

# DATA SHEET

## SMD 0603 SLOW BLOW FUSE JB06S Series

RoHS compliant & Halogen free



Product specification— June 25, 2023 V.0



[illegible]

## JB06S Series DataSheet

## Scope

This specification is applicable to over-current protection thick film fuse for 0603 slow blow series produced by YAGEO corporation.

## Applications

- TFT Displays
- Battery Management System (BMS)
- LED Head - Lights

## Features

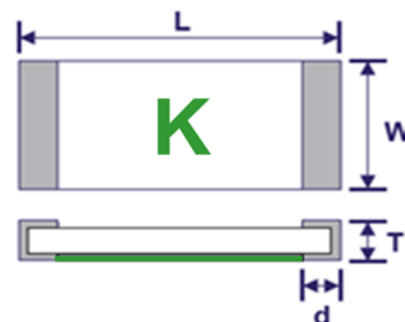
- Small Size, 0603 SMD
- Operating temperature -55°C to 125°C
- Excellent long-term stability
- Halogen Free
- Lead Free

## Agency Approval

| Agency                                                                              | File Number | Ampere Range |
|-------------------------------------------------------------------------------------|-------------|--------------|
|  | E531845     | 0.5A-8A      |

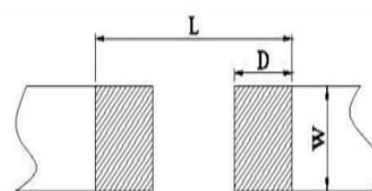
## Dimensions

| Series | L<br>(mm) | W<br>(mm) | T<br>(mm) | d<br>(mm) |
|--------|-----------|-----------|-----------|-----------|
| JB06S  | 1.60±0.15 | 0.81±0.15 | 0.48±0.08 | 0.35±0.20 |



## Recommended Land Patterns

| Series | L<br>(mm) | W<br>(mm) | D<br>(mm) |
|--------|-----------|-----------|-----------|
| JB06S  | 2.2       | 1.0       | 0.7       |



## Ordering Information

| Part Number | Current Rating<br>(A) | Voltage Rating<br>(Vdc) | Interrupting | Typical DCR<br>(mΩ) <sup>1</sup> | Typical I <sup>2</sup> t<br>(A <sup>2</sup> s) <sup>2</sup> | Marking |
|-------------|-----------------------|-------------------------|--------------|----------------------------------|-------------------------------------------------------------|---------|
| JB06S5000R  | 0.50A                 | 63Vdc                   | 50A@63Vdc    | 580                              | 0.02                                                        | F       |
| JB06S7500R  | 0.75A                 |                         |              | 400                              | 0.04                                                        | G       |
| JB06S1001R  | 1.0A                  |                         |              | 250                              | 0.10                                                        | B       |
| JB06S1501R  | 1.5A                  |                         |              | 150                              | 0.22                                                        | H       |
| JB06S2001R  | 2.0A                  | 32Vdc                   | 50A@32Vdc    | 78                               | 0.31                                                        | K       |
| JB06S2501R  | 2.5A                  |                         |              | 49                               | 0.52                                                        | L       |
| JB06S3001R  | 3.0A                  |                         |              | 35                               | 0.89                                                        | O       |
| JB06S3501R  | 3.5A                  |                         |              | 28                               | 1.04                                                        | R       |
| JB06S4001R  | 4.0A                  |                         |              | 18                               | 2.01                                                        | S       |
| JB06S5001R  | 5.0A                  |                         |              | 14                               | 3.10                                                        | T       |
| JB06S6001R  | 6.0A                  |                         |              | 11                               | 5.03                                                        | V       |
| JB06S7001R  | 7.0A                  |                         |              | 9.5                              | 6.24                                                        | X       |
| JB06S8001R  | 8.0A                  |                         |              | 7                                | 8.35                                                        | Z       |

