



The BDQQ series is the special design to enhance the performance of PFM and PWM applications. It provides lower  $R_{ac}$  value at light load and lower  $R_{dc}$  value at heavy load to improve efficiency performance. Furthermore, it provides excellent saturation current to reduce the ripple current and enhance efficiency.

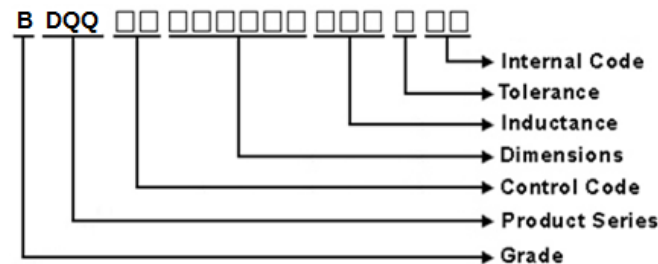
## Features

- Chip Size: 1412 and 2012
- Low profile: 0.65mm and 0.8mm
- Inductance: 0.33uH, 0.47uH, and 1.0uH
- Low  $R_{dc}$  for better power efficiency management
- High saturation current
- Special patented design for bottom termination

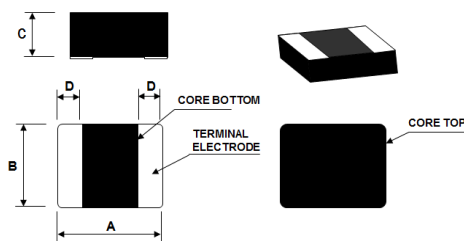
## Applications

- DC-DC buck converter for power management
- 5G, Cell phone

## Product Identification



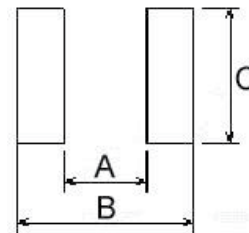
## Chip Shape and Dimensions



Dimensions in mm

| TYPE         | A       | B        | C         | D        |
|--------------|---------|----------|-----------|----------|
| BDQQ001412FE | 1.4±0.2 | 1.2±0.2  | 0.65 Max. | 0.5 Typ. |
| BDQQ00141208 | 1.4±0.2 | 1.2±0.2  | 0.80 Max. | 0.5 Typ. |
| BDQQ002012FE | 2.0±0.2 | 1.25±0.2 | 0.65 Max. | 0.5 Typ. |
| BDQQ00201208 | 2.0±0.2 | 1.25±0.2 | 0.80 Max. | 0.5 Typ. |

## Recommended Pad Pattern



Dimensions in mm

| TYPE         | A   | B   | C    |
|--------------|-----|-----|------|
| BDQQ001412FE | 0.5 | 1.5 | 1.3  |
| BDQQ00141208 | 0.5 | 1.5 | 1.3  |
| BDQQ002012FE | 0.7 | 2.2 | 1.45 |
| BDQQ00201208 | 0.7 | 2.2 | 1.45 |

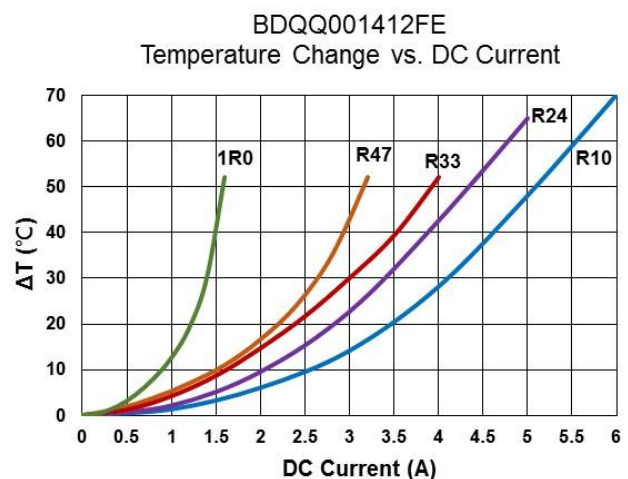
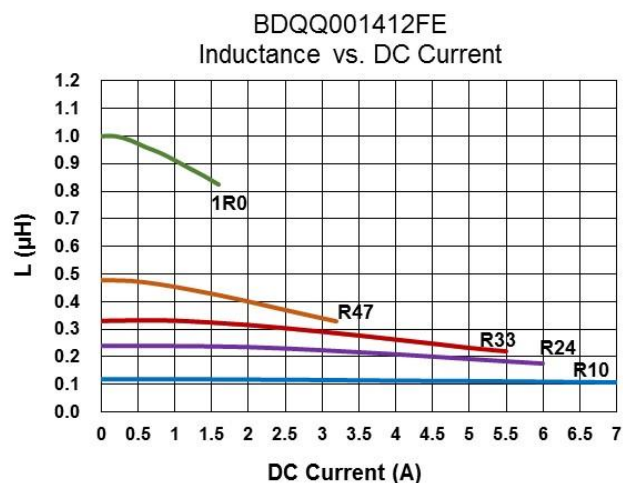
## Electrical Characteristics

