

APPROVAL SHEET

WLBD1005 Chip Bead

*Contents in this sheet are subject to change without prior notice.

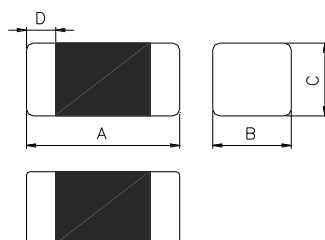
FEATURES

1. Closed magnetic circuit.

APPLICATIONS

1. Noise reduction for general signal and DC line for General electronic circuits. Ex:PCs 、Networking and Consumer electronics.

SHAPE and DIMENSION



Chip Size	
A	1.00±0.10
B	0.50±0.10
C	0.50±0.10
D	0.25±0.10

Units: mm

Ordering Information

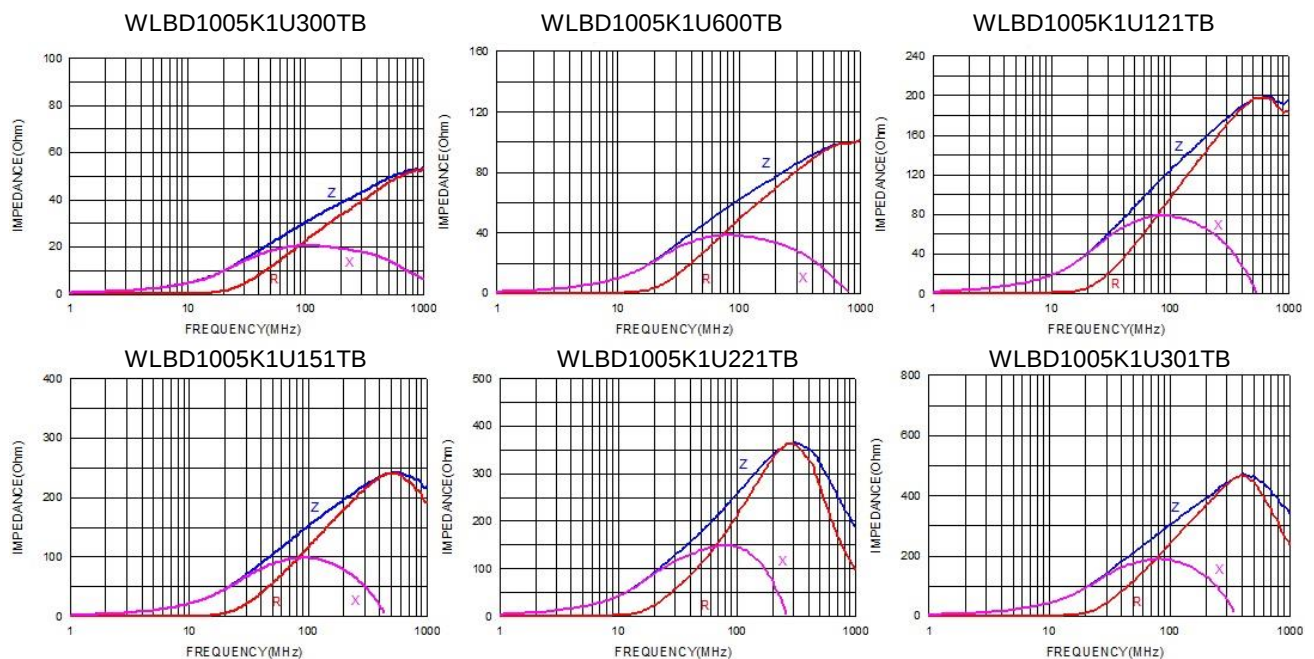
WL	BD	1005	K1	U	300	T	B
Product Code WL: Inductor	Series BD: Chip Bead.	Dimensions 1.0 * 0.5 mm 1005 :EIA 0402	Series extension Refer to characteristic	Tolerance U: ±25%	Value 300 =30 OHM 301 =300 OHM 102 =1000OHM	Packing Code T = 7" Paper Tape	B:STD

