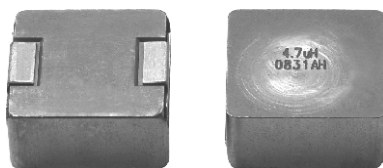


## Low Profile, High Current IHLP® Inductors



Manufactured under one or more of the following:  
**US Patents; 6,198,375/6,204,744/6,449,829/6,460,244.**  
 Several foreign patents, and other patents pending.

### STANDARD ELECTRICAL SPECIFICATIONS

| $L_0$<br>INDUCTANCE<br>$\pm 20\%$ AT 100 kHz,<br>0.25 V, 0 A<br>( $\mu$ H) | DCR<br>TYP.<br>25 °C<br>(m $\Omega$ ) | DCR<br>MAX.<br>25 °C<br>(m $\Omega$ ) | HEAT<br>RATING<br>CURRENT<br>DC TYP.<br>(A) <sup>(3)</sup> | SATURATION<br>CURRENT<br>DC TYP.<br>(A) <sup>(4)</sup> |
|----------------------------------------------------------------------------|---------------------------------------|---------------------------------------|------------------------------------------------------------|--------------------------------------------------------|
| 0.10                                                                       | 0.47                                  | 0.50                                  | 60.0                                                       | 120.0                                                  |
| 0.15                                                                       | 0.53                                  | 0.60                                  | 55.0                                                       | 118.0                                                  |
| 0.22                                                                       | 0.63                                  | 0.70                                  | 53.0                                                       | 112.0                                                  |
| 0.30                                                                       | 0.70                                  | 0.80                                  | 48.0                                                       | 72.0                                                   |
| 0.33                                                                       | 0.83                                  | 0.90                                  | 46.0                                                       | 65.0                                                   |
| 0.40                                                                       | 0.90                                  | 1.0                                   | 44.0                                                       | 64.0                                                   |
| 0.47                                                                       | 1.0                                   | 1.2                                   | 41.0                                                       | 63.0                                                   |
| 0.56                                                                       | 1.2                                   | 1.4                                   | 37.0                                                       | 62.0                                                   |
| 0.68                                                                       | 1.4                                   | 1.6                                   | 35.0                                                       | 60.0                                                   |
| 0.82                                                                       | 1.6                                   | 1.9                                   | 33.0                                                       | 50.0                                                   |
| 1.0                                                                        | 1.7                                   | 2.0                                   | 32.0                                                       | 49.0                                                   |
| 1.2                                                                        | 2.1                                   | 2.5                                   | 30.0                                                       | 48.0                                                   |
| 1.5                                                                        | 2.5                                   | 3.0                                   | 27.0                                                       | 45.0                                                   |
| 1.8                                                                        | 2.8                                   | 3.2                                   | 24.0                                                       | 41.0                                                   |
| 2.2                                                                        | 3.5                                   | 4.2                                   | 22.0                                                       | 40.0                                                   |
| 3.3                                                                        | 5.7                                   | 6.8                                   | 18.0                                                       | 35.0                                                   |
| 4.7                                                                        | 9.3                                   | 11.2                                  | 13.5                                                       | 30.0                                                   |
| 5.6                                                                        | 9.3                                   | 10                                    | 13.5                                                       | 26.5                                                   |
| 6.8                                                                        | 13.1                                  | 14                                    | 11.5                                                       | 16.5                                                   |
| 8.2                                                                        | 14.5                                  | 15.5                                  | 10.5                                                       | 16.0                                                   |
| 10                                                                         | 16.4                                  | 17.2                                  | 10.0                                                       | 15.5                                                   |

#### Notes

- (1) All test data is referenced to 25 °C ambient
- (2) Operating temperature range - 55 °C to + 125 °C
- (3) DC current (A) that will cause an approximate  $\Delta T$  of 40 °C
- (4) DC current (A) that will cause  $L_0$  to drop approximately 20 %
- (5) The part temperature (ambient + temp. rise) should not exceed 125 °C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

### DESCRIPTION

|                       |                              |                              |              |                               |
|-----------------------|------------------------------|------------------------------|--------------|-------------------------------|
| <b>IHLP-5050FD-A1</b> | <b>1.0 <math>\mu</math>H</b> | <b><math>\pm 20\%</math></b> | <b>ER</b>    | <b>e3</b>                     |
| MODEL                 | INDUCTANCE VALUE             | INDUCTANCE TOLERANCE         | PACKAGE CODE | JEDEC LEAD (Pb)-FREE STANDARD |