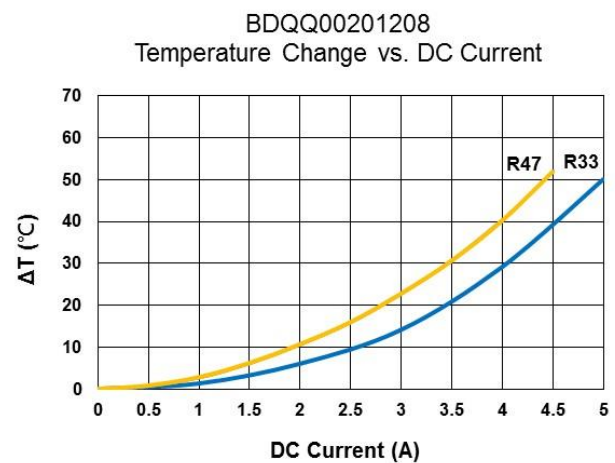
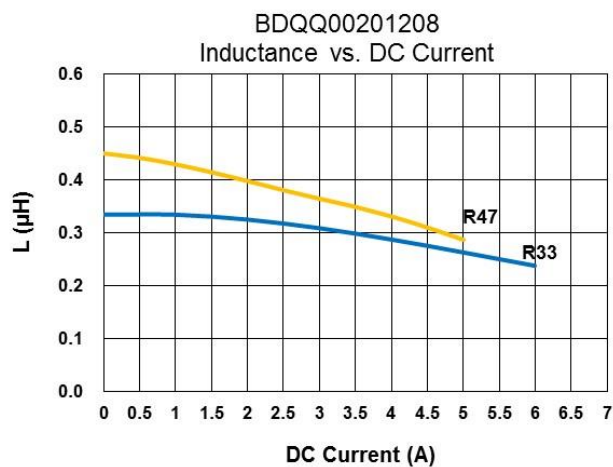
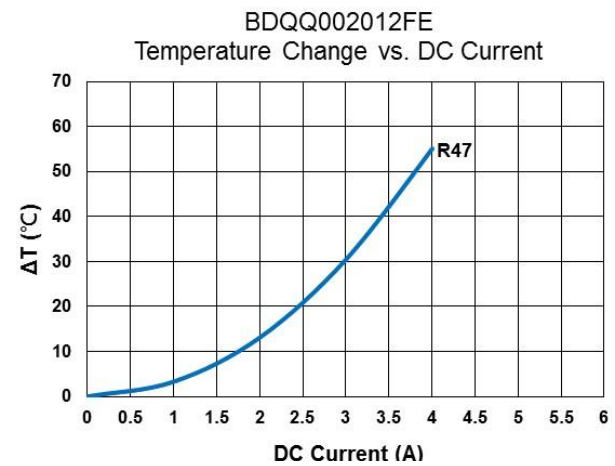
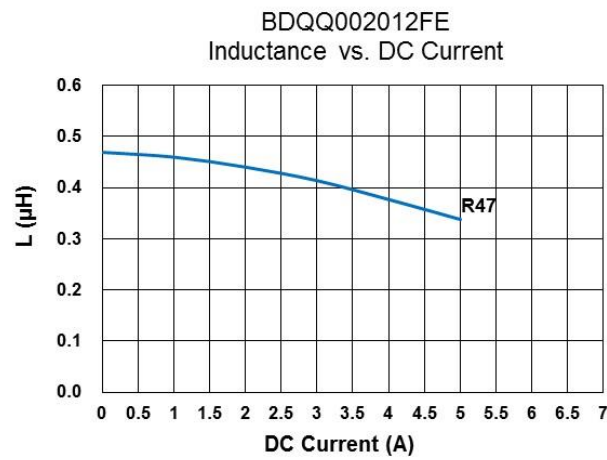
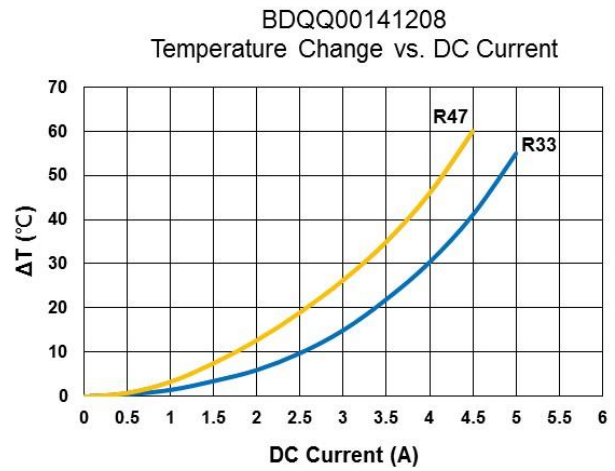
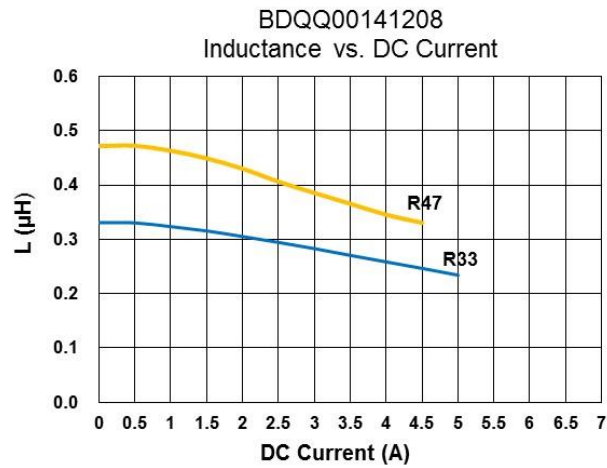
| Part Number        | Inductance<br>( $\mu$ H) | Tolerance<br>( $\pm\%$ ) | Test<br>Frequency | RDC (m $\Omega$ )<br>Max. | Isat (A)<br>Max. | Irms (A)<br>Max. |
|--------------------|--------------------------|--------------------------|-------------------|---------------------------|------------------|------------------|
|                    |                          |                          | (MHz)             |                           |                  |                  |
| BDQQ001412FER11NCA | 0.11                     | 30                       | 2                 | 20                        | 6.8              | 4.5              |
| BDQQ001412FER24MCA | 0.24                     | 20                       | 2                 | 27                        | 5.5              | 4.0              |
| BDQQ001412FER33MCA | 0.33                     | 20                       | 2                 | 32                        | 5.0              | 3.0              |
| BDQQ001412FER47MCA | 0.47                     | 20                       | 2                 | 42                        | 3.0              | 2.6              |
| BDQQ001412FE1R0MCA | 1.00                     | 20                       | 2                 | 88                        | 2.0              | 1.5              |
