

SK3632LD

Low Pass LC Filter

Revision 2 : Sept. 2017



1. Scope

This specification applies to SK3632LD of Low Pass LC Filter.

2. Product Description

Multi-layer Chip Low Pass LC Filter

3. Electrical Characteristics

Part Number	SK3632LD
Band edge	2025.0 MHz
Bandwidth(BW)	1805~2025 MHz
Max. IL in BW (@25°C)	1.4 dB max
Attenuation(Absolute value)	10 dB min. at 2400~2500MHz 25 dB min. at 3760~4050MHz 25 dB min. at 5150~6000MHz
Max. RL in BW (@25°C)	15 dB min
Characteristic Impedance (Nom.)	50 ohm

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

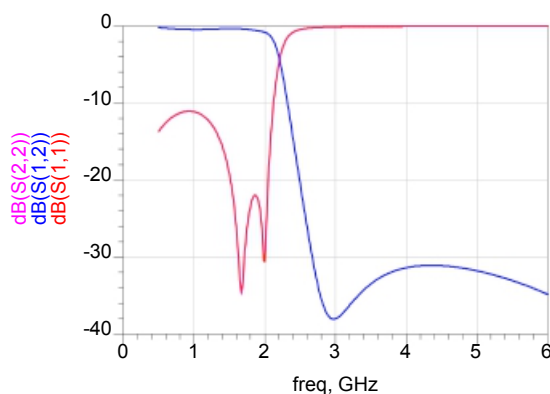


Fig. 3-1

4. Shape and Dimensions

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

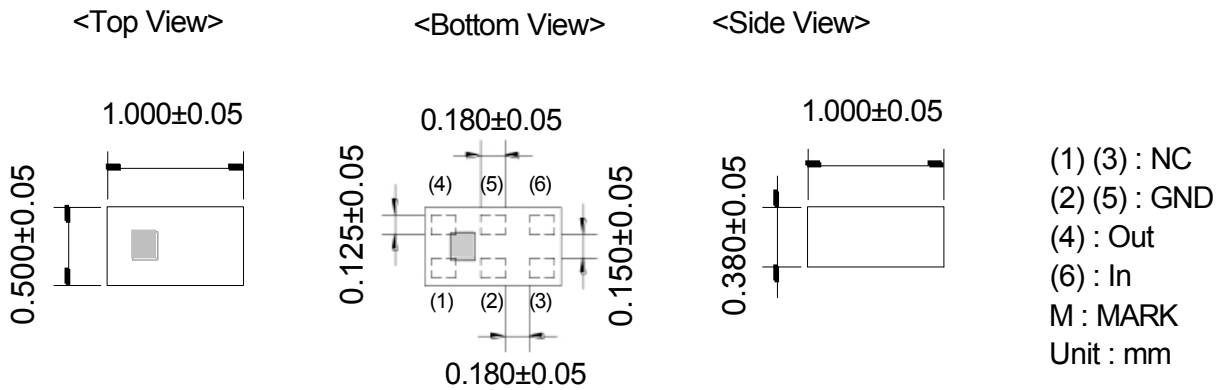
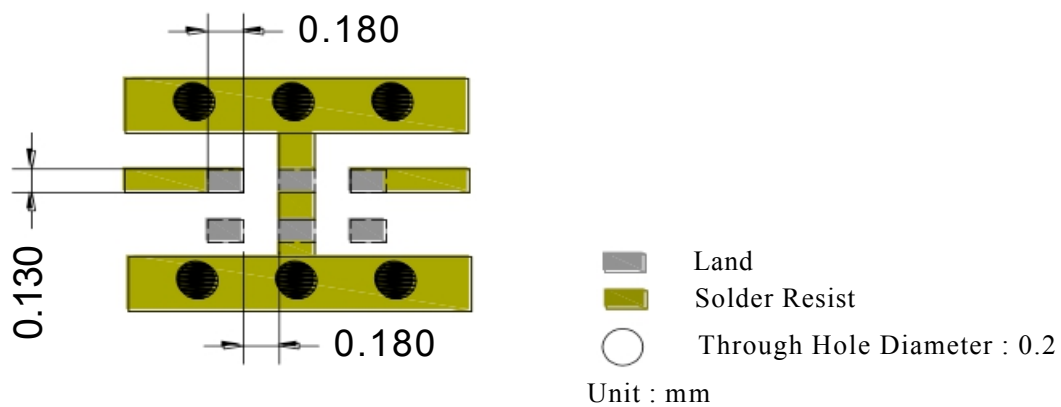