### GLOBAL PART NUMBER

|                |   |   |   |      |   |   |   |   |   |              |   |                  |   |   |      |        |   |
|----------------|---|---|---|------|---|---|---|---|---|--------------|---|------------------|---|---|------|--------|---|
| I              | H | L | P | 5    | 0 | 5 | 0 | F | D | E            | R | 1                | R | 0 | M    | A      | 1 |
| PRODUCT FAMILY |   |   |   | SIZE |   |   |   |   |   | PACKAGE CODE |   | INDUCTANCE VALUE |   |   | TOL. | SERIES |   |

### FEATURES

- Shielded construction
- Frequency range up to 5.0 MHz
- Lowest DCR/ $\mu$ H, in this package size
- Handles high transient current spikes without saturation
- Ultra low buzz noise, due to composite construction
- Excellent temperature stability for inductance and saturation
- AEC-Q200 qualified
- Compliant to RoHS Directive 2011/65/EU

#### Note

\*\* Please see document "Vishay Material Category Policy":  
[www.vishay.com/doc?99902](http://www.vishay.com/doc?99902)

### APPLICATIONS

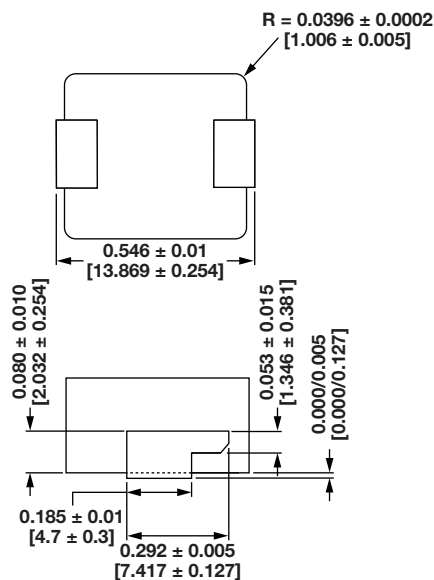
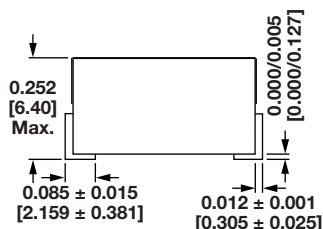
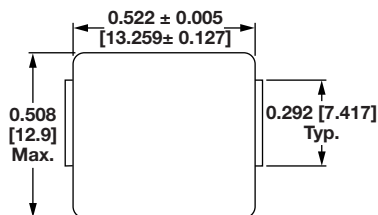
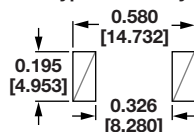
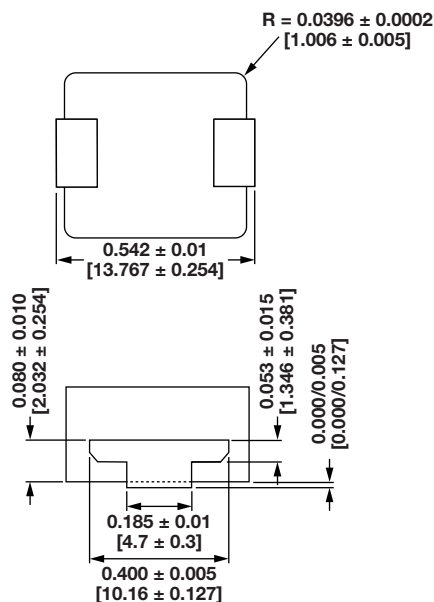
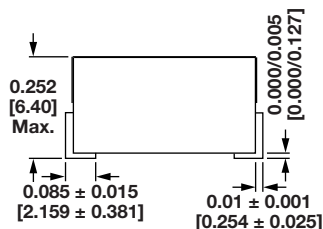
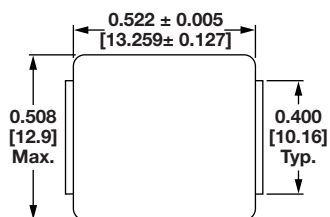
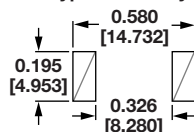
- Engine and transmission control units
- Diesel injection drivers
- DC/DC converters for entertainment/navigation systems
- Noise suppression for motors
- Windshield wipers
- Power seats
- Power mirrors
- Heating and ventilation blowers
- HID lighting
- LED drivers



