

## Overview

The KEMET MPX metal composite inductors are ideal for use in DC to DC switching power supplies, as power inductors as well as EMI filter inductors. The metal composite core has high saturation characteristics maintaining function in rush current mode and characterized by temperature stable inductance.

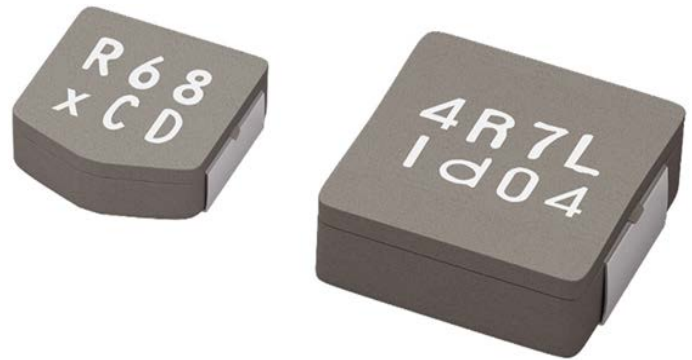
## Applications

Consumer and commercial power applications such as:

- High frequency DC-DC converters, including WBG GaN applications
- PCs and servers
- Points of loads (POL)
- Field-programmable gate arrays (FPGA)
- Battery powered regulators

## Benefits

- Metal composite powder
- Shielded construction, SMD configuration
- Inductance range from 0.10 – 47.00  $\mu$ H
- Operating temperature up to +155°C
- Low acoustic noise
- Low magnetic flux leakage



## Part Number System

| MPX    | Version | D0520                                                                                                                                                                        | L        | 1R5                                                                                                                                                                                                                     |
|--------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series |         | Size Code                                                                                                                                                                    | Inductor | Inductance Code $\mu$ H                                                                                                                                                                                                 |
| MPX    | 1       | D0520 = 5x5x2.0 mm<br>D0530 = 5x5x3.0 mm<br>D0618 = 6x6x1.8 mm<br>D0624 = 6x6x2.4 mm<br>D0630 = 6x6x3.0 mm<br>D0650 = 6x6x5.0 mm<br>D0830 = 8x8x3.0 mm<br>D0840 = 8x8x4.0 mm |          | The first two digits represent the inductance value. The third digit indicates the number of zeros to be added.<br>R = decimal point<br><br>Examples:<br>100 = 10.0 $\mu$ H<br>R68 = 0.68 $\mu$ H<br>1R5 = 1.50 $\mu$ H |

## Performance Characteristics

| Item                      | Performance Characteristics                       |
|---------------------------|---------------------------------------------------|
| Operating Temperature     | -55°C to +155°C (including self-temperature rise) |
| Rated Inductance Range    | 0.10 – 47.00 µH at 100 kHz, 1 mA                  |
| Inductance Tolerance      | ±20%                                              |
| Rated DC Resistance Range | 1.5 – 341.2 mΩ maximum                            |
| Rated Current Range       | 2.0 – 35.4 A                                      |

**Table 1 – Ratings & Part Number Reference**

| Part Number   | Inductance (µH)<br>at 100 kHz, 1 mA | Inductance<br>Tolerance | DC Resistance<br>(mΩ) Typical | DC Resistance<br>(mΩ) Maximum | Rated Current (A)                            |                                              |
|---------------|-------------------------------------|-------------------------|-------------------------------|-------------------------------|----------------------------------------------|----------------------------------------------|
|               |                                     |                         |                               |                               | I <sub>rms</sub> <sup>1</sup><br>(Reference) | I <sub>sat</sub> <sup>2</sup><br>(Reference) |
| MPX1D0520LR15 | 0.15                                | ±20%                    | 3.4                           | 3.9                           | 16.9                                         | 22.0                                         |
| MPX1D0520LR22 | 0.22                                | ±20%                    | 4.3                           | 5.0                           | 15.0                                         | 19.0                                         |
| MPX1D0520LR33 | 0.33                                | ±20%                    | 5.3                           | 6.2                           | 13.4                                         | 16.0                                         |
| MPX1D0520LR47 | 0.47                                | ±20%                    | 6.7                           | 7.8                           | 12.0                                         | 14.0                                         |
| MPX1D0520LR68 | 0.68                                | ±20%                    | 10.6                          | 12.2                          | 9.5                                          | 11.0                                         |
| MPX1D0520L1R0 | 1.00                                | ±20%                    | 16.4                          | 18.9                          | 7.6                                          | 9.0                                          |
| MPX1D0520L1R5 | 1.50                                | ±20%                    | 30.9                          | 35.6                          | 5.6                                          | 7.0                                          |
| MPX1D0520L2R2 | 2.20                                | ±20%                    | 35.1                          | 40.4                          | 5.2                                          | 6.5                                          |
| MPX1D0520L3R3 | 3.30                                | ±20%                    | 55.8                          | 64.2                          | 4.1                                          | 5.5                                          |
| MPX1D0520L4R7 | 4.70                                | ±20%                    | 84.0                          | 96.6                          | 3.4                                          | 4.5                                          |
| MPX1D0520L6R8 | 6.80                                | ±20%                    | 113.4                         | 130.5                         | 2.9                                          | 4.0                                          |
| MPX1D0520L100 | 10.00                               | ±20%                    | 193.7                         | 222.8                         | 2.2                                          | 3.5                                          |
| MPX1D0530LR15 | 0.15                                | ±20%                    | 2.4                           | 2.8                           | 22.0                                         | 21.0                                         |
| MPX1D0530LR22 | 0.22                                | ±20%                    | 3.4                           | 3.9                           | 18.4                                         | 16.0                                         |
| MPX1D0530LR33 | 0.33                                | ±20%                    | 4.5                           | 5.2                           | 16.0                                         | 15.0                                         |
| MPX1D0530LR47 | 0.47                                | ±20%                    | 6.0                           | 6.9                           | 13.8                                         | 13.0                                         |
| MPX1D0530LR68 | 0.68                                | ±20%                    | 7.1                           | 8.2                           | 12.6                                         | 12.0                                         |
| MPX1D0530L1R0 | 1.00                                | ±20%                    | 10.0                          | 11.5                          | 10.7                                         | 10.5                                         |
| MPX1D0530L1R5 | 1.50                                | ±20%                    | 15.3                          | 17.7                          | 8.6                                          | 8.0                                          |
| MPX1D0530L2R2 | 2.20                                | ±20%                    | 21.4                          | 24.6                          | 7.3                                          | 6.5                                          |
| MPX1D0530L3R3 | 3.30                                | ±20%                    | 37.2                          | 42.8                          | 5.5                                          | 5.5                                          |
| MPX1D0530L4R7 | 4.70                                | ±20%                    | 54.1                          | 62.2                          | 4.6                                          | 4.5                                          |
| MPX1D0530L6R8 | 6.80                                | ±20%                    | 93.7                          | 107.8                         | 3.5                                          | 4.0                                          |
| MPX1D0530L100 | 10.00                               | ±20%                    | 121.8                         | 140.1                         | 3.1                                          | 3.5                                          |
| MPX1D0530L150 | 15.00                               | ±20%                    | 186.5                         | 214.6                         | 2.5                                          | 3.0                                          |
| MPX1D0530L220 | 22.00                               | ±20%                    | 296.6                         | 341.2                         | 2.0                                          | 2.5                                          |
| Part Number   | Inductance (µH)<br>at 100 kHz, 1 mA | Inductance<br>Tolerance | DC Resistance<br>(mΩ) Typical | DC Resistance<br>(mΩ) Maximum | I <sub>rms</sub> <sup>1</sup>                | I <sub>sat</sub> <sup>2</sup>                |
|               |                                     |                         |                               |                               | Rated Current (A)                            |                                              |

<sup>1</sup> T = 40 K rise at rated current

<sup>2</sup> Inductance drop 30% at rated current

All electrical characteristics data is referenced to 25°C.

**Table 1 – Ratings & Part Number Reference cont.**

| Part Number    | Inductance (µH)<br>at 100 kHz, 1 mA | Inductance<br>Tolerance | DC Resistance<br>(mΩ) Typical | DC Resistance<br>(mΩ) Maximum | Rated Current (A)                            |                                              |
|----------------|-------------------------------------|-------------------------|-------------------------------|-------------------------------|----------------------------------------------|----------------------------------------------|
|                |                                     |                         |                               |                               | I <sub>rms</sub> <sup>1</sup><br>(Reference) | I <sub>sat</sub> <sup>2</sup><br>(Reference) |
| MPX1D0618LR10  | 0.10                                | ±20%                    | 2.4                           | 2.8                           | 18.9                                         | 40.0                                         |
| MPX1D0618LR15  | 0.15                                | ±20%                    | 3.2                           | 3.8                           | 16.2                                         | 30.0                                         |
| MPX1D0618LR22  | 0.22                                | ±20%                    | 4.6                           | 5.3                           | 13.7                                         | 26.0                                         |
| MPX1D0618LR33  | 0.33                                | ±20%                    | 5.3                           | 6.1                           | 12.7                                         | 20.0                                         |
| MPX1D0618LR47  | 0.47                                | ±20%                    | 7.4                           | 8.5                           | 10.7                                         | 17.0                                         |
| MPX1D0618LR68  | 0.68                                | ±20%                    | 11.0                          | 12.7                          | 8.8                                          | 13.0                                         |
| MPX1D0618LR1R0 | 1.00                                | ±20%                    | 16.7                          | 19.3                          | 7.1                                          | 11.0                                         |
| MPX1D0618LR1R5 | 1.50                                | ±20%                    | 22.4                          | 25.8                          | 6.2                                          | 10.5                                         |
| MPX1D0618LR2R2 | 2.20                                | ±20%                    | 29.4                          | 33.8                          | 5.4                                          | 9.0                                          |
| MPX1D0618LR3R3 | 3.30                                | ±20%                    | 53.4                          | 61.5                          | 4.0                                          | 6.5                                          |
| MPX1D0618LR4R7 | 4.70                                | ±20%                    | 72.5                          | 83.4                          | 3.4                                          | 6.0                                          |
| MPX1D0624LR10  | 0.10                                | ±20%                    | 1.5                           | 1.8                           | 26.6                                         | 42.0                                         |
| MPX1D0624LR15  | 0.15                                | ±20%                    | 2.0                           | 2.3                           | 23.2                                         | 37.0                                         |
| MPX1D0624LR22  | 0.22                                | ±20%                    | 2.8                           | 3.3                           | 19.4                                         | 29.0                                         |
| MPX1D0624LR33  | 0.33                                | ±20%                    | 3.6                           | 4.2                           | 17.2                                         | 22.5                                         |
| MPX1D0624LR47  | 0.47                                | ±20%                    | 4.5                           | 5.2                           | 15.4                                         | 20.0                                         |
| MPX1D0624LR68  | 0.68                                | ±20%                    | 6.7                           | 7.8                           | 12.6                                         | 16.0                                         |
| MPX1D0624LR1R0 | 1.00                                | ±20%                    | 9.1                           | 10.5                          | 10.8                                         | 13.0                                         |
| MPX1D0624LR1R5 | 1.50                                | ±20%                    | 16.1                          | 18.5                          | 8.1                                          | 10.0                                         |
| MPX1D0624LR2R2 | 2.20                                | ±20%                    | 26.6                          | 30.7                          | 6.3                                          | 9.0                                          |
| MPX1D0624LR3R3 | 3.30                                | ±20%                    | 29.4                          | 33.8                          | 6.0                                          | 8.0                                          |
| MPX1D0624LR4R7 | 4.70                                | ±20%                    | 44.0                          | 50.6                          | 4.9                                          | 6.5                                          |
| MPX1D0624LR6R8 | 6.80                                | ±20%                    | 58.6                          | 67.4                          | 4.3                                          | 5.5                                          |
| MPX1D0624LR100 | 10.00                               | ±20%                    | 98.4                          | 113.2                         | 3.3                                          | 4.5                                          |
| MPX1D0630LR10  | 0.10                                | ±20%                    | 1.3                           | 1.5                           | 31.1                                         | 50.0                                         |
| MPX1D0630LR15  | 0.15                                | ±20%                    | 1.6                           | 1.9                           | 27.6                                         | 40.0                                         |
| MPX1D0630LR22  | 0.22                                | ±20%                    | 2.2                           | 2.6                           | 23.3                                         | 33.0                                         |
| MPX1D0630LR33  | 0.33                                | ±20%                    | 2.7                           | 3.2                           | 21.1                                         | 25.0                                         |
| MPX1D0630LR47  | 0.47                                | ±20%                    | 3.5                           | 4.0                           | 18.7                                         | 21.0                                         |
| MPX1D0630LR68  | 0.68                                | ±20%                    | 5.3                           | 6.2                           | 15.1                                         | 17.0                                         |
| MPX1D0630LR1R0 | 1.00                                | ±20%                    | 7.1                           | 8.2                           | 13.1                                         | 13.0                                         |
| MPX1D0630LR1R5 | 1.50                                | ±20%                    | 11.0                          | 12.7                          | 10.5                                         | 11.0                                         |
| MPX1D0630LR2R2 | 2.20                                | ±20%                    | 15.9                          | 18.3                          | 8.7                                          | 9.0                                          |
| MPX1D0630LR3R3 | 3.30                                | ±20%                    | 26.3                          | 30.3                          | 6.8                                          | 7.0                                          |
| MPX1D0630LR4R7 | 4.70                                | ±20%                    | 31.8                          | 36.7                          | 6.2                                          | 6.5                                          |
| MPX1D0630LR6R8 | 6.80                                | ±20%                    | 44.2                          | 50.9                          | 5.2                                          | 5.5                                          |
| MPX1D0630LR100 | 10.00                               | ±20%                    | 67.8                          | 78.0                          | 4.2                                          | 4.5                                          |
| MPX1D0630LR150 | 15.00                               | ±20%                    | 113.2                         | 130.2                         | 3.3                                          | 4.0                                          |
| MPX1D0630LR220 | 22.00                               | ±20%                    | 162.0                         | 186.3                         | 2.7                                          | 3.5                                          |
| Part Number    | Inductance (µH)<br>at 100 kHz, 1 mA | Inductance<br>Tolerance | DC Resistance<br>(mΩ) Typical | DC Resistance<br>(mΩ) Maximum | I <sub>rms</sub> <sup>1</sup>                | I <sub>sat</sub> <sup>2</sup>                |
|                |                                     |                         |                               |                               | Rated Current (A)                            |                                              |

<sup>1</sup> T = 40 K rise at rated current

<sup>2</sup> Inductance drop 30% at rated current

All electrical characteristics data is referenced to 25°C.

