

# SPECIFICATIONS

<b>Customer</b>	
<b>Product Name</b>	<b>Balanced Filter</b>
<b>Sunlord Part Number</b>	<b>SLFBF21-2R450G-A02TF</b>
<b>Customer Part Number</b>	

New Released,  Revised]

**SPEC No.:** SLFB02130000

【 This SPEC is total 7 pages including specifications and appendix. 】  
 【 ROHS, Halogen-Free and SVHC Compliant Parts 】

Approved By	Checked By	Issued By

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**【 For Customer approval Only 】**

Date: \_\_\_\_\_

Qualification Status: Full		Restricted		Rejected	
Approved By	Verified By	Re-checked By	Checked By		

Comments:

**【Version change history】**

Rev.	Effective Date	Changed Contents	Change reasons	Approved By
01	/	New release	/	Hai Guo

1. Scope

This specification applies to SLFBF21-2R450G-A02TF of Balanced Filter.

2. Product Description and Identification (Part Number)

- 1) Description:  
Multi-layer Chip Balanced Filter
- 2) Product Identification (Part Number)

SLFBF      21      2R450G      A02      I      F

Type	
SLFBF	Balanced Filter

External Dimensions (L x W) (mm)	
21	2.0 x 1.2

Center Frequency	
2R450G	2450.0 MHz

Series Code	
A02	

Packing	
T	Tape Carrier Package

Hazardous Substance Free Products	
F	

3. Electrical Characteristics

Part Number	SLFBF21-2R450G-A02TF
Unbalance Port Impedance	50 ohm
Balance Port Impedance	Conjugate match to MTK MT6612/6616
Frequency Range(BW)	2450.0±50.0 MHz
Insertion Loss in BW	2.8dB max. at 25 3.1 dB max. at -40 to +85
Attenuation(Absolute value)	40 dB min at 880~960MHz 30 dB min at 1710~1880MHz 16 dB min at 1880~1990MHz 17 dB min at 4800~5000MHz
Unbalance Port V.S.W.R in BW	2.10 max.
Balance Port V.S.W.R in BW	2.10 max.
Power Capacity	500 mW max.

- a) Operating and storage temperature range (individual chip without packing): -40 ~ +85 .
- b) Storage temperature range (packaging conditions): -10 ~ +40 and RH 70% (Max.).
- c) Test equipment: Network Analyzer:E5071C.
- d) Electrical Performance: See Fig. 3-1, Fig. 3-2

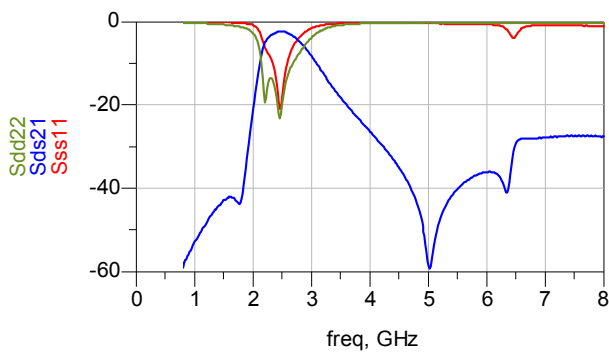


Fig. 3-1

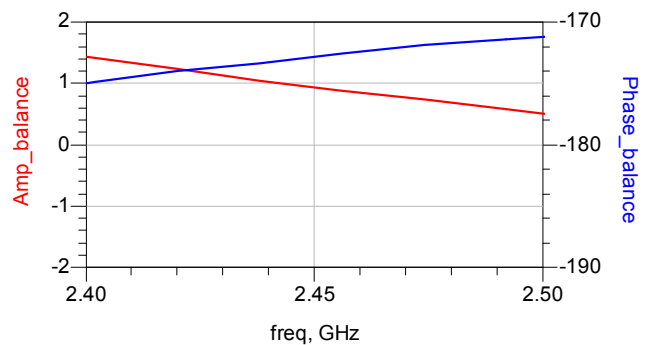
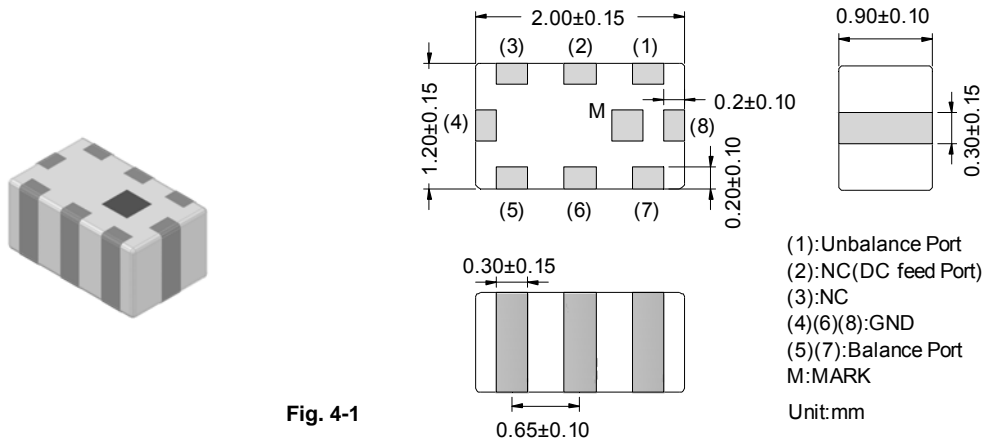


