

## Filter Inductors, High Current, Axial Leded



### ELECTRICAL SPECIFICATIONS

**Inductance:** Measured at 1.0 V with zero DC current

**Incremental Current:** The typical current at which the inductance will be decreased by 5 % from its initial zero DC value

**Dielectric Rating:** 2500 V<sub>RMS</sub> between winding and outer circumference to within 0.250" [6.35 mm] of the insulating sleeve edge

**Operating Temperature:** - 55 °C to + 125 °C (no load),  
- 55 °C to + 85 °C (at full rated current)

**Current Rating:** Maximum continuous operating current (DC or RMS) based on a 40 °C temperature rise

### FEATURES

- Printed circuit mounting (axial leads)
- Protected by polyolefin tubing
- High saturation bobbin used allowing high inductance with low DC resistance
- Pre-tinned leads
- High resistivity core offers very high parallel resistance, resulting in maximum coil performance
- 20 sleeveless models available at reduced cost
- Compliant to RoHS Directive 2002/95/EC



**RoHS**  
COMPLIANT

### MECHANICAL SPECIFICATIONS

**Wire:** Solid soft copper

**Terminals:** 20 AWG tinned copper leads

**Core Material:** Ferrite

**Coating:** Polyolefin tubing - flame retardant UL type VW-1 per MIL-I-23053/5, class 3 requirements

### DIMENSIONS in inches [millimeters]



| MODEL | A (MAX.)      | B (MAX.)      |
|-------|---------------|---------------|
| IHD-1 | 0.270 [6.85]  | 0.700 [17.78] |
| IHD-3 | 0.460 [11.68] | 0.900 [22.86] |

### STANDARD ELECTRICAL SPECIFICATIONS

| MODEL | IND. AT 1 kHz (μH) | TOL. (%) | DCR MAX. (Ω) | RATED DC CURRENT MAX. (A) | INCREMENTAL CURRENT APPROX. (A) |
|-------|--------------------|----------|--------------|---------------------------|---------------------------------|
| IHD-1 | 1                  | ± 15 %   | 0.009        | 5.3                       | 7.00                            |
| IHD-1 | 1.2                | ± 15 %   | 0.010        | 5.0                       | 6.40                            |
| IHD-1 | 1.5                | ± 15 %   | 0.011        | 4.8                       | 5.70                            |
| IHD-1 | 1.8                | ± 15 %   | 0.012        | 4.6                       | 5.20                            |
| IHD-1 | 2.2                | ± 15 %   | 0.013        | 4.4                       | 4.70                            |
| IHD-1 | 2.7                | ± 15 %   | 0.014        | 4.2                       | 4.30                            |
| IHD-1 | 3.3                | ± 15 %   | 0.016        | 4.0                       | 3.90                            |
| IHD-1 | 3.9                | ± 15 %   | 0.017        | 3.8                       | 3.60                            |
| IHD-1 | 4.7                | ± 15 %   | 0.022        | 3.4                       | 3.30                            |
| IHD-1 | 5.6                | ± 15 %   | 0.024        | 3.2                       | 3.00                            |
| IHD-1 | 6.8                | ± 15 %   | 0.026        | 3.1                       | 2.70                            |
| IHD-1 | 8.2                | ± 15 %   | 0.028        | 3.0                       | 2.50                            |
| IHD-1 | 10                 | ± 15 %   | 0.033        | 2.8                       | 2.30                            |
| IHD-1 | 12                 | ± 15 %   | 0.037        | 2.6                       | 2.10                            |
| IHD-1 | 15                 | ± 15 %   | 0.040        | 2.5                       | 1.90                            |
| IHD-1 | 18                 | ± 15 %   | 0.044        | 2.4                       | 1.70                            |
| IHD-1 | 22                 | ± 15 %   | 0.050        | 2.2                       | 1.50                            |
| IHD-1 | 27                 | ± 15 %   | 0.070        | 1.9                       | 1.40                            |
| IHD-1 | 33                 | ± 15 %   | 0.075        | 1.8                       | 1.30                            |
| IHD-1 | 39                 | ± 15 %   | 0.084        | 1.7                       | 1.20                            |
| IHD-1 | 47                 | ± 15 %   | 0.104        | 1.6                       | 1.10                            |
| IHD-1 | 56                 | ± 15 %   | 0.130        | 1.4                       | 0.97                            |
| IHD-1 | 68                 | ± 15 %   | 0.145        | 1.3                       | 0.88                            |
| IHD-1 | 82                 | ± 15 %   | 0.152        | 1.3                       | 0.80                            |
| IHD-1 | 100                | ± 15 %   | 0.208        | 1.1                       | 0.73                            |
| IHD-1 | 120                | ± 15 %   | 0.283        | 0.94                      | 0.66                            |
| IHD-1 | 150                | ± 15 %   | 0.330        | 0.87                      | 0.60                            |
| IHD-1 | 180                | ± 15 %   | 0.362        | 0.83                      | 0.54                            |
| IHD-1 | 220                | ± 15 %   | 0.505        | 0.70                      | 0.49                            |
| IHD-1 | 270                | ± 15 %   | 0.557        | 0.67                      | 0.45                            |
| IHD-1 | 330                | ± 15 %   | 0.650        | 0.62                      | 0.40                            |
| IHD-1 | 390                | ± 15 %   | 0.770        | 0.57                      | 0.37                            |
| IHD-1 | 470                | ± 15 %   | 1.030        | 0.49                      | 0.34                            |
| IHD-1 | 560                | ± 15 %   | 1.140        | 0.47                      | 0.31                            |