**Table 1 – Ratings & Part Number Reference cont.**

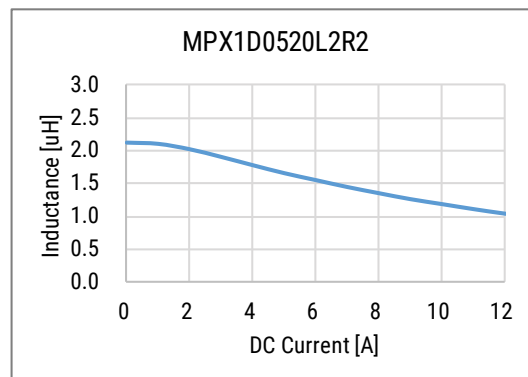
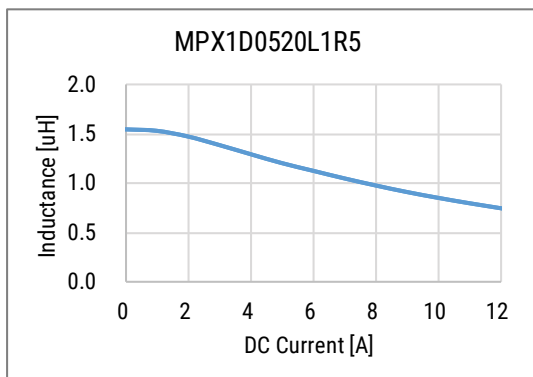
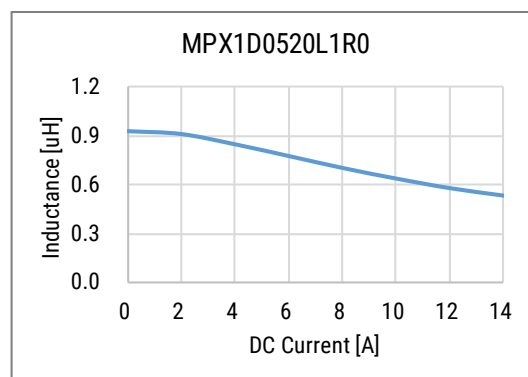
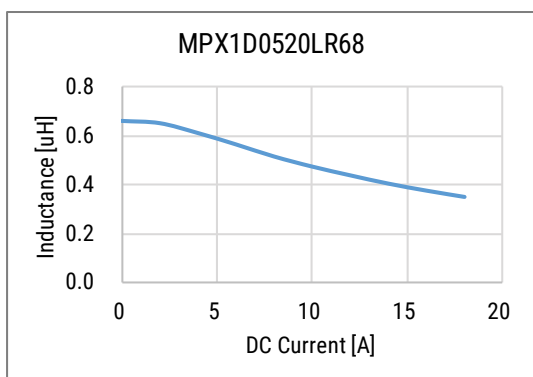
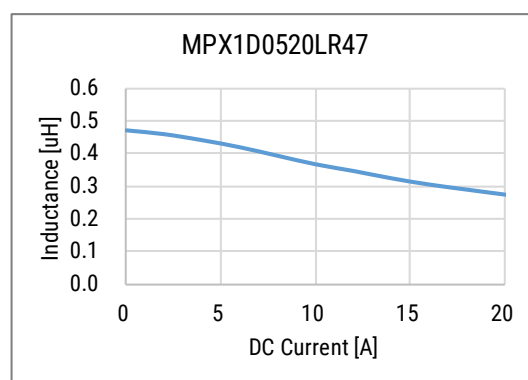
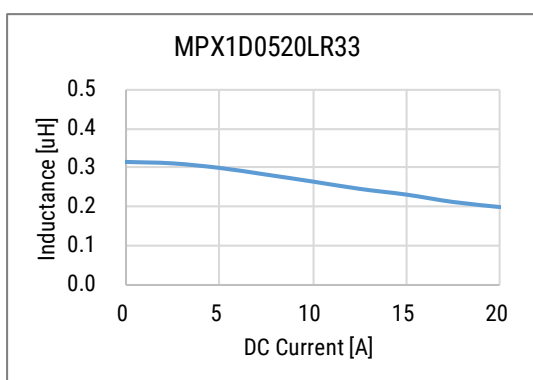
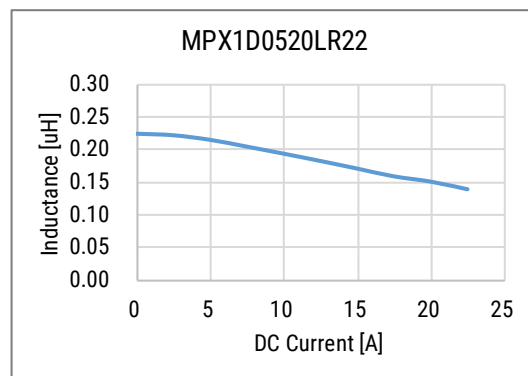
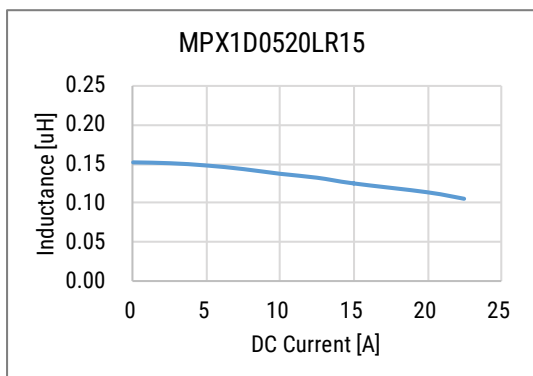
| Part Number   | Inductance (μH)<br>at 100 kHz, 1 mA | Inductance<br>Tolerance | DC Resistance<br>(mΩ) Typical | DC Resistance<br>(mΩ) Maximum | Rated Current (A)                            |                                              |
|---------------|-------------------------------------|-------------------------|-------------------------------|-------------------------------|----------------------------------------------|----------------------------------------------|
|               |                                     |                         |                               |                               | I <sub>rms</sub> <sup>1</sup><br>(Reference) | I <sub>sat</sub> <sup>2</sup><br>(Reference) |
| MPX1D0650LR68 | 0.68                                | ±20%                    | 3.6                           | 4.1                           | 18.8                                         | 17.0                                         |
| MPX1D0650L1R0 | 1.00                                | ±20%                    | 5.1                           | 6.0                           | 15.6                                         | 13.0                                         |
| MPX1D0650L1R5 | 1.50                                | ±20%                    | 7.2                           | 8.3                           | 13.2                                         | 12.0                                         |
| MPX1D0650L2R2 | 2.20                                | ±20%                    | 10.0                          | 11.6                          | 11.2                                         | 10.0                                         |
| MPX1D0650L3R3 | 3.30                                | ±20%                    | 16.4                          | 18.9                          | 8.7                                          | 8.0                                          |
| MPX1D0650L4R7 | 4.70                                | ±20%                    | 27.8                          | 32.0                          | 6.7                                          | 6.5                                          |
| MPX1D0650L6R8 | 6.80                                | ±20%                    | 38.4                          | 44.2                          | 5.7                                          | 5.5                                          |
| MPX1D0650L100 | 10.00                               | ±20%                    | 53.4                          | 61.4                          | 4.8                                          | 4.5                                          |
| MPX1D0830LR22 | 0.22                                | ±20%                    | 1.6                           | 1.9                           | 30.7                                         | 43.0                                         |
| MPX1D0830LR33 | 0.33                                | ±20%                    | 2.3                           | 2.7                           | 25.8                                         | 35.0                                         |
| MPX1D0830LR47 | 0.47                                | ±20%                    | 2.7                           | 3.1                           | 24.0                                         | 30.0                                         |
| MPX1D0830LR68 | 0.68                                | ±20%                    | 3.8                           | 4.4                           | 20.1                                         | 28.0                                         |
| MPX1D0830L1R0 | 1.00                                | ±20%                    | 5.0                           | 5.7                           | 17.6                                         | 23.0                                         |
| MPX1D0830L1R5 | 1.50                                | ±20%                    | 7.9                           | 9.1                           | 14.0                                         | 18.0                                         |
| MPX1D0830L2R2 | 2.20                                | ±20%                    | 11.8                          | 13.6                          | 11.4                                         | 14.0                                         |
| MPX1D0830L3R3 | 3.30                                | ±20%                    | 19.4                          | 22.3                          | 8.9                                          | 12.5                                         |
| MPX1D0830L4R7 | 4.70                                | ±20%                    | 25.8                          | 29.7                          | 7.7                                          | 10.5                                         |
| MPX1D0830L6R8 | 6.80                                | ±20%                    | 32.9                          | 37.9                          | 6.8                                          | 10.0                                         |
| MPX1D0830L100 | 10.00                               | ±20%                    | 53.6                          | 61.7                          | 5.4                                          | 8.0                                          |
| MPX1D0830L150 | 15.00                               | ±20%                    | 82.3                          | 94.6                          | 4.3                                          | 6.5                                          |
| MPX1D0830L220 | 22.00                               | ±20%                    | 116.9                         | 134.5                         | 3.6                                          | 5.0                                          |
| MPX1D0830L330 | 33.00                               | ±20%                    | 199.6                         | 229.5                         | 2.8                                          | 4.0                                          |
| MPX1D0840LR22 | 0.22                                | ±20%                    | 1.2                           | 1.5                           | 35.4                                         | 53.0                                         |
| MPX1D0840LR33 | 0.33                                | ±20%                    | 2.0                           | 2.4                           | 27.7                                         | 45.0                                         |
| MPX1D0840LR47 | 0.47                                | ±20%                    | 2.3                           | 2.7                           | 25.8                                         | 38.0                                         |
| MPX1D0840LR68 | 0.68                                | ±20%                    | 3.1                           | 3.6                           | 22.4                                         | 30.0                                         |
| MPX1D0840L1R0 | 1.00                                | ±20%                    | 3.6                           | 4.2                           | 20.8                                         | 28.0                                         |
| MPX1D0840L1R5 | 1.50                                | ±20%                    | 5.8                           | 6.8                           | 16.2                                         | 19.0                                         |
| MPX1D0840L2R2 | 2.20                                | ±20%                    | 7.5                           | 8.7                           | 14.3                                         | 17.0                                         |
| MPX1D0840L3R3 | 3.30                                | ±20%                    | 12.1                          | 14.0                          | 11.3                                         | 15.0                                         |
| MPX1D0840L4R7 | 4.70                                | ±20%                    | 20.4                          | 23.5                          | 8.7                                          | 11.0                                         |
| MPX1D0840L6R8 | 6.80                                | ±20%                    | 29.0                          | 33.4                          | 7.3                                          | 9.0                                          |
| MPX1D0840L100 | 10.00                               | ±20%                    | 43.1                          | 49.6                          | 6.0                                          | 7.5                                          |
| MPX1D0840L150 | 15.00                               | ±20%                    | 56.5                          | 65.0                          | 5.2                                          | 6.5                                          |
| MPX1D0840L220 | 22.00                               | ±20%                    | 85.4                          | 98.3                          | 4.2                                          | 5.5                                          |
| MPX1D0840L330 | 33.00                               | ±20%                    | 134.1                         | 154.2                         | 3.4                                          | 4.5                                          |
| MPX1D0840L470 | 47.00                               | ±20%                    | 197.1                         | 226.7                         | 2.8                                          | 3.5                                          |
| Part Number   | Inductance (μH)<br>at 100 kHz, 1 mA | Inductance<br>Tolerance | DC Resistance<br>(mΩ) Typical | DC Resistance<br>(mΩ) Maximum | I <sub>rms</sub> <sup>1</sup>                | I <sub>sat</sub> <sup>2</sup>                |
|               |                                     |                         |                               |                               | Rated Current (A)                            |                                              |