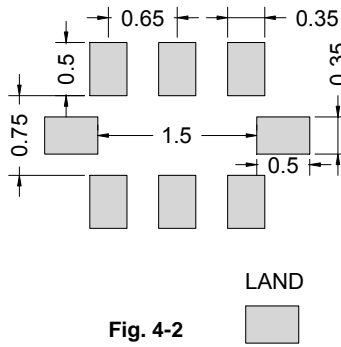
Fig.3-2

4. Shape and Dimensions

1) Dimensions and terminal configuration: See Fig. 4-1



2) Recommended Land Pattern: See Fig.4-2



5. Test and Measurement Procedures

5.1 Test Conditions

Unless otherwise specified, the standard atmospheric conditions for measurement/test as:

- a. Ambient Temperature: 20±15
- b. Relative Humidity: 65±20%
- c. Air Pressure: 86 KPa to 106 KPa

If any doubt on the results, measurements/tests should be made within the following limits:

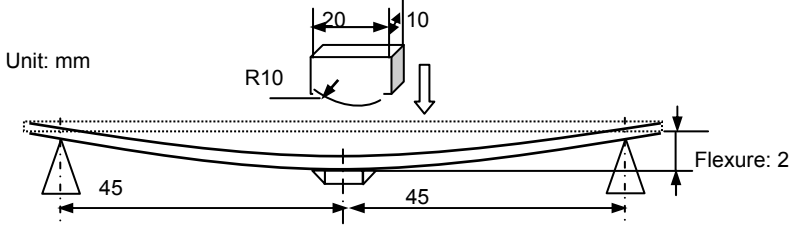
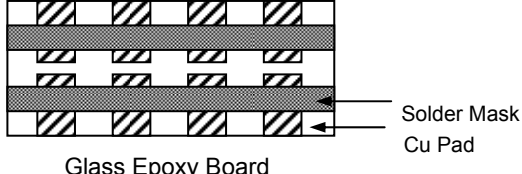
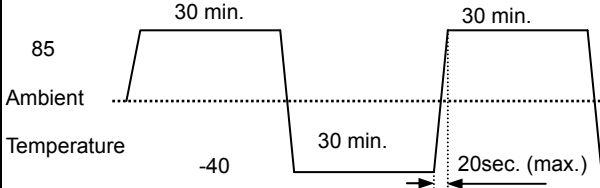
- a. Ambient Temperature: 20±2
- b. Relative Humidity: 65±5%
- c. Air Pressure: 86KPa to 106 KPa

5.2 Visual Examination

- a. Inspection Equipment: 20 X magnifier

5.3 Reliability Test

Items	Requirements	Test Methods and Remarks
5.3.1 Terminal Strength	No visible mechanical damage.	<p>Solder the inductor to the testing jig (glass epoxy board shown as the following figure) using eutectic solder. Then apply a force in the direction of the arrow. 10N force for 2012 series. Keep time: 10±1sec.</p> <p>Chip</p> <p>Mounting Pad</p> <p>Glass Epoxy Board</p> <p>10N/10±1s Speed: 1.0mm/s</p>

