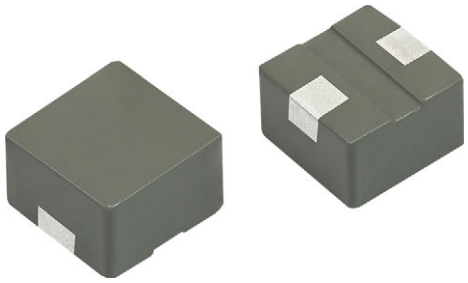
# IHLP® Power Inductors, Low DCR Series



## FEATURES

- 3.0 mm x 3.0 mm footprint
- Available in three height profiles (1.2 mm, 1.5 mm, 2.0 mm)
- Magnetically shielded construction
- Handles high transient current spikes without saturation
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

## LINKS TO ADDITIONAL RESOURCES

Product Page

## APPLICATIONS

- Energy storage for low profile DC/DC converters
- Battery powered devices
- Power line noise suppression and filtering

## MECHANICAL SPECIFICATIONS

- Terminations: pure tin electroplating over nickel underlayer over copper base
- Weight: 0.066 g (1.2 mm height), 0.087 g (1.5 mm height), 0.112 g (2.0 mm height)

## STANDARD ELECTRICAL SPECIFICATIONS

| PART NUMBER | $L_0$ INDUCTANCE ± 20 % AT 1 MHz, 1 V, 0 A (µH) | DCR TYP. 25 °C (mΩ) | DCR MAX. 25 °C (mΩ) | HEAT RATING CURRENT DC TYP. (A) (1) | SATURATION CURRENT DC TYP. (A) | | SRF TYP. (MHz) |
|---|---|---|---|---|---|---|---|
| | | | | | 20 % DROP (2) | 30 % DROP (3) | |
| **1.2 mm HEIGHT** | | | | | | | |
| IHLP1212ABEZR22M1Z | 0.22 | 8.6 | 10.3 | 11.1 | 9.5 | 12.4 | 185 |
| IHLP1212ABEZR33M1Z | 0.33 | 10.8 | 12.9 | 9.9 | 8.9 | 11.6 | 140 |
| IHLP1212ABEZR47M1Z | 0.47 | 14.7 | 17.6 | 8.5 | 7.2 | 9.4 | 115 |
| IHLP1212ABEZR56M1Z | 0.56 | 16.8 | 19.8 | 8.0 | 6.9 | 9.0 | 110 |
| IHLP1212ABEZR68M1Z | 0.68 | 20.3 | 22.5 | 7.5 | 5.7 | 7.4 | 85 |
| IHLP1212ABEZ1R0M1Z | 1.0 | 29.4 | 33.8 | 6.1 | 5.1 | 6.7 | 66 |
| **1.5 mm HEIGHT** | | | | | | | |
| IHLP1212AEEZR22M1Z | 0.22 | 8.6 | 10.3 | 11.1 | 11.0 | 14.3 | 202 |
| IHLP1212AEEZR33M1Z | 0.33 | 10.4 | 12.4 | 10.1 | 9.0 | 11.7 | 144 |
| IHLP1212AEEZR47M1Z | 0.47 | 11.4 | 13.5 | 9.7 | 8.1 | 10.6 | 102 |
| IHLP1212AEEZR56M1Z | 0.56 | 15.3 | 18.4 | 8.3 | 7.5 | 9.8 | 100 |
| IHLP1212AEEZR68M1Z | 0.68 | 16.6 | 19.8 | 8.0 | 6.8 | 8.8 | 97 |
| IHLP1212AEEZR82M1Z | 0.82 | 20.3 | 23.4 | 7.3 | 6.0 | 7.8 | 92 |
| IHLP1212AEEZ1R0M1Z | 1.0 | 26.6 | 29.7 | 6.5 | 5.8 | 7.5 | 74 |
| IHLP1212AEEZ1R5M1Z | 1.5 | 36.9 | 41.4 | 5.5 | 5.0 | 6.5 | 51 |



