SMT High Curent Flat Wire Inductor \ HCIB_TS Series

.Features

1. Magnetically Shielded construction.
2. High saturation current up to 78A.
3. Extremely low DCR with tolerance ± 10%
4. Operating temperature: –40 °C to +125 °C
5. Recommended solder profile: Reflow

.Product Identification

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1 2 3 4 5

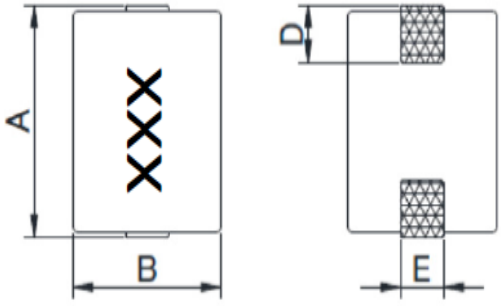
Series name	Dimensions (LxWxH)		Internal code
HCIB	100807	10.3X7.6X6.8mm	TS
	100808	10.3x7.6x7.2mm	

Inductance		Tolerance	
R10	0.1 uH	K	10%
R22	0.22 uH	M	20%

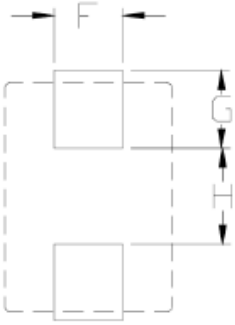
.Rating

1. Operating temperature -40℃ ~ +125℃
2. Storage conditions -40℃ ~ +125℃

.Shape and Dimension



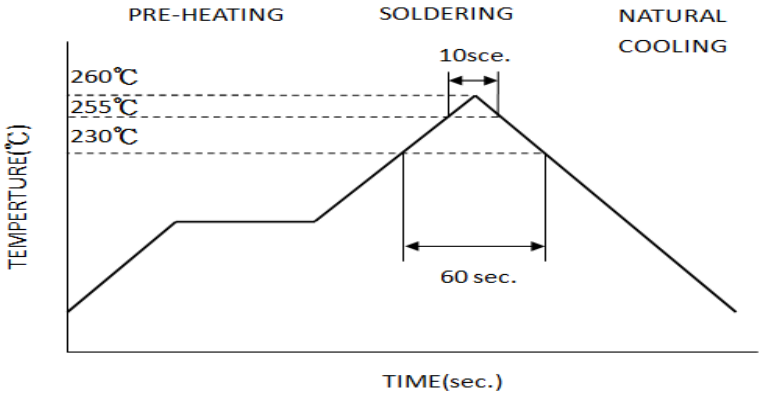
.Land Patterns for Reflow Soldering



Dimensions in mm

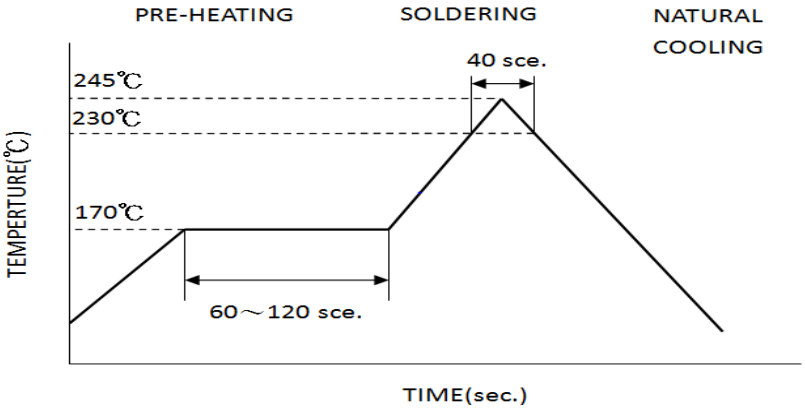
Part No.	A	B	C	D	E	G	H	I
HCIB100807	10.2±0.30	7.7±0.30	6.8 ±0.30	2.54 Typ.	2.24 Typ.	2.5 Ref.	3.3 Ref.	4.7 Ref.
HCIB100808	10.2±0.30	7.7±0.30	7.2 ±0.30	2.54 Typ.	2.24 Typ.	2.5 Ref.	3.3 Ref.	4.7 Ref.