Fig. 4-1

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



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

Fig. 4-2

5. Test and Measurement Procedures

5.1 Test Conditions

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

- Ambient Temperature: 20±15°C
- Relative Humidity: 65±20%
- Air Pressure: 86 KPa to 106 KPa

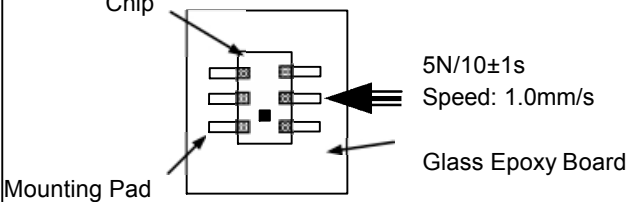
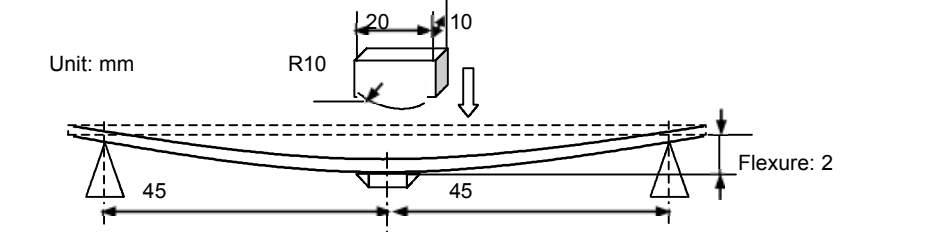
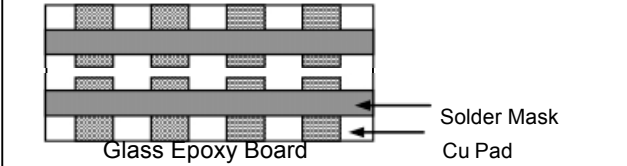
If any doubt on the results, measurements/tests should be made within the following limits:


- Ambient Temperature: 20±2°C
- Relative Humidity: 65±5%
- Air Pressure: 86KPa to 106 KPa

5.2 Visual Examination

- Inspection Equipment: 20 X magnifier

5.3 Reliability Test

Items	Requirements	Test Methods and Remarks
5.3.1 Terminal Strength	No visible mechanical damage.	<ul style="list-style-type: none"> <input type="checkbox"/> Solder the inductor to the testing jig (glass epoxy board shown as the following figure) using leadfree solder. Then apply a force in the direction of the arrow. <input type="checkbox"/> 5N force for 1608 series. <input type="checkbox"/> Keep time: 10±1sec. 
5.3.2 Resistance to Flexure	No visible mechanical damage.	<ul style="list-style-type: none"> <input type="checkbox"/> Solder the chip to the test jig (glass epoxy board) using a leadfree solder. Then apply a force in the direction shown as the following figure. Solder the chip to the test jig (glass epoxy board) using leadfree solder. Then apply a force in the direction. <input type="checkbox"/> Flexure: 2mm <input type="checkbox"/> Pressurizing Speed: 0.5mm/sec <input type="checkbox"/> Keep time: ≥30 sec 
5.3.3 Vibration	No visible mechanical damage.	<ul style="list-style-type: none"> <input type="checkbox"/> Solder the chip to the testing jig (glass epoxy board shown as the following figure) using leadfree solder. <input type="checkbox"/> 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. <input type="checkbox"/> 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). 
5.3.4 Dropping	No visible mechanical damage.	Drop the chip 10 times on a concrete floor from a height of 100 cm.
5.3.5 Solderability	<ul style="list-style-type: none"> <input type="checkbox"/> No visible mechanical damage. <input type="checkbox"/> Wetting shall be exceeded 75% coverage. 	<ul style="list-style-type: none"> <input type="checkbox"/> Solder temperature: 240±2°C <input type="checkbox"/> Duration: 3sec <input type="checkbox"/> Solder: Sn/3.0Ag/0.5Cu <input type="checkbox"/> Flux: 25% Resin and 75% ethanol in weight
5.3.6 Resistance to Soldering Heat	No visible mechanical damage.	<ul style="list-style-type: none"> <input type="checkbox"/> Solder temperature: 260±5°C <input type="checkbox"/> Duration: 5 sec <input type="checkbox"/> Solder: Sn/3.0Ag/0.5Cu <input type="checkbox"/> Flux: 25% Resin and 75% ethanol in weight <input type="checkbox"/> The chip shall be stabilized at normal condition for 1~2 hours before measuring.