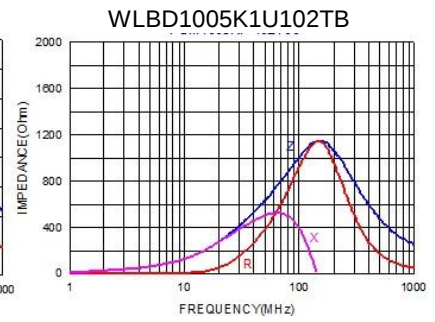
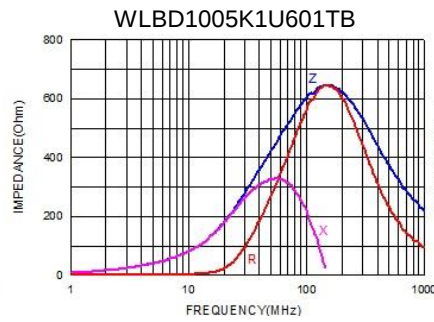
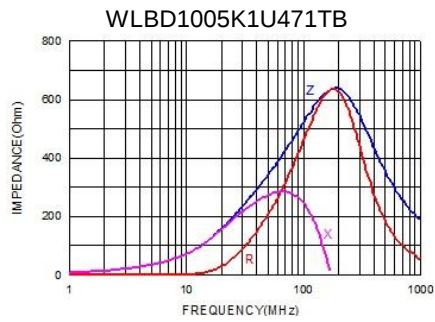
Electrical Characteristics

● WLBD1005 series

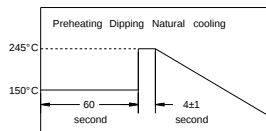
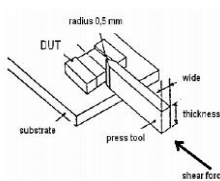
Walsin Part Number	Impedance (Ω)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated Current (mA) max.
WLBD1005K1U300TB	30 $\pm$ 25%	100	0.20	300
WLBD1005K1U600TB	60 $\pm$ 25%	100	0.25	300
WLBD1005K1U121TB	120 $\pm$ 25%	100	0.30	100
WLBD1005K1U151TB	150 $\pm$ 25%	100	0.30	100
WLBD1005K1U221TB	220 $\pm$ 25%	100	0.40	100
WLBD1005K1U301TB	300 $\pm$ 25%	100	0.50	100
WLBD1005K1U471TB	470 $\pm$ 25%	100	0.65	100
WLBD1005K1U601TB	600 $\pm$ 25%	100	0.80	80
WLBD1005K1U102TB	1000 $\pm$ 25%	100	1.20	50

Characteristic Curve





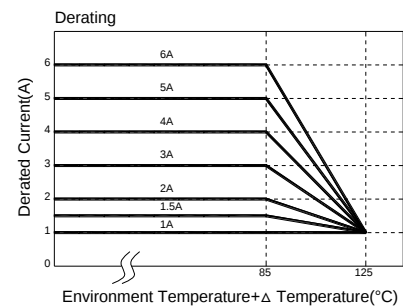
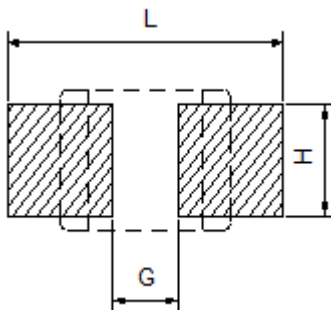
Test condition & Requirements

