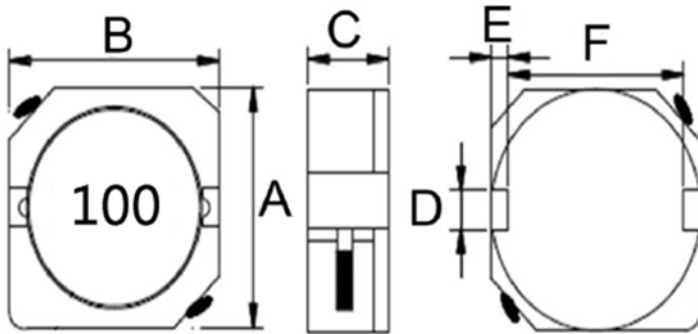


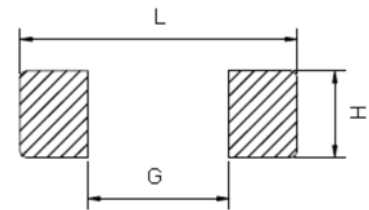
FEATRLRES

- Low profile very effective in space-conscious applications.
- Low resistance and high energy storage.
- 100% Lead(Pb) & Halogen-Free and RoHS compliant.

CONFIGLRATIONS & DIMENSIONS (unit in mm)



Recommended Land pattern



Size	A	B	C	D	E	F
HSBR105R	10.2±0.3	10.0±0.3	5.0MAX	3.0±0.1	1.2±0.15	7.7±0.3

L	G	H
10.5	7.3	3.2

ELECTRICAL CHARACTERISTICS

Part Number	Inductance (uH)	Test Frequency (Hz)	DCR (Ω) max.	I sat (A) max.	I rms (A) typ.
HSBR105R-R80Y	0.8±30%	0.1V/100K	4.3	9.50	13.50
HSBR105R-1R5Y	1.5±30%	0.1V/100K	5.8	8.30	10.50
HSBR105R-2R2Y	2.2±30%	0.1V/100K	7.2	7.50	9.25
HSBR105R-3R3Y	3.3±30%	0.1V/100K	10.4	6.50	7.80
HSBR105R-4R7Y	4.7±30%	0.1V/100K	12.3	6.10	6.40
HSBR105R-6R8Y	6.8±30%	0.1V/100K	18.0	5.40	5.40
HSBR105R-8R2Y	8.2±30%	0.1V/100K	20.0	5.00	4.85
HSBR105R-100M	10±20%	0.1V/100K	26.0	4.50	4.45
HSBR105R-120M	12±20%	0.1V/100K	33.0	3.80	4.00
HSBR105R-150M	15±20%	0.1V/100K	41.0	3.40	3.60
HSBR105R-180M	18±20%	0.1V/100K	46.0	3.10	3.20
HSBR105R-220M	22±20%	0.1V/100K	61.0	2.90	2.95
HSBR105R-270M	27±20%	0.1V/100K	69.0	2.60	2.70
HSBR105R-330M	33±20%	0.1V/100K	84.0	2.50	2.40
HSBR105R-390M	39±20%	0.1V/100K	106.0	2.25	2.30
HSBR105R-470M	47±20%	0.1V/100K	130.0	2.00	2.00

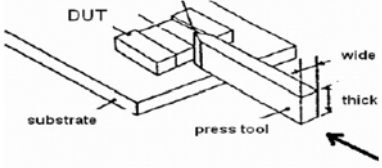
HSBR105R-560M	56±20%	0.1V/100K	149.0	1.90	1.90
HSBR105R-680M	68±20%	0.1V/100K	201.0	1.60	1.65
HSBR105R-820M	82±20%	0.1V/100K	227.0	1.45	1.50
HSBR105R-101M	100±20%	0.1V/100K	253.0	1.35	1.35
HSBR105R-121M	120±20%	0.1V/100K	303.0	1.18	1.28
HSBR105R-151M	150±20%	0.1V/100K	370.0	1.10	1.12
HSBR105R-181M	180±20%	0.1V/100K	419.0	1.00	1.04
HSBR105R-221M	220±20%	0.1V/100K	500.0	0.94	0.94
HSBR105R-271M	270±20%	0.1V/100K	672.0	0.80	0.84
HSBR105R-331M	330±20%	0.1V/100K	812.0	0.73	0.75
HSBR105R-391M	390±20%	0.1V/100K	953.0	0.70	0.70
HSBR105R-471M	470±20%	0.1V/100K	1289.0	0.54	0.60
HSBR105R-561M	560±20%	0.1V/100K	1430.0	0.52	0.54
HSBR105R-681M	680±20%	0.1V/100K	1599.0	0.51	0.52
HSBR105R-821M	820±20%	0.1V/100K	1768.0	0.48	0.50
HSBR105R-102M	1000±20%	0.1V/100K	1989.0	0.42	0.48

Note:

Based on inductance change ($\Delta L/L0 : \leq -35\%$) @ ambient temp. 25°C Based on temperature rise ($\Delta T : 40^\circ\text{C}$ typ.)