NOTE: 1. Measured at ≤10% rated current and 25°C

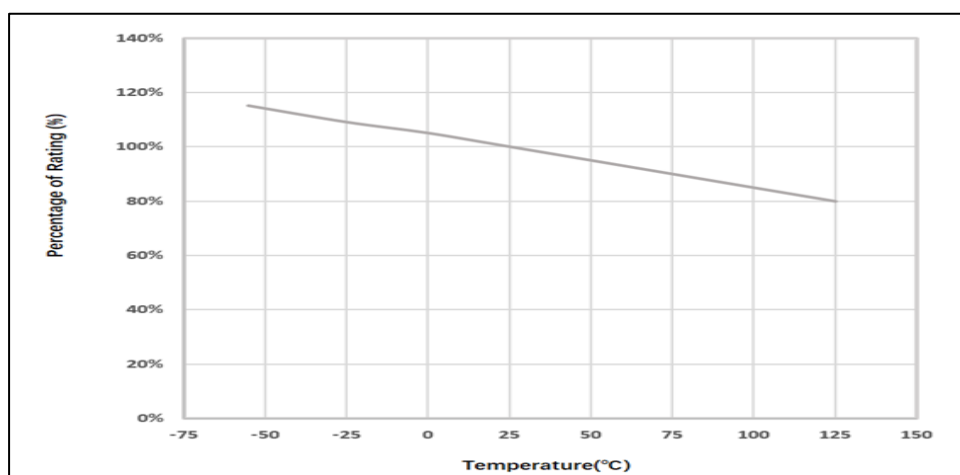
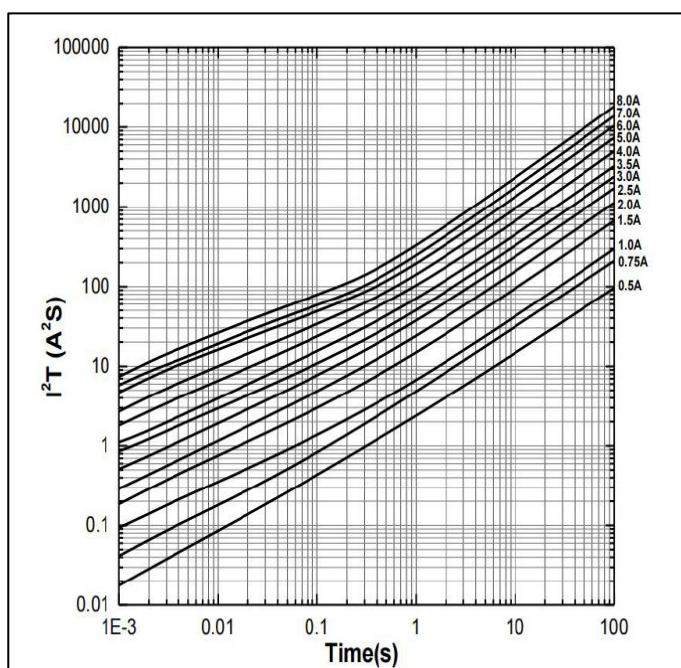
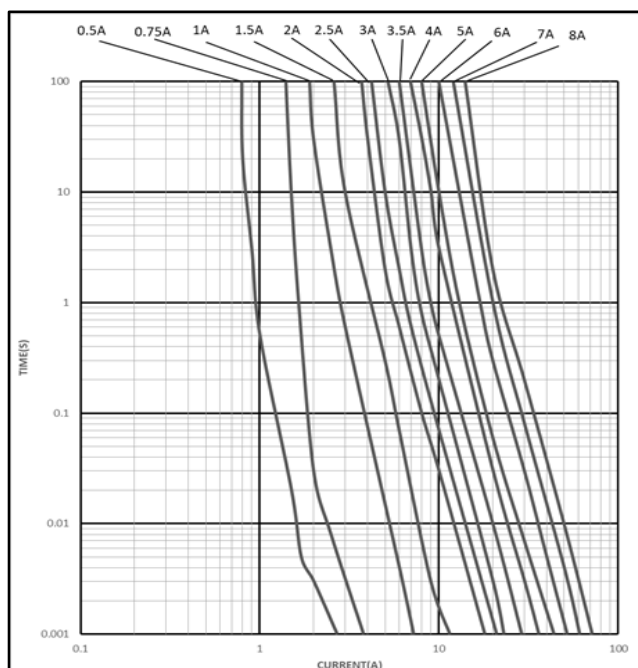
2. Nominal Melting I<sup>2</sup>t measured at 0.001s opening time