<p>5.3.7 Thermal Shock</p>	<ul style="list-style-type: none"> <input type="checkbox"/> No visible mechanical damage. <input type="checkbox"/> Satisfy electrical Characteristic. 	<ul style="list-style-type: none"> <input type="checkbox"/> Temperature and time: -40°C for 30 ± 3 min \rightarrow 85°C for 30 ± 3 min <input type="checkbox"/> Transforming interval: Max. 20 sec. <input type="checkbox"/> Tested cycle: 100 cycles <input type="checkbox"/> The chip shall be stabilized at normal condition for 1~2 hours before measuring. 
<p>5.3.8 Damp Heat (Steady States)</p>	<ul style="list-style-type: none"> <input type="checkbox"/> No visible mechanical damage. <input type="checkbox"/> Satisfy electrical Characteristic. 	<ul style="list-style-type: none"> <input type="checkbox"/> Temperature: $60\pm 2^{\circ}\text{C}$ <input type="checkbox"/> Humidity: 90% to 95% RH <input type="checkbox"/> Duration: 500_{+24} hours <input type="checkbox"/> The chip shall be stabilized at normal condition for 1~2 hours before measuring.
<p>5.3.9 Resistance to High temperature</p>	<ul style="list-style-type: none"> <input type="checkbox"/> No visible mechanical damage. <input type="checkbox"/> Satisfy electrical Characteristic. 	<ul style="list-style-type: none"> <input type="checkbox"/> Temperature: $85\pm 2^{\circ}\text{C}$ <input type="checkbox"/> Duration: 500_{+24} hours <input type="checkbox"/> The chip shall be stabilized at normal condition for 1~2 hours before measuring.

6. Packaging and Storage

6.1 Packaging

There is one type of packaging for the Low pass filter. Please specify the packing code when ordering.

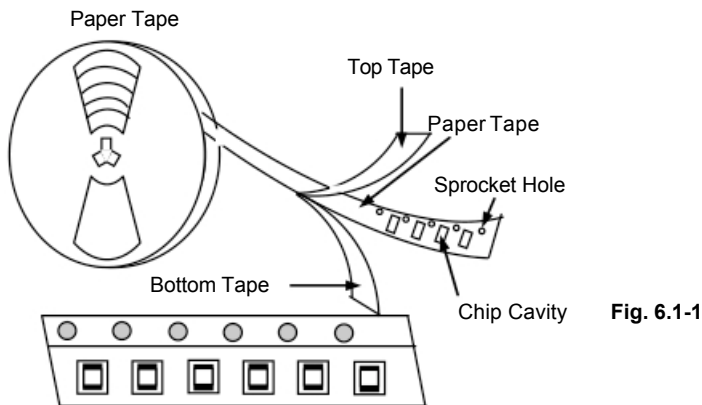
6.1.1 Tape Carrier Packaging:

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:

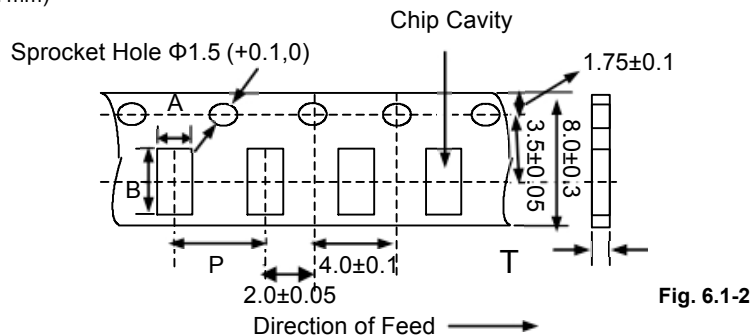
Type	1005[0402]
Tape	Paper Tape
Quantity	4K