<sup>1</sup> T = 40 K rise at rated current

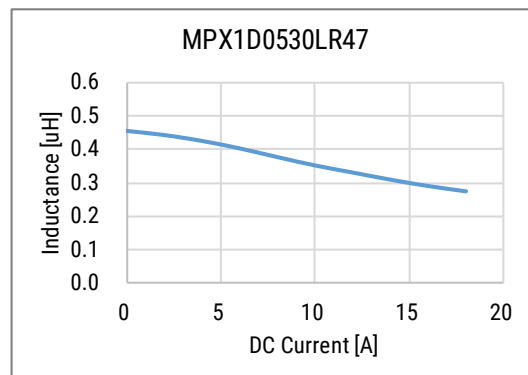
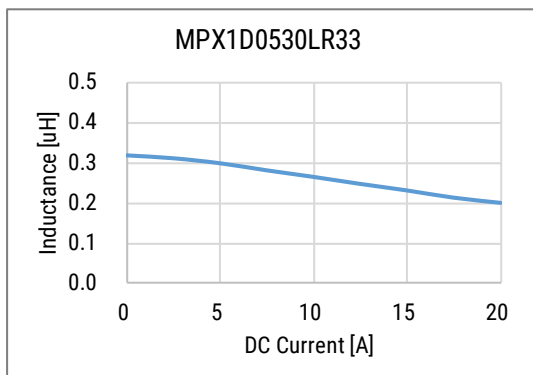
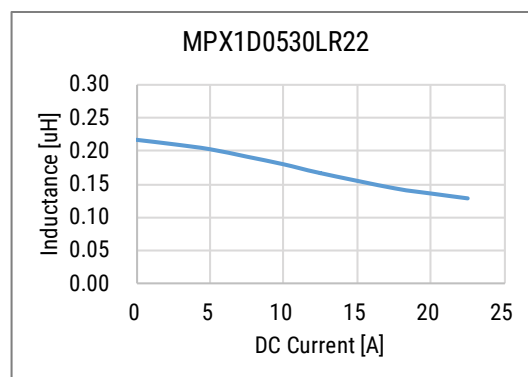
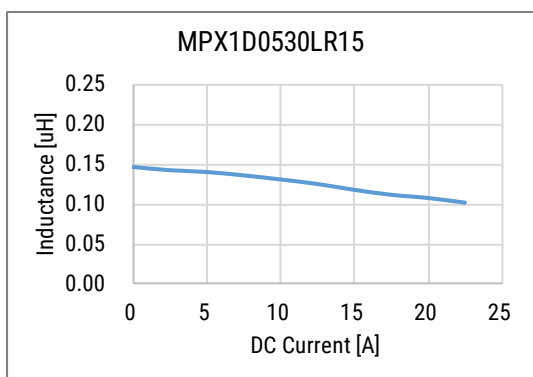
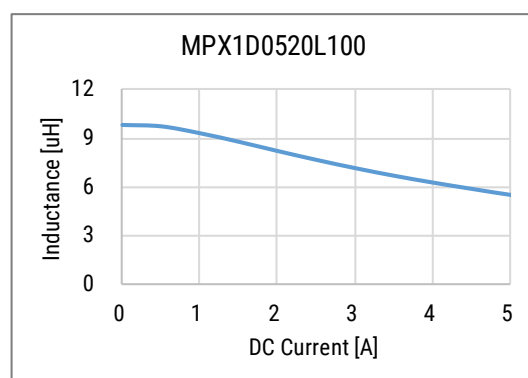
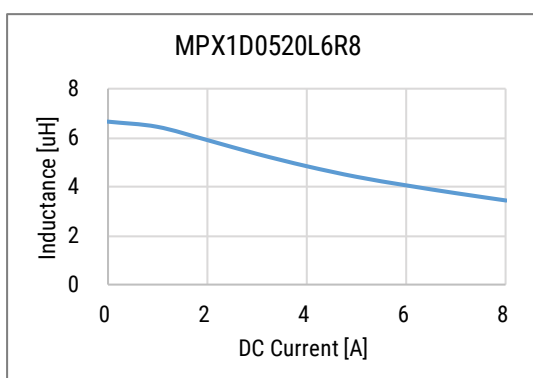
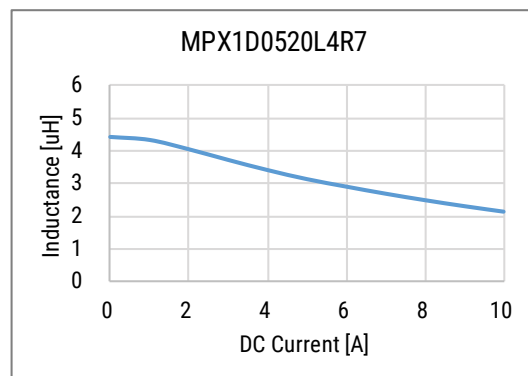
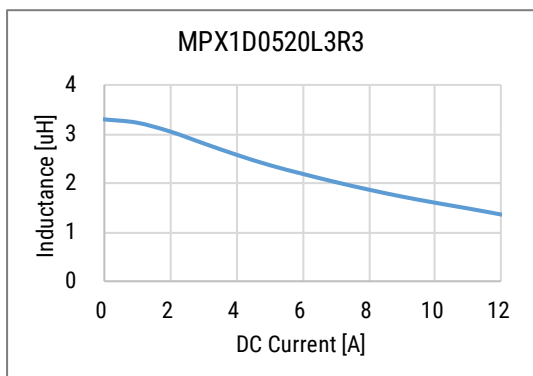
<sup>2</sup> Inductance drop 30% at rated current

All electrical characteristics data is referenced to 25°C.

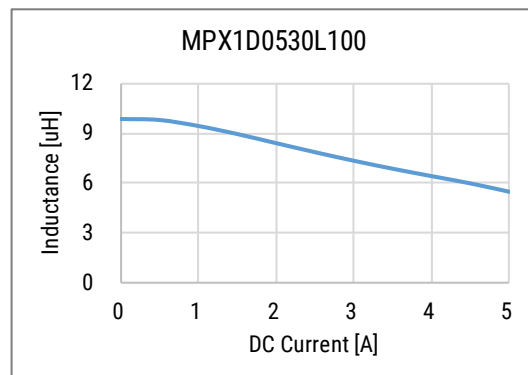
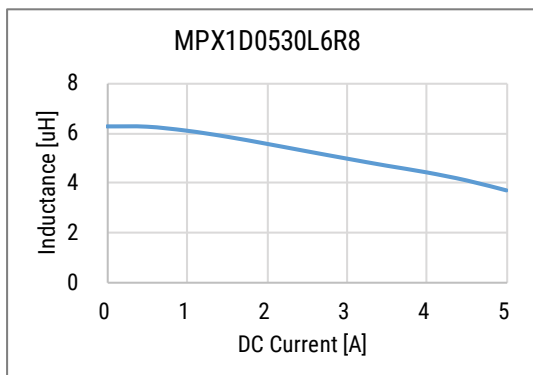
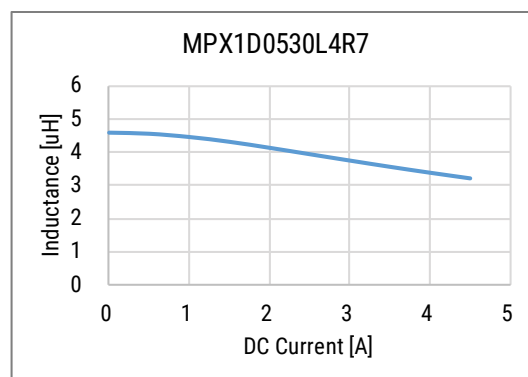
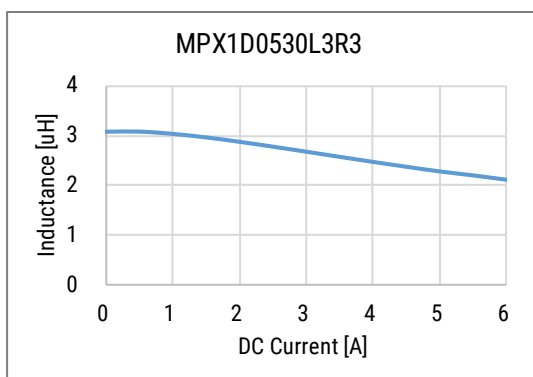
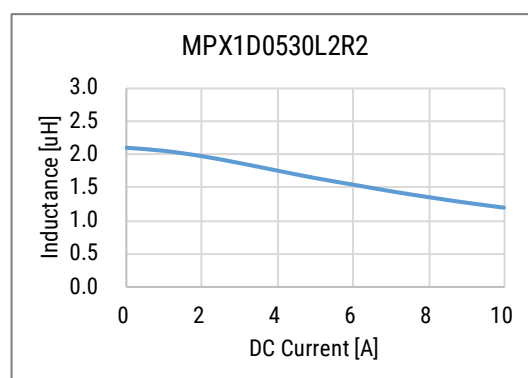
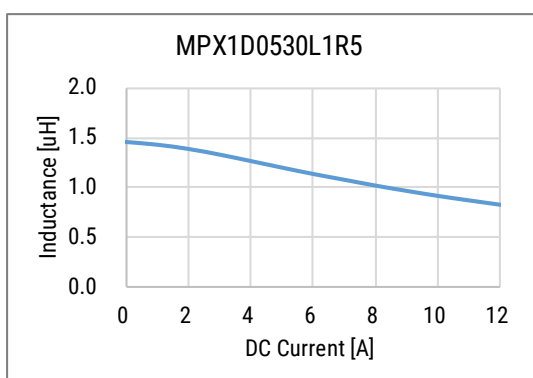
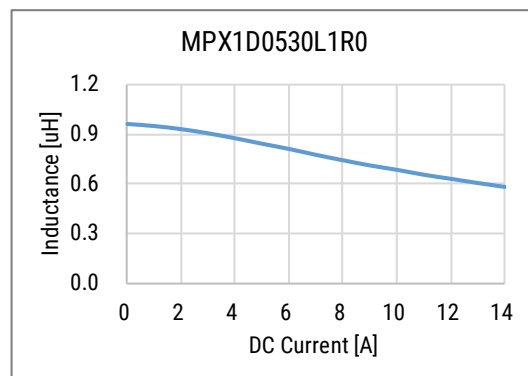
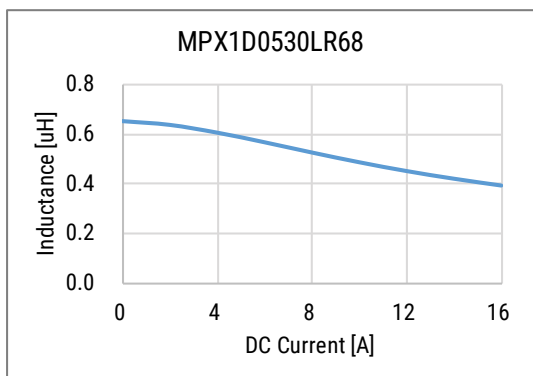
## DC-Superposed Characteristics



