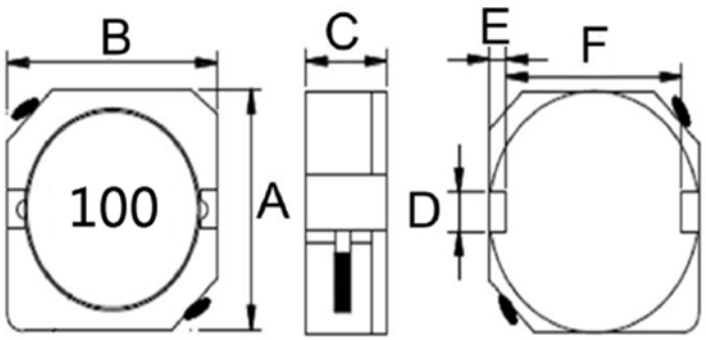
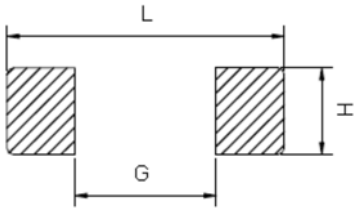
FEATRLRES

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

CONFIGRLRATIONS & DIMENSIONS (unit in mm)



Recommended Land pattern



Size	A	B	C	D	E	F
HSBR103R	10.2±0.3	10.0±0.3	3.0 max.	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.
HSBR103R-R80Y	0.8±30%	0.1V/100K	0.0057	11.2	8.30
HSBR103R-1R5Y	1.5±30%	0.1V/100K	0.011	8.00	5.80
HSBR103R-2R2Y	2.2±30%	0.1V/100K	0.0169	6.70	5.10
HSBR103R-3R3Y	3.3±30%	0.1V/100K	0.021	5.56	4.70
HSBR103R-4R7Y	4.7±30%	0.1V/100K	0.030	4.65	4.00
HSBR103R-6R8Y	6.8±30%	0.1V/100K	0.035	3.84	3.60
HSBR103R-8R2Y	8.2±30%	0.1V/100K	0.050	3.54	3.00
HSBR103R-100M	10±20%	0.1V/100K	0.059	3.18	2.80
HSBR103R-150M	15±20%	0.1V/100K	0.091	2.60	2.05
HSBR103R-220M	22±20%	0.1V/100K	0.143	2.16	1.60
HSBR103R-330M	33±20%	0.1V/100K	0.202	1.74	1.35
HSBR103R-470M	47±20%	0.1V/100K	0.299	1.43	1.20
HSBR103R-560M	56±20%	0.1V/100K	0.325	1.36	1.15
HSBR103R-680M	68±20%	0.1V/100K	0.429	1.22	0.95
HSBR103R-820M	82±20%	0.1V/100K	0.494	1.14	0.80
HSBR103R-101M	100±20%	0.1V/100K	0.683	1.02	0.70

HSBR103R-121M	120±20%	0.1V/100K	0.754	0.89	0.65
HSBR103R-151M	150±20%	0.1V/100K	0.871	0.84	0.51

Note:

Based on inductance change （△L/L0：≦-35%）@ ambient temp. 25℃ Based on temperature rise （△T：40℃ typ.）

Reliability and Test Condition

Item	Performance	Test Condition
Operating temperature	-40~+125℃ (Including self - temperature rise)	
Storage temperature	1. -10~+40℃,50~60%RH (Product with taping) 2. -40~+125℃(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△L30%	Saturation DC Current (Isat) will cause L0 to drop △L(%)
Heat Rated Current (Irms)	Approximately △T40℃	Heat Rated Current (Irms) will cause the coil temperature rise △T(℃). 1.Applied the allowed DC current 2.Temperature measured by digital surface thermometer
Reliability Test		
Life Test	Appearance：No damage. 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-020DClassification Reflow Profiles) Temperature： 125±2℃(Inductor) Applied current：rated current Duration：1000±12hrs Measured at room temperature after placing for 24±2 hrs
Load Humidity		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification 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
Moisture Resistance		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles 1. Baked at50℃ for 25hrs, measured at room temperature after placing for 4 hrs. 2. Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs. 3. Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs,keep at 25℃ for 2 hrs then keep at -10℃ for 3 hrs 4. Keep at 25℃ 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℃ 30±5min Step2：25±2℃ ≦0.5min Step3：125±2℃ 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	Appearance：No damage.	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.

<table>
<tr>
<td>Shock</td>
<td>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</td>
<td>
<table>
<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>
<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>
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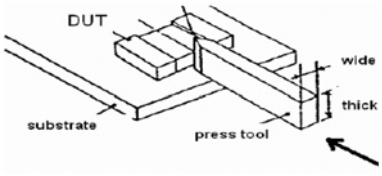
<tr>
<td>Solder ability</td>
<td>More than 95% of the terminal electrode should be covered with solder。</td>
<td>Preheat: 150℃,60sec.。
Solder: Sn96.5% Ag3% Cu0.5%
Temperature: 245±5℃。
Flux for lead free: Rosin. 9.5%。
Dip time: 4±1sec。
Depth: completely cover the termination</td>
</tr>
<tr>
<td>Resistance to Soldering Heat</td>
<td rowspan="2">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</td>
<td>Depth: completely cover the termination
<table>
<tr><th>Temperature(°C)</th><th>Time(s)</th><th>Temperature ramp/immersion and emersion rate</th><th>Number of heat cycles</th></tr>
<tr><td>260 ±5 (solder temp)</td><td>10 ±1</td><td>25mm/s ±6 mm/s</td><td>1</td></tr>
</table>
</td>
</tr>
<tr>
<td>Terminal Strength</td>
<td>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.
 

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