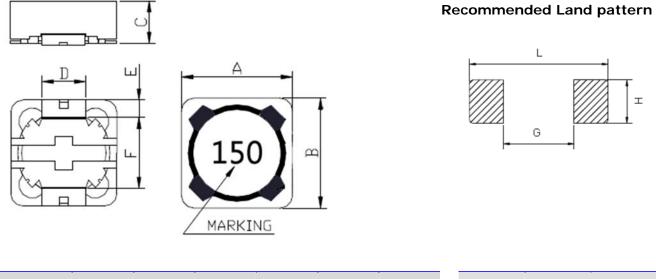


FEATRLRES

- 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)



Size	Α	В	С	D	Е	F		L	G	Н	
HSB125	12.8 max.	12.8 max.	5.0 max.	5.0 ref.	2.2 ref.	7.6 ref.	1	2.6	7.0	5.4	

ELECTRICAL CHARACTERISTICS

Part Number			Test	DCR	IDC
Part Number	Inductance(uH)	Tolerance (%)	Frequency(Hz)	(Ω) max.	(A) max.
HSB125-3R9Y	3.9	± 30%	1V/100K	0.015	6.50
HSB125-4R7Y	4.7	± 30%	1V/100K	0.018	5.70
HSB125-6R8Y	6.8	± 30%	1V/100K	0.023	4.90
HSB125-8R2Y	8.2	± 30%	1V/100K	0.026	4.60
HSB125-100M	10	± 20%	1V/100K	0.028	4.50
HSB125-120M	12	± 20%	1V/100K	0.038	4.00
HSB125-150M	15	± 20%	1V/100K	0.052	3.20
HSB125-180M	18	± 20%	1V/100K	0.060	3.10
HSB125-220M	22	± 20%	1V/100K	0.070	2.90
HSB125-270M	27	± 20%	1V/100K	0.080	2.80
HSB125-820M	82	± 20%	1V/100K	0.260	1.30
HSB125-101M	100	± 20%	1V/100K	0.308	1.20

HSIA TECHNOLOGY CO.LTD. TEL:886-2-2999-6691 FAX: 2999-6692 Website:www.hsia.com.tw



HSB125-121M	120	± 20%	1V/100K	0.380	1.10
HSB125-151M	150	± 20%	1V/100K	0.530	0.95
HSB125-181M	180	± 20%	1V/100K	0.620	0.85
HSB125-221M	220	± 20%	1V/100K	0.700	0.80
HSB125-271M	270	± 20%	1V/100K	0.870	0.60
HSB125-331M	330	± 20%	1V/100K	0.990	0.50

Note:

Based on inductance change (\triangle L/L0 : \leq -35%) @ ambient temp. 25°C Based on temperature rise (\triangle T : 40°C typ.)

Reliability and Test Condition

Item	Performance	Test Condition
Operating temperature	-40~+125°C (Including self - temperature rise)	
Storage temperature	110~+40℃,50~60%RH (Product with taping) 240~+125℃(on board)	
Electrical Performance Test	•	· · ·
Inductance		HP4284A,CH11025,CH3302,CH1320,CH1320S LCR Meter.
DCR	Refer to standard electrical characteristics list.	CH16502, Agilent33420A Micro-Ohm Meter.
Saturation Current (Isat)	Approximately∆L30%	Saturation DC Current (Isat) will cause L0 to drop \triangle L(%)
Heat Rated Current (Irms)	Approximately △T40℃	Heat Rated Current (Irms) will cause the coil temperature rise $\triangle T(C)$. 1.Applied the allowed DC current 2.Temperature measured by digital surface thermometer
Reliability Test		
Life Test		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification 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		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification 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	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 1. Baked at50°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. 4. Keep at 25°C for 2 hrs then keep at -10°C for 3 hrs 4. Keep at 25°C 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