For technical questions, contact: magnetics@vishay.com

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## STANDARD ELECTRICAL SPECIFICATIONS

| PART NUMBER | $L_0$ INDUCTANCE ± 20 % AT 1 MHz, 1 V, 0 A (µH) | DCR TYP. 25 °C (mΩ) | DCR MAX. 25 °C (mΩ) | HEAT RATING CURRENT DC TYP. (A) (1) | SATURATION CURRENT DC TYP. (A) | | SRF TYP. (MHz) |
|---|---|---|---|---|---|---|---|
| | | | | | 20 % DROP (2) | 30 % DROP (3) | |
| **2.0 mm HEIGHT** | | | | | | | |
| IHLP1212BZEZR22M1Z | 0.22 | 8.6 | 10.3 | 11.1 | 10.5 | 13.7 | 214 |
| IHLP1212BZEZR36M1Z | 0.36 | 10.4 | 12.4 | 10.1 | 10.0 | 13.0 | 161 |
| IHLP1212BZEZR56M1Z | 0.56 | 11.7 | 14.9 | 9.2 | 8.4 | 10.9 | 90 |
| IHLP1212BZEZR68M1Z | 0.68 | 12.6 | 15.8 | 8.9 | 8.2 | 10.7 | 85 |
| IHLP1212BZEZR88M1Z | 0.88 | 14.0 | 16.7 | 8.7 | 8.0 | 10.4 | 65 |
| IHLP1212BZEZ1R0M1Z | 1.0 | 18.0 | 20.0 | 8.4 | 7.6 | 9.8 | 55 |
| IHLP1212BZEZ1R2M1Z | 1.2 | 20.7 | 23.4 | 7.3 | 6.8 | 8.8 | 50 |
| IHLP1212BZEZ1R5M1Z | 1.5 | 22.5 | 25.2 | 7.1 | 6.0 | 7.9 | 47 |
| IHLP1212BZEZ2R2M1Z | 2.2 | 36.0 | 40.5 | 5.7 | 5.3 | 6.9 | 35 |
| IHLP1212BZEZ3R3M1Z | 3.3 | 50.4 | 54.9 | 4.5 | 3.7 | 4.8 | 30 |

**Notes**

- All test data is referenced to 25 °C ambient
- Inductance test condition: 1 MHz, 1 V
- Operating temperature range -55 °C to +125 °C
- The part temperature (ambient + temp. rise) should not exceed 125 °C under worst case operating conditions. Circuit design, component placement, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application

(1) DC current (A) that will cause an approximate ΔT of 40 °C

(2) DC current (A) that will cause $L_0$ to drop approximately 20 %

(3) DC current (A) that will cause $L_0$ to drop approximately 30 %

## GLOBAL PART NUMBER

| I H L P | 1 2 1 2 B Z | E Z | 1 R 5 | M | 1 Z |
|---|---|---|---|---|---|
| PRODUCT FAMILY | SIZE | PACKAGE CODE | INDUCTANCE VALUE | TOLERANCE | SERIES |
| | | **EZ** = tape and reel, 3000 pieces/reel | **1R5** = 1.5 µH | **M** = ± 20 % | |

## DESCRIPTION

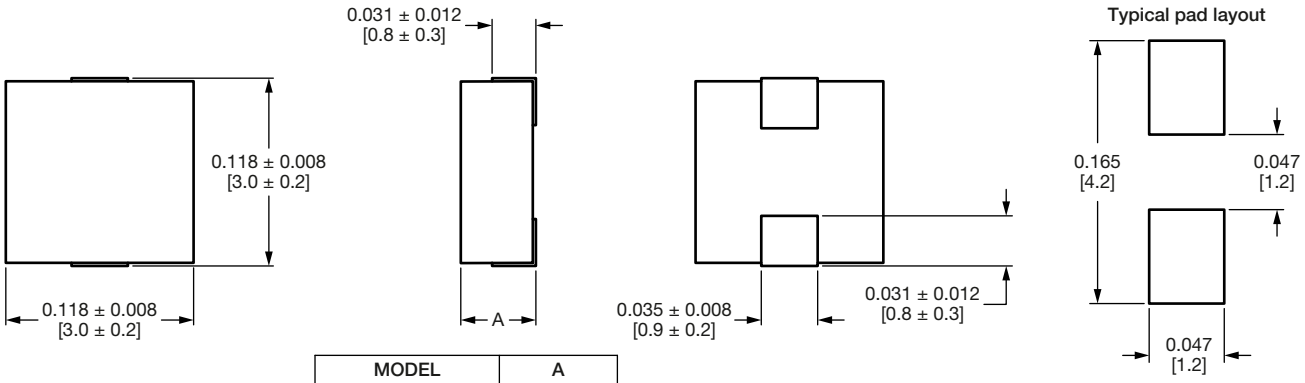
| IHLP1212BZEZ-1Z | 1.5 µH | ± 20 % | EZ |
|---|---|---|---|
| MODEL | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE |



