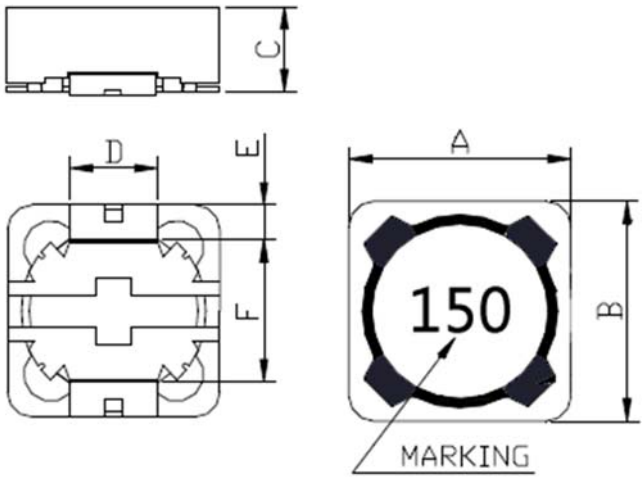
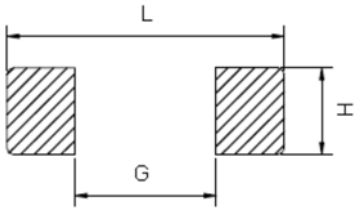
FEATRLRES

- Magnetic Shielded surface mount inductor with high current rating.
- Low resistance to keep power loss minimum.
- 100% Lead(Pb) & Halogen-Free and RoHS compliant.

CONFIGRLRATIONS & DIMENSIONS (unit in mm)



Recommended Land pattern



Size	A	B	C	D	E	F
HSB127	12.8 max.	12.8 max.	8.5max.	5.0 ref.	2.2 ref.	7.6 ref.

L	G	H
12.6	7.0	5.4

ELECTRICAL CHARACTERISTICS

Part Number	Inductance(uH)	Tolerance (%)	Test Frequency(Hz)	DCR (Ω) max.	IDC (A) max.
HSB127-1R2Y	1.2	± 30%	1V/100K	0.0070	9.80
HSB127-2R2Y	2.2	±30%	1V/100K	0.0115	8.00
HSB127-2R4Y	2.4	± 30%	1V/100K	0.0115	8.00
HSB127-3R3Y	3.3	± 30%	1V/100K	0.0135	12.00
HSB127-3R5Y	3.5	± 30%	1V/100K	0.0135	7.50
HSB127-4R7Y	4.7	± 30%	1V/100K	0.0158	6.80
HSB127-6R1Y	6.1	± 30%	1V/100K	0.0176	6.60
HSB127-6R8Y	6.8	±30%	1V/100K	0.0185	6.20
HSB127-7R6Y	7.6	± 30%	1V/100K	0.0200	5.90
HSB127-100M	10	± 20%	1V/1K	0.0216	5.40
HSB127-120M	12	± 20%	1V/1K	0.0243	4.90
HSB127-150M	15	± 20%	1V/1K	0.0270	4.50

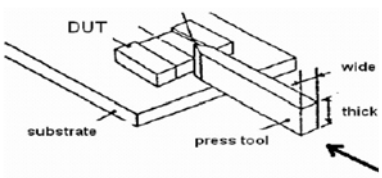
HSB127-180M	18	± 20%	1V/1K	0.0392	3.90
HSB127-220M	22	± 20%	1V/1K	0.0432	3.60
HSB127-270M	27	± 20%	1V/1K	0.0459	3.40
HSB127-330M	33	± 20%	1V/1K	0.0648	3.00
HSB127-390M	39	± 20%	1V/1K	0.0729	2.75
HSB127-470M	47	± 20%	1V/1K	0.1000	2.50
HSB127-560M	56	± 20%	1V/1K	0.1100	2.35
HSB127-680M	68	± 20%	1V/1K	0.1400	2.10
HSB127-820M	82	± 20%	1V/1K	0.1600	1.95
HSB127-101M	100	± 20%	1V/1K	0.2200	1.70
HSB127-121M	120	± 20%	1V/1K	0.2500	1.60
HSB127-151M	150	± 20%	1V/1K	0.2800	1.42
HSB127-181M	180	± 20%	1V/1K	0.3500	1.30
HSB127-221M	220	± 20%	1V/1K	0.3900	1.16
HSB127-271M	270	± 20%	1V/1K	0.5600	1.06
HSB127-331M	330	± 20%	1V/1K	0.6400	0.95
HSB127-391M	390	± 20%	1V/1K	0.7000	0.88
HSB127-471M	470	± 20%	1V/1K	0.9800	0.79
HSB127-561M	560	± 20%	1V/1K	1.0700	0.73
HSB127-681M	680	± 20%	1V/1K	1.4600	0.67
HSB127-821M	820	± 20%	1V/1K	1.6400	0.60
HSB127-102M	1000	± 20%	1V/1K	1.8200	0.55

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		

<table>
<tr><td>Life Test</td><td rowspan="5">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</td><td>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</td></tr>
<tr><td>Load Humidity</td><td>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</td></tr>
<tr><td>Moisture Resistance</td><td>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.</td></tr>
<tr><td>Thermal
shock</td><td>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</td></tr>
<tr><td>Vibration</td><td>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)。</td></tr>
<tr><td>Bending</td><td rowspan="2"></td><td>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.</td></tr>
<tr><td>Shock</td><td>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>
<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>
</table></td></tr>
<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.
 
</td></tr>
</table>

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