

Mini Molded Chip Power Inductors – MWTC Series

Operating Temp. : -40°C~+125°C (Including self-heating)



FEATURES

- Metal material for large current and low loss
- Vinyl thermal spray, better surface compactness
- Closed magnetic circuit design reduces leakage flux

APPLICATIONS

- Smart phone, pad
- Notebooks, VR, AR
- Portable gaming devices, Smart wear, Wi-Fi module

PRODUCT IDENTIFICATION

MWTC

①

201608

②

S

③

XXX

④

□

⑤

T

⑥

| ① Type | |
|--------|---------------------------------|
| MWTC | Mini Molded Chip Power Inductor |

| ④ Nominal Inductance[μH] | |
|--------------------------|-------------------|
| Example | Nominal Value[μH] |
| R47 | 0.47μH |
| 1R0 | 1.0μH |

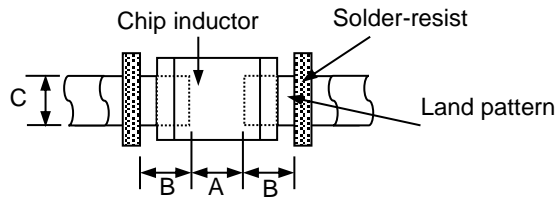
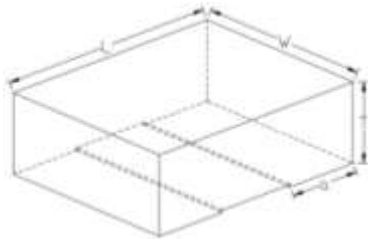
| ② External Dimensions(LxWxH) [mm] | |
|-----------------------------------|-------------|
| 201208 | 2.0x1.2x0.8 |
| 201210 | 2.0x1.2x1.0 |
| 201608 | 2.0x1.6x0.8 |
| 201610 | 2.0x1.6x1.0 |
| 252010 | 2.5x2.0x1.0 |

| ⑤ Inductance Tolerance | |
|------------------------|------|
| M | ±20% |
| N | ±30% |

| ③ Feature Type | |
|----------------|-------------------------|
| S | Standard |
| U | Ultra Low RDC |
| H | High Saturation Current |

| ⑥ Packing | |
|-----------|-------------|
| T | Tape & Reel |

SHAPE AND DIMENSIONS



Unit: mm

| Series | L | W | T | a | A | B | C |
|------------|----------|---------|---------|---------|---------|---------|---------|
| MWTC201208 | 2.0 ±0.2 | 1.2±0.2 | 0.8Max. | 0.6±0.2 | 0.8~1.2 | 0.8~1.2 | 1.2~2.0 |
| MWTC201210 | 2.0 ±0.2 | 1.2±0.2 | 1.0Max. | 0.6±0.2 | 0.8~1.2 | 0.8~1.2 | 1.2~2.0 |
| MWTC201608 | 2.0 ±0.2 | 1.6±0.2 | 0.8Max. | 0.6±0.2 | 0.8~1.2 | 0.8~1.2 | 1.2~2.0 |
| MWTC201610 | 2.0 ±0.2 | 1.6±0.2 | 1.0Max. | 0.6±0.2 | 0.8~1.2 | 0.8~1.2 | 1.2~2.0 |
| MWTC252008 | 2.5 ±0.2 | 2.0±0.2 | 0.8Max. | 0.8±0.2 | 1.2~1.6 | 0.8~1.2 | 1.8~2.4 |
| MWTC252010 | 2.5 ±0.2 | 2.0±0.2 | 1.0Max. | 0.8±0.2 | 1.2~1.6 | 0.8~1.2 | 1.8~2.4 |

SPECIFICATIONS

MWTC201208 Series

| Part Number | Inductance | DC Resistance | | Self-resonant Frequency | Saturation Current | | Heat Rating Current | |
|------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
| | @1MHz,1V | Max. | Typ. | Min. | Max. | Typ. | Max. | Typ. |
| Units | μH | Ω | | MHz | A | | A | |
| Symbol | L | DCR | | S.R.F | Isat | | Irms | |
| MWTC201208SR33□T | 0.33 | 0.028 | 0.023 | 125 | 5.6 | 6.2 | 4.3 | 4.0 |
| MWTC201208S1R0□T | 1.0 | 0.102 | 0.092 | 74 | 2.8 | 3.1 | 2.0 | 2.3 |
| MWTC201208S2R2□T | 2.2 | 0.238 | 0.216 | 45 | 2.2 | 2.5 | 1.1 | 1.3 |