| STANDARD ELECTRICAL SPECIFICATIONS |                             |             |                          |                              |                                    |
|------------------------------------|-----------------------------|-------------|--------------------------|------------------------------|------------------------------------|
| MODEL                              | IND. AT 1 kHz<br>( $\mu$ H) | TOL.<br>(%) | DCR MAX.<br>( $\Omega$ ) | RATED DC CURRENT MAX.<br>(A) | INCREMENTAL CURRENT APPROX.<br>(A) |
| IHD-1                              | 680                         | $\pm 15\%$  | 1.500                    | 0.41                         | 0.28                               |
| IHD-1                              | 820                         | $\pm 15\%$  | 1.980                    | 0.36                         | 0.26                               |
| IHD-1                              | 1000                        | $\pm 15\%$  | 2.300                    | 0.33                         | 0.23                               |
| IHD-1                              | 1200                        | $\pm 15\%$  | 2.550                    | 0.31                         | 0.21                               |
| IHD-1                              | 1500                        | $\pm 15\%$  | 3.000                    | 0.29                         | 0.19                               |
| IHD-1                              | 1800                        | $\pm 15\%$  | 4.000                    | 0.25                         | 0.18                               |
| IHD-1                              | 2200                        | $\pm 15\%$  | 4.400                    | 0.24                         | 0.16                               |
| IHD-1                              | 2700                        | $\pm 15\%$  | 5.800                    | 0.21                         | 0.14                               |
| IHD-1                              | 3300                        | $\pm 15\%$  | 6.560                    | 0.20                         | 0.13                               |
| IHD-1                              | 3900                        | $\pm 15\%$  | 8.630                    | 0.17                         | 0.12                               |
| IHD-1                              | 4700                        | $\pm 15\%$  | 10.100                   | 0.16                         | 0.11                               |
| IHD-1                              | 5600                        | $\pm 15\%$  | 11.200                   | 0.15                         | 0.10                               |
| IHD-1                              | 6800                        | $\pm 15\%$  | 15.000                   | 0.13                         | 0.09                               |
| IHD-1                              | 8200                        | $\pm 15\%$  | 20.800                   | 0.11                         | 0.08                               |
| IHD-1                              | 10 000                      | $\pm 15\%$  | 23.400                   | 0.10                         | 0.08                               |
| IHD-1                              | 12 000                      | $\pm 15\%$  | 26.000                   | 0.10                         | 0.07                               |
| IHD-1                              | 15 000                      | $\pm 15\%$  | 36.000                   | 0.08                         | 0.06                               |
| IHD-1                              | 18 000                      | $\pm 15\%$  | 40.000                   | 0.08                         | 0.06                               |
| IHD-3                              | 3.9                         | $\pm 15\%$  | 0.007                    | 4.0                          | 8.20                               |
| IHD-3                              | 4.7                         | $\pm 15\%$  | 0.008                    | 4.0                          | 7.50                               |
| IHD-3                              | 5.6                         | $\pm 15\%$  | 0.011                    | 4.0                          | 6.90                               |
| IHD-3                              | 6.8                         | $\pm 15\%$  | 0.011                    | 4.0                          | 6.30                               |
| IHD-3                              | 8.2                         | $\pm 15\%$  | 0.013                    | 4.0                          | 5.70                               |
| IHD-3                              | 10                          | $\pm 15\%$  | 0.016                    | 4.0                          | 5.20                               |