**RoHS**  
COMPLIANT

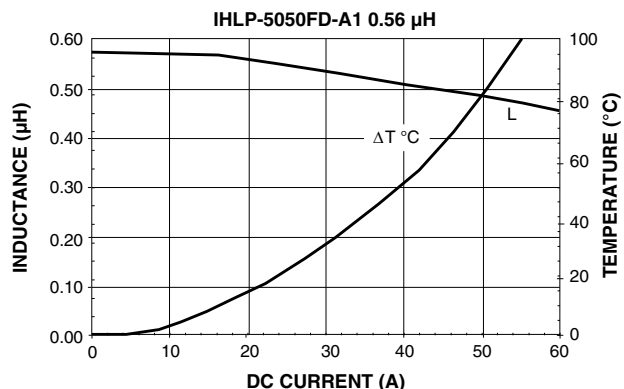
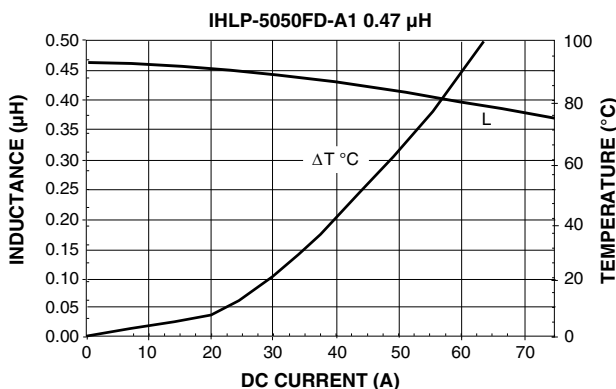
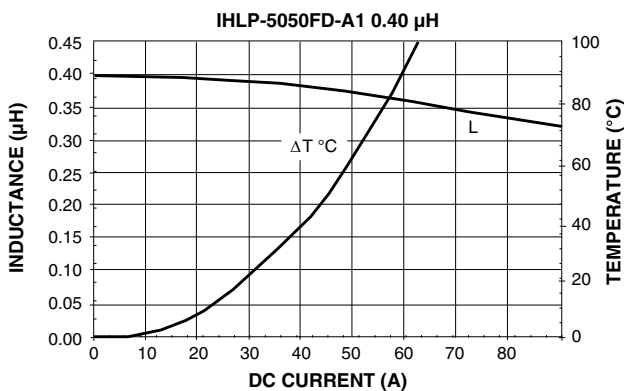
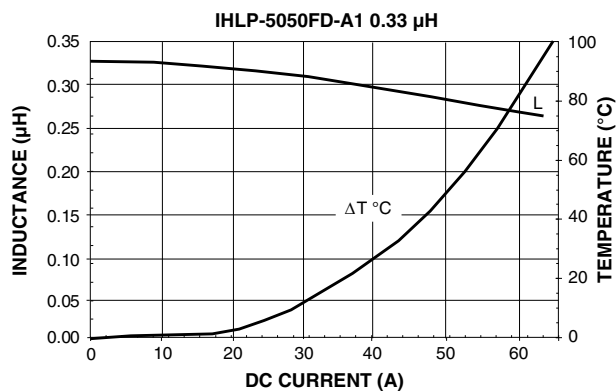
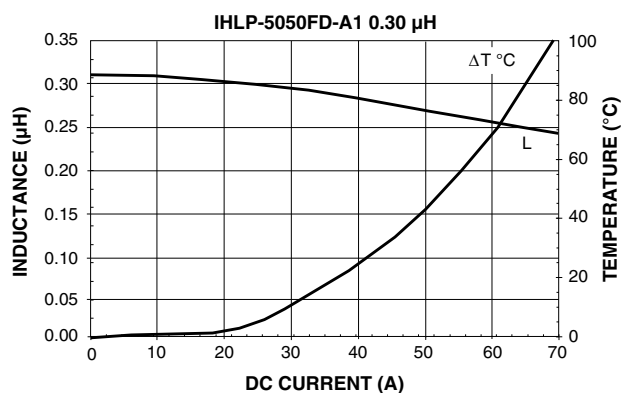
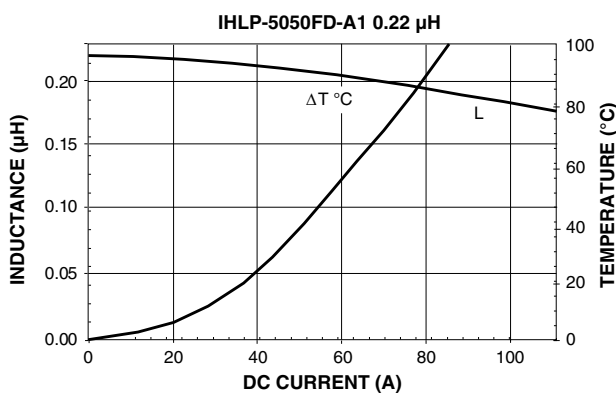
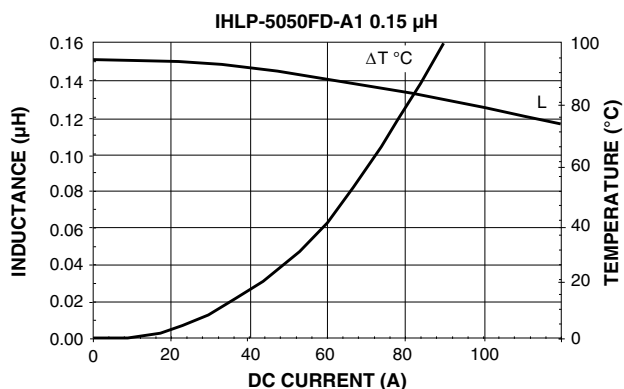
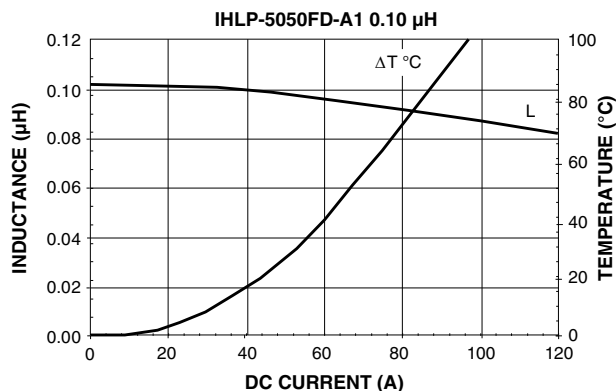
**GREEN**  
(5-2008)\*\*

