

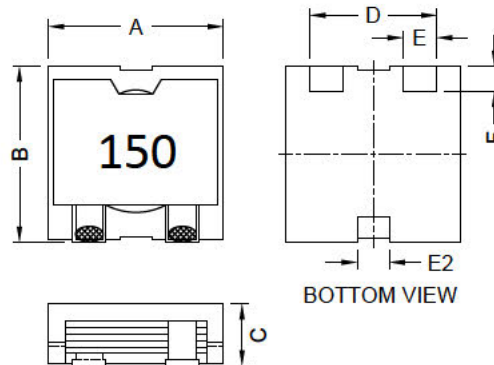
⊕ Feature

- High current saturation.
- Magnetically Shielded Structure.
- Lowest DCR / μH , in this package size.

⊕ Applications

- DC to DC converters.
- Power line filtering.
- DVC/DSC/PDA, LCD display.

⊕ Shapes And Dimensions



Part No.	Dimensions(mm)							
	A	B	C	D	E	E2	F	
Patron: SER1390-153MLD	12.70 ± 0.4	13.00 ± 0.4	9.00 Max	9.50 ± 0.3	2.50 Ref	2.50 Ref	1.80 Ref	

⊕ Electrical Characteristics :

Part No.	Inductance (μH)	Isat		Irms		DCR		Test Frequency
		(A)	(A)	(A)	(A)	(m Ω)	(m Ω)	
Patron: SER1390-153MLD	15 $\pm 20\%$	8.10 Max	8.60 Typ	8.70 Max	9.20 Typ	15 Max	13.7 Typ	100KHz/0.1V

※Isat : DC Saturation Current that will cause initial inductance to drop approximately 30 % max.

※Irms : DC Current that will cause an approximate ΔT of 50°C.

※All test data is referenced to 25°C ambient.

※Test Instrument : L(CH1062/HP4284A) · DCR(TH2511/CH502BC) · Isat & Irms(WK3260B+WK3265B) or equivalent.

⊕ Equivalent Circuit Schematic :



⊕ Material List :

No.	Location	Material
1	Core	Mn-Zn Ferrite Core
2	Wire	G2Polyurethane enameled or Equivalent
3	Hoop	C5191H or Equivalent
4	Glue	Resin

1. Operating temperature -40°C ~ +125°C

2. Storage conditions -40°C ~ +125°C

TEST DATA FOR PREPRODUCTION SAMPLES

Customer: [Redacted] Test Date: 2022/7/27

Part No.: Patron: SER1390-153MLD Sample Quantity: 5 PCS

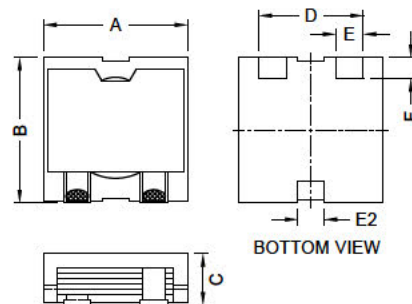
Lot No: [Redacted] Test Temp: 25°C Test Humidity: 62%

MEAS Item	L (0A) (μH)	L (8.6A) (μH)	Rate of decline	DCR (mΩ)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	E2 (mm)	F (mm)
SPEC	15	L(0A)*70%	30%	15.00	12.70	13.00	9.00	9.50	2.50	2.50	1.80
Upper	18	-	30%	15.00	13.10	13.40	9	9.80	-	-	-
Lower	12	8.4	-	-	12.30	12.60	-	9.20	-	-	-
Tolerance	20%	Min	Max	Max	0.40	0.40	Max	0.30	Ref	Ref	Ref
Test Freq.	100KHz/0.1V										
1	14.19	11.69	17.60%	13.85	12.60	12.95	8.65	9.52	2.55	2.51	1.91
2	14.12	11.59	17.90%	13.80	12.62	12.96	8.69	9.51	2.52	2.48	1.85
3	14.05	11.42	18.70%	13.78	12.67	12.98	8.68	9.47	2.54	2.52	1.91
4	14.04	11.44	18.50%	13.75	12.64	13.02	8.72	9.51	2.52	2.51	1.92
5	14.08	11.60	17.60%	13.79	12.69	12.97	8.76	9.52	2.54	2.48	1.89
6											
7											
8											
9											
10											
Average	14.10	11.55	18.06%	13.794	12.64	12.98	8.70	9.51	2.53	2.50	1.90
Max	14.19	11.69	18.70%	13.850	12.69	13.02	8.76	9.52	2.55	2.52	1.92
Min	14.04	11.42	17.60%	13.750	12.60	12.95	8.65	9.47	2.52	2.48	1.85
Range	0.15	0.27	1.10%	0.100	0.09	0.07	0.11	0.05	0.03	0.04	0.07
StDevP	0.05	0.10	0.46%	0.033	0.03	0.02	0.04	0.02	0.01	0.02	0.02