Reliability and Test Condition

Item	Performance	Test Condition
Operating temperature	-40~+125°C (Including self - temperature rise)	
Storage temperature	1. -10~+40°C, 50~60%RH (Product with taping) 2. -40~+125°C (on board)	
Electrical Performance Test		
Inductance	Refer to standard electrical characteristics list.	HP4284A, CH11025, CH3302, CH1320, CH1320S LCR Meter.
DCR		CH16502, Agilent33420A Micro-Ohm Meter.
Saturation Current (Isat)	Approximately $\Delta L30\%$	Saturation DC Current (Isat) will cause L0 to drop $\Delta L(\%)$
Heat Rated Current (Irms)	Approximately $\Delta T40^\circ\text{C}$	Heat Rated Current (Irms) will cause the coil temperature rise $\Delta T(^\circ\text{C})$. 1. Applied the allowed DC current 2. Temperature measured by digital surface thermometer
Reliability Test		
Life Test	Appearance : No damage.	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Temperature : 125±2°C (Inductor) Applied current : rated current Duration : 1000±12hrs Measured at room temperature after placing for 24±2 hrs
Load Humidity	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°C ±2°C Duration : 1000hrs Min. with 100% rated current Measured at room temperature after placing for 24±2 hrs

Moisture Resistance		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles 1. Baked at 50°C for 25hrs, measured at room temperature after placing for 4 hrs. 2. Raise temperature to 65±2°C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs. 3. Raise temperature to 65±2°C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs,keep at 25°C for 2 hrs then keep at -10°C for 3 hrs 4. Keep at 25°C 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs.															
Thermal shock		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles Condition for 1 cycle Step1 : -40±2°C 30±5min Step2 : 25±2°C ≤0.5min Step3 : 125±2°C 30±5min Number of cycles : 500 Measured at room temperature after placing for 24±2 hrs															
Vibration		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).															
Bending		Shall be mounted on a FR4 substrate of the following dimensions: >=0805 inch(2012mm):40x100x1.2mm <0805 inch(2012mm):40x100x0.8mm Bending depth: >=0805 inch(2012mm):1.2mm <0805 inch(2012mm):0.8mm duration of 10 sec.															
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	<table border="1"> <thead> <tr> <th>Type</th> <th>Peak value (g's)</th> <th>Normal duration (D) (ms)</th> <th>Wave form</th> <th>Velocity change (Vi)ft/sec</th> </tr> </thead> <tbody> <tr> <td>SMD</td> <td>50</td> <td>11</td> <td>Half-sine</td> <td>11.3</td> </tr> <tr> <td>Lead</td> <td>50</td> <td>11</td> <td>Half-sine</td> <td>11.3</td> </tr> </tbody> </table>	Type	Peak value (g's)	Normal duration (D) (ms)	Wave form	Velocity change (Vi)ft/sec	SMD	50	11	Half-sine	11.3	Lead	50	11	Half-sine	11.3
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SMD	50	11	Half-sine	11.3													
Lead	50	11	Half-sine	11.3													
Solder ability	More than 95% of the terminal electrode should be covered with solder.	Preheat: 150°C,60sec.. Solder: Sn96.5% Ag3% Cu0.5% Temperature: 245±5°C Flux for lead free: Rosin. 9.5% Dip time: 4±1sec Depth: completely cover the termination															
Resistance to Soldering Heat		Depth: completely cover the termination <table border="1"> <thead> <tr> <th>Temperature(°C)</th> <th>Time(s)</th> <th>Temperature ramp/immersion and emersion rate</th> <th>Number of heat cycles</th> </tr> </thead> <tbody> <tr> <td>260 ±5 (solder temp)</td> <td>10 ±1</td> <td>25mm/s ±6 mm/s</td> <td>1</td> </tr> </tbody> </table>	Temperature(°C)	Time(s)	Temperature ramp/immersion and emersion rate	Number of heat cycles	260 ±5 (solder temp)	10 ±1	25mm/s ±6 mm/s	1							
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260 ±5 (solder temp)	10 ±1	25mm/s ±6 mm/s	1														
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 e	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles With the component mounted on a PCB with the device to be tested, 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 apply a shock to the component being tested. 															

Note : When there are questions concerning measurement result : measurement shall be made after 48 ± 2 hours of recovery under the standard condition.