MWTC201210 Series

| Part Number | Inductance | DC Resistance | | Self-resonant Frequency | Saturation Current | | Heat Rating Current | |
|------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
| | @1MHz,1V | Max. | Typ. | Min. | Max. | Typ. | Max. | Typ. |
| Units | μH | Ω | | MHz | A | | A | |
| Symbol | L | DCR | | S.R.F | Isat | | Irms | |
| MWTC201210SR24□T | 0.24 | 0.022 | 0.019 | 136 | 6.2 | 6.7 | 4.5 | 5 |
| MWTC201210SR47□T | 0.47 | 0.031 | 0.027 | 120 | 4.7 | 5.2 | 4 | 4.3 |

MWTC201608 Series

| Part Number | Inductance | DC Resistance | | Self-resonant Frequency | Saturation Current | | Heat Rating Current | |
|------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
| | @1MHz,1V | Max. | Typ. | Min. | Max. | Typ. | Max. | Typ. |
| Units | μH | Ω | | MHz | A | | A | |
| Symbol | L | DCR | | S.R.F | Isat | | Irms | |
| MWTC201608SR24□T | 0.24 | 0.022 | 0.018 | 120 | 5.7 | 6.3 | 4.4 | 4.9 |
| MWTC201608SR33□T | 0.33 | 0.026 | 0.021 | 115 | 5.5 | 6.0 | 4.2 | 4.7 |
| MWTC201608SR47□T | 0.47 | 0.032 | 0.028 | 104 | 5.0 | 5.5 | 3.6 | 4.1 |
| MWTC201608S1R0□T | 1.0 | 0.066 | 0.059 | 62 | 3.3 | 3.7 | 2.7 | 3.0 |
| MWTC201608S2R2□T | 2.2 | 0.148 | 0.134 | 40 | 2.3 | 2.6 | 1.8 | 2.0 |

SPECIFICATIONS

MWTC201610 Series

| Part Number | Inductance | DC Resistance | | Self-resonant Frequency | Saturation Current | | Heat Rating Current | |
|---------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
| | @1MHz | Max. | Typ. | Min. | Max. | Typ. | Max. | Typ. |
| Units | μH | Ω | | MHz | A | | A | |
| Symbol | L | DCR | | S.R.F | Isat | | Irms | |
| MWTC201610SR24□T | 0.24 | 0.017 | 0.014 | 142 | 7.0 | 7.8 | 5.0 | 5.6 |
| MWTC201610SR33□T | 0.33 | 0.021 | 0.018 | 110 | 6.8 | 7.6 | 4.8 | 5.3 |
| MWTC201610SR47□T | 0.47 | 0.026 | 0.028 | 98 | 5.0 | 5.4 | 4.0 | 4.4 |
| MWTC201610S1R0□T | 1.0 | 0.046 | 0.042 | 46 | 4.6 | 4.9 | 3.4 | 4.0 |
| MWTC201610S1R0□TD01 | 1.0 | 0.037 | 0.034 | 60 | 4.2 | 4.5 | 4.2 | 4.5 |
| MWTC201610S4R7□T | 4.7 | 0.235 | 0.213 | 26 | 1.6 | 1.9 | 1.3 | 1.5 |

MWTC252008 Series

| Part Number | Inductance | DC Resistance | | Self-resonant Frequency | Saturation Current | | Heat Rating Current | |
|------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
| | @1MHz | Max. | Typ. | Min. | Max. | Typ. | Max. | Typ. |
| Units | μH | Ω | | MHz | A | | A | |
| Symbol | L | DCR | | S.R.F | Isat | | Irms | |
| MWTC252008S1R0□T | 1.0 | 0.053 | 0.046 | 55 | 3.5 | 3.8 | 3.2 | 3.5 |

