

**Multilayer Chip Ceramic Inductor**



◆ **Features**

- 1、 Monolithic Structure for high reliability
- 2、 High self-resonant frequency
- 3、 Excellent solderability and high heat resistance
- 4、 RoHS Compliant.



◆ **Application**

- 1、 RF Circuit of in telecommunication and other Equipments

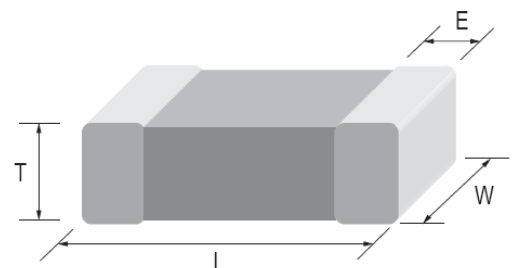
◆ **PRODUCT IDENTIFICATION**

**CMCC 1608 C 2N2 S S P**  
**(1) (2) (3) (4) (5) (6) (7)**

- (1) Series Type
- (2) Chip Size (mm) :Length X Width
- (3) Material Code
- (4) Inductance: 1N0=1nH; 10N=10nH  
R10=100nH
- (5) Inductance Tolerance: S=±0.3;  
J=±5%; K=±10%
- (6) Company Code
- (7) Packaging:P–Embossed paper tape, 7" reel  
E- Embossed plastic tape, 7" reel

◆ **Dimensions Unit: mm**

| Size(EIA) | L          | W          | T          | E          |
|-----------|------------|------------|------------|------------|
|           | 1.60±0.150 | 0.80±0.150 | 0.80±0.150 | 0.30±0.200 |