**DIMENSIONS** in inches [millimeters]

**Values 0.82  $\mu$ H and lower**
**Typical Pad Layout**

**Values 1.0  $\mu$ H and higher**
**Typical Pad Layout**


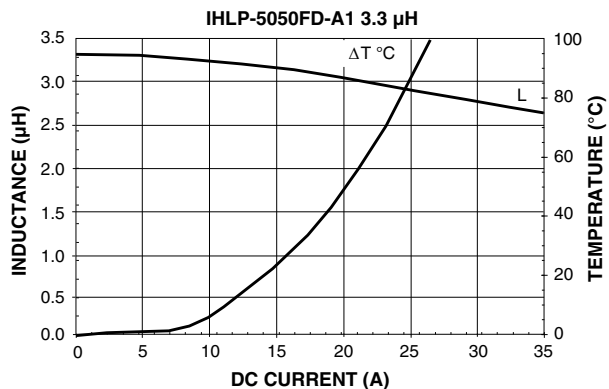
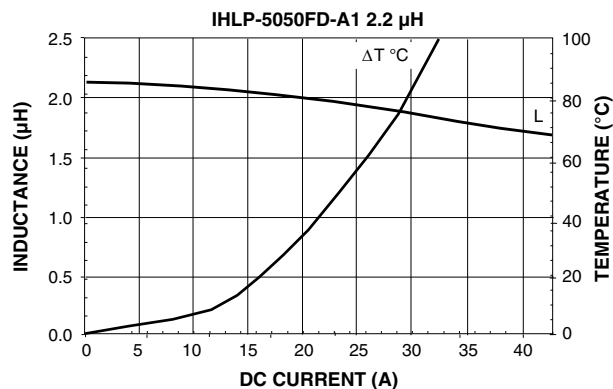