| IHD-3                              | 12                          | $\pm 15\%$  | 0.018                    | 4.0                          | 4.70                               |
| IHD-3                              | 15                          | $\pm 15\%$  | 0.020                    | 4.0                          | 4.30                               |
| IHD-3                              | 18                          | $\pm 15\%$  | 0.022                    | 4.0                          | 3.90                               |
| IHD-3                              | 22                          | $\pm 15\%$  | 0.024                    | 4.0                          | 3.50                               |
| IHD-3                              | 27                          | $\pm 15\%$  | 0.025                    | 4.0                          | 3.20                               |
| IHD-3                              | 33                          | $\pm 15\%$  | 0.028                    | 4.0                          | 2.90                               |
| IHD-3                              | 39                          | $\pm 15\%$  | 0.031                    | 4.0                          | 2.70                               |
| IHD-3                              | 47                          | $\pm 15\%$  | 0.034                    | 4.0                          | 2.50                               |
| IHD-3                              | 56                          | $\pm 15\%$  | 0.043                    | 3.2                          | 2.30                               |
| IHD-3                              | 68                          | $\pm 15\%$  | 0.059                    | 2.5                          | 2.10                               |
| IHD-3                              | 82                          | $\pm 15\%$  | 0.066                    | 2.0                          | 1.90                               |
| IHD-3                              | 100                         | $\pm 15\%$  | 0.084                    | 1.6                          | 1.70                               |
| IHD-3                              | 120                         | $\pm 15\%$  | 0.113                    | 1.6                          | 1.60                               |
| IHD-3                              | 150                         | $\pm 15\%$  | 0.129                    | 1.6                          | 1.40                               |
| IHD-3                              | 180                         | $\pm 15\%$  | 0.150                    | 1.6                          | 1.30                               |
| IHD-3                              | 220                         | $\pm 15\%$  | 0.162                    | 1.6                          | 1.20                               |
| IHD-3                              | 270                         | $\pm 15\%$  | 0.226                    | 1.6                          | 1.10                               |
| IHD-3                              | 330                         | $\pm 15\%$  | 0.257                    | 1.6                          | 0.95                               |
| IHD-3                              | 390                         | $\pm 15\%$  | 0.288                    | 1.6                          | 0.88                               |
| IHD-3                              | 470                         | $\pm 15\%$  | 0.393                    | 1.2                          | 0.80                               |
| IHD-3                              | 560                         | $\pm 15\%$  | 0.504                    | 1.0                          | 0.74                               |
| IHD-3                              | 680                         | $\pm 15\%$  | 0.570                    | 1.0                          | 0.67                               |
| IHD-3                              | 820                         | $\pm 15\%$  | 0.643                    | 0.8                          | 0.61                               |
| IHD-3                              | 1000                        | $\pm 15\%$  | 0.844                    | 0.8                          | 0.56                               |
| IHD-3                              | 1200                        | $\pm 15\%$  | 0.977                    | 0.6                          | 0.51                               |
| IHD-3                              | 1500                        | $\pm 15\%$  | 1.180                    | 0.6                          | 0.46                               |
| IHD-3                              | 1800                        | $\pm 15\%$  | 1.500                    | 0.6                          | 0.42                               |
| IHD-3                              | 2200                        | $\pm 15\%$  | 1.760                    | 0.5                          | 0.38                               |
