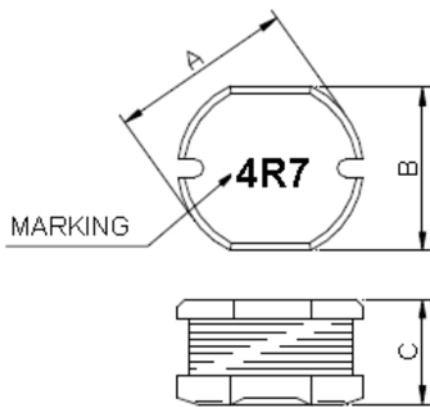


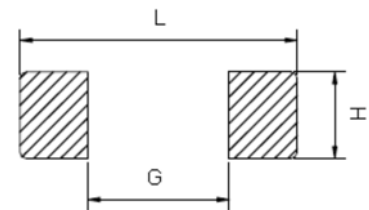
FEATRLRES

- 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
HSDR54	5.80±0.3	5.20±0.3	4.50±0.3	6.0	1.7	5.5

ELECTRICAL CHARACTERISTICS

Part Number	Inductance (uH)	Tolerance (%)	Test Frequency (Hz)	DCR (Ω) max.	IDC (A) max.
HSDR54-1R0M	1.0	± 20%	1V/7.96M	0.018	3.50
HSDR54-1R4M	1.4	± 20%	1V/7.96M	0.020	3.50
HSDR54-1R8M	1.8	± 20%	1V/7.96M	0.025	3.00
HSDR54-2R2M	2.2	± 20%	1V/7.96M	0.030	2.80
HSDR54-2R7M	2.7	± 20%	1V/7.96M	0.035	2.60
HSDR54-3R3M	3.3	± 20%	1V/7.96M	0.040	2.50
HSDR54-3R9M	3.9	± 20%	1V/7.96M	0.050	2.30
HSDR54-4R7M	4.7	± 20%	1V/7.96M	0.060	2.60
HSDR54-5R6M	5.6	± 20%	1V/7.96M	0.070	2.40
HSDR54-6R8M	6.8	± 20%	1V/7.96M	0.080	2.20
HSDR54-8R2M	8.2	± 20%	1V/7.96M	0.080	2.00
HSDR54-100M	10	± 20%	1V/2.52M	0.090	1.80

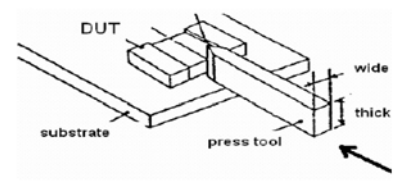
HSDR54-120M	12	± 20%	1V/2.52M	0.100	1.60
HSDR54-150M	15	± 20%	1V/2.52M	0.120	1.50
HSDR54-180M	18	± 20%	1V/2.52M	0.150	1.40
HSDR54-220M	22	± 20%	1V/2.52M	0.180	1.30
HSDR54-270M	27	± 20%	1V/2.52M	0.220	1.20
HSDR54-330M	33	± 20%	1V/2.52M	0.260	1.00
HSDR54-390M	39	± 20%	1V/2.52M	0.300	0.90
HSDR54-470M	47	± 20%	1V/2.52M	0.350	0.85
HSDR54-560M	56	± 20%	1V/2.52M	0.400	0.80
HSDR54-680M	68	± 20%	1V/2.52M	0.450	0.70
HSDR54-820M	82	± 20%	1V/2.52M	0.500	0.70
HSDR54-101M	100	± 20%	1V/1K	0.700	0.60
HSDR54-121M	120	± 20%	1V/1K	0.750	0.60
HSDR54-151M	150	± 20%	1V/1K	0.900	0.55
HSDR54-181M	180	± 20%	1V/1K	1.100	0.50
HSDR54-221M	220	± 20%	1V/1K	1.200	0.40
HSDR54-271M	270	± 20%	1V/1K	1.500	0.25
HSDR54-331M	330	± 20%	1V/1K	3.000	0.22
HSDR54-391M	390	± 20%	1V/1K	3.500	0.20
HSDR54-471M	470	± 20%	1V/1K	4.000	0.19
HSDR54-561M	560	± 20%	1V/1K	4.000	0.18
HSDR54-681M	680	± 20%	1V/1K	4.500	0.15

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-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	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 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 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,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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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 Depth: completely cover the termination															
Resistance to Soldering Heat		<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.