MWTC252010 Series

| Part Number | Inductance | DC Resistance | | Self-resonant Frequency | Saturation Current | | Heat Rating Current | |
|---------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
| | @1MHz | Max. | Typ. | Min. | Max. | Typ. | Max. | Typ. |
| Units | μH | Ω | | MHz | A | | A | |
| Symbol | L | DCR | | S.R.F | Isat | | Irms | |
| MWTC252010SR47□T | 0.47 | 0.020 | 0.016 | 81 | 6.0 | 6.6 | 4.7 | 5.0 |
| MWTC252010SR47□TD02 | 0.47 | 0.020 | 0.016 | 81 | 6.5 | 7.0 | 4.7 | 5.0 |
| MWTC252010S1R0□T | 1.0 | 0.043 | 0.038 | 53 | 4.5 | 5.0 | 3.4 | 3.7 |
| MWTC252010S1R0□TD02 | 1.0 | 0.032 | 0.027 | 53 | 5.0 | 5.2 | 4.5 | 4.7 |
| MWTC252010S2R2□T | 2.2 | 0.095 | 0.083 | 35 | 3.0 | 3.3 | 2.1 | 2.4 |

※□: Please specify the inductance tolerance code (M=±20%, N=±30%).

※1: All test data is referenced to 20°C ambient;

※2: Rated current: Isat or Irms, whichever is smaller;

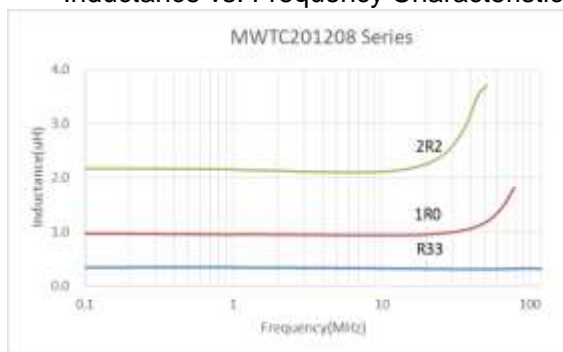
※3: Isat: DC current at which the inductance drops approximate 30% from its value without current;

※4: Irms: DC current that causes the temperature rise ($\Delta T = 40^\circ\text{C}$) from 20°C ambient.

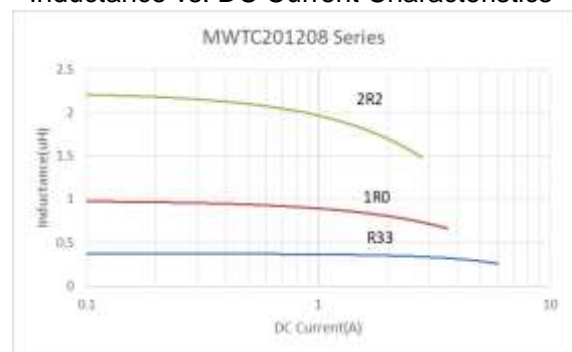
TYPICAL ELECTRICAL CHARACTERISTICS

MWTC201208 Series

Inductance vs. Frequency Characteristics



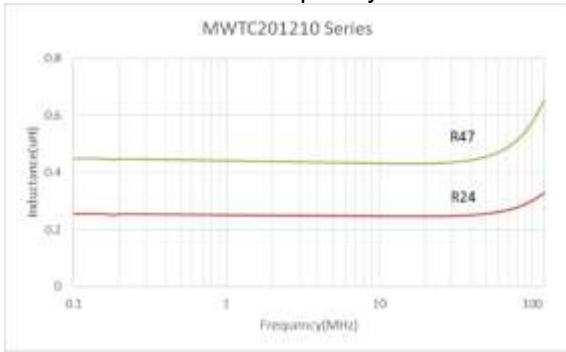
Inductance vs. DC Current Characteristics