| BDQQ00141208R33MCA | 0.33                     | 20                       | 2                 | 25                        | 5.0              | 4.0              |
| BDQQ00141208R47MCA | 0.47                     | 20                       | 2                 | 29                        | 4.5              | 3.3              |
| BDQQ002012FER47MCA | 0.47                     | 20                       | 2                 | 34                        | 4.5              | 3.4              |
| BDQQ00201208R33MCA | 0.33                     | 20                       | 2                 | 23                        | 5.3              | 4.5              |
| BDQQ00201208R47MCB | 0.47                     | 20                       | 2                 | 27                        | 4.8              | 3.9              |

**Note:** Please be noted that the tolerance of 0.11 $\mu$ H is  $\pm 30\%$  and others are  $\pm 20\%$

- Operating temperature range:  $-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$  (Including self-temperature rise)
- Isat for Inductance drop 30% from its initial inductance value without applying current
- Irms for a  $40^{\circ}\text{C}$  temperature rise from  $25^{\circ}\text{C}$  ambient with applying current
- Rated current: Isat or Irms, whichever is smaller
- Measure Equipment:  
L: WK 6500B/HP4285A (or equivalent), 2MHz 1V  
RDC: Chen Hwa 502BC/HP4338B (or equivalent)  
Isat: Agilent E4980A+HP42841A (or equivalent)  
Irms: Agilent 6641 system DC power supply (or equivalent)

**Test Instruments :** E4991A Impedance / Material Analyzer





## For More Information:

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