◆ Specifications

| Part Number            | Inductance (nH) | Min. Quality Factor (Q) | L, Q Test Freq. L/Q(MHz) | Typical Q @ Freq. (MHz) |     |     |     |      |      | Min. Self-resonant Frequency (MHz) | Max. DC Resistance (Ω) | Max. Rated Current (mA) |
|------------------------|-----------------|-------------------------|--------------------------|-------------------------|-----|-----|-----|------|------|------------------------------------|------------------------|-------------------------|
|                        |                 |                         |                          | 100                     | 300 | 500 | 800 | 1000 | 1800 |                                    |                        |                         |
|                        |                 |                         |                          | Q                       |     |     |     |      |      |                                    |                        |                         |
| <b>CMCC1608 Series</b> |                 |                         |                          |                         |     |     |     |      |      |                                    |                        |                         |
| CMCC1608C1N0SSP        | 1.0±0.3         | 8                       | 100                      | 12                      | 22  | 37  | 38  | 68   | 85   | 6000                               | 0.10                   | 500                     |
| CMCC1608C1N2SSP        | 1.2±0.3         | 8                       | 100                      | 12                      | 22  | 37  | 38  | 68   | 85   | 6000                               | 0.10                   | 500                     |
| CMCC1608C1N5SSP        | 1.5±0.3         | 8                       | 100                      | 12                      | 22  | 37  | 38  | 68   | 85   | 6000                               | 0.10                   | 500                     |
| CMCC1608C1N8SSP        | 1.8±0.3         | 8                       | 100                      | 12                      | 21  | 33  | 35  | 61   | 85   | 6000                               | 0.12                   | 500                     |
| CMCC1608C2N2SSP        | 2.2±0.3         | 8                       | 100                      | 12                      | 26  | 40  | 39  | 60   | 85   | 6000                               | 0.20                   | 500                     |
| CMCC1608C2N7SSP        | 2.7±0.3         | 8                       | 100                      | 12                      | 23  | 27  | 37  | 47   | 85   | 6000                               | 0.20                   | 500                     |
| CMCC1608C3N3SSP        | 3.3±0.3         | 8                       | 100                      | 12                      | 23  | 27  | 36  | 47   | 77   | 6000                               | 0.20                   | 500                     |
| CMCC1608C3N9SSP        | 3.9±0.3         | 8                       | 100                      | 12                      | 25  | 28  | 38  | 47   | 73   | 6000                               | 0.20                   | 500                     |
| CMCC1608C4N7SSP        | 4.7±0.3         | 8                       | 100                      | 12                      | 26  | 30  | 38  | 49   | 81   | 6000                               | 0.20                   | 500                     |
| CMCC1608C5N6SSP        | 5.6±0.3         | 8                       | 100                      | 12                      | 26  | 29  | 35  | 34   | 28   | 5000                               | 0.30                   | 500                     |
| CMCC1608C6N8JSP        | 6.8             | 8                       | 100                      | 12                      | 23  | 27  | 35  | 40   | 63   | 4500                               | 0.30                   | 500                     |
| CMCC1608C8N2JSP        | 8.2             | 8                       | 100                      | 12                      | 22  | 26  | 33  | 39   | 50   | 4000                               | 0.30                   | 500                     |
| CMCC1608C10NJSP        | 10              | 8                       | 100                      | 14                      | 25  | 31  | 38  | 45   | 64   | 3500                               | 0.50                   | 300                     |
| CMCC1608C12NJSP        | 12              | 8                       | 100                      | 14                      | 24  | 28  | 35  | 39   | 50   | 2800                               | 0.50                   | 300                     |
| CMCC1608C15NJSP        | 15              | 8                       | 100                      | 14                      | 22  | 27  | 34  | 40   | 45   | 2300                               | 0.60                   | 300                     |
| CMCC1608C18NJSP        | 18              | 8                       | 100                      | 14                      | 24  | 28  | 35  | 38   | 37   | 2200                               | 0.60                   | 300                     |
| CMCC1608C22NJSP        | 22              | 8                       | 100                      | 15                      | 27  | 32  | 38  | 43   | 36   | 2000                               | 0.60                   | 300                     |
| CMCC1608C27NJSP        | 27              | 8                       | 100                      | 15                      | 26  | 29  | 36  | 44   | 25   | 1700                               | 0.80                   | 300                     |
| CMCC1608C33NJSP        | 33              | 8                       | 100                      | 15                      | 26  | 30  | 35  | 34   | 6    | 1500                               | 0.80                   | 300                     |
| CMCC1608C39NJSP        | 39              | 8                       | 100                      | 15                      | 22  | 25  | 28  | 28   | -    | 1300                               | 0.80                   | 300                     |
| CMCC1608C47NJSP        | 47              | 8                       | 100                      | 15                      | 25  | 29  | 30  | 25   | -    | 1200                               | 1.00                   | 300                     |
| CMCC1608C56NJSP        | 56              | 8                       | 100                      | 15                      | 28  | 31  | 31  | 25   | -    | 1100                               | 1.00                   | 300                     |
| CMCC1608C68NJSP        | 68              | 8                       | 100                      | 15                      | 22  | 25  | 22  | 15   | -    | 900                                | 1.00                   | 300                     |
| CMCC1608C82NJSP        | 82              | 8                       | 100                      | 15                      | 23  | 24  | 22  | -    | -    | 800                                | 1.00                   | 300                     |
| CMCC1608CR10JSP        | 100             | 8                       | 100                      | 15                      | 25  | 27  | 16  | -    | -    | 700                                | 1.20                   | 300                     |
| CMCC1608CR12JSP        | 120             | 8                       | 50                       | 15                      | 24  | 23  | -   | -    | -    | 600                                | 1.40                   | 200                     |

◆ Specifications

| Part Number            | Inductance (nH) | Min. Quality Factor (Q) | L, Q Test Freq. L/Q(MHz) | Typical Q @ Freq. (MHz) |     |     |     |      |      | Min. Self-resonant Frequency (MHz) | Max. DC Resistance (Ω) | Max. Rated Current (mA) |
|------------------------|-----------------|-------------------------|--------------------------|-------------------------|-----|-----|-----|------|------|------------------------------------|------------------------|-------------------------|
|                        |                 |                         |                          | 100                     | 300 | 500 | 800 | 1000 | 1800 |                                    |                        |                         |
|                        |                 |                         |                          | Q                       |     |     |     |      |      |                                    |                        |                         |
| <b>CMCC1608 Series</b> |                 |                         |                          |                         |     |     |     |      |      |                                    |                        |                         |
| CMCC1608CR15JSP        | 150             | 8                       | 50                       | 15                      | 19  | 16  | -   | -    | -    | 500                                | 1.60                   | 200                     |
| CMCC1608CR18JSP        | 180             | 8                       | 50                       | 15                      | 18  | 12  | -   | -    | -    | 400                                | 1.90                   | 200                     |
| CMCC1608CR22JSP        | 220             | 8                       | 50                       | 15                      | 16  | -   | -   | -    | -    | 350                                | 2.40                   | 200                     |
| CMCC1608CR27JSP        | 270             | 8                       | 50                       | 16                      | 18  | -   | -   | -    | -    | 350                                | 2.60                   | 150                     |
| CMCC1608CR33JSP        | 330             | 8                       | 50                       | 16                      | 16  | -   | -   | -    | -    | 350                                | 2.80                   | 150                     |
| CMCC1608CR39JSP        | 390             | 8                       | 50                       | 16                      | -   | -   | -   | -    | -    | 300                                | 3.20                   | 150                     |
| CMCC1608CR43JSP        | 430             | 8                       | 50                       | 16                      | -   | -   | -   | -    | -    | 280                                | 3.40                   | 150                     |
| CMCC1608CR47JSP        | 470             | 8                       | 50                       | 15                      | -   | -   | -   | -    | -    | 250                                | 3.60                   | 150                     |
| CMCC1608CR56JSP        | 560             | 8                       | 50                       | 15                      |     |     |     |      |      | 250                                | 4.00                   | 100                     |
| CMCC1608CR68JSP        | 680             | 8                       | 50                       | 15                      |     |     |     |      |      | 250                                | 4.50                   | 100                     |
|                        |                 |                         |                          |                         |     |     |     |      |      |                                    |                        |                         |
|                        |                 |                         |                          |                         |     |     |     |      |      |                                    |                        |                         |
|                        |                 |                         |                          |                         |     |     |     |      |      |                                    |                        |                         |
|                        |                 |                         |                          |                         |     |     |     |      |      |                                    |                        |                         |
|                        |                 |                         |                          |                         |     |     |     |      |      |                                    |                        |                         |