. 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.

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.Electrical Characteristics HCIB100807TS Type

Part No.	Inductance	Irms	Isat@25℃	DCR@25℃	Test Frequency
	(nH)	(A)	(A)	(mΩ)	
HCIB100807TS-R15M	150±20%	56.0	70.0	0.29±10%	100 KHZ / 1.0 V
HCIB100807TS-R18M	180±20%	56.0	55.0	0.29±10%	100 KHZ / 1.0 V
HCIB100807TS-R22M	220±20%	56.0	50.0	0.29±10%	100 KHZ / 1.0 V
HCIB100807TS-R30M	300±20%	56.0	32.0	0.29±10%	100 KHZ / 1.0 V
HCIB100807TS-R40M	400±20%	56.0	26.0	0.29±10%	100 KHZ / 1.0 V

.Electrical Characteristics HCIB100808TS Type

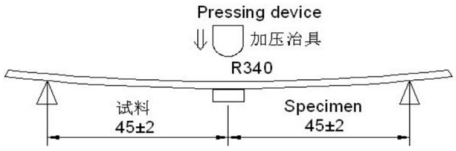
Part No.	Inductance	Irms	Isat@25℃	DCR@25℃	Test Frequency
	(nH)	(A)	(A)	(mΩ)	
HCIB100808TS-R12M	120±20%	56.0	78.0	0.29±10%	100 KHZ / 1.0 V
HICB100808TS-R15M	150±20%	56.0	72.0	0.29±10%	100 KHZ / 1.0 V
HICB100808TS-R17M	170±20%	56.0	62.0	0.29±10%	100 KHZ / 1.0 V
HICB100808TS-R20M	200±20%	56.0	48.0	0.29±10%	100 KHZ / 1.0 V
HICB100808TS-R23M	230±20%	56.0	43.0	0.29±10%	100 KHZ / 1.0 V
HICB100808TS-R27M	270±20%	56.0	37.0	0.29±10%	100 KHZ / 1.0 V
HICB100808TS-R30M	300±20%	56.0	32.0	0.29±10%	100 KHZ / 1.0 V

1. Isat：DC Saturation Current that will cause initial inductance to drop approximately 20 % max.
2. Irms：DC Current that will cause an approximate △T of 40℃.
3. All test data is referenced to 25℃ ambient.
4. Test Instrument：L (CH3302), RDC(TH2511), Isat & Irms (WK3260+WK3265B)
5. The Part temperature (ambient + △T) should not exceed 125℃ under worst case operating conditions.
6. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions a effect the part temperature. Part temperature should be verified in the end application.

Molding Commom Mold Power Inductor / HCIB_TS Series

.Reliability and Test Conditions(可靠性測試條件)

General Characteristics

Item	Specification	Conditions
Temperature drift	Inductance temperature coeffic 2000 ppm/℃ or less	To be measured in the range of -40℃~ +125℃.
Bending test	Change from an intial value L : within±10%	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. 
Adhesion strength	Change from an intial value L : within±10%	A static load using a R 0.5 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.
Vibration	Change from an initial value L : within±10%	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.
Mechanical shock	Change from an initial value L : within±10%	Peak acceleration: 981 m/S2 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.
Free fall test	Change from an initial value L : within±10%	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.
Solder ability	New solder shall cover 90% minimum of the surface immersed.	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℃ for 3±0.5 seconds.
Dielectric strength	Without damage.	100V DC shall be applied for 60s between the terminal and the core.