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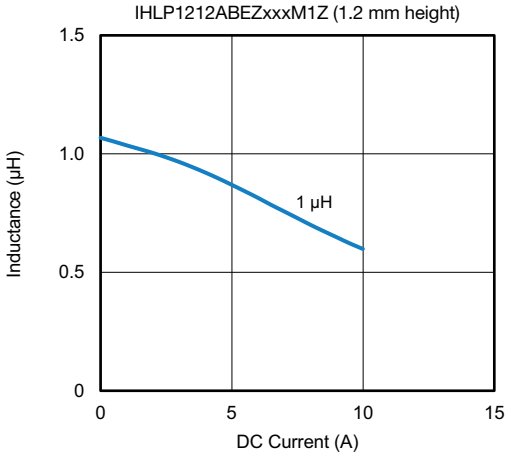
## DIMENSIONS in inches [millimeters]

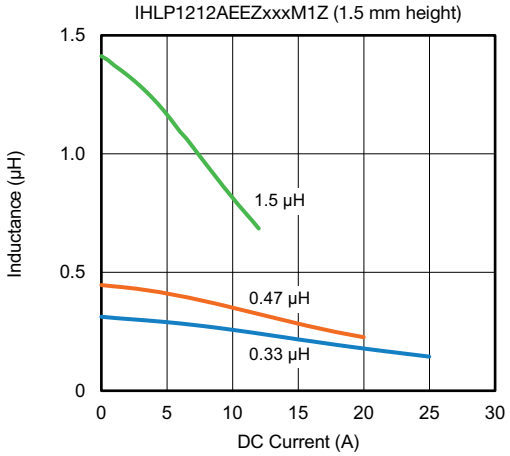


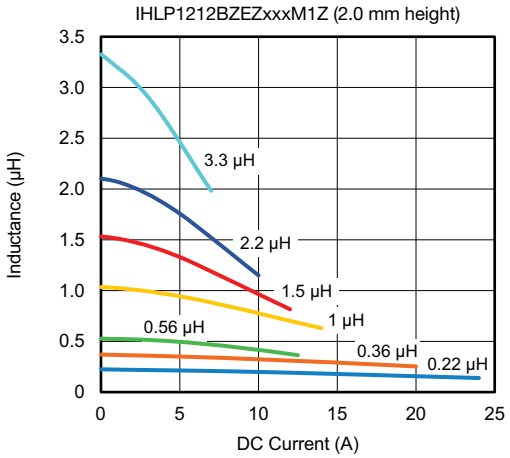

| MODEL | A |
|---|---|
| IHLP1212ABEZ-1Z | 0.047 max. [1.2 max.] |
| IHLP1212AEEZ-1Z | 0.059 max. [1.5 max.] |
| IHLP1212BZEZ-1Z | 0.079 max. [2.0 max.] |

