SUNTSU

Multilayer Ceramic Band Pass Filter

# SRFBF-1E1B1A-WFB8

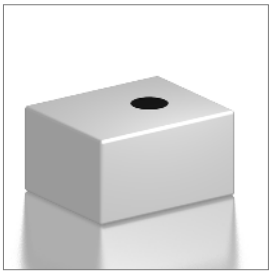
1.40mm x 1.10mm

## Features

- Miniature Footprint
- Low Insertion Loss
- LTCC Process
- High Rejection Rate

## Applications

- ISM 2.4GHz
- Bluetooth
- Wireless LAN
- HomeRF
- WiFi 2.4GHz 802.11b/g



## Part Numbering Guide

**S RF BF - 1E1B 1A - WF B8**

| SUNTSU | RF COMPONENT | BAND PASS FILTER | * PACKAGE SIZE | * INSERT LOSS (dB) | APPLICATION | FREQUENCY BAND |
|---|---|---|---|---|---|---|
| | | | 1E1B = 1.40mm x 1.10mm | 1A = 1.0dB | WF : WiFi | B8 : 2400-2500, ISM Band |

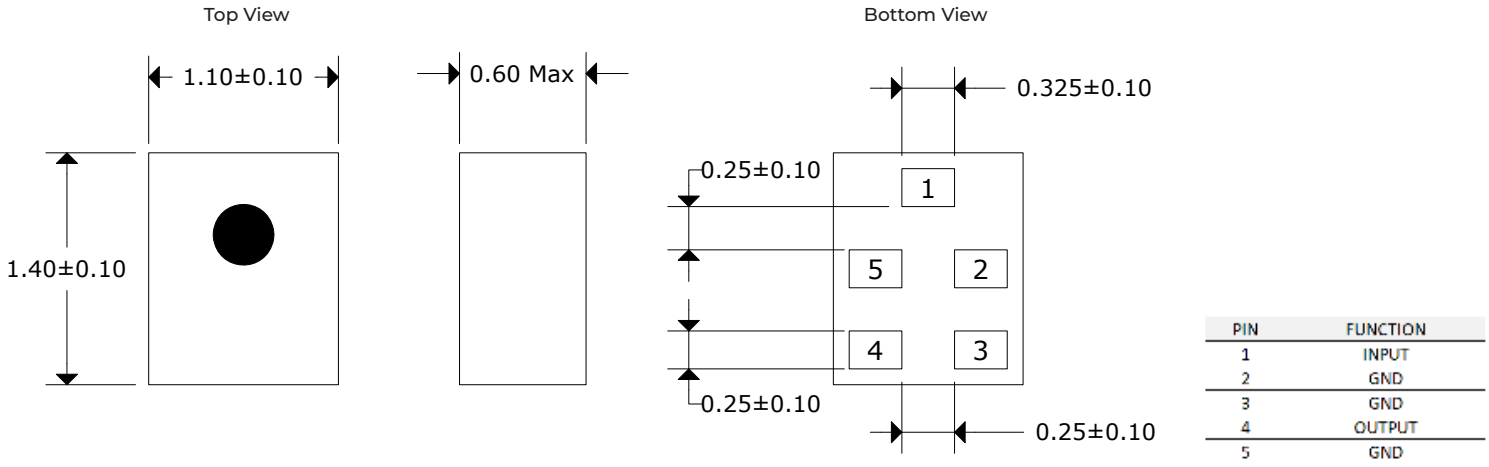
RoHS COMPLIANT

* Where letters denote decimal location (A=.0, B=.1, C=.2, etc.); e.g. B5=0.15, 3A5=3.05, 9A=9.0

| Electrical Parameters | Units | Minimum | Typical | Maximum | Remarks |
|---|---|---|---|---|---|
| Frequency | MHz | 2400 | | 2500 | |
| Insertion Loss @ 25°C | dB | | | 1.0 | |
| Insertion Loss @ -40°~105°C | dB | | | 1.2 | |
| VSWR | | | | 2.0 | |
| Impedance | Ω | | 50 | | |
| Power Capacity | W | | | 2 | |
| Operating Temperature Range | °C | -40 | | 105 | |
| Storage Temperature Range | °C | -40 | | 105 | |
| Attenuation @ 50~960MHz | dB | 15 | | | |
| Attenuation @ 1710~1990MHz | dB | 10 | | | |
| Attenuation @ 3600MHz | dB | 15 | | | |
| Attenuation @ 4800~7200MHz | dB | 25 | | | |

## Outline Drawing

All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.




| PIN | FUNCTION |
|---|---|
| 1 | INPUT |
| 2 | GND |
| 3 | GND |
| 4 | OUTPUT |
| 5 | GND |


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Specifications are subject to change without notice.