(1) Taping Drawings (Unit: mm)



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

(2) Taping Dimensions (Unit: mm)



Type	Chip Thickness	A	B	P	T max
SK3632LD	0.60±0.10	0.6±0.1	1.10±0.10	4.0±0.05	0.6

(3) Reel Dimensions (Unit: mm)

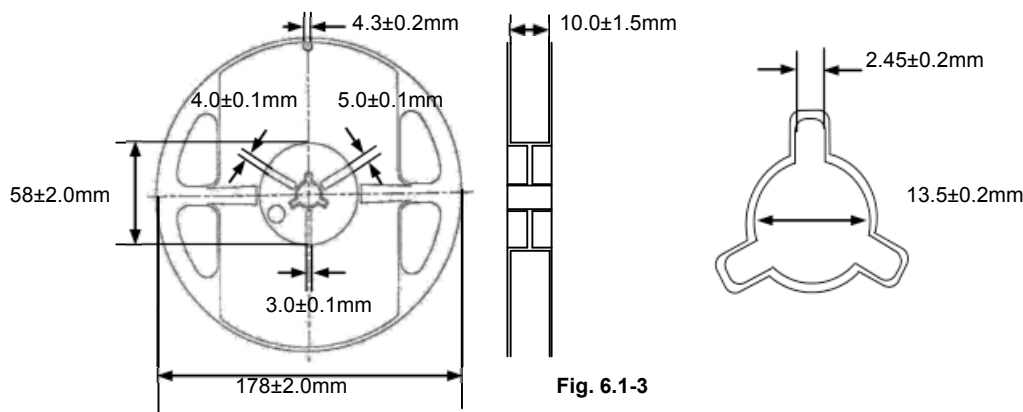


Fig. 6.1-3

6.2 Storage

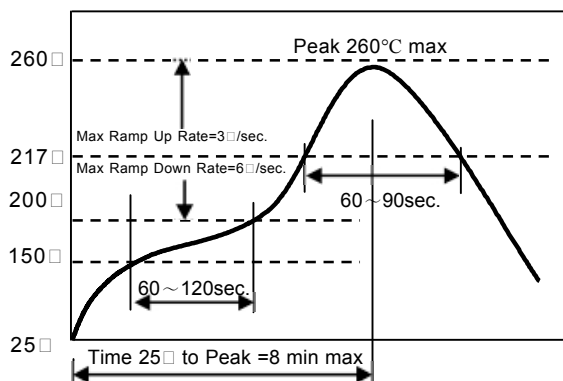
- The solderability of the external electrode may be deteriorated if packages are stored where they are exposed to high humidity. Package must be stored at 40°C or less and 70% RH or less.
- The solderability of the external electrode may be deteriorated if packages are stored where they are exposed to dust of harmful gas (e.g. HCl, sulfurous gas of H₂S).
- Packaging material may be deformed if package are stored where they are exposed to heat of direct sunlight.
- 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 Re-flowing 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

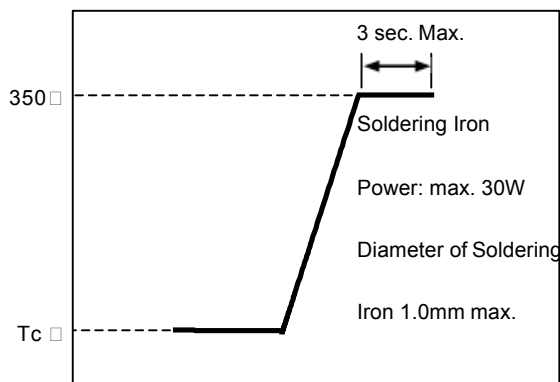
[Note: The reflow profile in the above table is only for qualification and is not meant to specify board assembly profiles. Actual board assembly profiles must be based on the customer's specific board design, solder paste and process, and should not exceed the parameters as the Reflow profile shows.]



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.]



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