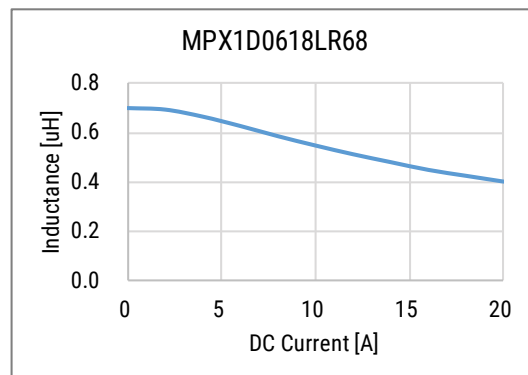
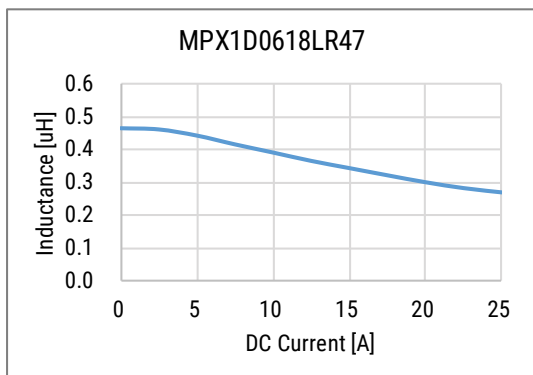
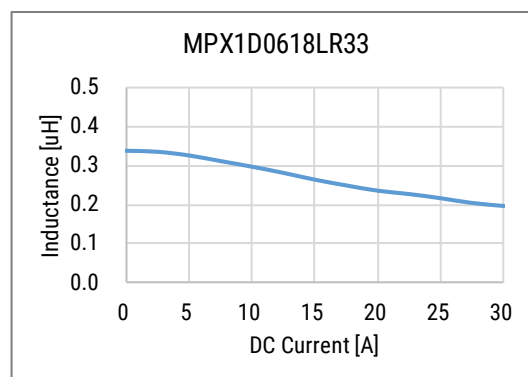
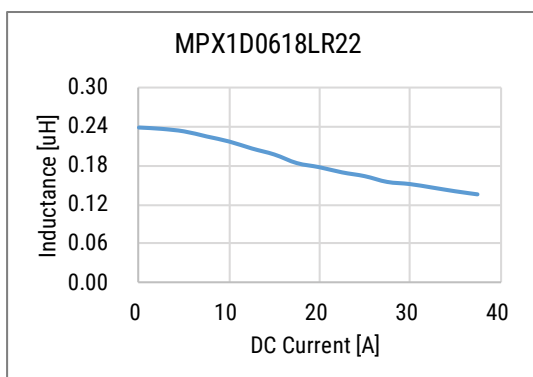
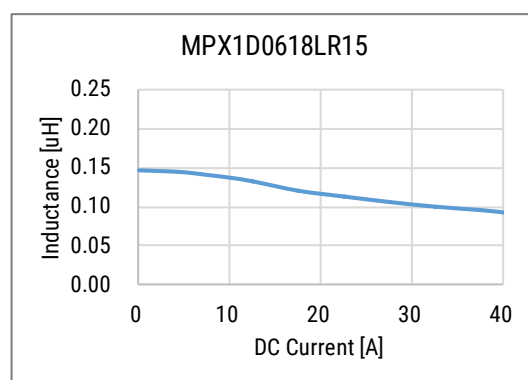
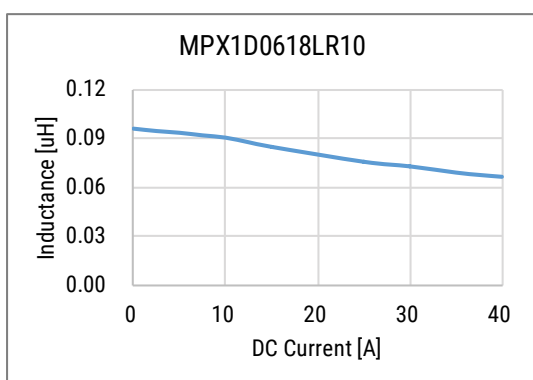
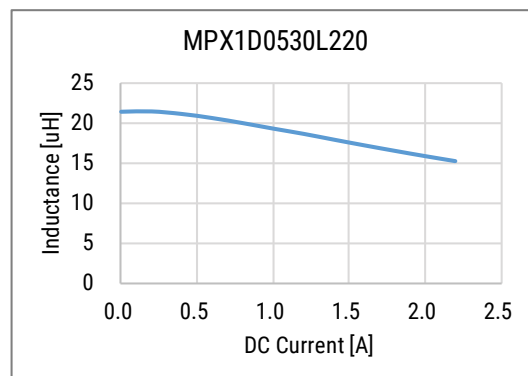
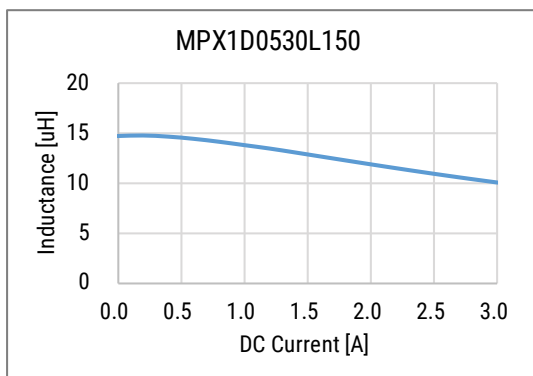
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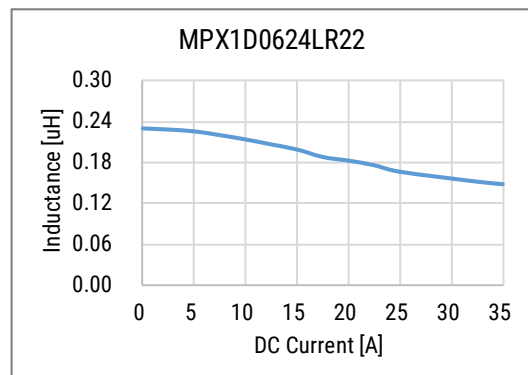
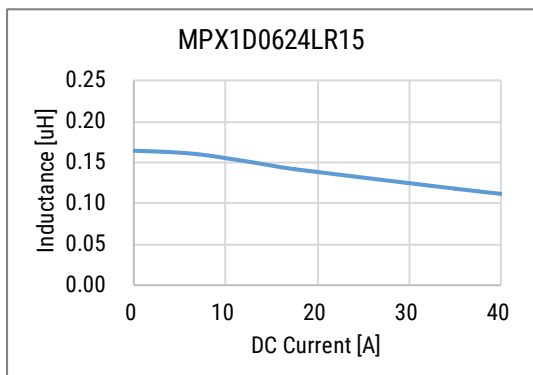
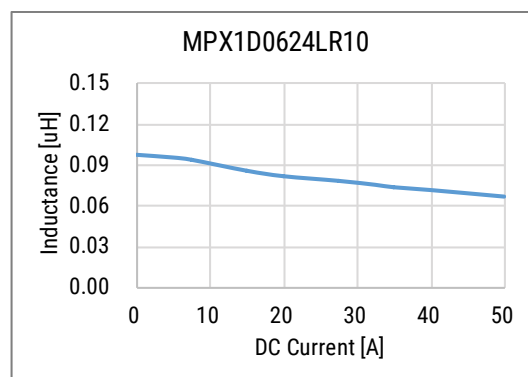
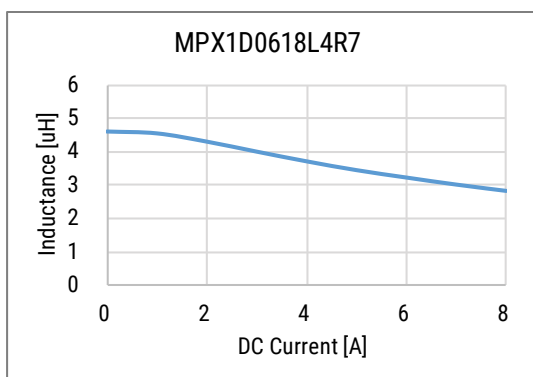
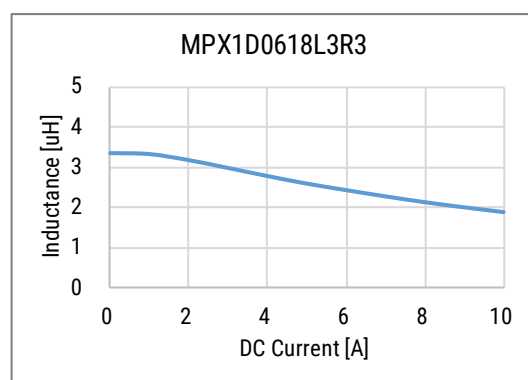
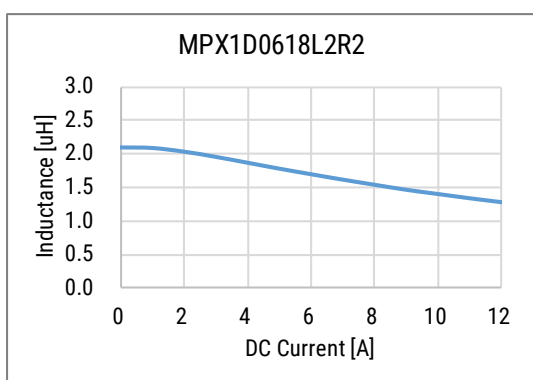
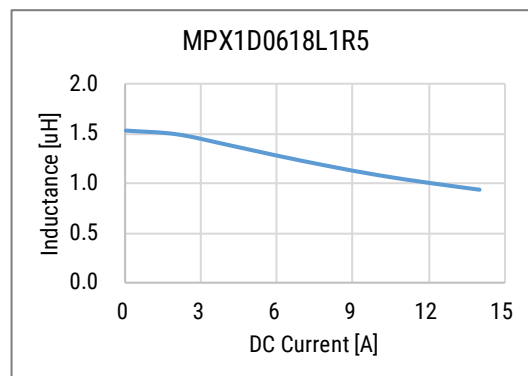
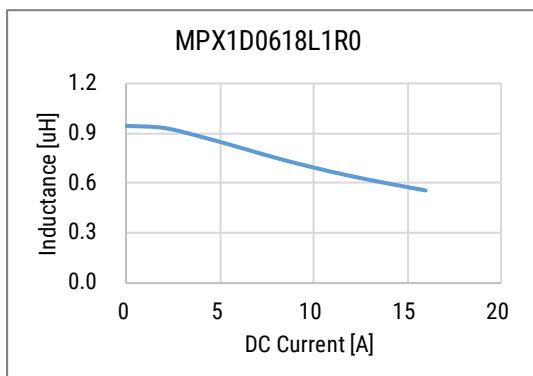
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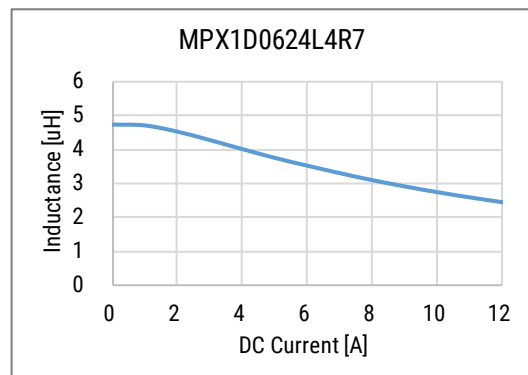
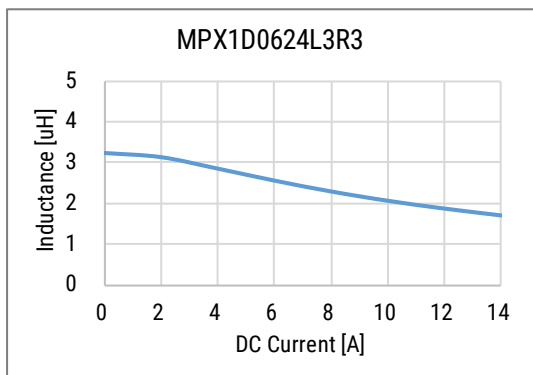
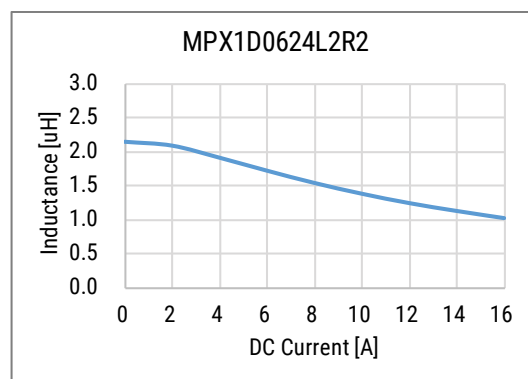
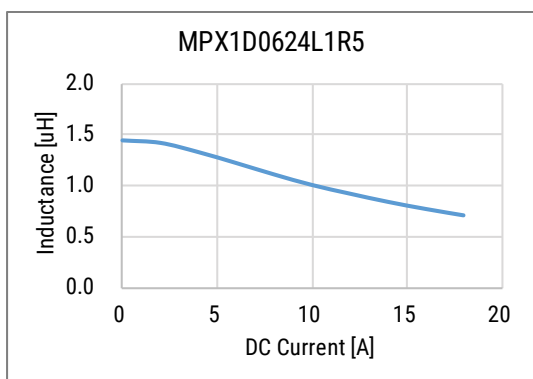
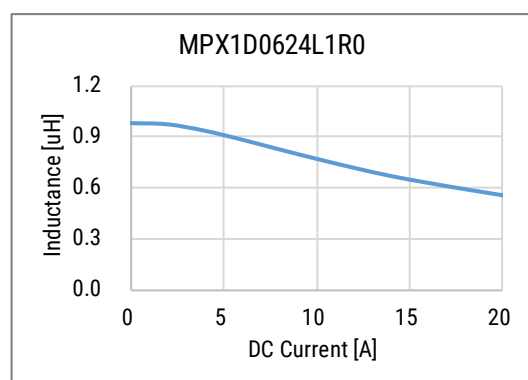
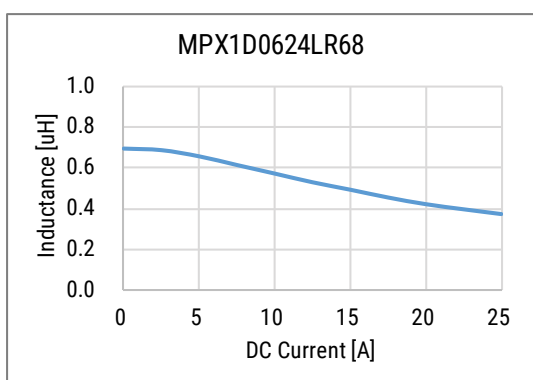