Test Instrument

L: HP4284A or equivalent.
 DCR: CH502BC or equivalent.
 IDC: WK3260B+WK3265B or equivalent.

Configuration



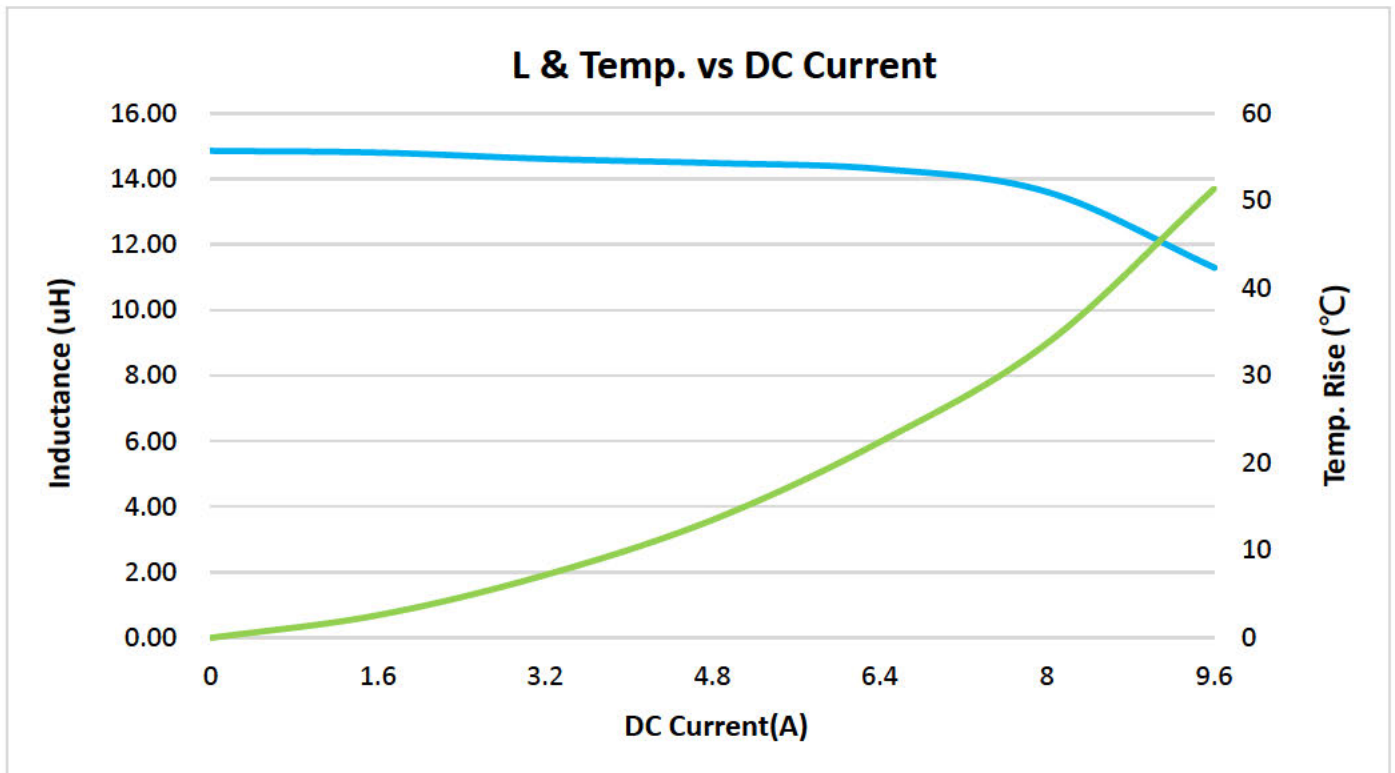
Coil Spec :

