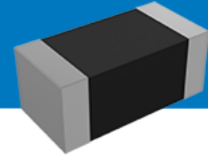


# 叠层片式扼流电感—MCL-N 系列

## Multilayer Chip Inductor for Choke—MCL-N Series



**工作温度**  
Operating Temp

◆ -40°C ~+85°C

### 特征 Features

- ◆ 迭层独石结构、高度可靠性
- ◆ 良好的可焊性和耐焊性
- ◆ 良好的磁屏蔽，无交叉耦合
- ◆ 通过磁体材料的改进，偏置电流大幅度提高
- ◆ 交流电阻，功率损耗大幅度降低
- ◆ Monolithic structure for high reliability
- ◆ Excellent solderability and high heat resistance
- ◆ No cross coupling due to magnetic shield
- ◆ High DC bias current due to developed material
- ◆ Low AC resistance, low power loss

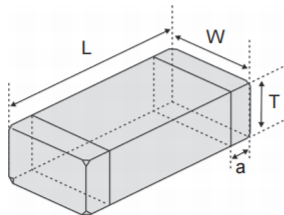
### 用途 Applications

- ◆ NFC 输出滤波和匹配电路，电源线等
- ◆ NFC output filtering and matching circuit, Power line, etc.

### 产品型号 Product Identification

|         |                               |   |             |                                                   |   |
|---------|-------------------------------|---|-------------|---------------------------------------------------|---|
| 1       | 2                             | 3 | 4           | 5                                                 | 6 |
| MCL     | 1608                          | N | R16         | J                                                 | T |
| 1       | 分类 Type                       |   | 2           | 外形尺寸 (L×W) (mm)<br>External Dimensions (L×W) (mm) |   |
| MCL     | 片式扼流电感<br>Chip Power Inductor |   | 1005 [0402] | 1.0×0.5                                           |   |
|         |                               |   | 1608 [0603] | 1.6×0.8                                           |   |
|         |                               |   | 3           | 特性类别 Feature Type                                 |   |
|         |                               |   | N           | NFC                                               |   |
| 4       | 公称电感量 Nominal Inductance      |   | 5           | 电感公差 Inductance Tolerance                         |   |
| Example | Nominal Value                 |   | J           | ±5%                                               |   |
| R16     | 0.16μH                        |   | K           | ±10%                                              |   |
| ※R= 小数点 |                               |   | M           | ±20%                                              |   |
|         |                               |   | 6           | 包装 Packing                                        |   |
|         |                               |   | T           | 编带 Tape & Reel                                    |   |

### 外观尺寸 Shape and Dimensions



Unit: mm [inch]

| Type                   | L                          | W                         | T                         | a                         |
|------------------------|----------------------------|---------------------------|---------------------------|---------------------------|
| MCL1005N<br>[0402]     | 1.0±0.15<br>[0.039±0.006]  | 0.5±0.15<br>[0.020±0.006] | 0.5±0.15<br>[0.020±0.006] | 0.25±0.1<br>[0.010±0.004] |
| MCL1608N<br>[0603]     | 1.60±0.15<br>[0.063±0.006] | 0.8±0.15<br>[0.031±0.006] | 0.8±0.15<br>[0.031±0.006] | 0.3±0.2<br>[0.012±0.008]  |
| MCL1608N-A01<br>[0603] | 1.60±0.15<br>[0.063±0.006] | 0.8±0.15<br>[0.031±0.006] | 0.55±0.1<br>[0.021±0.004] | 0.3±0.2<br>[0.012±0.008]  |