Item	Performance	Test Condition				
Operating Temperature	-40~+125℃ (Including self-temperature rise)	--				
Transportation Storage Temperature	-40~+125℃ (on board)	For long storage conditions, please see the Application Notice				
Impedance (Z)	Refer to standard electrical characteristics list	Agilent4291				
Inductance (Ls)		Agilent E4991				
Q Factor		Agilent4287				
DC Resistance		Agilent16192				
		Agilent 4338				
Rated Current		DC Power Supply Over Rated Current requirements, there will be some risk				
Temperature Rise Test	Rated Current < 1A ΔT 20℃Max Rated Current ≥ 1A ΔT 40℃Max	1. Applied the allowed DC current. 2. Temperature measured by digital surface thermometer.				
Resistance to Soldering Heat	Appearance : No damage. Impedance : within±15% of initial value Inductance : within±10% of initial value Q : Shall not exceed the specification value. RDC : within ±15% of initial value and shall not exceed the specification value	Number of heat cycles: 1				
		Temperature (°C)	Time (s)	Temperature ramp/immersion and emersion rate		
		260 ±5 (solder temp)	10 ±1	25mm/s ±6 mm/s		
		Depth: completely cover the termination				
Solderability	More than 95% of the terminal electrode should be covered with solder. 	Preheat: 150℃, 60sec. Solder: Sn96.5%-Ag3%-Cu0.5% Solder temperature: 245±5℃ Flux for lead free: Rosin. 9.5% Depth: completely cover the termination. Dip time: 4±1sec.				
Terminal strength	Appearance : No damage. Impedance : within±15% of initial value Inductance : within±10% of initial value Q : Shall not exceed the specification value. RDC : within ±15% of initial value and shall not exceed the specification value 	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Component mounted on a PCB apply a force (>0805:1kg <=0805:0.5kg)to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to shock the component being tested.				
Bending	Appearance : No damage. Impedance : within±10% of initial value Inductance : within±10% of initial value Q : Shall not exceed the specification value. RDC : within ±15% of initial value and shall not exceed the specification value	Shall be mounted on a FR4 substrate of the following dimensions:>=0805:40x100x1.2mm <0805:40x100x0.8mm Bending depth:>=0805:1.2mm <0805:0.8mm Duration of 10 sec for a min.				
Vibration Test	Appearance : No damage. Impedance : within±15% of initial value Inductance : within±10% of initial value Q : Shall not exceed the specification value. RDC : within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Oscillation Frequency: 10 ~2K ~10Hz for 20 minutes Equipment : Vibration checker Total Amplitude:1.52mm±10% Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations) °				
Shock	Appearance : No damage. Impedance : within±10% of initial value Inductance : within±10% of initial value Q : Shall not exceed the specification value. RDC : within ±15% of initial value and shall not exceed the specification value	Test condition:				
		Type	Peak Value (g's)	Normal duration (D) (ms)	Wave form	Velocity change (V)ft/sec
		SMD	50	11	Half-sine	11.3
		Lead	50	11	Half-sine	11.3

Item	Performance	Test Condition
Life test	Appearance: no damage.	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Temperature: 125±2℃ (bead), 105±2℃ (Inductor) Applied current: rated current. Duration: 1000±12hrs. Measured at room temperature after placing for 24±2 hrs.
Load Humidity	Impedance: within±15%of initial value. Inductance: within±10%of initial value. Q : Shall not exceed the specification value. RDC : within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Humidity: 85±2%R.H. Temperature: 85±2℃. Duration: 1000hrs Min. with 100% rated current. Measured at room temperature after placing for 24±2 hrs.
Thermal shock	Appearance: no damage. Impedance: within±15%of initial value. Inductance: within±10%of initial value. Q : Shall not exceed the specification value. RDC : within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Condition for 1 cycle Step1: -40±2℃ 30±5 min. Step2: 25±2℃ ≤0.5min Step3: +125±2℃ 30±5min. (Bead) Step3: +105±2℃ 30±5min. (Inductor) Number of cycles: 500 Measured at room temperature after placing for 24±2 hrs.