⊕ Test Condition

Part No.	Patron: SER1390-153MLD	Test Instruments	WK3260B+WK3265B or equivalent.
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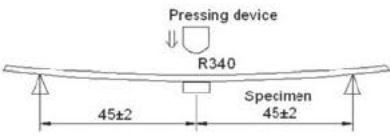
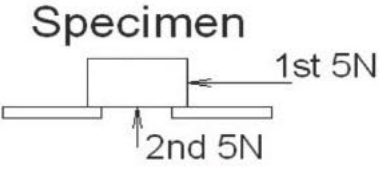
⊕ Test Curve

Current (A)	0	1.6	3.2	4.8	6.4	8	9.6				
L (uH)	14.850	14.800	14.610	14.480	14.300	13.600	11.290				
Temp. (°C)	0	2.6	7.2	13.5	22.4	33.7	51.4				



⊕ Remark

⊕ General Characteristics

Item	Conditions	Specification
Temperature drift	To be measured in the range of -40°C to 125°C.	Inductance temperature coefficient 2000 ppm/°C or less
Storage Temperature	With taping.	- 40°C ~ + 125°C
Operating Temperature	Including self temperature rise.	- 40°C ~ + 125°C
Bending test	<p>Apply pressure gradually in the direction of the arrow at a rate of about 0.5mm/s until bent depth reaches 3mm and hold for 30±5s.</p>  <p>Board: 40*100mm Thickness: 1.0mm</p>	Change from an initial value L : within±10%
Adhesion strength	<p>A static load using a R0.5 pressing tool shall be applied the arrow and to the body of the specimen in the direction of the arrow and shall be hold for 60±5s. Measure after removing pressure.</p> 	Change from an initial value L : within±10%

Vibration	The specimen shall be subjected to a vibration of 1.5mm amplitude, sweep frequency 10~55Hz (10Hz to 55Hz to 10Hz in a period of one minute) for 1 h in each of 3(X,Y,Z) axes.	Change from an initial value L : within±10%
Mechanical shock	Peak acceleration: 981 m/S ² Duration of pulse: 6ms 3 times in each of 3(X,Y,Z)axes. The specimen must be fixed on test board. Three successive shock shall be applied in the perpendicular direction of each surface of the specimen.	Change from an initial value L : within±10%
Free fall test	The specimen must be fixed on test board. It must be equipped with instruments of which weight is 500g. Then it shall be fallen freely from 1m height to rigid wood 3 times in each of three axes.	Change from an initial value L : within±10%
Solder ability	Terminals shall be immersed for 5 to 10 seconds in flux at room temperature. Dip sample into solder bath containing molten solder at 245±5°C for 3±0.5 seconds.	New solder shall cover 90% minimum of the surface immersed.
Dielectric strength	100V DC shall be applied for 60s between the terminal and the core.	Without damage.

Resistance to soldering heat	<p>Test method Reflow soldering method Preheat 150~180°C 90±30s Peak temp 250(+ 5,-0)°C (230°Cmin , 30±10s)</p> <p>The specimen shall be subjected to the reflow process under the above condition 2 times. Test board shall be 0.8mm thick. Base material shall be glass epoxy resin.</p> <p>Measurement The specimen shall be stored at standard atmospheric conditions for 1 h in prior to the measurement.</p>	Change from an initial value L : within±10%
Insulation resistance	100V DC shall be applied between the terminal and the core.	100mΩ or more.
Low temperature	<p>The specimen shall be stored at a temperature of -40±3°C for 500 ±12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement Measurement shall be made within 1h.</p>	Change from an initial value L : within±10%
Dry heat	<p>The specimen shall be stored at a temperature of 125 ± 2°C for 500± 12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.</p>	Change from an initial value L : within±10%

Dump heat	The specimen shall be stored at a temperature of $60 \pm 2^\circ\text{C}$ with relative humidity of 90 ~ 95% for $500 \pm 2\text{h}$. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.	Change from an initial value L : within $\pm 10\%$
Temperature cycle	The specimen shall be subjected to 500 continuous cycles of temperature change of -40°C for 30 min and 125°C for 30 min with the transit period of 2min or less. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.	Change from an initial value L : within $\pm 10\%$

Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions in making measurements and test as follows;

Ambient temperature : 5°C to 35°C , Relative humidity: 45% to 85%, Air pressure: 86kPa to 106kPa