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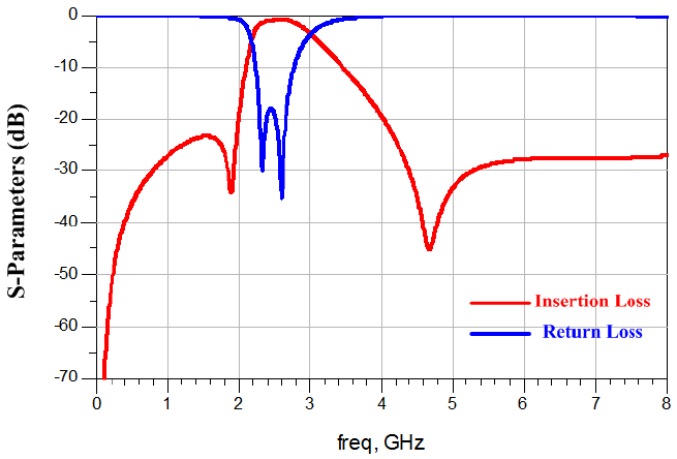
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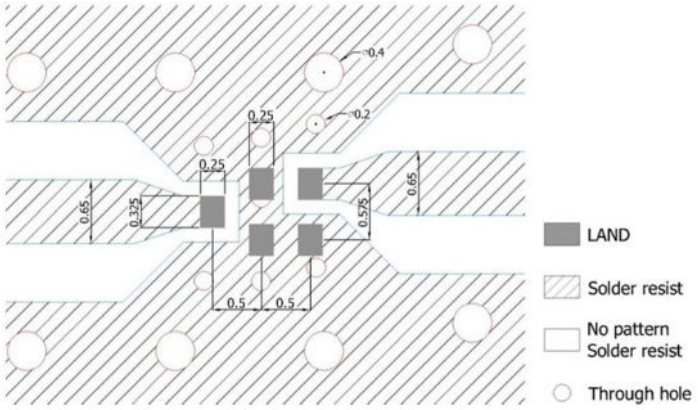
1.40mm x 1.10mm

## Typical Electrical Chart



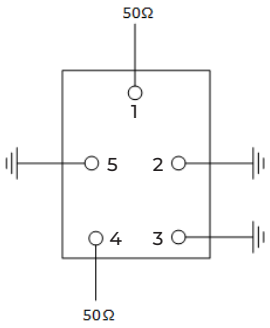

## Land Pattern

All dimensions are in millimeters (mm) unless otherwise noted.
Drawings are not to scale.

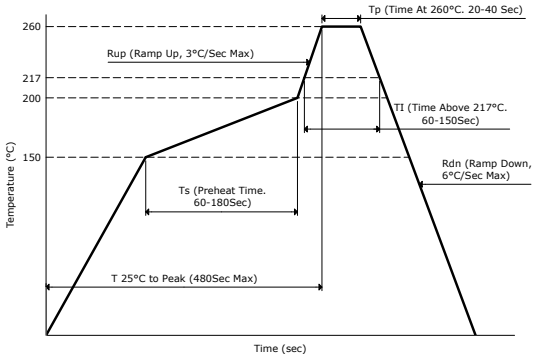



Line width to be designed to match 50Ω characeristic impedance, depending on PCB material and thickness.