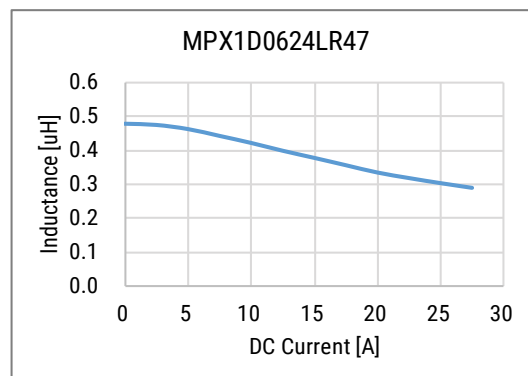
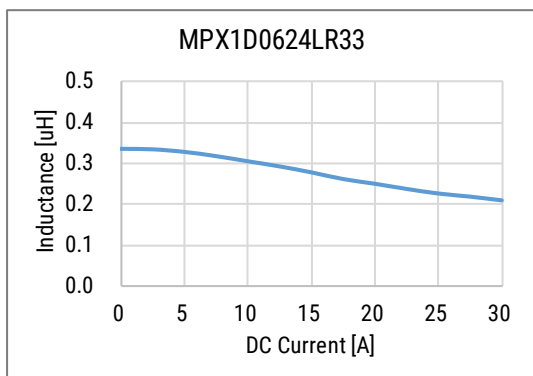
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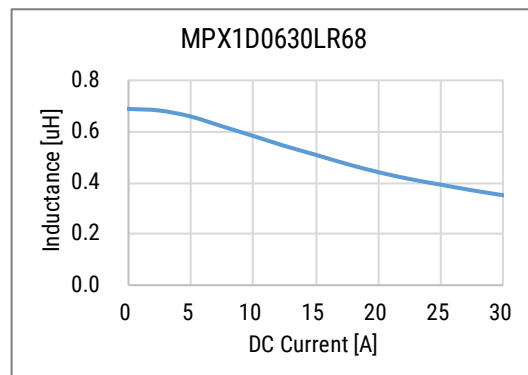
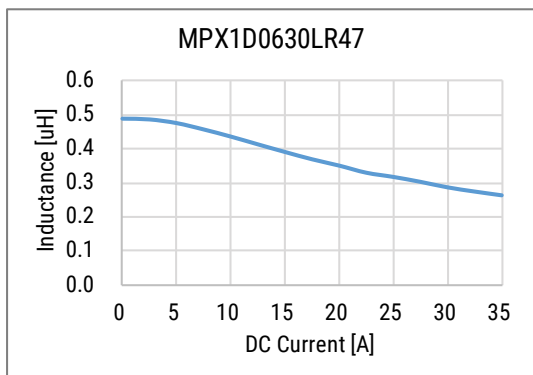
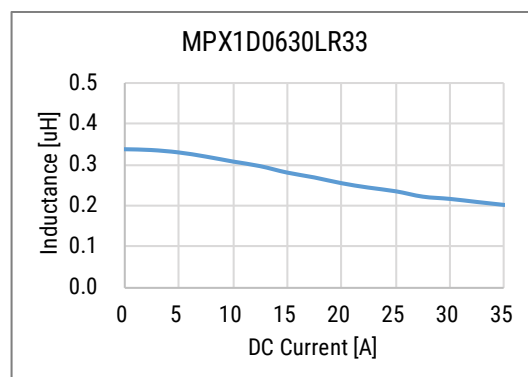
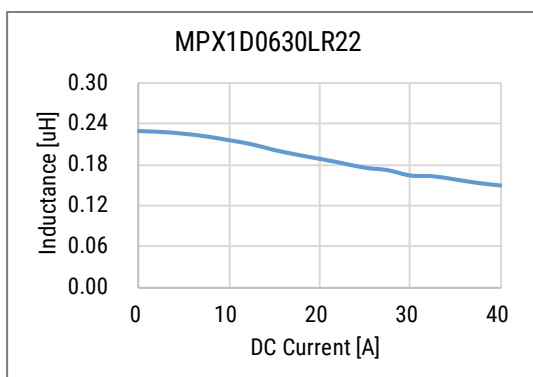
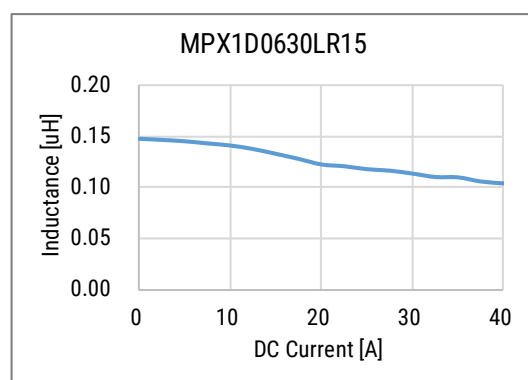
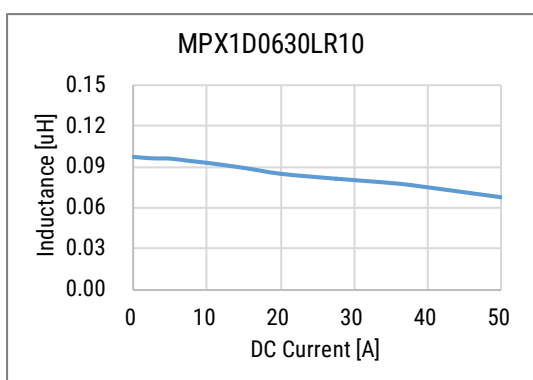
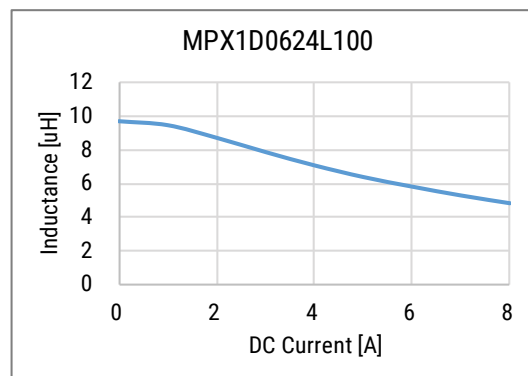
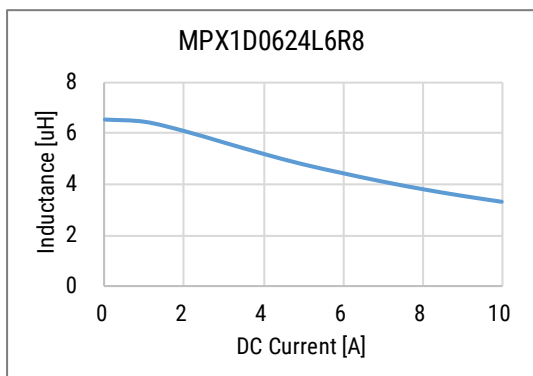
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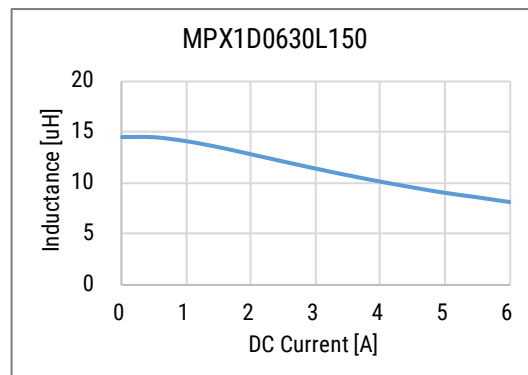
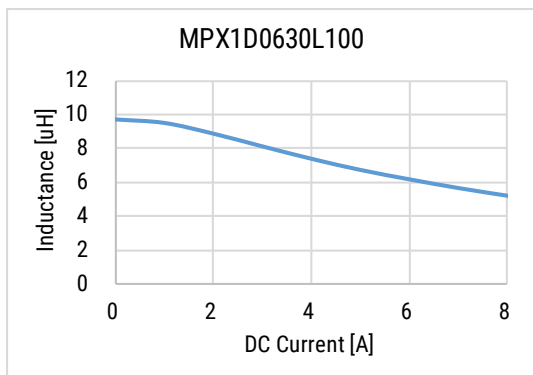
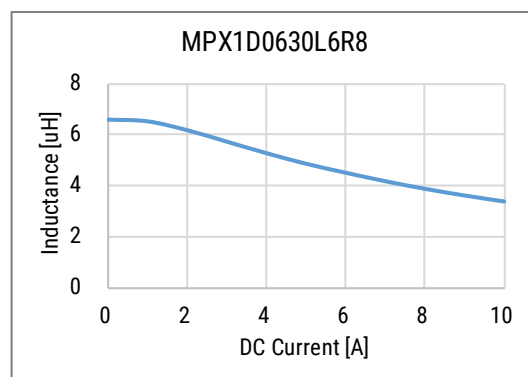
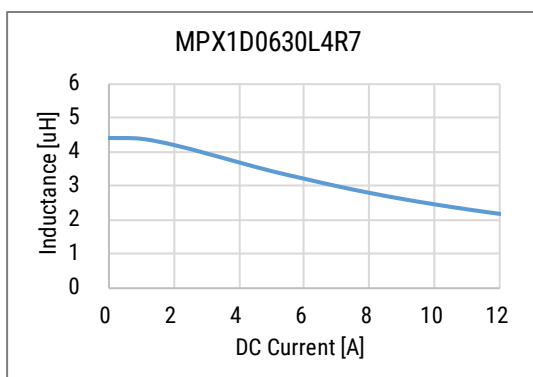
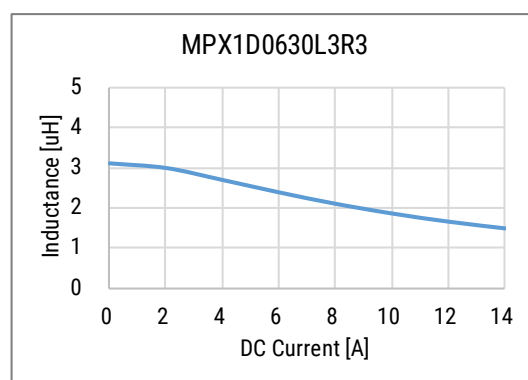
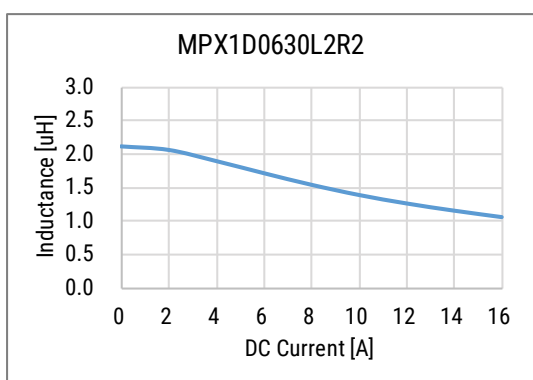
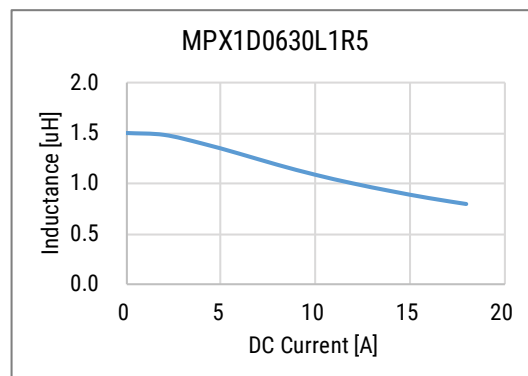
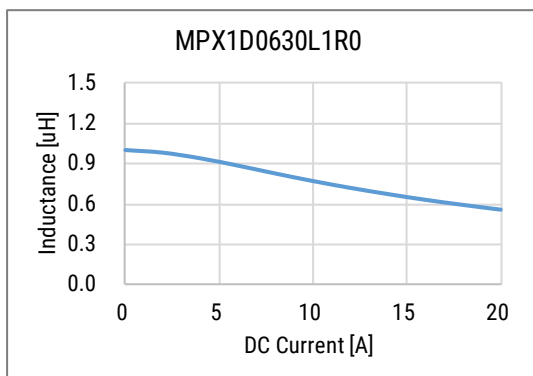
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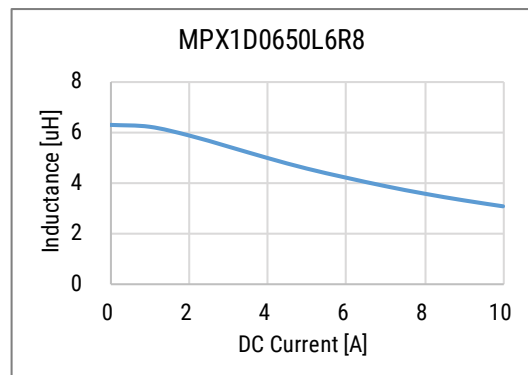
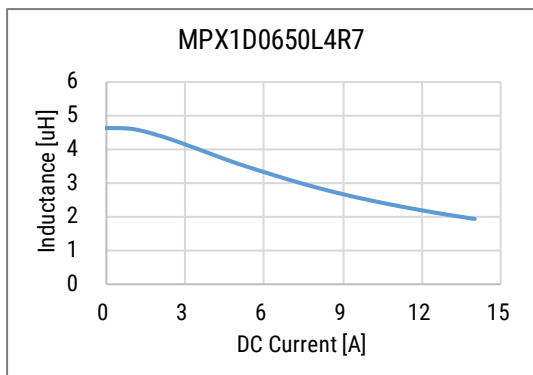
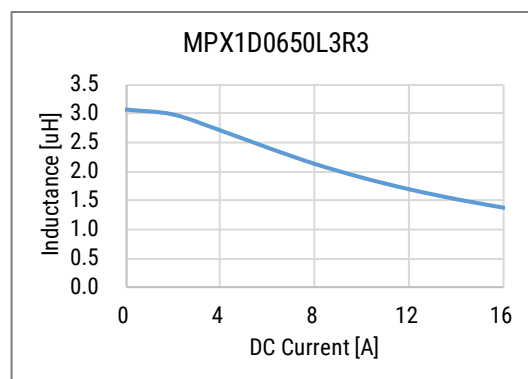
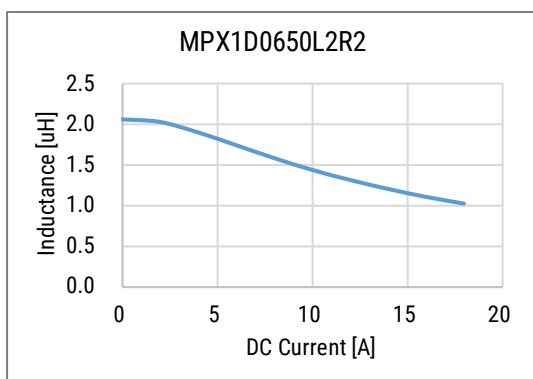