Variation Operation Operation Operation Bending Appearance : Middrange. Total Anplitude: 1:20mm12 (Minutes, 12 org/ds each of 3 org/minutes) Bending Appearance : Middrange. Shall be mounded on a FP4 subtrate for the form (Optice and Control on a FP4 subtrate of the following dimensions: >e0005 include: 212mm; 12.2mm (2005) Shock Description Description Shall be mounded on a FP4 subtrate of the following dimensions: >e0005 include: 212mm; 12.2mm (2005) Shock D: Shall on conceld the specification value. D: Shall be mounded on a FP4 subtrate of the following dimensions: >e0005 include: 212mm; 12.2mm (2005) Shock D: Shorth or exceed the specification value. D: Shorth or exceed the specification value. Solder ability More than 95% of Initial value and sholl not exceed the specification value. Prevent: 1807; 60xec. Solder ability Appearance : No damage. Impedance: Shorth or shor			1								
Bending Total Amplaule: 1.52mm:10% Bending Appearance : No damage. Shock Shock in the specification value. Shock 0: Shall no mounted on a FR4 substrate of the following dimensions: ~406 sinc(2012mm)/40x100x12mm Shock in the specification value. Shock 0: Shall no mounted on a FR4 substrate of the following dimensions: ~406 sinc(2012mm)/40x100x12mm Shock in the specification value. Shock 0: Shall no mounted on a FR4 substrate of the following dimensions: ~406 sinc(2012mm)/40x100x12mm Shock in the specification value. Shock 0: Shall no taxeed the specification value. Shock in the specification value. Shock in the specification value. Solder ability More than 95% of the terminal electrode should be covered with solder. Preheat: 150°; 60sec Solder: Sho6 5% Ag3% Cu0.5% Solder ability More than 95% of the terminal electrode should be covered with solder. Depth: completely cover the termination Depth: completely cover the termination Depth: completely cover the termination Depth: completely cover the termination Temperature : No damage. Impedance : whin: 15% of initial value and shall not cover the specification value. Temperature (ror) Time(s) Time(s) for more the sold of a dave of the soc sold of	Vibration										
Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations). Bending Shall be mounted on a FR4 substrate of the following dimensions: >=0080 mid(2012mm):40x100x1.2mm Genomes): >=0080 mid(2012mm):40x100x1.2mm Genomes): >=0080 mid(2012mm):40x100x1.2mm Genomes): >=0080 mid(2012mm):40x100x1.2mm Genomes): >=0080 mid(2012mm):12mm Genomes): >=0080 mid	VIDIAUON										
Bending orientations). Bending Appearance : No damage. Impedance : withint 15% of initial value not withint 15% of initial value 2. Shall not exceed the specification value. RDC : withint 15% of initial value acceed the specification value. Type Veak Normal (Vi)/tisee SMD 0 11 Half-sine 11.3 Solder ability More than 95% of the terminal electrode should be covered with solder. Preheat: 150°, 60sec., Solder ability Resistance to Soldering Heat Appearance : No damage. Impedance : withint 15% of initial value acceed the specification value Preheat: 150°, 60sec., Solder completely cover the termination Depth: completely cover the tet							s 12 ovolo	s each of 3			
Bending Shall be monited on a FP4 substrate of the torus = 0405 incl2012mm)40x100x1.2mm Bending Appearance : No damage. Impedance : within:15% of initial value Inductance : within:15% of initial value exceed the specification value Impedance : within:15% of initial value Inductance : within:15% of the terminal electrode should be covered with solder. Impedance : within:15% of the terminal electrode should be covered with solder. Preheat: 150°C.05% Temperature: 2455°C + Flux for leaders = 05% - Dip time: 41sec - Depth: completely cover the termination Resistance to Soldering Heat Appearance : No damage. Impedance : within: 15% of initial value into sceed the specification value Preheat: 150°C.05% Temperature: 2455°C + Flux for lead feer. Terminal Strength Appearance : No damage. Impedance : within: 15% of initial value into sceed the specification value. RDC : within: 15% of initial value into sceed the specification value. RDC : within: 15% of initial value into sceed the specification value. Preconditioning: Run through Reflow Profiles and emersion rate heat cycles applied gradually as not to apply a shock to the component b tested. Terminal Strength C: Shall not exceed the specification value. RDC : within: 15% of initial value into sceed the specification value. DUT UT UT UT UT UT				0			s, iz cycles	5 CaUI 01 5			
Bending Iolowing dimensions: >>0808 incl(2012mm)40x100x1.2mm Shock Appearance : No damage. Impedance : within:15% of initial value Inductors : within:16% of initial value Inductors : within:16% of initial value Impedance: within:16% of initial value O : Shall not exceed the specification value. RDC : within 15% of initial value Impedance: within:16% of initial value Solder ability More than 95% of the terminal electrode should be covered with solder. Preheat: 150°:.60sec. Solder ability More than 95% of the terminal electrode should be covered with solder. Preheat: 150°:.60sec. Resistance to Soldering Heat Appearance: No damage. Impedance: within:15% of initial value Resistance to Soldering Heat Appearance: No damage. Impedance: within:15% of inital value Resistance to Soldering Heat Appearance: No damage. Impedance: within:15% of inital value Strength Appearance: No damage. Preconting Run through IR reflow for 2 times (IPC/JEDEC J.S. 2002) Terminal Shall not exceed the specification value. Preconting Run through IR reflow for 2 times (IPC/JEDEC J.S. 2002) Solder ability Appearance: No damage. Impedance: within: 15% of inital value Preconting Run through IR reflow for 2 times (IPC/JEDEC J.S. 2002) Resistance to Soldering Heat </td <td></td> <td></td> <td colspan="8">,</td>			,								