<p>5.3.2 Resistance to Flexure</p>	<p>No visible mechanical damage.</p>	<p>Solder the chip to the test jig (glass epoxy board) using a eutectic solder. Then apply a force in the direction shown as the following figure. Solder the chip to the test jig (glass epoxy board) using eutectic solder. Then apply a force in the direction.</p> <p>Flexure: 2mm Pressurizing Speed: 0.5mm/sec Keep time: ≥30 sec</p>
 <p>Unit: mm</p>		
<p>5.3.3 Vibration</p>	<p>No visible mechanical damage.</p>	<p>Solder the chip to the testing jig (glass epoxy board shown as the following figure) using eutectic solder.</p> <p>The chip shall be subjected to a simple harmonic motion having total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 55 Hz.</p> <p>The frequency range from 10 to 55 Hz and return to 10 Hz shall be traversed in approximately 1 minute. This motion shall be applied for a period of 2 hours in each 3 mutually perpendicular directions (total of 6 hours).</p> 
<p>5.3.4 Dropping</p>	<p>No visible mechanical damage.</p>	<p>Drop the chip 10 times on a concrete floor from a height of 100 cm.</p>
<p>5.3.5 Solderability</p>	<p>No visible mechanical damage. Wetting shall be exceeded 75% coverage.</p>	<p>Solder temperature: 240±2 Duration: 3sec Solder: Sn/3.0Ag/0.5Cu Flux: 25% Resin and 75% ethanol in weight</p>
<p>5.3.6 Resistance to Soldering Heat</p>	<p>No visible mechanical damage.</p>	<p>Solder temperature: 260±5 Duration: 5 sec Solder: Sn/3.0Ag/0.5Cu Flux: 25% Resin and 75% ethanol in weight The chip shall be stabilized at normal condition for 1~2 hours before measuring.</p>
<p>5.3.7 Thermal Shock</p>	<p>No visible mechanical damage. Satisfy electrical Characteristic.</p>	<p>Temperature and time: -40 for 30±3 min→85 for 30±3min Transforming interval: Max. 20 sec. Tested cycle: 100 cycles The chip shall be stabilized at normal condition for 1~2 hours before measuring.</p> 

<p>5.3.8 Damp Heat (Steady States)</p>	<p>No visible mechanical damage. Satisfy electrical Characteristic.</p>	<p>Temperature: 60±2 Humidity: 90% to 95% RH Duration: 500<sup>+24</sup> hours The chip shall be stabilized at normal condition for 1~2 hours before measuring.</p>
<p>5.3.9 Resistance to High temperature</p>	<p>No visible mechanical damage. Satisfy electrical Characteristic.</p>	<p>Temperature: 85±2 Duration: 500<sup>+24</sup> hours The chip shall be stabilized at normal condition for 1~2 hours before measuring.</p>

6. Packaging and Storage

6.1 Packaging

There is one type of packaging for the Balanced Filters. Please specify the packing code when ordering.

6.1.1 Tape Carrier Packaging:

Packaging code: T

- a. Tape carrier packaging are specified in attached figure Fig. 6.1-1~3
- b. Tape carrier packaging quantity please see the following table:

Type	2012[0805]
Tape	Embossed Tape
Quantity	4K

(1) Taping Drawings (Unit: mm)

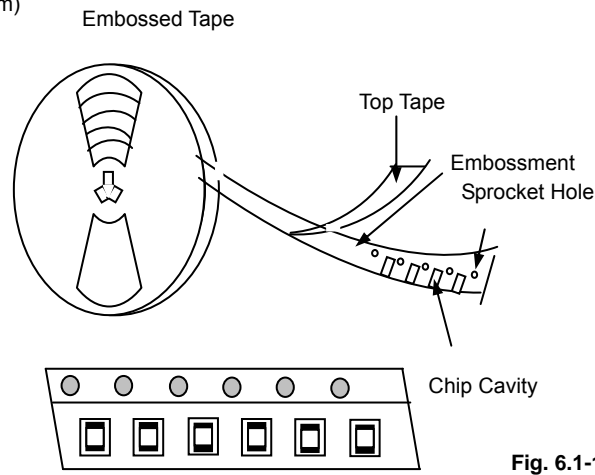


Fig. 6.1-1

Remark: The sprocket holes are to the right as the tape is pulled toward the user.

(2) Taping Dimensions (Unit: mm)

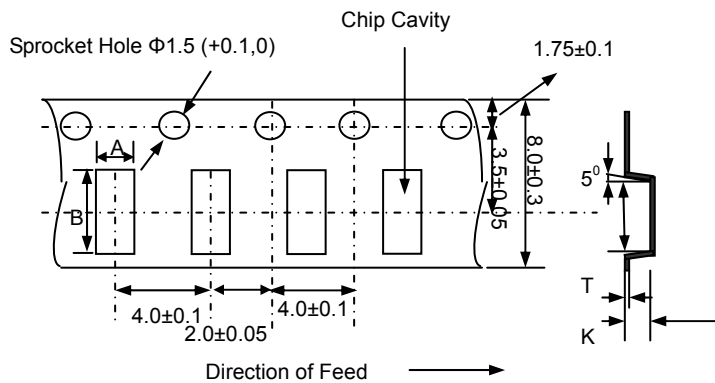


Fig. 6.1-2

Type	Chip Thickness	A	B	K max	T max
SLFBF21	0.95±0.10	1.42±0.10	2.25±0.10	1.14	0.27

(3) Reel Dimensions (Unit: mm)

