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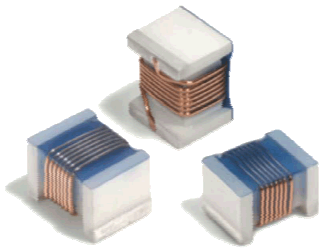
# CMCW2520C Series

## Wire Wound Chip Ceramic Inductor

Pb

### ◆ Features

1、Small chip suitable for surface mounting；
2、High Q value and high self-resonant frequency with ceramic material；
3、Tight inductance tolerance and stable inductance; at high frequency；
4、RoHS Compliant。



### ◆ Application

1、High frequency circuit in telecommunication and other equipments；
2、Mobile phones such as GSM, CDMA, PDC, etc；
3、Bluetooth, W-LAN, Broadband network。

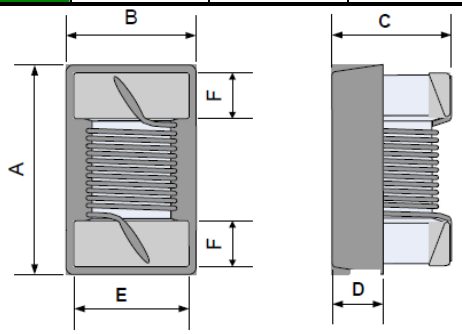
### ◆ PRODUCT IDENTIFICATION

| CMCW | 2520 | C | R10 | J | S | T |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |

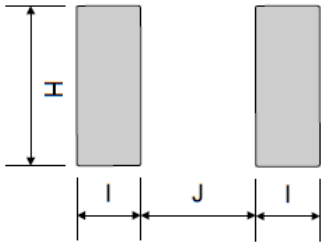
(1) Series Type
(2) Chip Size（mm）:Length X Width
(3) Material Code
(4) Inductance：0N1=0.1nH；4N7=4.7nH
10N=10nH；R10=100nH
1R0=1000nH
(5) Inductance Tolerance：G=±2%；J=±5%；
K=±10%；
(6) Company Code
(7) Packaging：Tape Carrier Package

### ◆ SHAPE AND DIMENSIONS (unit：mm)

| Series | A | B | C | D | E | F | H | I | J |
|---|---|---|---|---|---|---|---|---|---|
| CMCW1005C | 1.2 ±0.10 | 0.60±0.10 | 0.60±0.10 | 0.20±0.05 | 0.50±0.05 | 0.20±0.05 | 0.64±0.05 | 0.40±0.05 | 0.60±0.05 |
| CMCW1608C | 1.68±0.10 | 1.00±0.10 | 0.85±0.10 | 0.32±0.05 | 0.76±0.05 | 0.33±0.05 | 1.02±0.05 | 0.60±0.05 | 0.60±0.05 |
| CMCW2012C | 2.20±0.10 | 1.62±0.10 | 1.45±0.10 | 0.48±0.05 | 1.22±0.05 | 0.45±0.05 | 1.72±0.05 | 1.02±0.05 | 0.76±0.05 |
| CMCW2520C | 2.65±0.10 | 2.60±0.10 | 2.00±0.10 | 0.50±0.05 | 2.05±0.05 | 0.45±0.05 | 2.50±0.05 | 1.02±0.05 | 1.27±0.05 |
| CMCW3216C | 3.46±0.10 | 2.06±0.10 | 1.42±0.10 | 0.50±0.05 | 1.55±0.05 | 0.45±0.05 | 1.88±0.05 | 1.02±0.05 | 1.78±0.05 |
| CMCW3225C | 3.46±0.10 | 2.75±0.10 | 2.60±0.10 | 0.50±0.05 | 2.05±0.05 | 0.45±0.05 | 2.97±0.05 | 1.02±0.05 | 1.78±0.05 |
| CMCW4532C | 4.75±0.10 | 3.71±0.10 | 3.33±0.10 | 1.72±0.05 | 2.85±0.05 | 0.53±0.05 | 3.00±0.05 | 1.14±0.05 | 3.00±0.05 |