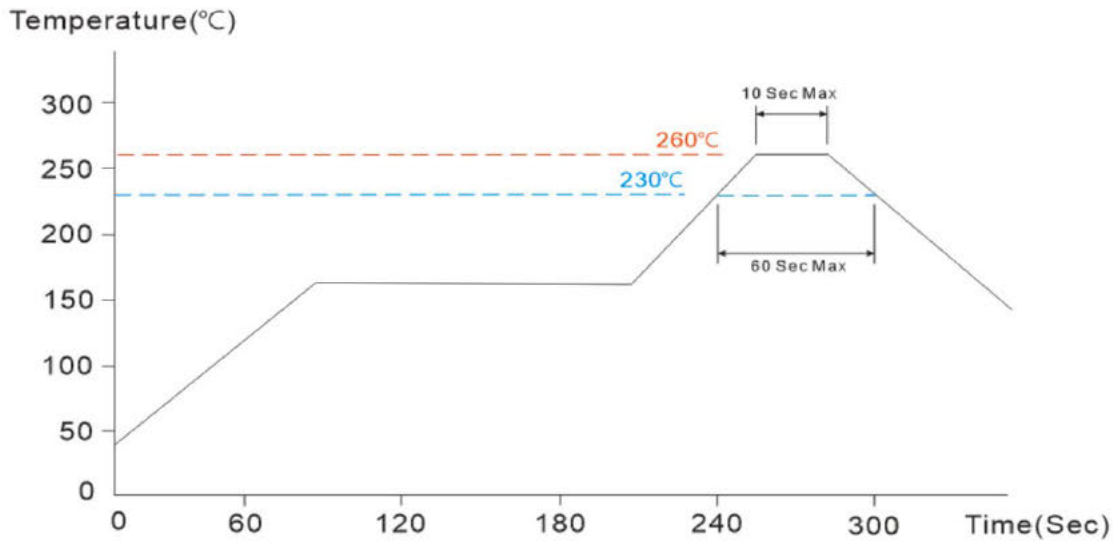
If more strict measurement is required, measurement shall be made within following limits;

Ambient temperature : $20 \pm 2^\circ\text{C}$, Relative humidity: $65 \pm 5\%$, Air pressure: 86kPa to 106kPa

Prohibited Substances

We confirm that our products and our production process accord with "rule of RoHS". All materials used in this product are registered material under the law concerning the examination and Regulation of Manufacture of Chemical Substances.

⊕ Reflow Soldering Heat Endurance

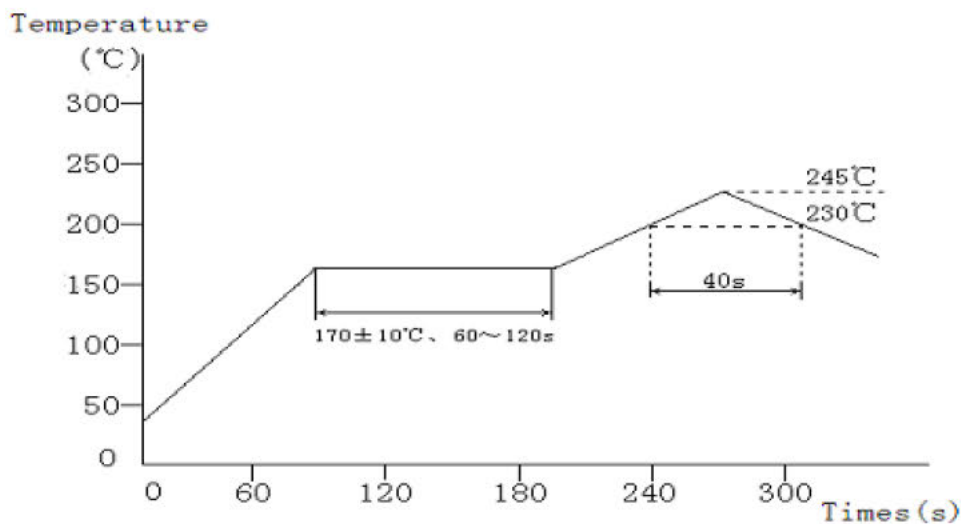


No mechanical and electrical defects are found after testing based on the above profile and keeping under the conditions of room temperature and humidity for 2 hours.

Twice reflow test is acceptable with the test interval remaining 1 hour under the normal conditions.