◆ General Technical Data

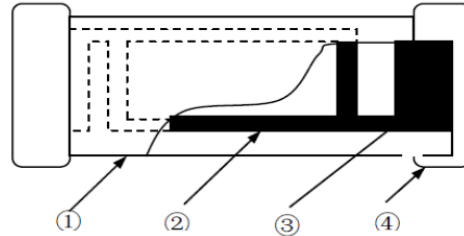
|                                    |                           |
|------------------------------------|---------------------------|
| <b>Operating Temperature Range</b> | -55°C ~ +125°C            |
| <b>Storage Condition</b>           | Less than 40°C and 70% RH |
| <b>Soldering Method</b>            | Reflow or Wave Soldering  |

◆ **Composition / Information on Ingredients**

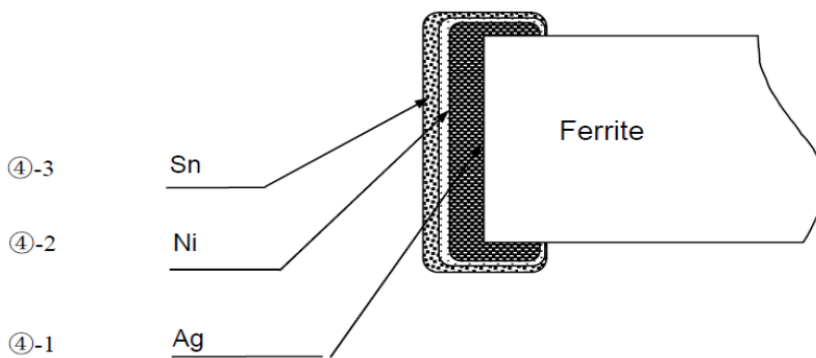
Product Structure: See Fig.1, Fig. 2 and Fig. 3



**Fig.1 Shape**



**Fig.2 Body Structure**



**Fig. 3 Structure of Electro-plating**

| Composition/Information on the Components |                                   |   |
|---|-----------------------------------|---|
| Code                                      | Material                          | Main Components   |
| ①   | Ceramic                           | Boron Silicate, Al <sub>2</sub> O <sub>3</sub> , Secret |
| ②   | Inner Coil                        | Silver (Ag)   |
| ③   | Pull-out Electrode                | Silver (Ag)   |
| ④-1                                       | Terminal Electrode                | Silver (Ag)   |
| ④-2                                       | Electrode-plating: Nickel plating | Nickel (Ni)   |
| ④-3                                       | Electrode-plating: Sn plating     | Tin (Sn)  |