**Land Pattern**



# CMCW2520C Series

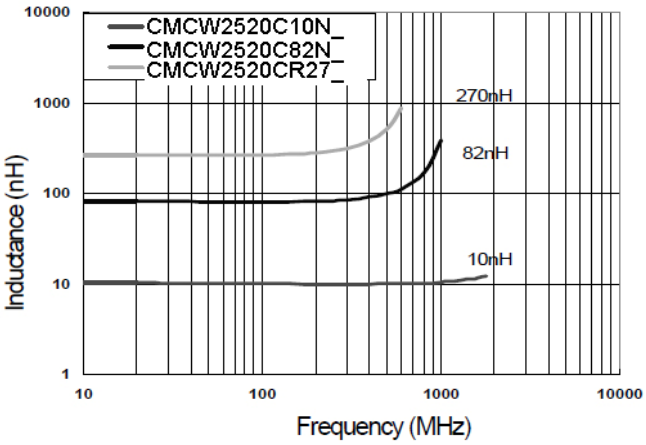
## ◆ Specifications

| Part Number | Inductance | Min. Quality Factor | L/Q Test Condition | Max. DC Resistance | Max. Rated Current | Min. Self-resonant Frequency |
|---|---|---|---|---|---|---|
| | nH | Q | MHZ | Ω | mA | MHZ |
| **CMCW2520C Series** | | | | | | |
| CMCW2520C4N7JST | 4.7 | 50 | 50/1500 | 0.11 | 1000 | >6000 |
| CMCW2520C10NJST | 10 | 50 | 50/500 | 0.08 | 1000 | 4100 |
| CMCW2520C12NJST | 12 | 50 | 50/500 | 0.09 | 1000 | 3300 |
| CMCW2520C15NJST | 15 | 50 | 50/500 | 0.13 | 1000 | 2500 |
| CMCW2520C18NJST | 18 | 50 | 50/350 | 0.11 | 1000 | 2500 |
| CMCW2520C22NJST | 22 | 55 | 50/350 | 0.12 | 1000 | 2400 |
| CMCW2520C27NJST | 27 | 55 | 50/350 | 0.13 | 1000 | 1600 |
| CMCW2520C33NJST | 33 | 60 | 50/350 | 0.14 | 1000 | 1600 |
| CMCW2520C39NJST | 39 | 50 | 50/350 | 0.15 | 1000 | 1500 |
| CMCW2520C47NJST | 47 | 65 | 50/350 | 0.16 | 1000 | 1500 |
| CMCW2520C56NJST | 56 | 50 | 50/350 | 0.18 | 1000 | 1300 |
| CMCW2520C68NJST | 68 | 65 | 50/350 | 0.21 | 1000 | 1200 |
| CMCW2520C82NJST | 82 | 60 | 50/350 | 0.22 | 1000 | 800 |
| CMCW2520CR10JST | 100 | 60 | 25/350 | 0.56 | 650 | 1000 |
| CMCW2520CR12JST | 120 | 60 | 25/350 | 0.63 | 650 | 950 |
| CMCW2520CR15JST | 150 | 50 | 25/100 | 0.62 | 580 | 800 |
| CMCW2520CR18JST | 180 | 50 | 25/100 | 0.7 | 620 | 750 |
| CMCW2520CR22JST | 220 | 50 | 25/100 | 0.8 | 500 | 630 |
| CMCW2520CR27JST | 270 | 50 | 25/100 | 0.91 | 500 | 600 |
| CMCW2520CR33JST | 330 | 50 | 25/100 | 1.05 | 450 | 530 |
| CMCW2520CR39JST | 390 | 50 | 25/100 | 1.12 | 470 | 480 |
| CMCW2520CR47JST | 470 | 50 | 25/100 | 1.19 | 470 | 450 |
| CMCW2520CR56JST | 560 | 50 | 25/100 | 1.33 | 400 | 390 |
| CMCW2520CR62JST | 620 | 45 | 25/100 | 1.4 | 300 | 375 |
| CMCW2520CR68JST | 680 | 45 | 25/100 | 1.47 | 400 | 360 |
| CMCW2520CR75JST | 750 | 45 | 25/100 | 1.54 | 360 | 360 |
| CMCW2520CR82JST | 820 | 45 | 25/100 | 1.61 | 400 | 330 |
| CMCW2520CR91JST | 910 | 35 | 25/50 | 1.68 | 380 | 295 |
| CMCW2520C1R0JST | 1000 | 35 | 25/50 | 1.8 | 370 | 270 |
| CMCW2520C1R2JST | 1200 | 35 | 7.9/50 | 2 | 310 | 200 |
| CMCW2520C1R5JST | 1500 | 28 | 7.9/50 | 2.3 | 330 | 150 |
| CMCW2520C1R8JST | 1800 | 28 | 7.9/50 | 2.6 | 300 | 120 |
| CMCW2520C2R2JST | 2200 | 28 | 7.9/50 | 2.8 | 280 | 100 |

