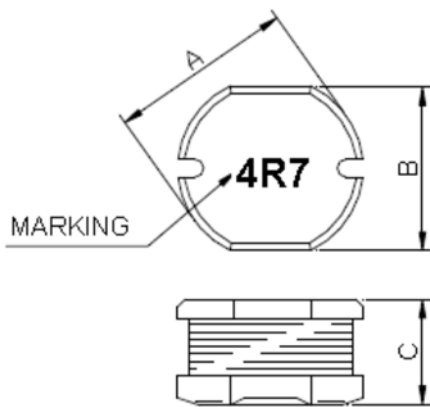


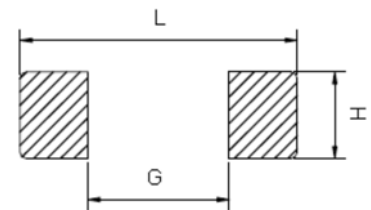
FEATRLRES

- Excellent solderability and high heat resistance.
- Excellent terminal strength construction.
- Packed in embossed carrier tape and can be used by automatic mounting machine.
- 100% Lead(Pb) & Halogen-Free and RoHS compliant.

CONFIGLRATIONS & DIMENSIONS (unit in mm)



Recommended Land pattern



Size	A	B	C	L	G	H
HSDR53	5.80±0.3	5.20±0.3	3.00±0.3	6.0	1.7	5.5

ELECTRICAL CHARACTERISTICS

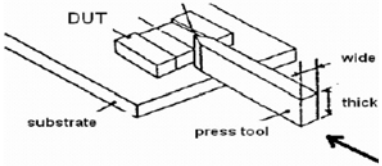
Part Number	Inductance (uH)	Tolerance (%)	Test Frequency (Hz)	DCR (Ω) max.	IDC (A) max.
HSDR53-1R5M	1.50±20%	1V/100K	37	4.10	4.10
HSDR53-1R8M	1.80±20%	1V/7.96M	50	4.00	2.80
HSDR53-4R7M	4.70±20%	1V/7.96M	130	1.30	1.30
HSDR53-6R8M	6.80±20%	1V/7.96M	71.2	1.87	1.87
HSDR53-8R2M	8.20±20%	1V/7.96M	100	2.00	2.00
HSDR53-100M	10.0±20%	1V/2.52M	200	1.90	1.90
HSDR53-330M	33.0±20%	1V/2.52M	450	1.40	1.40

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℃ (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 $\Delta L30\%$	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. Inductance : within $\pm 10\%$ of initial value Q : Shall not exceed the specification value. RDC : within $\pm 15\%$ 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 $\pm 2^{\circ}\text{C}$ (Inductor) Applied current : rated current Duration : 1000 ± 12 hrs 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 $\pm 2^{\circ}\text{C}$ 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 at50 $^{\circ}\text{C}$ for 25hrs, measured at room temperature after placing for 4 hrs. 2. Raise temperature to 65 $\pm 2^{\circ}\text{C}$ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25 $^{\circ}\text{C}$ in 2.5hrs. 3. Raise temperature to 65 $\pm 2^{\circ}\text{C}$ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25 $^{\circ}\text{C}$ in 2.5hrs,keep at 25 $^{\circ}\text{C}$ for 2 hrs then keep at -10 $^{\circ}\text{C}$ for 3 hrs 4. Keep at 25 $^{\circ}\text{C}$ 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 $\pm 2^{\circ}\text{C}$ 30 ± 5 min Step2 : 25 $\pm 2^{\circ}\text{C}$ ≤ 0.5 min Step3 : 125 $\pm 2^{\circ}\text{C}$ 30 ± 5 min 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 $\pm 10\%$ 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 $\pm 15\%$ of initial value Inductance : within $\pm 10\%$ of initial value Q : Shall not exceed the specification value. RDC : within $\pm 15\%$ of initial value and shall not exceed the specification value
Solder ability	More than 95% of the terminal electrode should be covered with solder.	Preheat: 150 $^{\circ}\text{C}$,60sec. Solder: Sn96.5% Ag3% Cu0.5% Temperature: 245 $\pm 5^{\circ}\text{C}$ ◦ Flux for lead free: Rosin. 9.5% ◦ Dip time: 4 ± 1 sec ◦

		Depth: completely cover the termination								
Resistance to Soldering Heat		Depth: completely cover the termination <table border="1" data-bbox="1023 277 1453 394"> <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
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							
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-020Classification 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.