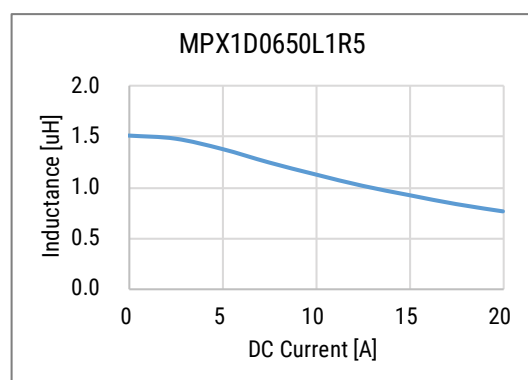
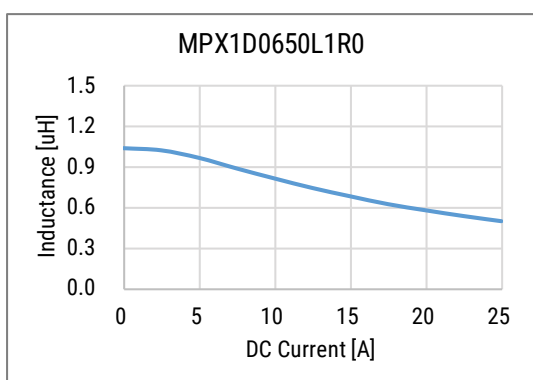
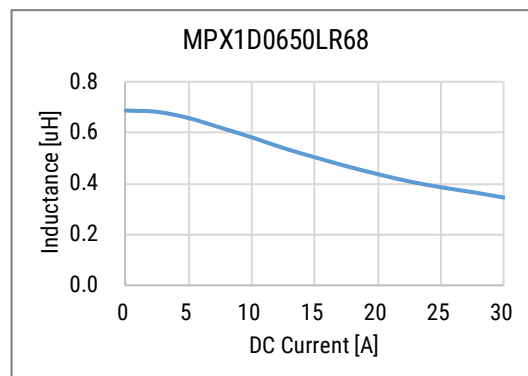
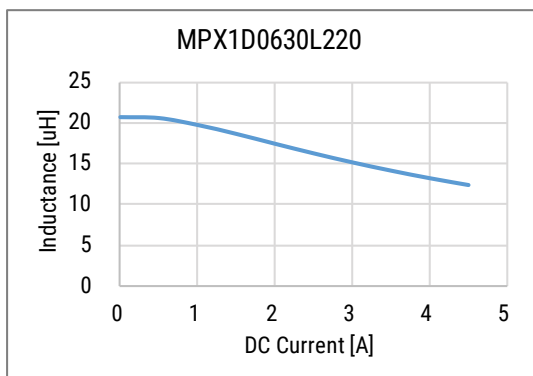
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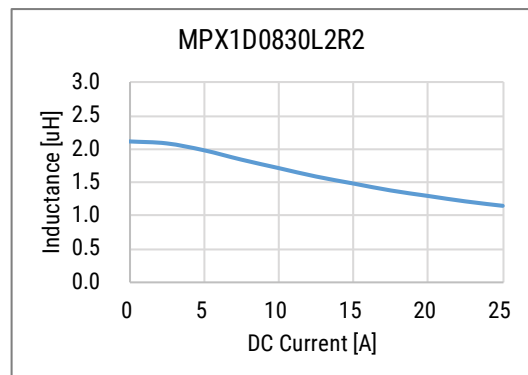
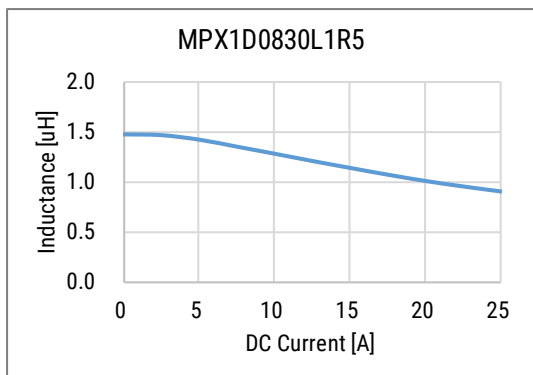
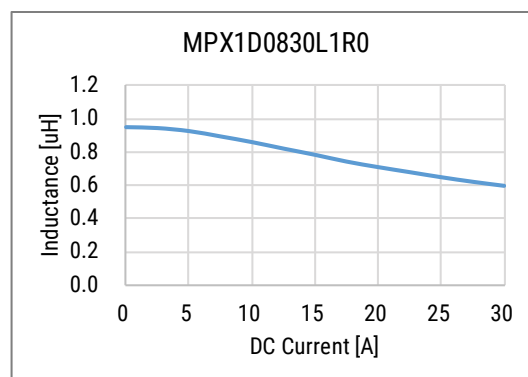
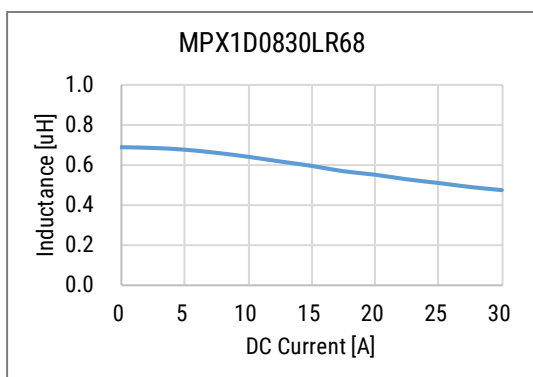
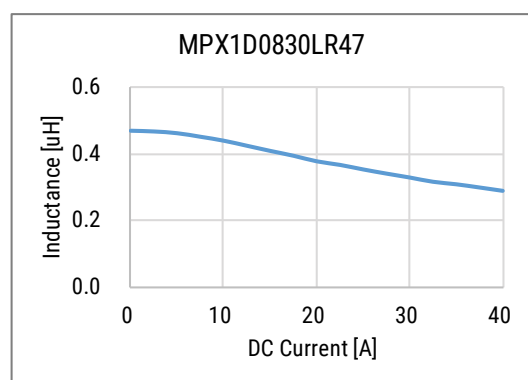
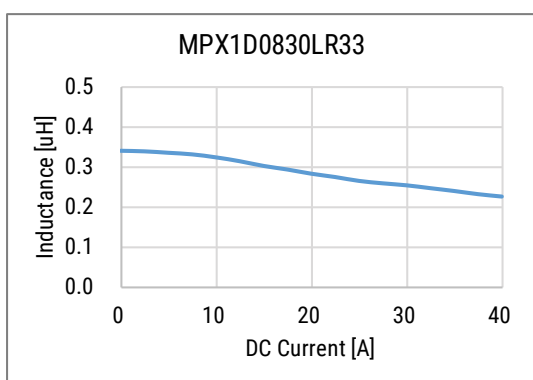
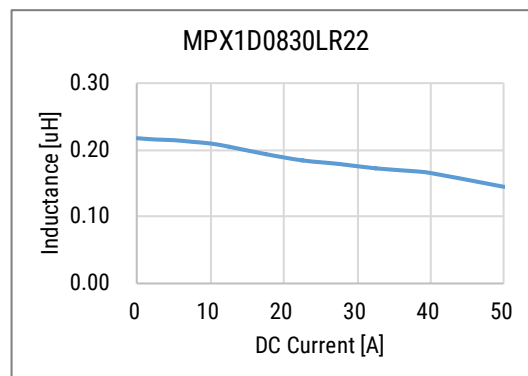
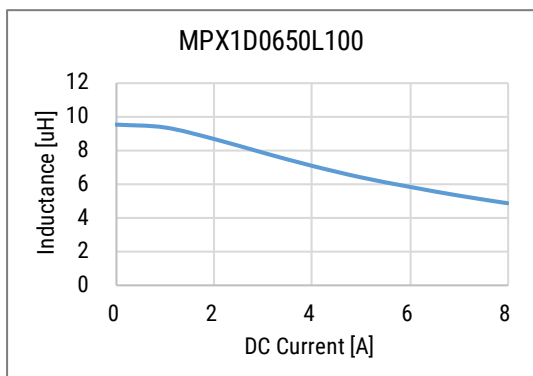
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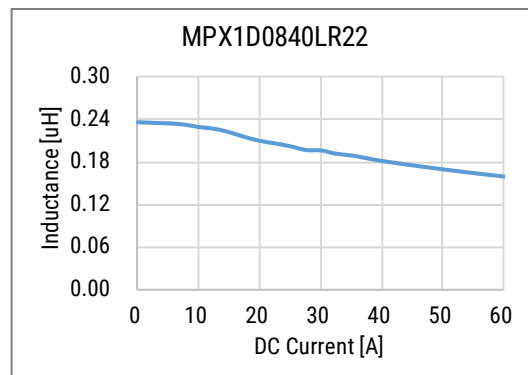
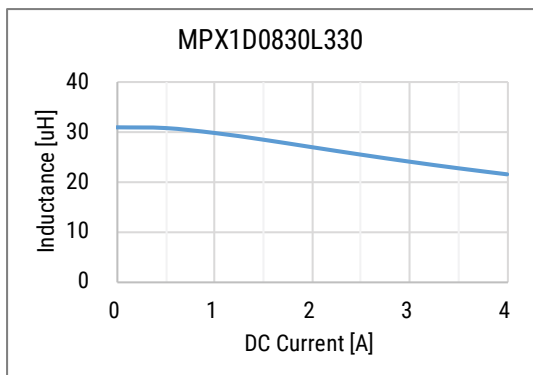
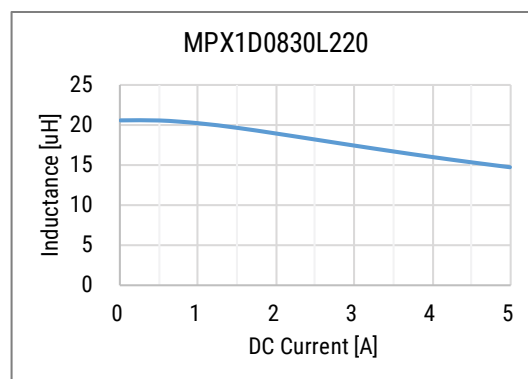
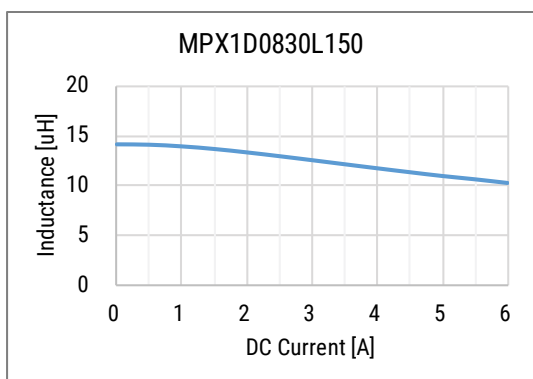
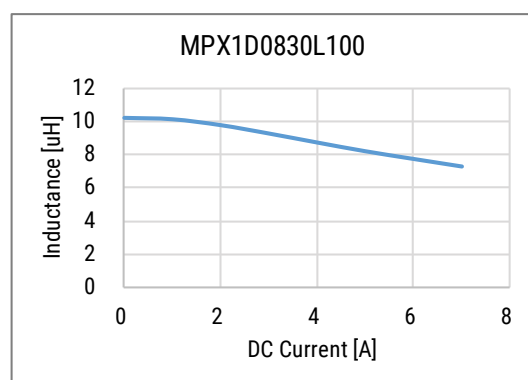
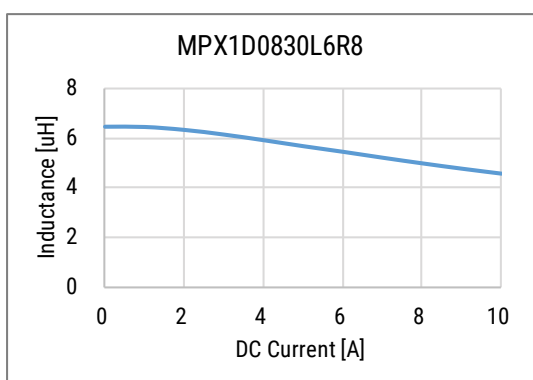
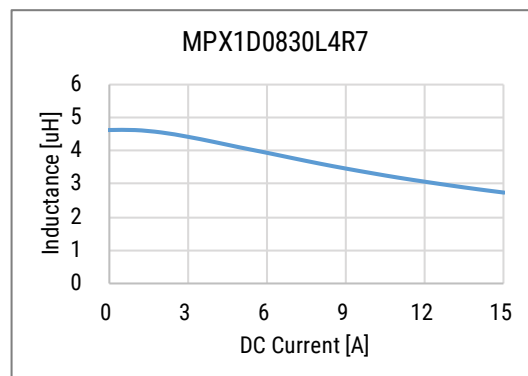
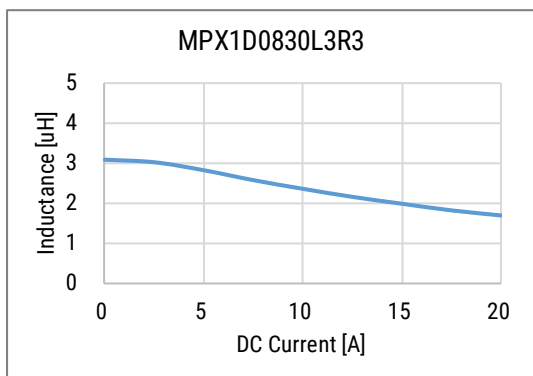
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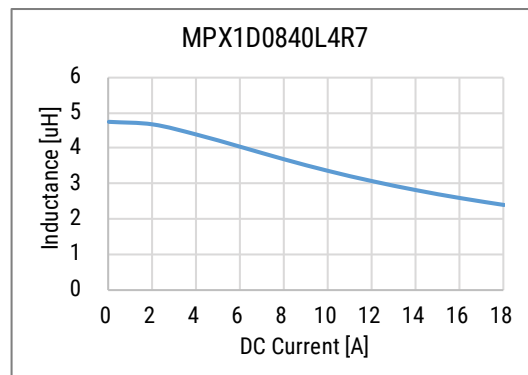