Impedance : within:15% of initial value Peak Normal Wave Velocity Shock Q: Shall not exceed the specification value. RDC : within:15% of initial value and shall not exceed the specification value. Shod 11 Half-sine 11.3 Solder ability More than 95% of the terminal electrode should be covered with solder. Preheat: 150°C, 60sec Solder: Shod 55% A33% Cu0.5%. Solder ability More than 95% of the terminal electrode should be covered with solder. Preheat: 150°C, 60sec Solder: Shod 55% A33% Cu0.5%. Resistance to Soldering Heat Preheat: 150°C, 60sec Solder: Shod 55% A33% Cu0.5%. Temperature: 2455°C : Text for lead free: Rosin. 9.5% · Dip time: 4:1sec - Depth: completely cover the termination Resistance to Soldering Heat Preheat: 150°C, 60sec Solder: Shod 55% A33% Cu0.5%. Temperature: 2455°C : Text for lead free: Rosin. 9.5% · Dip time: 4:1sec - Depth: completely cover the termination Resistance to Soldering Heat Preconditioning: Run through IR reflow for 2 times (IPC/JEDEC J-S 020Classification Reflow Profiles Number of and emersion rate heat cycles apply a force(>0095:1Kg, .<=0805:0.5Kg) to be tested a device b be tested.	Bending		following dimensions: >=0805 inch(2012mm):40x100x1.2mm <0805 inch(2012mm):40x100x0.8mm Bending depth: >=0805 inch(2012mm):1.2mm <0805 inch(2012mm):0.8mm								
Rep: within: 15% of initial value and shall not exceed the specification value Solder ability Solder ability 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 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 Presentation: Completely cover the termination Perfect: completely cover the termination Perfect: completely cover the termination Presentation: Reflow Profiles Number of and emersion rate heat cycles 280,25% (Solder termination) Presentation: Reflow Profiles Preconditioning: Run through IR reflow for 2 times, (IPC/JEDEC J-S 2020Classification Reflow Profiles Terminal Appearance : No damage Immedance : within: 15% of initial value and shall not exceed the specification value. Preconditioning: Run through IR reflow for 06 + 1 seconds. Also the force she applied for 60 + 1 seconds. Also the force she be tested. This force shall be applied as not to apply a shock to the component b tested. Terminal Strength C) : while: 15% of initial value and shall not exceed the specification value. Put the completely cover the termination tested.	Shock	Impedance : within±15% of initial value Inductance : within±10% of initial value	т		value	duration (D)		change]		
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: Solde: Sh96, 433% Cu0.5% Temperature: 244:55 °· Flux for lead free. Rosin. 9.5% • Dip time: 41:41 sec. • Depth: completely cover the termination Depth: completely cover the termination Depth: completely cover the termination Depth: completely cover the termination Ze0 a5 10 ±1 25mm/s ±6 mm/s 1 Yereonetilioning: Run through IR reflew for 2 times. (IPC/JEDEC J-S 0200Classification Reflow Profiles With the device to be tested. Solder temp) 10 ±1 25mm/s ±6 mm/s 1 Terminal Impedance : within±15% of initial value Inductance : within±15% of initial value. Impedance is within±15% of initial value. Preconditioning: Run through IR reflew for 2 times.(IPC/JEDEC J-S 0200Classification Reflew Profiles) Solder temp) 10 ±1 25mm/s ±6 mm/s 1 Terminal Strength Q : Shall not exceed the specification value. Preconditioning: Run through IR reflew for 2 times.(IPC/JEDEC J-S 0200Classification Reflew Frofiles) Solder temp) 10 ±1 25mm/s ±6 mm/s 1 Terminal Strength Q : Shall not exceed the specification value. Preconditioning: Run through IR reflew for 2 times.(IPC/JEDEC J-S 0200Classification	Shock		s	SMD	50	11	Half-sine	11.3			
Solder ability More than 95% of the terminal electrode should be covered with solder. Solder: Sn96.5% Ag3% Cu0.5% Temperature: 2455° · · · 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 Image: Signal of the specification rate in the specification value. Temperature: 2455° · · · · Elux for lead free: Rosin, 9.5% · Dip time: 4±1sec · Depth: completely cover the termination Resistance to Soldering Heat Image: Signal of the specification rate in the specification rate is the specification rate in the specification rate is the		exceed the specification value	L	Lead	50	11	Half-sine	11.3	1		
Resistance to Soldering Heat Imperature (*C) Time(s) Temperature (*C) Temperate (*T) Temperature (*C) Temperature (*C) Te	Solder ability		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								
Image: Strength 10 ±1 25mm/s ±0 mm/s 1 Image: Strength Image: Strength 1 1 Image: Strength Image: Strength Image: Strength 1 Image: Strength Image: Strength Image: Strength Image: Strength Image: Strength	Resistance to Soldering Heat			Temperature °C) Time(s) Temperature ramp/immersion and emersion rate Number of heat cycles							
Terminal Appearance : No damage. Impedance : within±15% of initial value Inductance : within±10% of initial value Strength Q : Shall not exceed the specification value. RDC : within ±15% of initial value e DUT wide thick						10 ±1 25m	m/s ±6 mm	n/s 1			
		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	020 Wit app test be	0DClass th the ciply a for ited. This applied ited.	sification f componen rcce(>0805 is force sh d gradually	Reflow Profiles t mounted on S:14g, <=0800 hall be applied f y as not to ap	a PCB with i:0.5kg)to th or 60 +1 ser ply a shock	the device to b the side of a device conds. Also the first to the component wide	e tested, ice being orce shall		

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