****Derating Curve**

For the ferrite chip bead which withstanding current over 1.5A, as the operating temperature over 85℃, the derating current information is necessary to consider with. For the detail derating of current, please refer to the Derated Current vs. Operating Temperature curve.

**Soldering and Mounting**

	L (mm)	G (mm)	H (mm)
WLBD1005	1.50	0.40	0.55

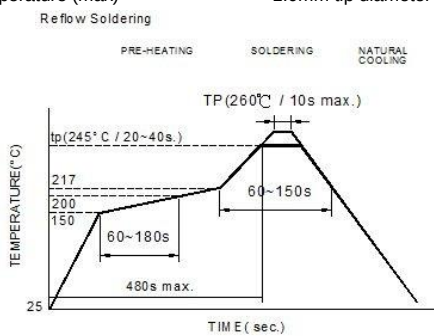
Mildly activated rosin fluxes are preferred. The terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

Note. If wave soldering is used ,there will be some risk.
Re-flow soldering temperatures below 240 degrees, there will be non-wetting risk

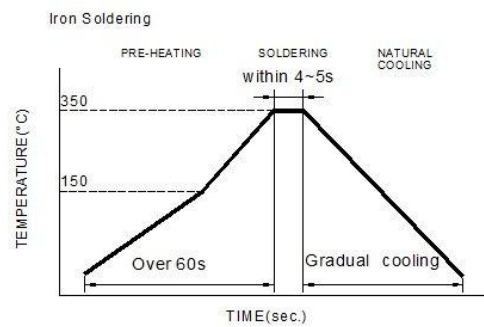
Recommended temperature profiles for lead free re-flow soldering in Figure 1. (Referred to J-STD-020C)

Products attachment with a soldering iron is discouraged due to the inherent process control limitations. If a soldering iron must be employed the following precautions are recommended, for Iron Soldering in Figure 2.

- Preheat circuit and products to 150°C
- 350°C tip temperature (max)
- Never contact the ceramic with the iron tip
- 1.0mm tip diameter (max)
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- Limit soldering time to 4~5sec.

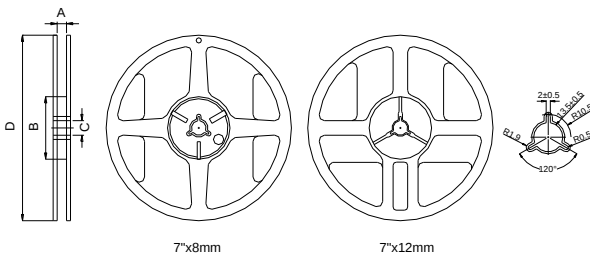


Reflow times: 3 times max.
Fig.1



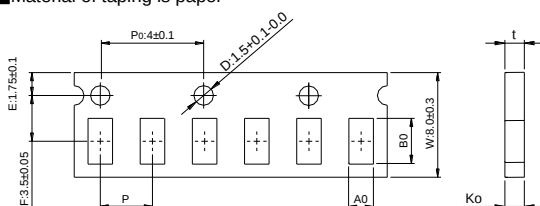
Iron Soldering times : 1 times max.
Fig.2

Reel Dimension

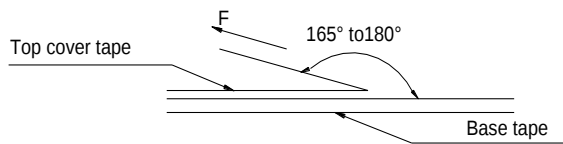


Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x8mm	9.0±0.5	60±2	13.5±0.5	178±2
7"x12mm	13.5±0.5	60±2	13.5±0.5	178±2

■Material of taping is paper



Size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	t(mm)
WLBD1005	1.12±0.03	0.62±0.03	0.60±0.03	2.0±0.05	0.60±0.03



The force for tearing off cover tape is 15 to 60 grams in the arrow direction under the following conditions

Room Temp. (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

Products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.

Quantity per reel : 10K pcs / reel



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