## 规格特性 Specifications

### MCL1005N TYPE

| 型号<br>Part Number | 电感量<br>Inductance | L 测试频率<br>L Test Freq. | 直流电阻<br>DC Resistance Max. | 自谐频率<br>Min. Self-resonant Frequency | 饱和电流<br>Saturation Current Typ. | 温升电流<br>Heat Rating Current Max. |
|-------------------|-------------------|------------------------|----------------------------|--------------------------------------|---------------------------------|----------------------------------|
| 单位 Units          | nH                | MHz                    | $\Omega$                   | MHz                                  | mA                              | mA                               |
| 符号 Symbol         | L                 | Freq.                  | DCR                        | S.R.F                                | Isat                            | Irms                             |
| MCL1005N77N □ T   | 77                | 25                     | 0.27                       | 200                                  | 550                             | 550                              |
| MCL1005N96N □ T   | 96                | 25                     | 0.35                       | 200                                  | 500                             | 500                              |
| MCL1005NR10 □ T   | 100               | 25                     | 0.35                       | 200                                  | 500                             | 500                              |
| MCL1005NR11 □ T   | 110               | 25                     | 0.39                       | 200                                  | 450                             | 450                              |
| MCL1005NR12 □ T   | 120               | 25                     | 0.39                       | 200                                  | 450                             | 450                              |
| MCL1005NR13 □ T   | 130               | 25                     | 0.39                       | 200                                  | 450                             | 450                              |
| MCL1005NR14 □ T   | 140               | 25                     | 0.45                       | 200                                  | 450                             | 450                              |
| MCL1005NR15 □ T   | 150               | 25                     | 0.45                       | 200                                  | 450                             | 450                              |
| MCL1005NR16 □ T   | 160               | 25                     | 0.52                       | 200                                  | 550                             | 400                              |
| MCL1005NR18 □ T   | 180               | 25                     | 0.58                       | 200                                  | 370                             | 400                              |
| MCL1005NR20 □ T   | 200               | 25                     | 0.58                       | 200                                  | 370                             | 400                              |
| MCL1005NR22 □ T   | 220               | 25                     | 0.58                       | 180                                  | 370                             | 400                              |
| MCL1005NR27 □ T   | 270               | 25                     | 0.65                       | 180                                  | 350                             | 350                              |
| MCL1005NR33 □ T   | 330               | 25                     | 0.65                       | 120                                  | 300                             | 350                              |
| MCL1005NR39 □ T   | 390               | 25                     | 0.97                       | 120                                  | 300                             | 300                              |
| MCL1005NR47 □ T   | 470               | 25                     | 0.97                       | 120                                  | 250                             | 300                              |
| MCL1005NR56 □ T   | 560               | 25                     | 1.40                       | 120                                  | 250                             | 250                              |

### MCL1608N TYPE

| 型号<br>Part Number | 电感量<br>Inductance | L 测试频率<br>L Test Freq. | 直流电阻<br>DC Resistance Max. | 自谐频率<br>Min. Self-resonant Frequency | 饱和电流<br>Saturation Current Typ. | 温升电流<br>Heat Rating Current Max. |
|-------------------|-------------------|------------------------|----------------------------|--------------------------------------|---------------------------------|----------------------------------|
| 单位 Units          | nH                | MHz                    | $\Omega$                   | MHz                                  | mA                              | mA                               |
| 符号 Symbol         | L                 | Freq.                  | DCR                        | S.R.F                                | Isat                            | Irms                             |
| MCL1608N77N □ T   | 77                | 25                     | 0.11                       | 200                                  | 1100                            | 1100                             |
| MCL1608N85N □ T   | 85                | 25                     | 0.11                       | 200                                  | 1100                            | 1100                             |
| MCL1608NR10 □ T   | 100               | 25                     | 0.12                       | 200                                  | 1000                            | 1000                             |
| MCL1608NR12 □ T   | 120               | 25                     | 0.14                       | 200                                  | 1000                            | 800                              |
| MCL1608NR16 □ T   | 160               | 25                     | 0.156                      | 200                                  | 1100                            | 700                              |
| MCL1608NR20 □ T   | 200               | 25                     | 0.22                       | 200                                  | 700                             | 650                              |
| MCL1608NR21 □ T   | 210               | 25                     | 0.26                       | 200                                  | 700                             | 600                              |
| MCL1608NR22 □ T   | 220               | 25                     | 0.26                       | 200                                  | 700                             | 600                              |
| MCL1608NR27 □ T   | 270               | 25                     | 0.286                      | 200                                  | 650                             | 550                              |
| MCL1608NR33 □ T   | 330               | 25                     | 0.312                      | 180                                  | 650                             | 500                              |
| MCL1608NR39 □ T   | 390               | 25                     | 0.36                       | 180                                  | 600                             | 450                              |
| MCL1608NR47 □ T   | 470               | 25                     | 0.494                      | 120                                  | 600                             | 400                              |
| MCL1608NR56 □ T   | 560               | 25                     | 0.52                       | 120                                  | 550                             | 400                              |
| MCL1608NR65 □ T   | 650               | 25                     | 0.65                       | 100                                  | 450                             | 350                              |
| MCL1608NR82 □ T   | 820               | 25                     | 0.75                       | 80                                   | 400                             | 300                              |