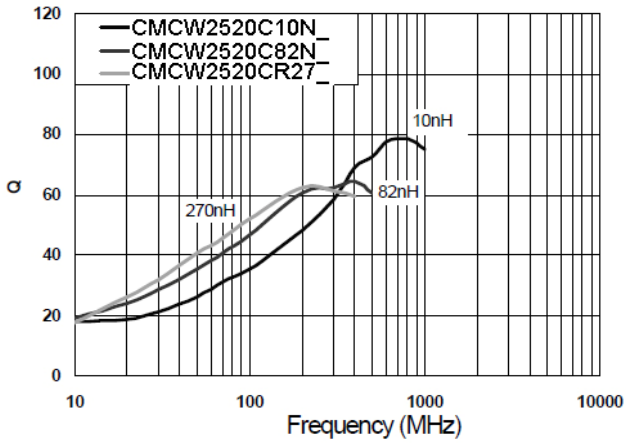
## ◆ Typical Electrical Characteristic

### CMCW2520C Series

Inductance vs. Frequency Characteristics

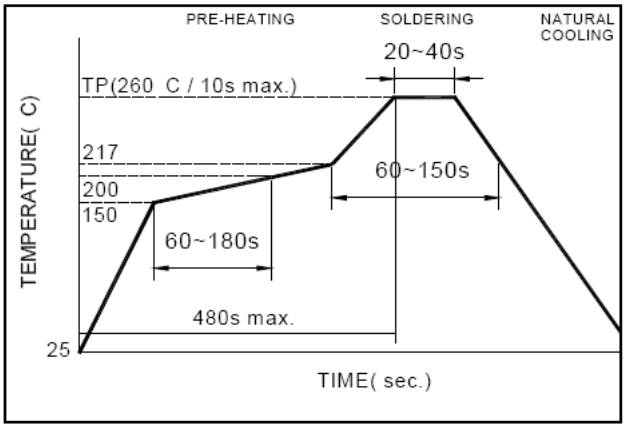



Q vs. Frequency Characteristics



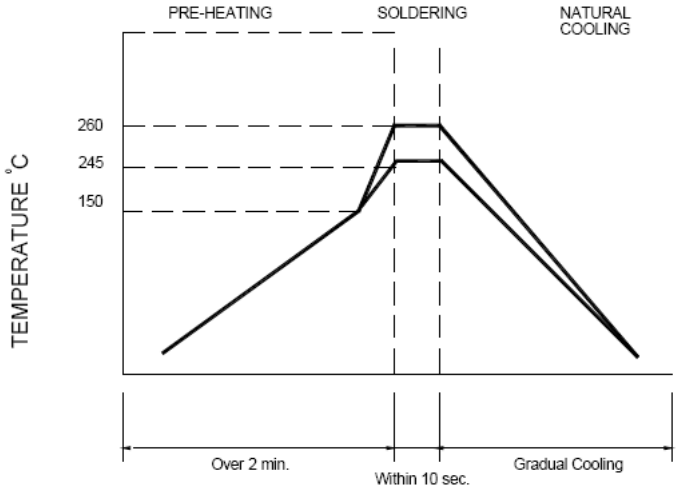
## ◆Soldering Conditions

**Figure 1. Re-flow Soldering (Lead Free)**



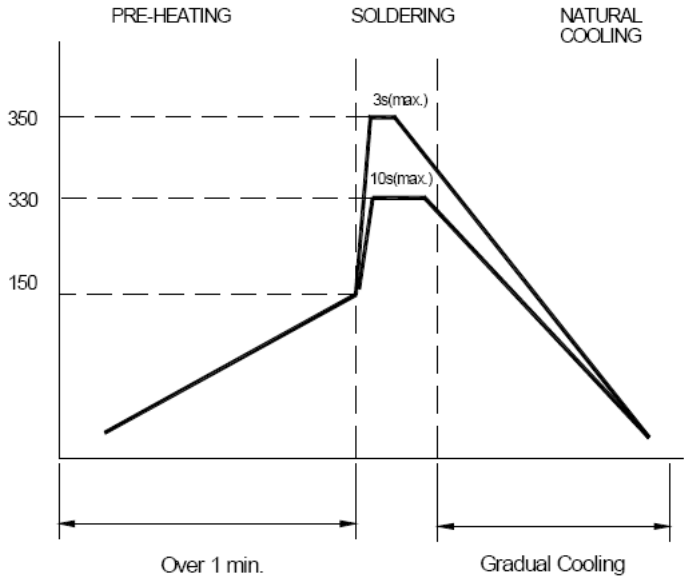

Note:
- Preheat circuit and products to 150℃
- 280℃ tip temperature (max)