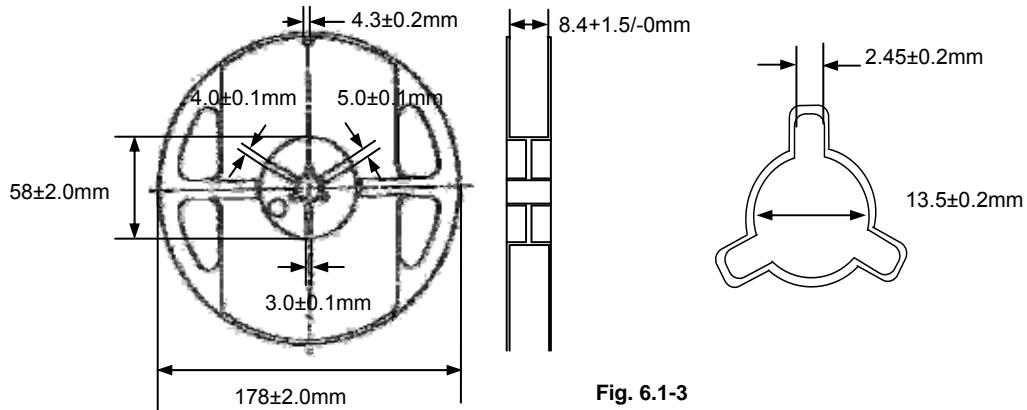


Fig. 6.1-3

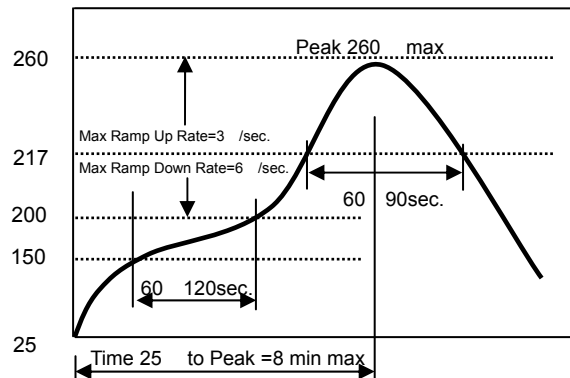
6.2 Storage

- a. The solderability of the external electrode may be deteriorated if packages are stored where they are exposed to high humidity. Package must be stored at 40 °C or less and 70% RH or less.
- b. The solderability of the external electrode may be deteriorated if packages are stored where they are exposed to dust or harmful gas (e.g. HCl, sulfurous gas of H<sub>2</sub>S).
- c. Packaging material may be deformed if package are stored where they are exposed to heat of direct sunlight.
- d. Solderability specified in **Clause 5.3.6** shall be guaranteed for 6 months from the date of delivery on condition that they are stored at the environment specified in **Clause 3**. For those parts, which passed more than 6 months shall be checked solder-ability before use.

7. Recommended Soldering Technologies

7.1 Reflow Profile

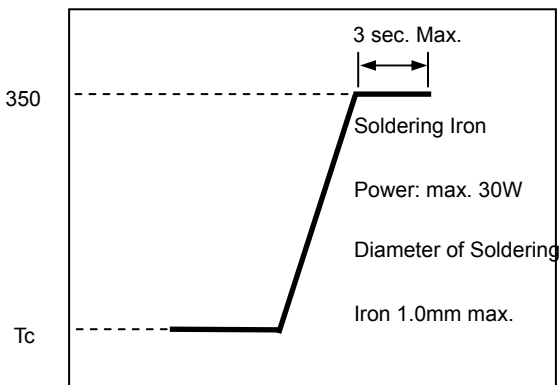
Preheat condition: 150 ~200 °C /60~120sec.  
 Allowed time above 217 °C : 60~90sec.  
 Max temp: 260 °C  
 Max time at max temp: 10sec.  
 Solder paste: Sn/3.0Ag/0.5Cu  
 Allowed Reflow time: 2x max



[Note: The reflow profile in the above table is only for qualification and is not meant to specify board assembly profiles. Actual board assembly profiles must be based on the customer's specific board design, solder paste and process, and should not exceed the parameters as the Reflow profile shows.]

7.2 Iron Soldering Profile

Iron soldering power: Max.30W  
 Pre-heating: 150 °C / 60 sec.  
 Soldering Tip temperature: 350 °C Max.  
 Soldering time: 3 sec Max.  
 Solder paste: Sn/3.0Ag/0.5Cu  
 Max.1 times for iron soldering



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

8. Supplier Information

- a) Supplier:  
**Shenzhen Sunlord Electronics Co., Ltd.**
- b) Manufacturer:  
**Shenzhen Sunlord Electronics Co., Ltd.**
- c) Manufacturing Address:  
**Sunlord Industrial Park, Dafuyuan Industrial Zone, Guanlan, Shenzhen, China**  
**Zip: 518110**

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