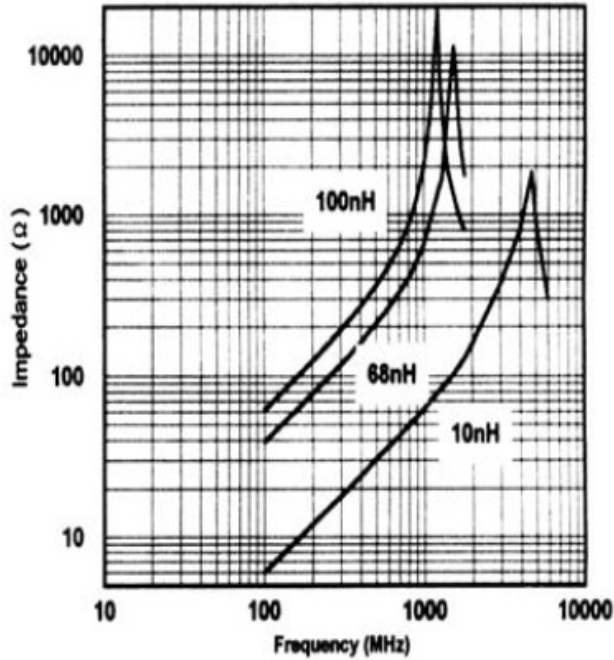
  

| Compositions Wt Rate (Wt%) of Material |               |            |
|--|---------------|------------|
| Material                               | Wt Rate (Wt%) | CAS No.    |
| Boron Silicate                         | 51~65         | 65997-18-4 |
| Al <sub>2</sub> O <sub>3</sub>         | 14~17         | 1344-28-1  |
| Secret                                 | 0~5           | -          |
| Ag                                     | 9~29          | 7440-22-4  |
| Nickel                                 | 1.8~2.3       | 7440-02-0  |
| Tin                                    | 3.6~4.7       | 7440-31-5  |
|  |               |            |
|  |               |            |
|  |               |            |

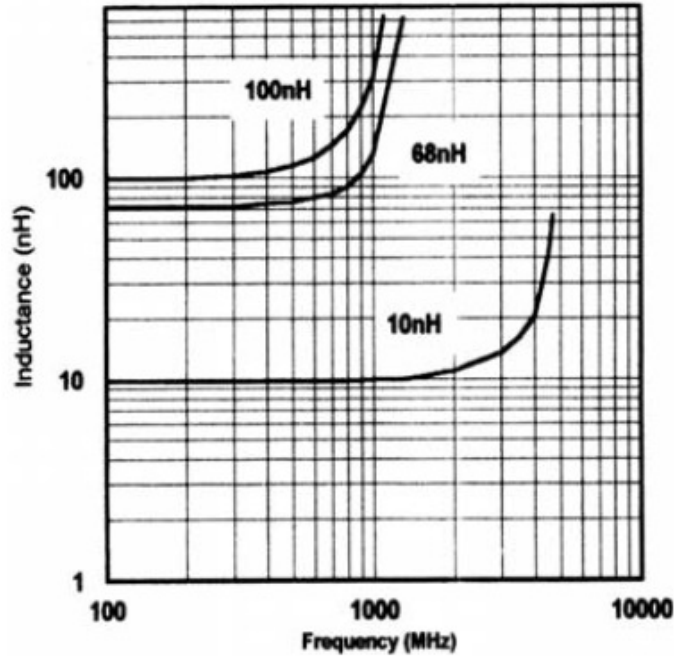
◆ TYPICAL ELECTRICAL CHARACTERISTICS

CMCC1608 Series

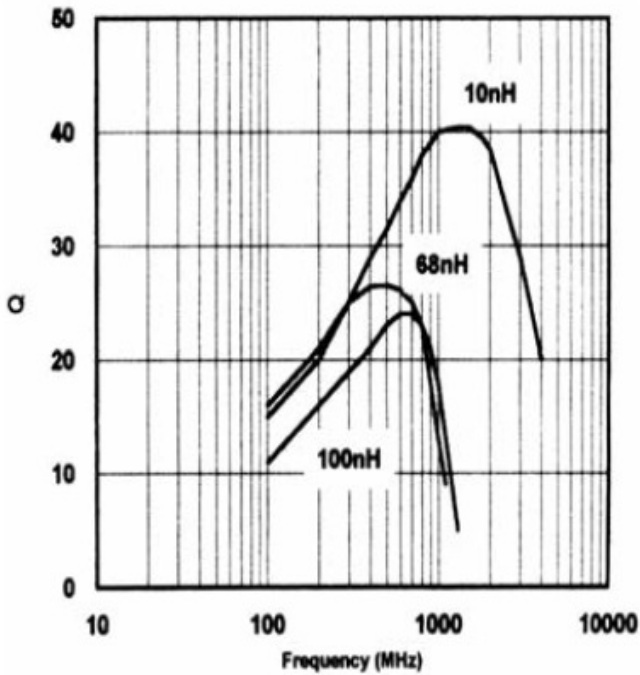
Inductance vs. Frequency Characteristics