**Figure 2. Wave Soldering**




Note：
- Never contact the ceramic with the iron tip
- 1.0mm tip diameter (max)

**Figure 3. Hand Soldering**



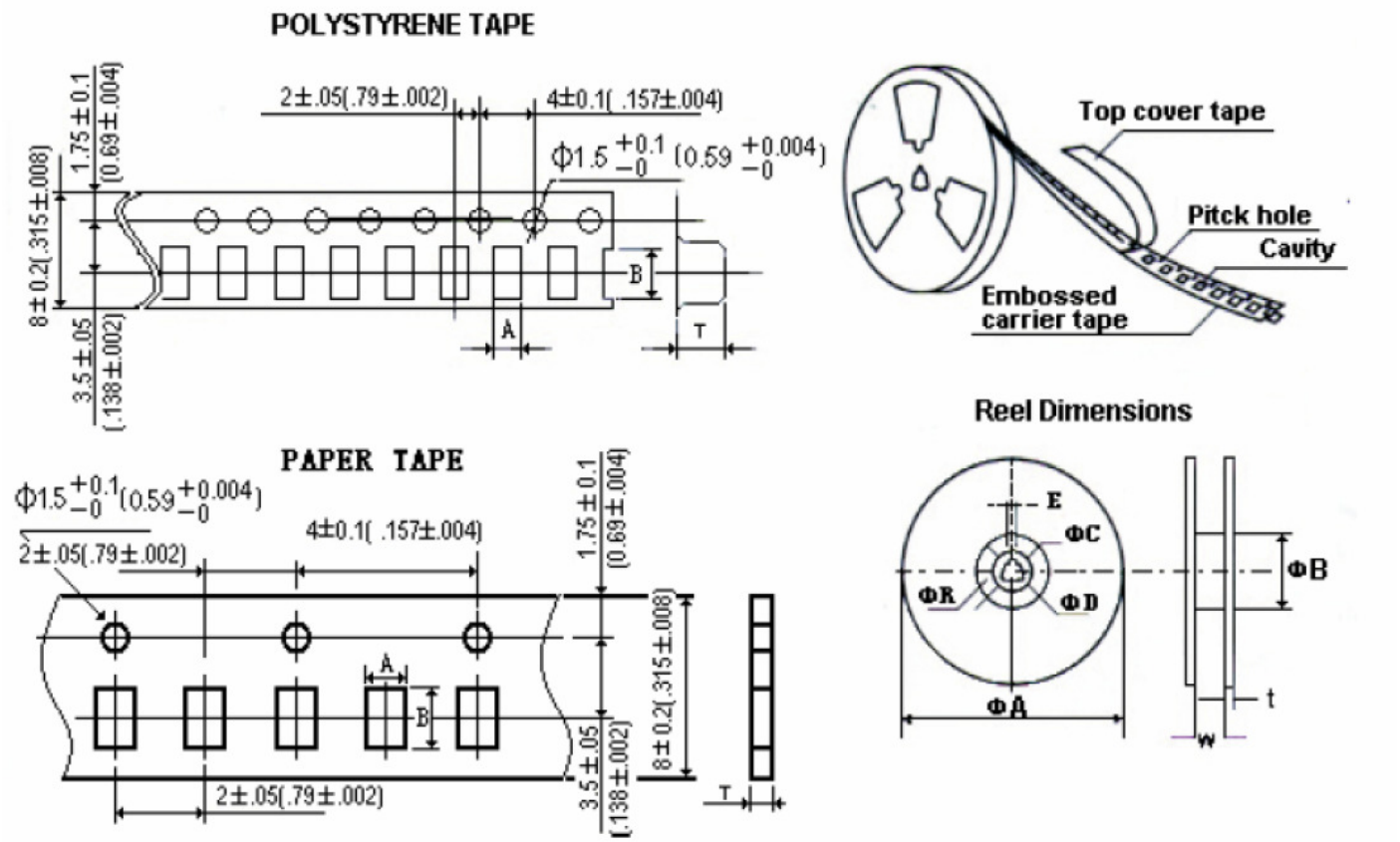

Note:
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- Limit soldering time to 3 sec.