| IHD-3                              | 2700                        | $\pm 15\%$  | 2.130                    | 0.4                          | 0.34                               |
| IHD-3                              | 3300                        | $\pm 15\%$  | 2.530                    | 0.4                          | 0.31                               |
| IHD-3                              | 3900                        | $\pm 15\%$  | 2.840                    | 0.4                          | 0.29                               |
| IHD-3                              | 4700                        | $\pm 15\%$  | 3.790                    | 0.4                          | 0.26                               |
| IHD-3                              | 5600                        | $\pm 15\%$  | 4.240                    | 0.32                         | 0.24                               |
| IHD-3                              | 6800                        | $\pm 15\%$  | 5.750                    | 0.25                         | 0.22                               |
| IHD-3                              | 8200                        | $\pm 15\%$  | 6.440                    | 0.25                         | 0.20                               |
| IHD-3                              | 10 000                      | $\pm 15\%$  | 7.300                    | 0.25                         | 0.18                               |
| IHD-3                              | 12 000                      | $\pm 15\%$  | 9.340                    | 0.20                         | 0.17                               |
| IHD-3                              | 15 000                      | $\pm 15\%$  | 10.700                   | 0.20                         | 0.15                               |
| IHD-3                              | 18 000                      | $\pm 15\%$  | 14.800                   | 0.16                         | 0.14                               |
| IHD-3                              | 22 000                      | $\pm 15\%$  | 18.000                   | 0.13                         | 0.12                               |
| IHD-3                              | 27 000                      | $\pm 15\%$  | 22.700                   | 0.13                         | 0.11                               |
| IHD-3                              | 33 000                      | $\pm 15\%$  | 25.700                   | 0.13                         | 0.10                               |
| IHD-3                              | 39 000                      | $\pm 15\%$  | 29.700                   | 0.10                         | 0.09                               |
| IHD-3                              | 47 000                      | $\pm 15\%$  | 33.700                   | 0.10                         | 0.09                               |
| IHD-3                              | 56 000                      | $\pm 15\%$  | 38.000                   | 0.10                         | 0.08                               |
| IHD-3                              | 68 000                      | $\pm 15\%$  | 52.800                   | 0.08                         | 0.07                               |
| IHD-3                              | 82 000                      | $\pm 15\%$  | 67.300                   | 0.07                         | 0.07                               |
| IHD-3                              | 100 000                     | $\pm 15\%$  | 76.000                   | 0.07                         | 0.06                               |



### MARKING

- Vishay Dale
- Model
- Inductance value
- Date code

### ORDERING INFORMATION

|              |                              |                              |              |                               |
|--------------|------------------------------|------------------------------|--------------|-------------------------------|
| <b>IHD-1</b> | <b>3.9 <math>\mu</math>H</b> | <b><math>\pm 15\%</math></b> | <b>ER</b>    | <b>e2</b>                     |
| MODEL        | INDUCTANCE VALUE             | INDUCTANCE TOLERANCE         | PACKAGE CODE | JEDEC LEAD (Pb)-FREE STANDARD |

### GLOBAL PART NUMBER

|                                                     |                           |                                        |                      |
|-----------------------------------------------------|---------------------------|----------------------------------------|----------------------|
| <div>I</div> <div>H</div> <div>D</div> <div>1</div> | <div>E</div> <div>R</div> | <div>3</div> <div>R</div> <div>9</div> | <div>L</div>         |
| MODEL                                               | PACKAGE CODE              | INDUCTANCE VALUE                       | INDUCTANCE TOLERANCE |



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