Impedance vs. Frequency Characteristics

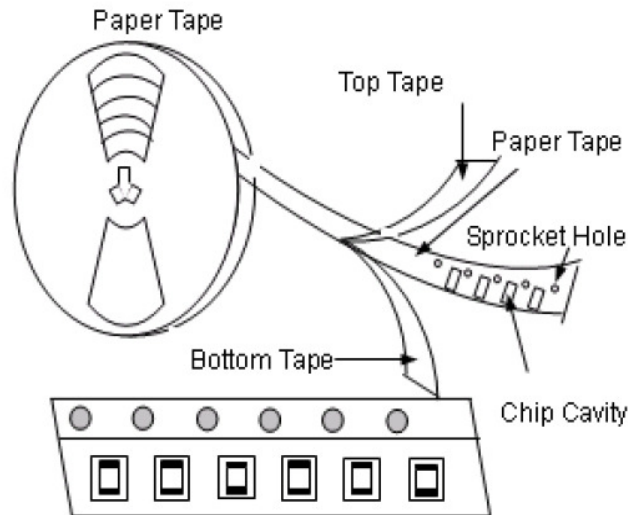


Q vs. Frequency Characteristics



### ◆ Packaging

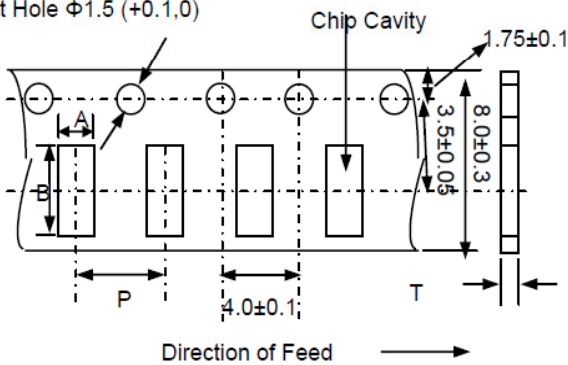
(1) Taping Drawings (Unit: mm)



**Remark:** The sprocket holes are to the right as the tape is pulled toward the user.

(2) Taping Dimensions (Unit: mm)

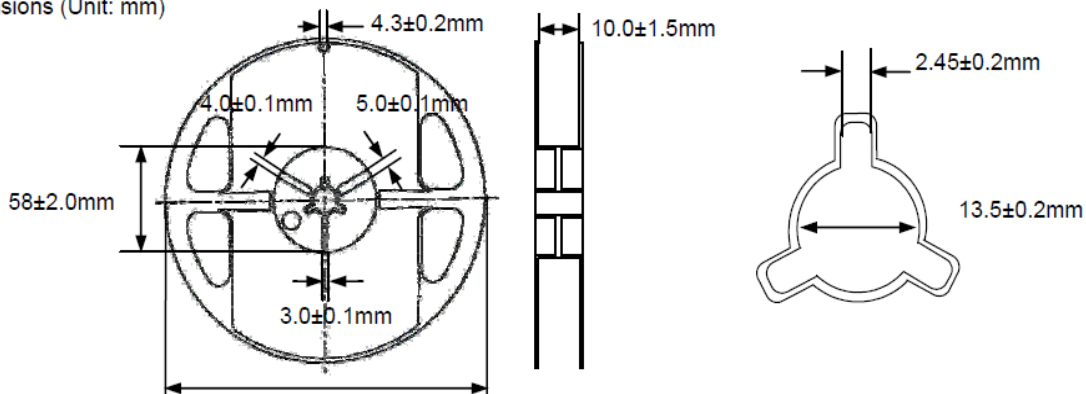
Sprocket Hole  $\Phi 1.5 (+0.1, 0)$



Paper Tape

| Type       | A       | B       | P       | T max | Quantity |
|------------|---------|---------|---------|-------|----------|
| 1608(0603) | 1.0±0.2 | 1.8±0.2 | 4.0±0.1 | 1.1   | 4K       |

(3) Reel Dimensions (Unit: mm)



## X-ON Electronics

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[MLZ1608M150WTD25](#) [MLZ1608M3R3WTD25](#) [MLZ1608M3R3WT000](#) [MLZ1608M150WT000](#) [MLZ1608A1R5WT000](#)  
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