**SMD 0603 Slow Blow Fuse****JB06S Series****Clearing Time Characteristics**

| Rated Current | % of Current Rating | Clearing Time at 25°C |      |
|---------------|---------------------|-----------------------|------|
|               |                     | Min                   | Max  |
| 0.5A-8.0A     | 100%                | 4hours                | /    |
| 0.5A-8.0A     | 200%                | 1s                    | 120s |
| 0.5A-8.0A     | 350%                | /                     | 3s   |

**Part Number Code Rule**

| J            | B             | 06        | S            | 1001                 | R                          |
|--------------|---------------|-----------|--------------|----------------------|----------------------------|
| Product Code | Product Type  | Size Type | Fusing Type  | Current Rating       | Package                    |
| J:Fuse       | B: Thick Film | 06:0603   | S: Slow Blow | 5000:0.5A<br>1001:1A | R:Tape and Reel<br>B: Bulk |

**Temperature Derating Curve****Time & Current Curve****I<sup>2</sup>t & Time Curve**

## SMD 0603 Slow Blow Fuse

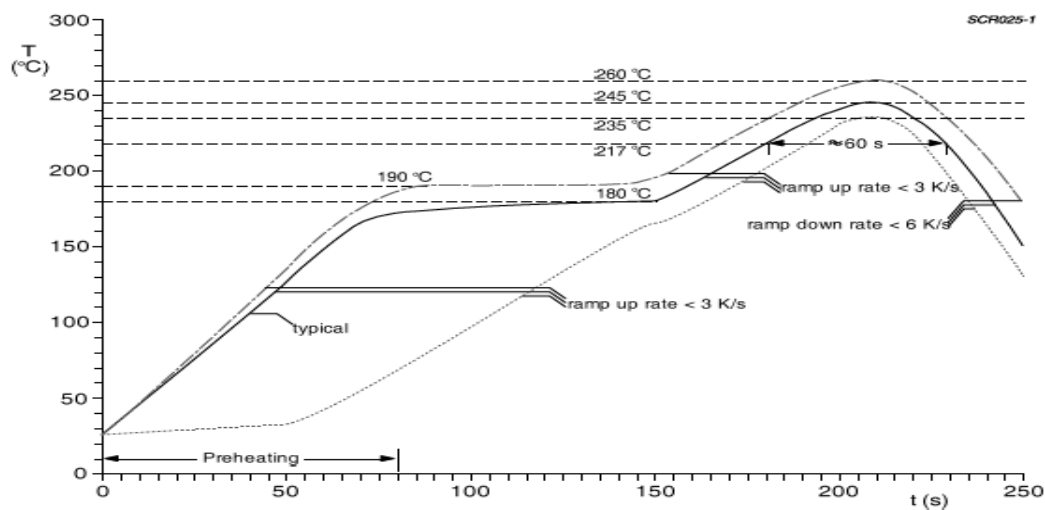
## JB06S Series

## Reliability Test Performance

| Item                         | Test condition/ Methods                                                                                                                                                                              | Performance                                                 | Standard                               |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------|
| Time/Current Characteristics | 100% Rated Current                                                                                                                                                                                   | No fusing within 4hr                                        | UL248-14                               |
|                              | 200% Rated Current                                                                                                                                                                                   | 0.5A-8.0A: Min:1s;Max:120s                                  | Refer to clearing time characteristics |
|                              | 350% Rated Current                                                                                                                                                                                   | 0.5A-8.0A: Max:3s                                           |                                        |
| Breaking Capacity            | 0.5A-1.5A: 50A@63Vdc<br>2.0A-8.0A: 50A@32Vdc                                                                                                                                                         | No a permanent arcing, ignition, bursting                   | UL248-14                               |