**No part marking**

## PERFORMANCE GRAPHS: INDUCTANCE VS. DC CURRENT



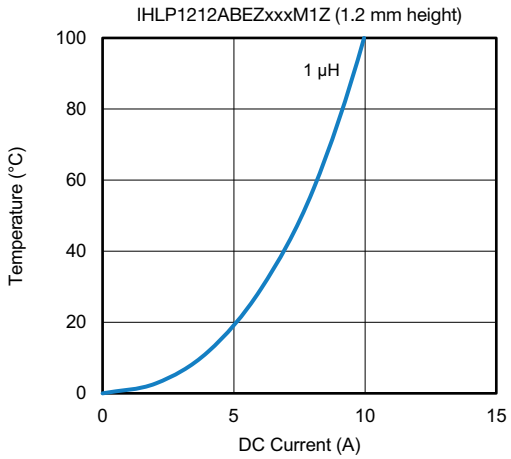



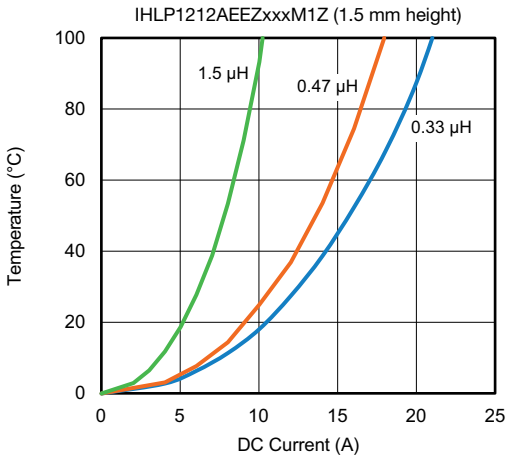


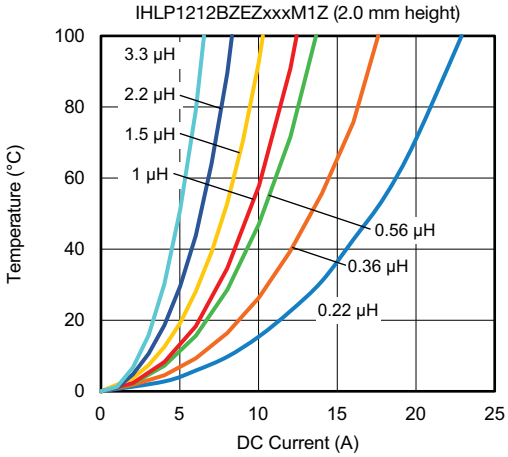

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## PERFORMANCE GRAPHS: TEMPERATURE RISE VS. DC CURRENT



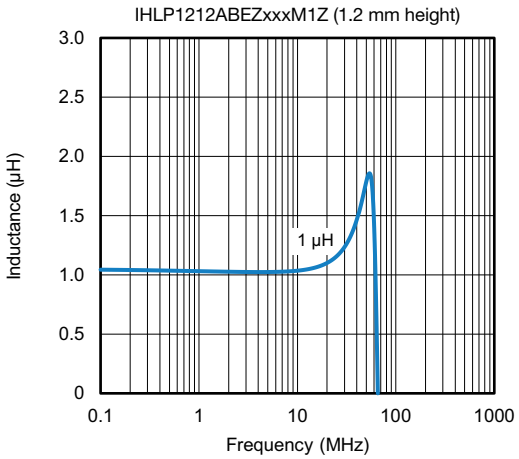



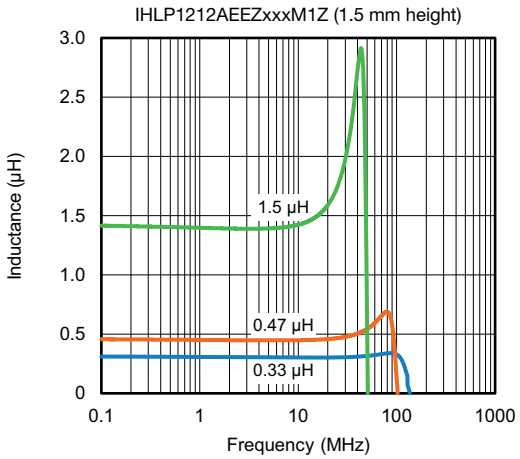


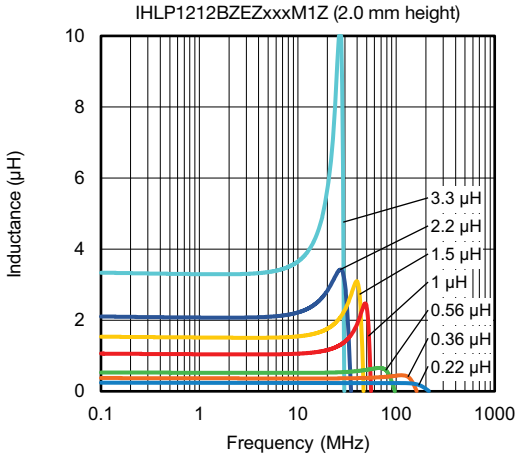

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