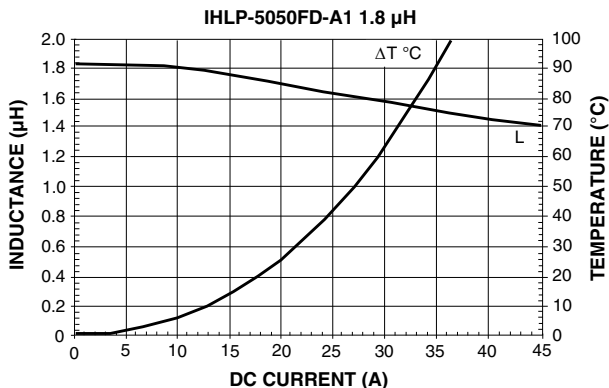
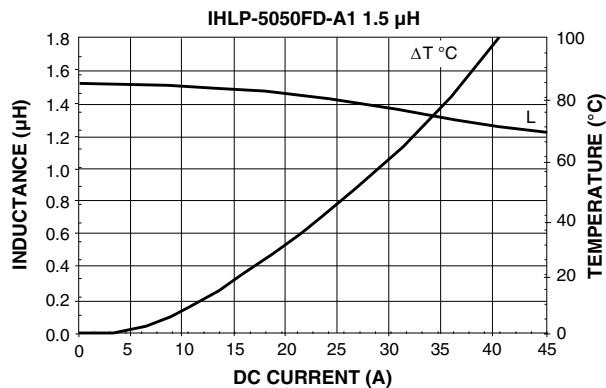
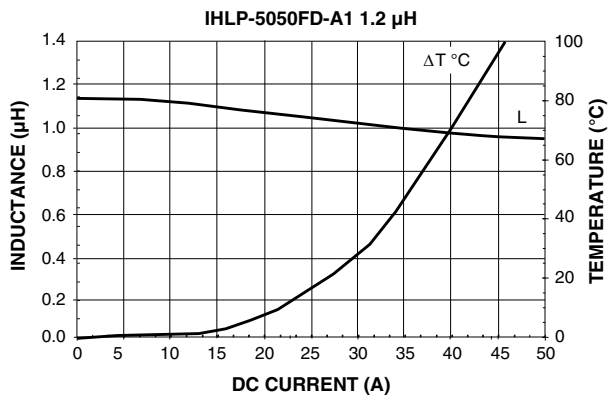
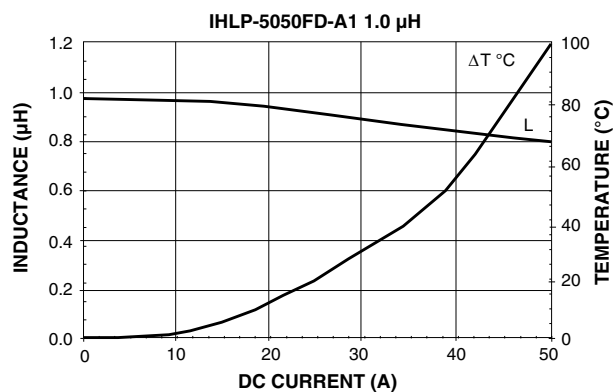
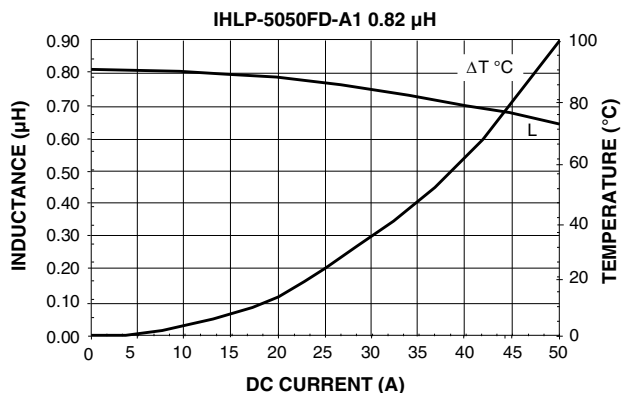
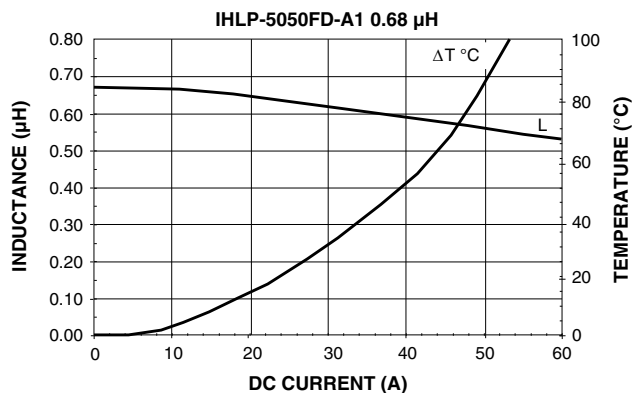