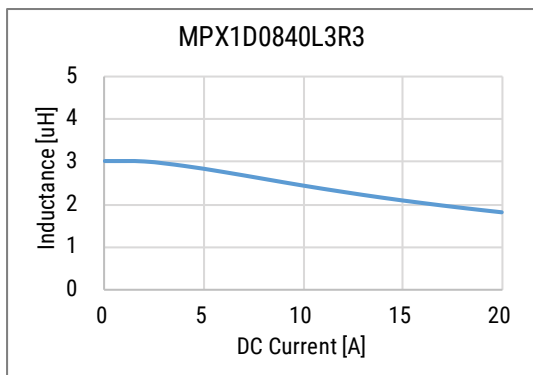
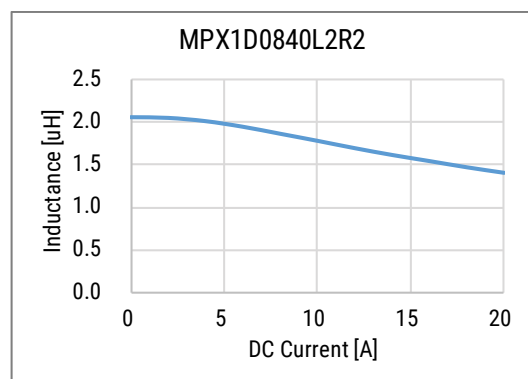
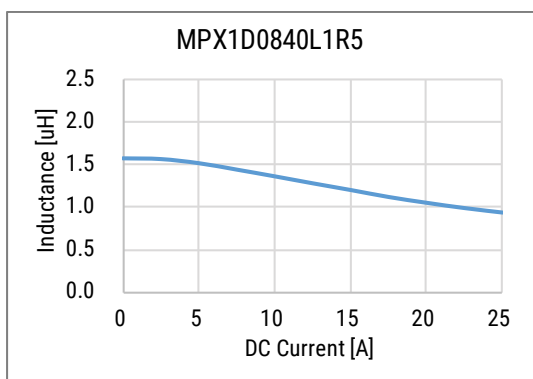
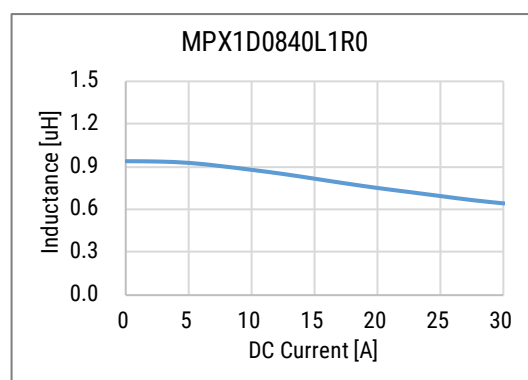
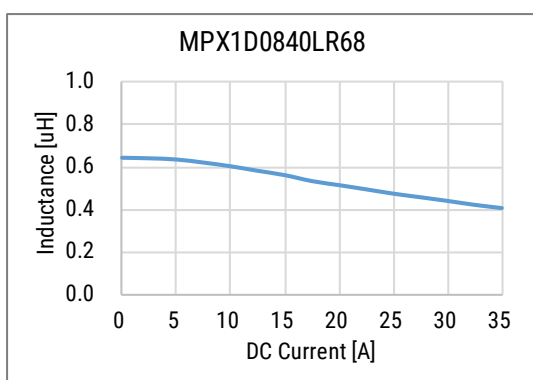
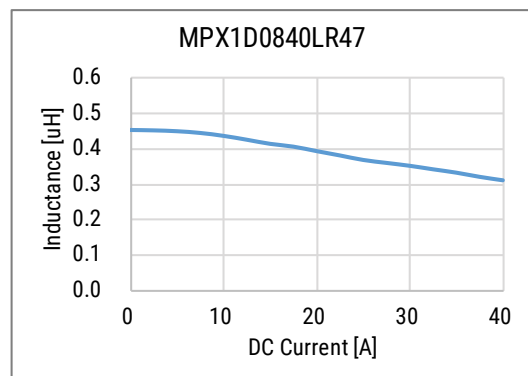
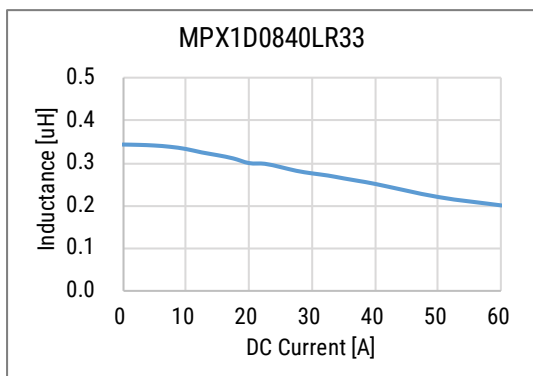
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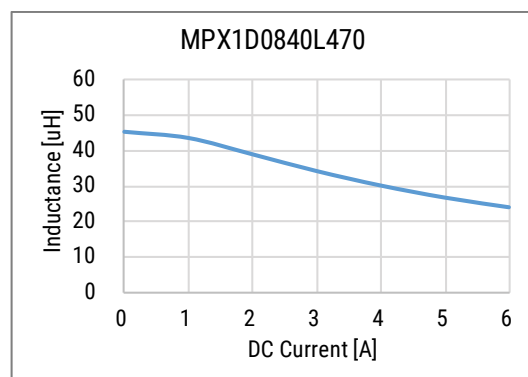
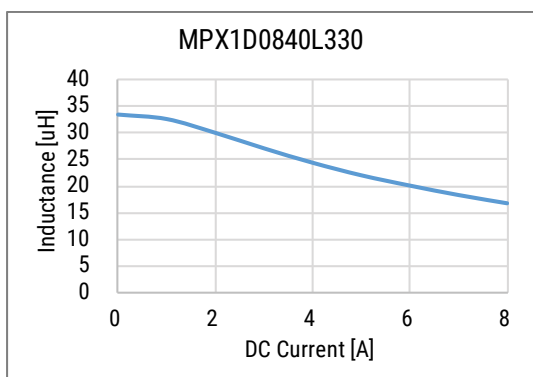
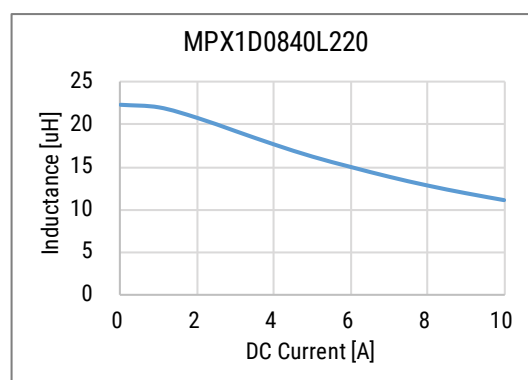
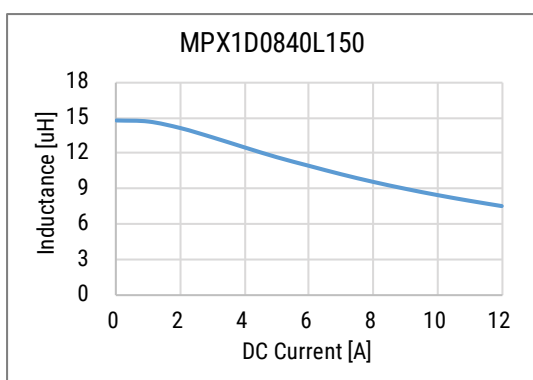
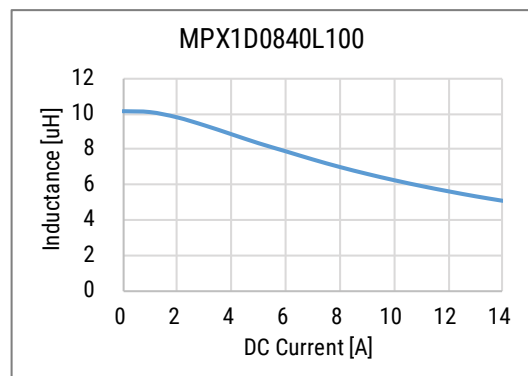
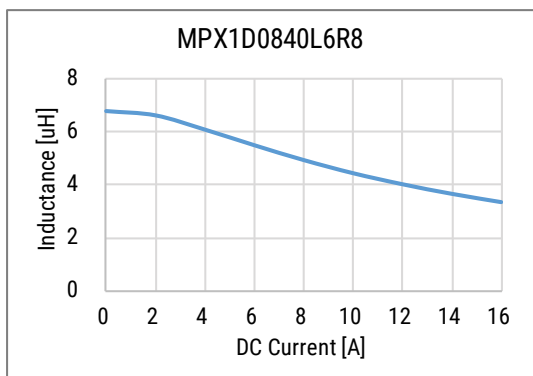
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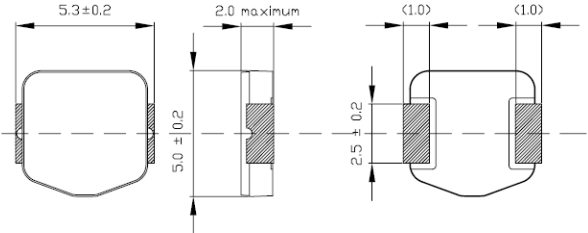
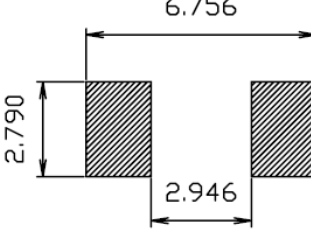
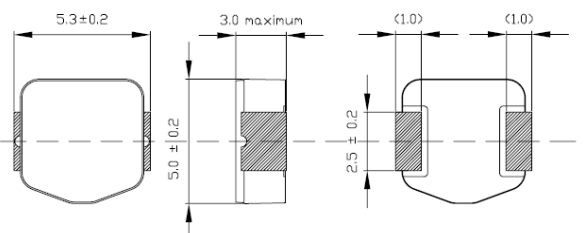
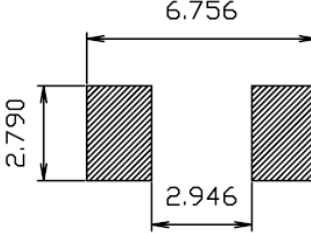
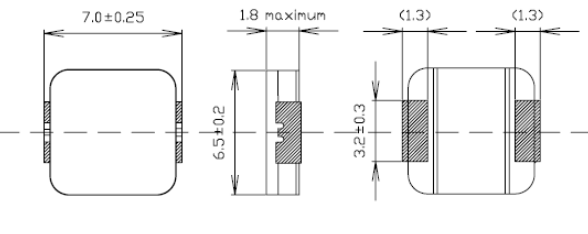
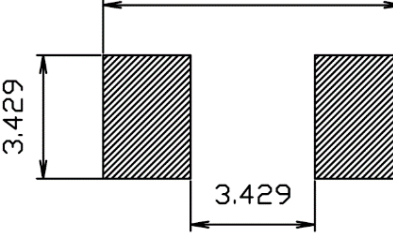
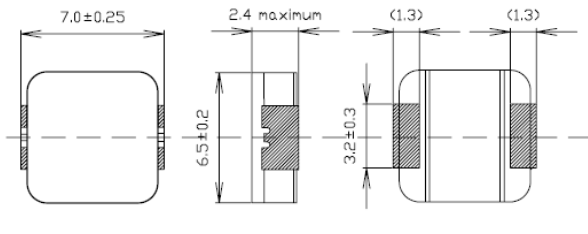
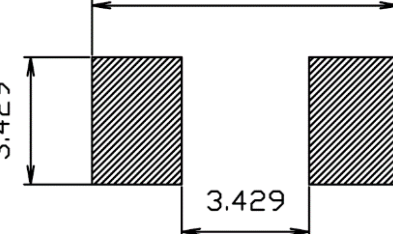
## DC-Superposed Characteristics cont.