## ◆ Reliability and Test Condition

| Item | Performance | Test Condition |
|---|---|---|
| **Electrical Performance Test** | | |
| Inductance L | Refer to standard electrical characteristic list | HP4291A, HP4287A |
| Q | | |
| SRF | | HP4291A |
| DC Resistance | | HP4338B, Chroma 16502 |
| Rated Current | | Applied the current to coils, the inductance change shall be less than 10% to initial value & temperature rise shall not be more than 20℃. |
| Temperature Rise Test | 20℃ MAX(△t) | 1.Applied the allowed DC current for 10 mins.<br>2.Temperature measure by digital surface thermometer. |
| **Mechanical Performance Test** | | |
| Resistance to Soldering Heat | 1. Inductors shall be no evidence of electrical and mechanical damage.<br>2. Inductance : within ±0.3nH of initial value for ≦3.9nH.<br>3. Inductance : within ±10% of initial value for ≧10nH.<br>4. Q shall not change more than ± 20%. | Temp.: 260±5℃<br>Time: 10±1.0 Sec |
| Solderability Test | The terminal shall be at least 90% covered with solder. | After fluxing, inductor shall be dipped in a melted solder bath at 230 ± 5℃ for 5 Sec. |
| **Reliability Test** | | |
| Humidity Test | 1. Inductors shall be no evidence of electrical and mechanical damage.<br>2. Inductance : within ±0.3nH of initial value for ≦3.9nH.<br>3. Inductance : within ±10% of initial value for ≧10nH.<br>4. Q shall not change more than ± 20%. | 1. Temperature :50±2℃<br>2. R.H. : 90-95%<br>3. Time : 96±2 Hours |
| Thermal Shock Test | | Conditions of 1 cycle<br>Step / Temperature(℃) / Times(min.)<br>1 / -40±5 / 30±3<br>2 / 125±5 / 30±3<br>Total:10 cycles |
| High Temperature Load Life Test | Inductors shall be no evidence of short or open circuit. | 1. Temp. : 85 ± 2℃<br>2. Time : 1000 ± 12 Hours<br>3. Load : Allowed DC current |
| Humidity Load Life | | 1. Temp : 40 ± 2℃<br>2. R.H. : 90-95%<br>3. Time : 1000 ± 12 Hours<br>4. Load : Allowed DC current |
| Low temperature storage test | 1. Appearance : no damage<br>2. Inductance : within ±0.3nH of initial value for ≦3.9nH<br>3. Inductance : within ±10% of initial value for ≧10nH<br>4. Q : within ±20% of initial value | 1. Temperature:-40±2℃<br>2. Applied current : rated current<br>3. Duration : 1000±12hrs<br>4. Measured at room temperature after Placing for 2to 3hrs. |

## ◆ Packaging Style

### 1、Tape




| | | A | B | T |
|---|---|---|---|---|
| 纸带 | 0402 | 0.74 | 1.23 | 0.60 |
| 胶带 | 0603 | 1.15 | 1.83 | 0.95 |
| | 0805 | 1.85 | 2.40 | 1.45 |
| | 1008 | 2.73 | 2.90 | 2.34 |
| | 1210 | 2.96 | 3.60 | 2.40 |
| | 1812 | 3.22 | 4.82 | 3.15 |

unit:( mm)

| unit | ΦA | ΦB | ΦC | ΦD | E | W | t | R |
|---|---|---|---|---|---|---|---|---|
| mm | 178 | 60 | 13 | 21 | 2 | 10 | 2 | 1 |
| | 330 | 75 | 13 | 23 | 2 | 12 | 2 | 1 |

### 2、Packaging Quantity

| Dimension | 1005 (0402) | 1608 (0603) | 2012 (0805) | 2520 (1008) | 3225 (1210) | 4532 (1812) |
|---|---|---|---|---|---|---|
| Quantity(Pcs) | 10000 | 4000 | 2000 | 2000 | 2000 | 2000 |