The reflow test profile may vary with the testing instruments.

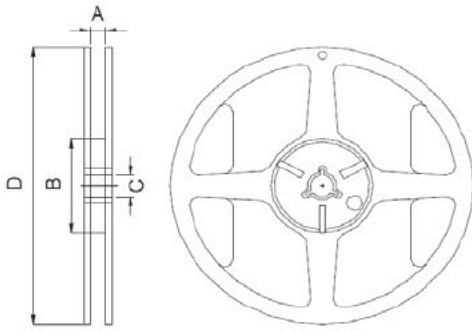
⊕ Recommended Reflow Conditions



The recommended reflow profile is based on the testing instruments used. Solder ability will depend on the testing equipments, reflow conditions, testing method, etc. So it is necessary to make a confirmation of them when the reflow conditions are set up.

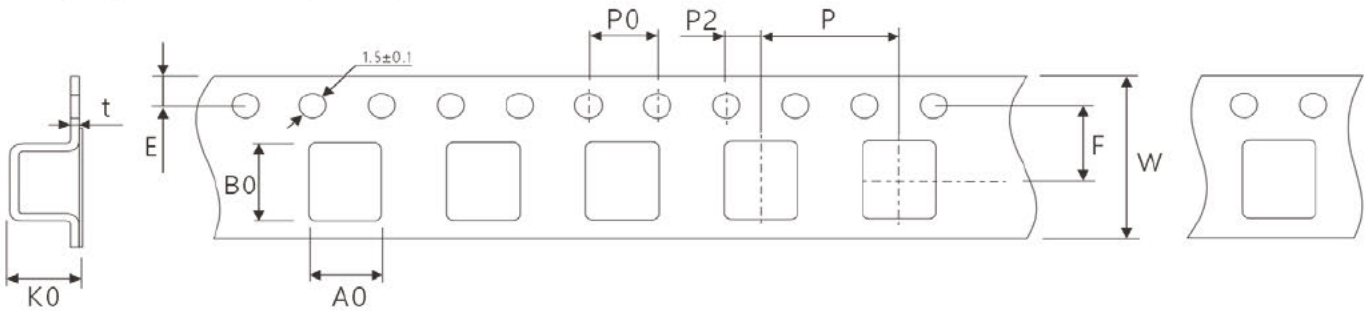
However halogen lamp shall be used, side heat will be beyond range of resistance heat, so we can't recommend it.

⊕ Reel Dimension(m/m)



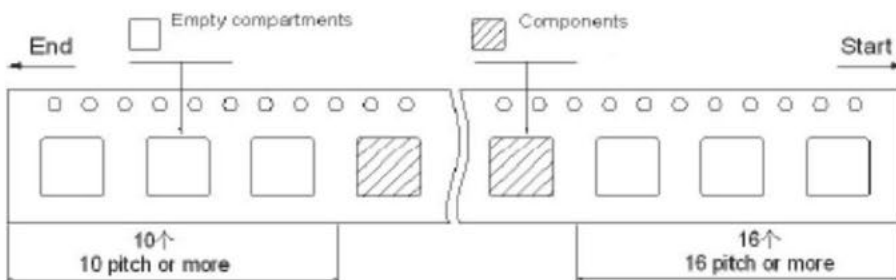
Item	A	B	C	D
13"x24	24.5±1	100±1	13±1	330±1

⊕ Taping Dimension(m/m)

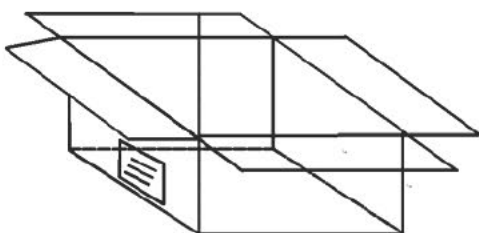


Item	W	Ao	Bo	Ko	E	F	P	P0
24mm	24±0.3	13.0±0.15	13.5±0.15	9.2±0.15	1.75±0.1	11.5±0.1	20.0±0.1	4.0±0.1
	P2	t						
	2.0±0.1	0.4±0.05						

⊕ Taping method



⊕ Packaging Carton



Reel Packing Unit	Inner Box Packing Unit	Carton Packing Unit
300 PCS / Reel	600 PCS / Box	1,200 PCS / Box