PERFORMANCE GRAPHS



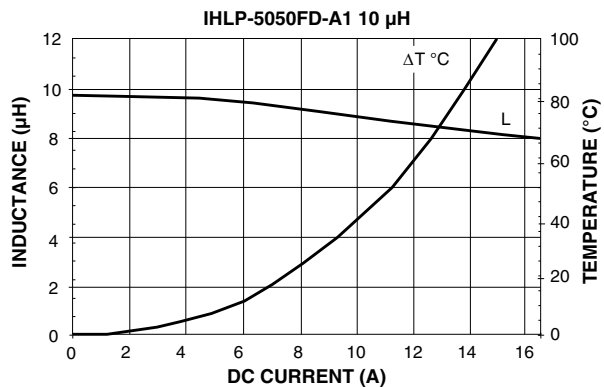
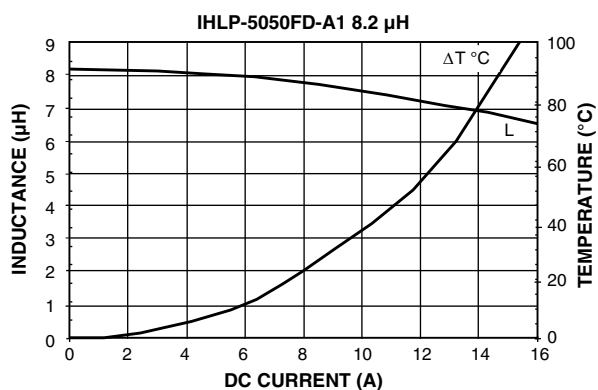
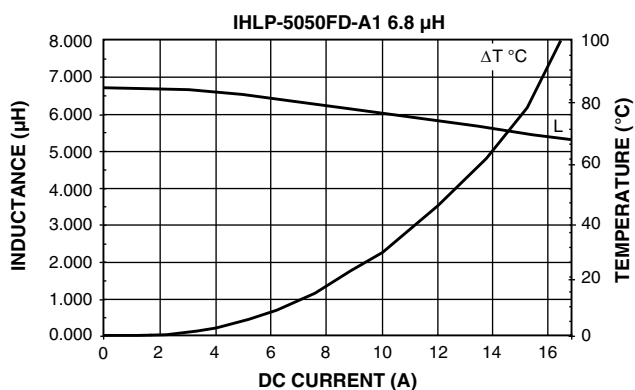
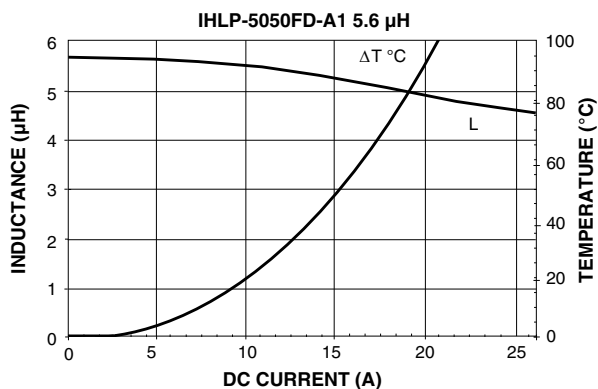
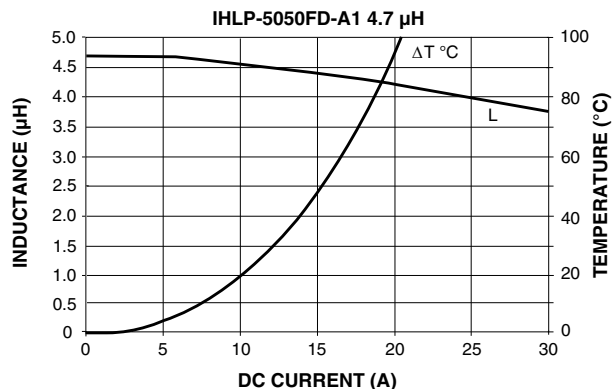


PERFORMANCE GRAPHS





PERFORMANCE GRAPHS





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