| Solderability                | T=245°C±5°C, t=5s±0.5s                                                                                                                                                                               | Cover ≥95%                                                  | MIL-STD-202 Method 208                 |
| Resistance to Soldering      | Pre-heating:145°±15°C, max.120s<br>Peak: 260°C, max.10s<br>Reflow cycle: 2 times<br>After immersion into solder, leaving the room temp.<br>for 1h or more, and then measure the internal resistance. | △R<15%<br>No crack and damage,<br>Marking is easily legible | MIL-STD-202, Method 210F               |
| Thermal Shock                | -65°C, 15min→25°C, 5min→+125°C, 15min ;<br>100 cycles                                                                                                                                                | △R<10%<br>No crack and damage,                              | MIL-STD-202, Method 213B               |
| Mechanical Shock             | a=100G for 11ms, 5pulses                                                                                                                                                                             | △R<10%<br>No crack and damage                               | MIL-STD-202, Method 213B               |
| Vibration                    | Frequency range:10~15~10Hz/min<br>Vibration amplitude:1.5mm                                                                                                                                          | △R<10%<br>No mechanical damages                             | MIL-STD-202, Method 201A               |
| Salt Spray                   | 5% salt solution, 48hr                                                                                                                                                                               | △R<10%<br>Legible appearance                                | MIL-STD-202, Method 101                |
| Board Flex                   | Bending:1mm, time:60s                                                                                                                                                                                | △R<15%<br>No mechanical damages                             | IEC 60127-4                            |

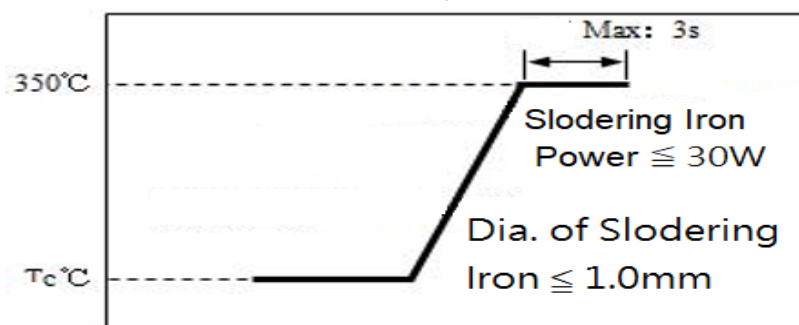
## Soldering Condition

Recommend Re-Flowing Profile



| Item              | Condition              |
|-------------------|------------------------|
| Ramp              | <3° C/sec.             |
| Pre-heating       | 145 ± 15° C, 120s max. |
| Time above 220° C | 60s max.               |
| Peak temperature  | 260° C/10s max.        |

Recommend Soldering tip Temperature



| Item                      | Condition     |
|---------------------------|---------------|
| Iron soldering power      | Max. 30W      |
| Pre-heating time          | 60sec, 150° C |
| Soldering tip temperature | Max. 350° C   |
| Soldering time            | Max. 3sec     |

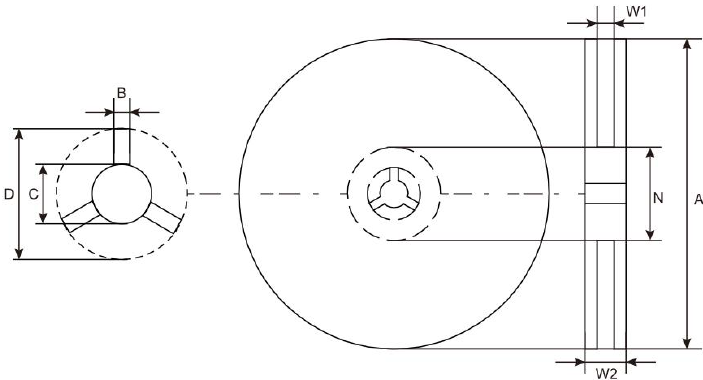
Note: Take care not to apply the tip of the soldering iron to the terminal electrodes.