### MCL1608N-A01 TYPE

| 型号<br>Part Number  | 电感量<br>Inductance | L 测试频率<br>L Test Freq. | 直流电阻<br>DC Resistance Max. | 自谐频率<br>Min. Self-resonant Frequency | 饱和电流<br>Saturation Current Typ. | 温升电流<br>Heat Rating Current Max. |
|--------------------|-------------------|------------------------|----------------------------|--------------------------------------|---------------------------------|----------------------------------|
| 单位 Units           | nH                | MHz                    | $\Omega$                   | MHz                                  | mA                              | mA                               |
| 符号 Symbol          | L                 | Freq.                  | DCR                        | S.R.F                                | Isat                            | Irms                             |
| MCL1608NR16 □ TA01 | 160               | 25                     | 0.156                      | 300                                  | 550                             | 700                              |
| MCL1608N2R2MTA01   | 2200              | 1                      | 0.3                        | 80                                   | 130 <sup>Isat1</sup>            | 800                              |

※饱和电流: 电感值比无电流时下降约10%的直流电流。  
※Isat: DC current at which the inductance drops approximate 10% from its value without current;

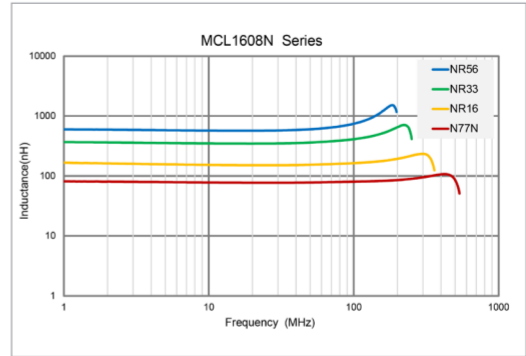
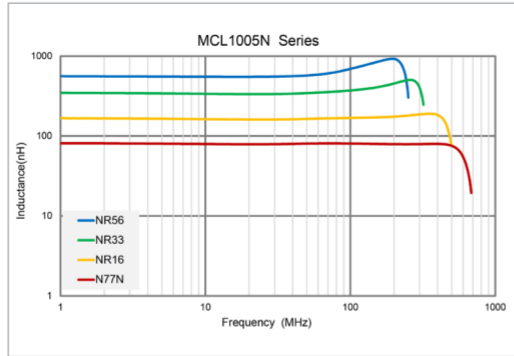
※温升电流: 使产品表面温度从20℃升高( $\Delta T = 25^\circ\text{C}$ )的直流电流值。  
※Irms: DC current that causes the temperature rise ( $\Delta T = 25^\circ\text{C}$ ) from  $20^\circ\text{C}$  ambient.

※□: 请指定电感量精度代码(J=±5%, K=±10%, M=±20%)。  
※□: Please specify the inductance tolerance code (J=±5%, K=±10%, M=±20%).

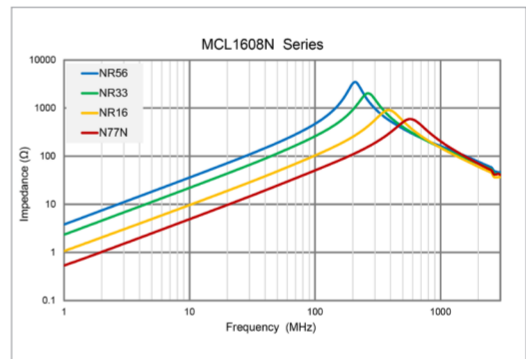
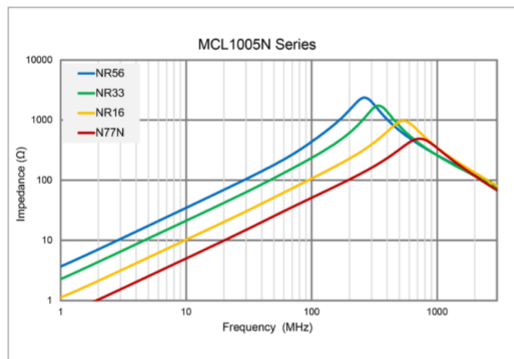
## 电气特性

### Typical Electrical Characteristics

#### Inductance vs. Frequency Characteristics



#### Impedance vs. Frequency Characteristics



#### Inductance vs. DC Current Characteristics

