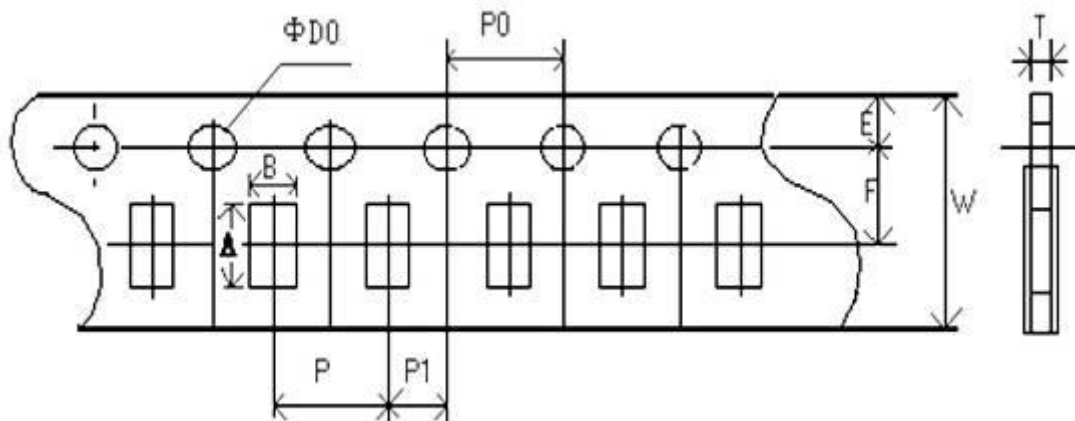
- Reservoir Temperature: 260°C
- Time in Reservoir: 10secMax.

### 3. Hand Soldering

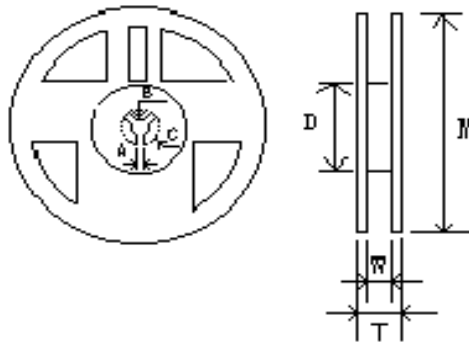
- Temperature: 350°C
- Time: 5secMax.

## 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)
S0603-SD	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)
S0603-SD	4.00±0.10	4.00±0.10	2.00±0.10	1.50±0.10	0.60±0.10



Type	M(mm)	W(mm)	T(mm)	A(mm)	B(mm)	C(mm)	D(mm)
S0603-SD	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°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