Packaging Specification

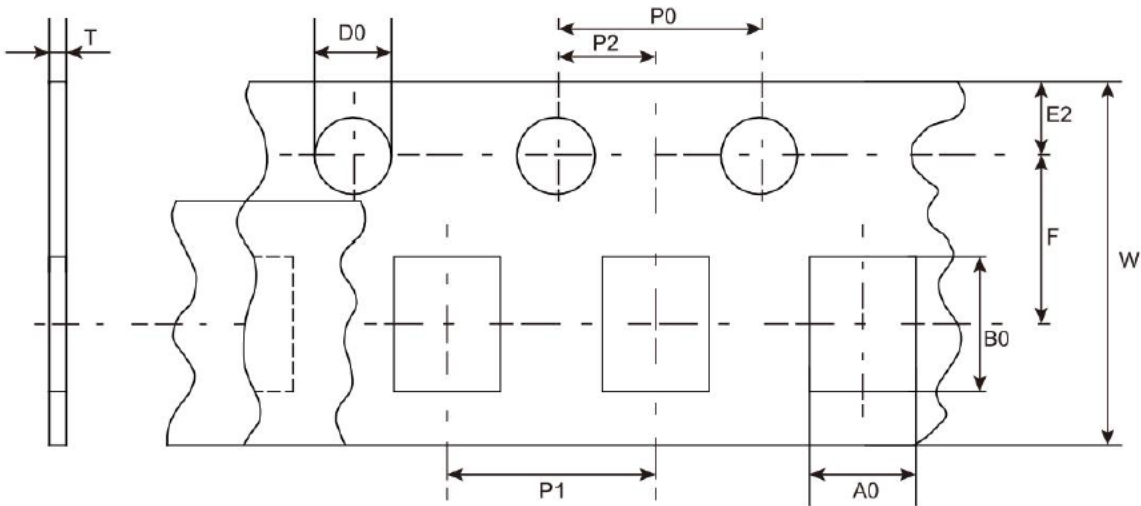
■ Quantity & Weight

| Series | Quantity     |
|--------|--------------|
| JB06S  | 5000pcs/Reel |

■ Reel & Tape Specification



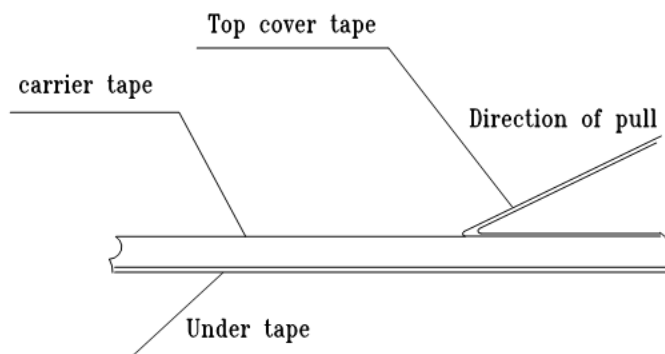
| Series | A<br>(mm) | B<br>(mm) | C<br>(mm) | D<br>(mm) | N<br>(mm) | W1<br>(mm) | W2<br>(mm) |
|--------|-----------|-----------|-----------|-----------|-----------|------------|------------|
| JB06S  | 178±5     | 1.6 Min.  | 12.8 Min. | 20.8 Min. | 58±2      | 8.4 Min.   | 12.4 Max.  |



| Series | A0<br>(mm) | B0<br>(mm) | D0<br>(mm) | E2<br>(mm) | F<br>(mm) | P0<br>(mm) |
|--------|------------|------------|------------|------------|-----------|------------|
| JB06S  | 1.10±0.05  | 1.90±0.05  | 1.55±0.05  | 1.75±0.10  | 3.50±0.05 | 4.00±0.10  |
|        | P1<br>(mm) | T<br>(mm)  | W<br>(mm)  |            |           |            |
|        | 4.00±0.10  | 0.60±0.05  | 8.00±0.10  |            |           |            |

**SMD 0603 Slow Blow Fuse****JB06S Series****■ Peeling Strength of Seal Tape**

The top cover tape is pulled at a speed of 300 mm/min with the angle between the tape during peel and the direction of unreeling maintained at 165 to 180 degree as following picture. The peel force of paper carrier tape shall be 0.1N to 0.7N(10 to 70 g)

**Storage Conditions**

- Storage Temperature: 10°C~+40°C
- Relative Humidity: ≤75%RH
- Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 2 year.



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