Item	Specification	Conditions
Resistance to soldering heat	Change from an initial value L : within±10%	Test method Reflow soldering method Preheat 150~180℃ 90±30s Peak temp 250(+ 5,-0)℃ (230℃min , 30±10s) 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. Measurement The specimen shall be stored at standard atmospheric conditions for 1 h in prior to the measurement.
Insulation resistance	100mΩ or more.	100V DC shall be applied between the terminal and the core.
Low temperature	Change from an initial value L : within±10%	The specimen shall be stored at a temperature of -40±3℃ for 500 ±12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.
Dry heat	Change from an initial value L : within±10%	The specimen shall be stored at a temperature of -125±3℃ for 500 ±12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.
Dump heat	Change from an initial value L : within±10%	The specimen shall be stored at a temperature of 60±2℃ with relative humidity of 90 ~ 95% for 500 ± 2h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within
Temperature cycle	Change from an initial value L : within±10%	The specimen shall be subjected to 20 continuous cycles of temperature change of -40℃ for 30 min and 125℃ for 30 min with the transit period of 2min or less. Then it shall be stabilized under standard atmospheric conditions for 1h before measurement. Measurement shall be made within 1h.

Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions in making measurements and test as follows; Ambient temperature : 5℃ to 35℃, 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±2℃, Relative humidity: 65±5%, Air pressure: 86kPa to 106kPa

Prohibited Subtances

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 Regula of Manufacture of Chemical Substances.

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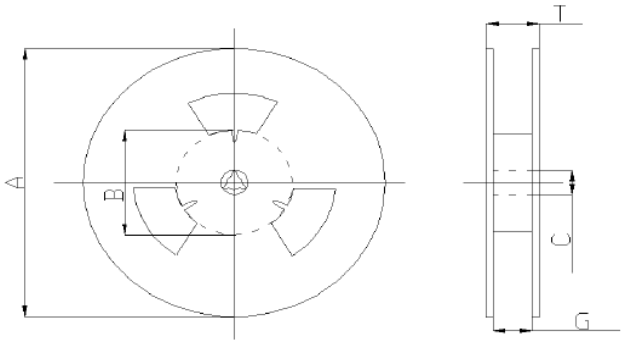
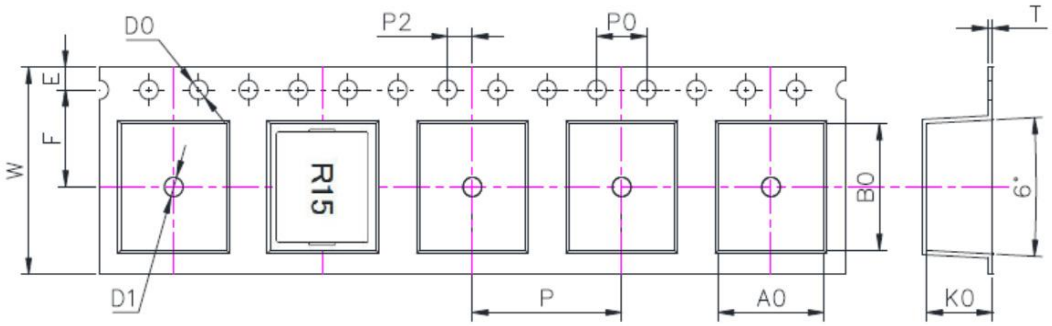
.Packing Specifications

1. Reel Dimension(m/m)



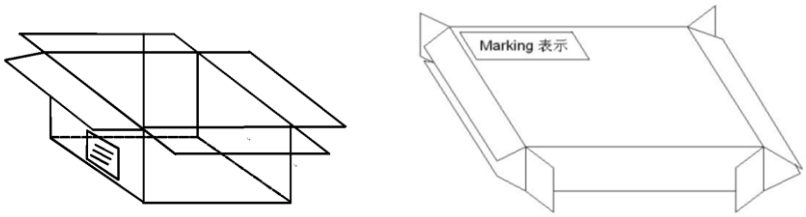
Item	A(mm)	B(mm)	C(mm)	G(mm)	T(mm)	Applicable Models
13'x24	330	100	13	24.5	28.5	HCIB100807, HCIB100808

2.Taping Dimension(m/m)



Item	W	A0	B0	K0	P	P0	P2	F	T
24mm	24±0.3	8.0±0.1	10.7±0.1	7.6±0.1	12±0.1	4.0±0.1	2.0±0.1	11.5±0.15	0.5±0.05

3. Packing Carton



Reel Packing Unit	Inner Box Pakcing Unit	Carton Packing Unit
700 PCS / Reel	1400 PCS / Box	7000 PCS / Box

The force to tear off cover tape: 10~130g.f