## DC-Superposed Characteristics cont.



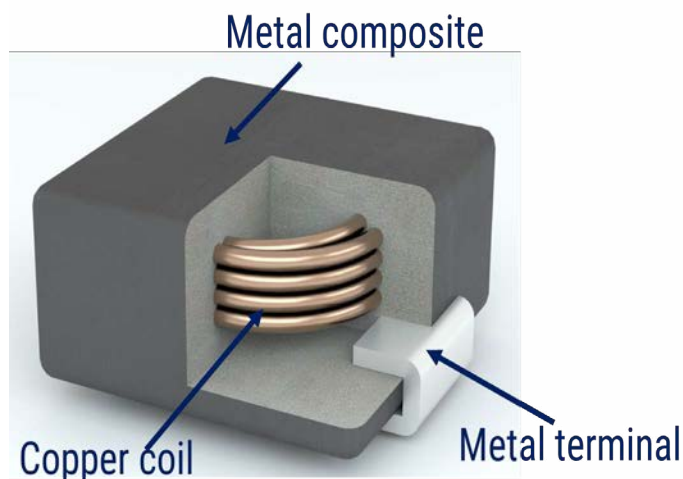
## Dimensions

| Case Size | Dimensions (mm)                                                                     | Land Pattern (mm)                                                                     |
|-----------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| MPX1D0520 |    |    |
| MPX1D0530 |   |   |
| MPX1D0618 |  |  |
| MPX1D0624 |  |  |

## Dimensions

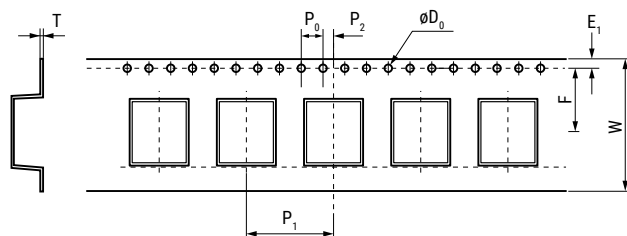
| Case Size | Dimensions (mm) | Land Pattern (mm) |
|-----------|-----------------|-------------------|
| MPX1D0630 |                 |                   |
| MPX1D0650 |                 |                   |
| MPX1D0830 |                 |                   |
| MPX1D0840 |                 |                   |

## Construction



## Taping Specification

### Dimensions of Indented Square Hole Plastic Tape

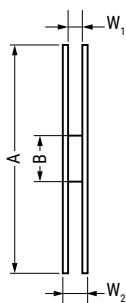
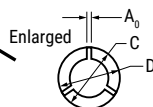
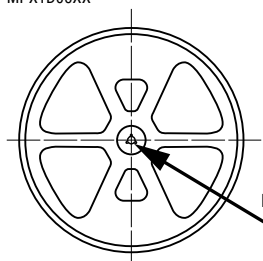


| Case Size | Reel Quantity |           | Dimensions (mm) |       |       |                |                |                |                 |       |
|-----------|---------------|-----------|-----------------|-------|-------|----------------|----------------|----------------|-----------------|-------|
|           |               |           | W               | F     | E     | P <sub>1</sub> | P <sub>2</sub> | P <sub>0</sub> | ØD <sub>0</sub> | T     |
| MPX1D0520 | 3,500         | Tolerance | ±0.30           | ±0.10 | ±0.10 | ±0.10          | ±0.10          | ±0.10          | ±0.10           | ±0.05 |
|           |               | Nominal   | 12.00           | 5.50  | 1.75  | 8.00           | 2.00           | 4.00           | 1.50            | 0.40  |
| MPX1D0530 | 2,500         | Tolerance | ±0.30           | ±0.10 | ±0.10 | ±0.10          | ±0.10          | ±0.10          | ±0.10           | ±0.05 |
|           |               | Nominal   | 12.00           | 5.50  | 1.75  | 8.00           | 2.00           | 4.00           | 1.50            | 0.40  |
| MPX1D0618 | 2,500         | Tolerance | ±0.30           | ±0.10 | ±0.10 | ±0.10          | ±0.10          | ±0.10          | ±0.10           | ±0.05 |
|           |               | Nominal   | 16.00           | 7.50  | 1.75  | 12.00          | 2.00           | 4.00           | 1.50            | 0.40  |
| MPX1D0624 | 1,500         | Tolerance | ±0.30           | ±0.10 | ±0.10 | ±0.10          | ±0.10          | ±0.10          | ±0.10           | ±0.05 |
|           |               | Nominal   | 16.00           | 7.50  | 1.75  | 12.00          | 2.00           | 4.00           | 1.55            | 0.40  |
| MPX1D0630 | 1,500         | Tolerance | ±0.30           | ±0.10 | ±0.10 | ±0.10          | ±0.10          | ±0.10          | ±0.10           | ±0.05 |
|           |               | Nominal   | 16.00           | 7.50  | 1.75  | 12.00          | 2.00           | 4.00           | 1.55            | 0.40  |
| MPX1D0650 | 1,000         | Tolerance | ±0.30           | ±0.10 | ±0.10 | ±0.10          | ±0.10          | ±0.10          | ±0.05           | ±0.05 |
|           |               | Nominal   | 16.00           | 7.50  | 1.75  | 12.00          | 2.00           | 4.00           | 1.55            | 0.40  |
| MPX1D0830 | 1,500         | Tolerance | ±0.30           | ±0.10 | ±0.10 | ±0.10          | ±0.10          | ±0.10          | ±0.05           | ±0.05 |
|           |               | Nominal   | 16.00           | 7.50  | 1.75  | 12.00          | 2.00           | 4.00           | 1.55            | 0.40  |
| MPX1D0840 | 1,000         | Tolerance | ±0.30           | ±0.10 | ±0.10 | ±0.10          | ±0.10          | ±0.10          | ±0.05           | ±0.05 |
|           |               | Nominal   | 16.00           | 7.50  | 1.75  | 12.00          | 2.00           | 4.00           | 1.50            | 0.40  |

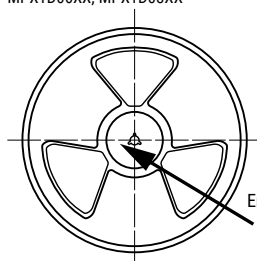
## Reel Specifications

### Reel Dimensions

MPX1D05XX



MPX1D06XX, MPX1D08XX



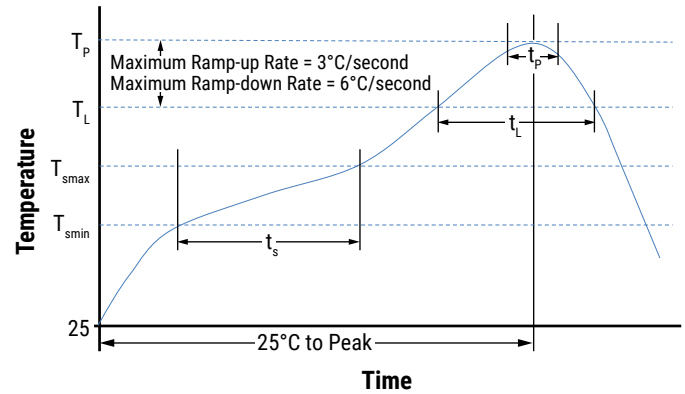
| Case Size |           | Dimensions (mm) |      |       |       |                |                |                |
|-----------|-----------|-----------------|------|-------|-------|----------------|----------------|----------------|
|           |           | A               | B    | C     | D     | A <sub>0</sub> | W <sub>1</sub> | W <sub>2</sub> |
| MPX1D0520 | Tolerance | ±2.0            | ±2.0 | ±0.2  | ±0.8  | ±0.5           |                |                |
|           | Nominal   | ø330            | ø80  | ø13.0 | ø21.0 | 2.0            | 13.5           | 17.5           |
| MPX1D0530 | Tolerance | ±2.0            | ±2.0 | ±0.2  | ±0.8  | ±0.5           |                |                |
|           | Nominal   | ø330            | ø80  | ø13.0 | ø21.0 | 2.0            | 13.5           | 17.5           |
| MPX1D0618 | Tolerance | ±2.0            | ±2.0 | ±0.2  | ±0.8  | ±0.5           |                |                |
|           | Nominal   | ø330            | ø100 | ø13.2 | ø21.5 | 2.5            | 16.9           | 21.3           |
| MPX1D0624 | Tolerance | ±2.0            | ±2.0 | ±0.2  | ±0.8  | ±0.5           |                |                |
|           | Nominal   | ø330            | ø100 | ø13.2 | ø21.5 | 2.5            | 16.9           | 21.3           |
| MPX1D0630 | Tolerance | ±2.0            | ±2.0 | ±0.2  | ±0.8  | ±0.5           |                |                |
|           | Nominal   | ø330            | ø100 | ø13.2 | ø21.5 | 2.5            | 16.9           | 21.3           |
| MPX1D0650 | Tolerance | ±2.0            | ±2.0 | ±0.2  | ±0.8  | ±0.5           |                |                |
|           | Nominal   | ø330            | ø100 | ø13.2 | ø21.5 | 2.5            | 16.9           | 21.3           |
| MPX1D0830 | Tolerance | ±2.0            | ±2.0 | ±0.2  | ±0.8  | ±0.5           |                |                |
|           | Nominal   | ø330            | ø100 | ø13.2 | ø21.5 | 2.5            | 16.9           | 21.3           |
| MPX1D0840 | Tolerance | ±2.0            | ±2.0 | ±0.2  | ±0.8  | ±0.5           |                |                |
|           | Nominal   | ø330            | ø100 | ø13.2 | ø21.5 | 2.5            | 16.9           | 21.3           |

## Soldering Process

### Recommended Reflow Soldering Profile

Reference ICP/JEDEC J-STD-020E

| Profile Feature                                       | Pb-Free Assembly                                                               |
|-------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Preheat/Soak</b>                                   |                                                                                |
| Temperature Minimum ( $T_{smin}$ )                    | 150°C                                                                          |
| Temperature Maximum ( $T_{smax}$ )                    | 200°C                                                                          |
| Time ( $t_s$ ) from $T_{smin}$ to $T_{smax}$          | 60 – 120 seconds                                                               |
| Ramp-Up Rate ( $T_L$ to $T_p$ )                       | 3°C/second maximum                                                             |
| Liquidous Temperature ( $T_L$ )                       | 217°C                                                                          |
| Time Above Liquidous ( $t_L$ )                        | 60 – 150 seconds                                                               |
| Peak Temperature ( $T_p$ )                            | 260°C for MPX1D0520, 0618, 0624<br>250°C for MPX1D0530, 0630, 0650, 0830, 0840 |
| Time within 5°C of Maximum Peak Temperature ( $t_p$ ) | 30 seconds maximum                                                             |
| Ramp-Down Rate ( $T_p$ to $T_L$ )                     | 6°C/second maximum                                                             |
| Time 25°C to Peak Temperature                         | 8 minutes maximum                                                              |



## Handling Precautions

Inductors should be stored in normal working environments. While the inductors themselves are quite robust in other environments, exposure to high temperatures, high humidity, corrosive atmospheres, and long-term storage degrades solderability.

KEMET recommends that maximum storage temperature not exceed 40°C and maximum storage humidity not exceed 70% relative humidity. Atmospheres should be free of chlorine-bearing and sulfur-bearing compounds. Temperature fluctuations should be minimized to avoid condensation on the parts.

For optimized solderability, inductor stock should be used promptly, preferably within six months of receipt.

## Export Control

### For customers in Japan

For products which are controlled items subject to the “Foreign Exchange and Foreign Trade Law” of Japan, the export license specified by the law is required for export.

### For customers outside Japan

Inductors should not be used or sold for use in the development, production, stockpiling, or utilization of any conventional weapons or weapons of mass destruction (nuclear weapons, chemical weapons, biological weapons, or missiles), or any other weapons.

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Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated or that other measures may not be required.

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