## Test Circuit



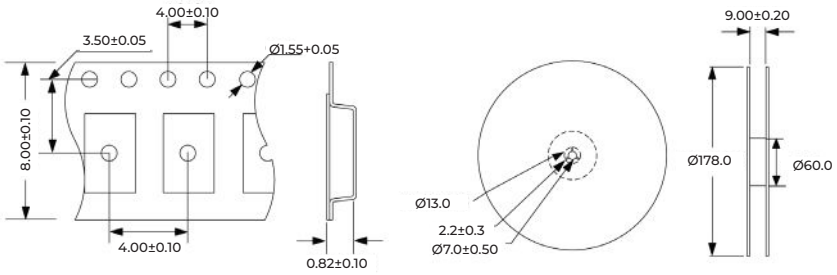

## Reflow Profile




## Tape and Reel Dimensions

3,000 pcs/reel

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| Reliability Test | | |
|---|---|---|
| Test Item | Test Conditions/Test Method | Specification |
| Solderability<br>**JIS C 0050-4.6**<br>**JESD22-B102D** | *Solder bath temperature : 235±5°C<br>*Immersion time : 2±0.5 sec<br>Solder : Sn3Ag0.5Cu for lead-free | At least 95% of a surface of each terminal electrode must be covered by fresh solder. |
| Leaching (Resistance to dissolution of metallization)<br>**IEC 60068-2-58** | *Solder bath temperature : 260±5°C<br>*Leaching immersion time : 30±0.5 sec<br>Solder : SN63A | Loss of metallization on the edges of each electrode shall not exceed 25% |
| Resistance to soldering heat<br>**JIS C 0050-5.4** | *Preheating temperature : 120~150°C, 1 minute<br>*Solder temperature : 270±5°C<br>*Immersion time : 10±1 sec<br>Solder : Sn3Ag 0.5Cu for lead-free<br>Measurement to be made after keeping at room temperature for 24±2 hrs. | No mechanical damage.<br>Eletrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature ranger within -40~85°C.<br>Loss of metallization on the edges of each electrode shall not exceed 25% |
| Drop Test<br>**JIS C 0044** | *Height : 75 cm<br>*Test surface : Rigid surface of concrete or steel.<br>*Times : 6 surfaces for each unit; 2 times each side. | No mechanical damage.<br>Electrical specification shall satisfy the description in electrical characteristics under the operational temperature range within -40~85°C. |
| Vibration<br>**JIS C 0040** | *Frequency : 10Hz~55Hz~10Hz (1 min)<br>*Total amplitude : 1.5mm<br>*Test times : 6hrs<br>(two hrs each in three mutually perpendicular directions) | No mechanical damage.<br>Eletrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -40~85°C. |
| Adhesive Strength of Termination<br>**JIS C 0051-7.4.3** | *Pressurizing force : 5N(≤603) ; 10N(>0603)<br>*Test time : 10±1 sec | No remarkable damage or removal of the termination |
| Bending Test<br>**JIS C 0051-7.4.1** | The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1mm/s per second until the deflection becomes 1mm/s and then pressure shall be maintained for 5±1 sec.<br>Measurement to be made after keeping at room temperature for 24±2 hours. | No mechanical damage.<br>Eletrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -40~85°C. |
| Temperature Cycle<br>**JIS C 0025** | 1. 30±3 minutes at -40°C±3°C<br>2. 10~15 minutes at room temperature<br>3. 30±3 minutes at 85°C±3°C<br>4. 10~15 minutes at room temperaure<br>Total 100 continuous cycles<br>Measurement to be made after keeping at room temperature for 24±2 hous. | No mechanical damage.<br>Eletrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -40~85°C. |
| High Temperature<br>**JIS C 0021** | *Temperature : 85°C±2°C<br>*Test duration : 1000+24/-0 hours<br>Measurement to be made after keeping at room temperature for 24±2 hours. | No mechanical damage.<br>Eletrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -40~85°C. |
| Humidity (steady conditions)<br>**JIS C 0022** | *Humidity : 90% to 95% Relative Humidity<br>*Temperature : 40°C±2°C<br>*Time : 1000+24/-0 hours<br>Measurement to be made after keeping at room temperature for 24±2 hours.<br>**500hrs measuring the first data then 1000hrs data | No mechanical damage.<br>Eletrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -40~85°C. |
| Low Temperature<br>**JIS C 0020** | *Temperature : -40°C±2°C<br>*Test duration : 1000+24/-0 hours<br>Measurement to be made after keeping at room temperature for 24±2 hours. | No mechanical damage.<br>Eletrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -40~85°C. |



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