TYPICAL ELECTRICAL CHARACTERISTICS

MWTC201210 Series

Inductance vs. Frequency Characteristics

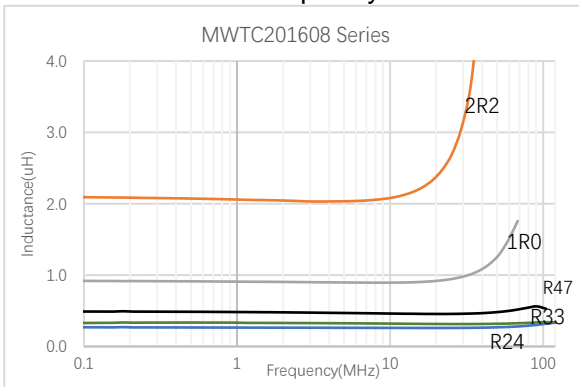


Inductance vs. DC Current Characteristics

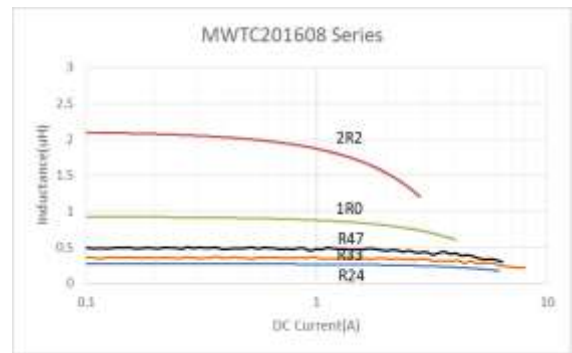


MWTC201608 Series

Inductance vs. Frequency Characteristics

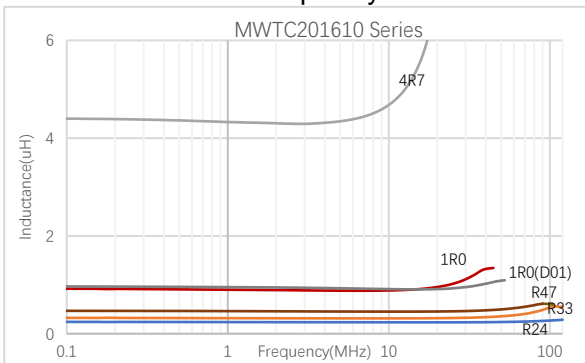


Inductance vs. DC Current Characteristics

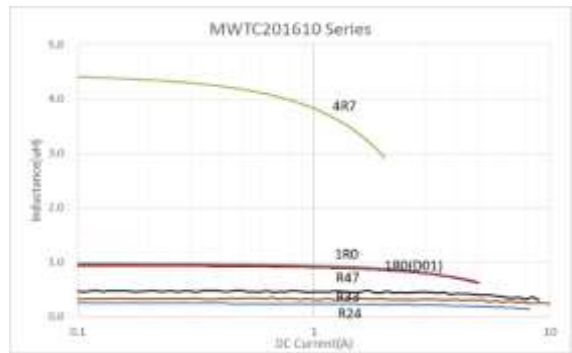


MWTC201610 Series

Inductance vs. Frequency Characteristics

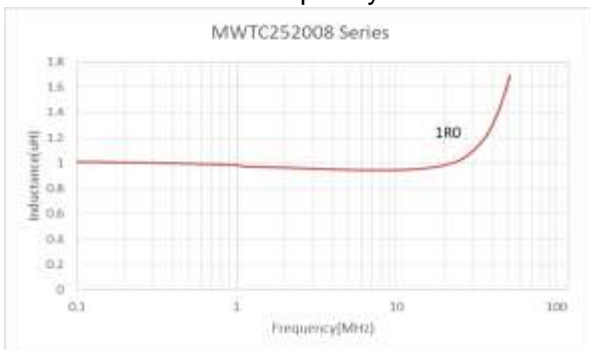


Inductance vs. DC Current Characteristics

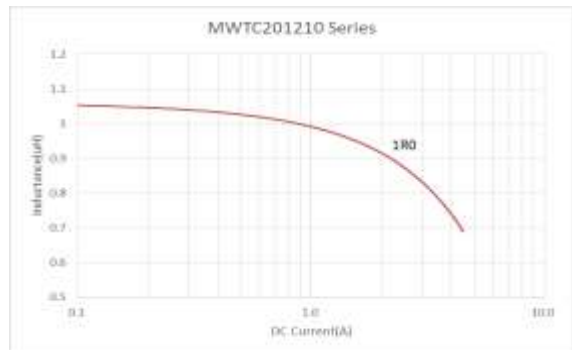


MWTC252008 Series

Inductance vs. Frequency Characteristics



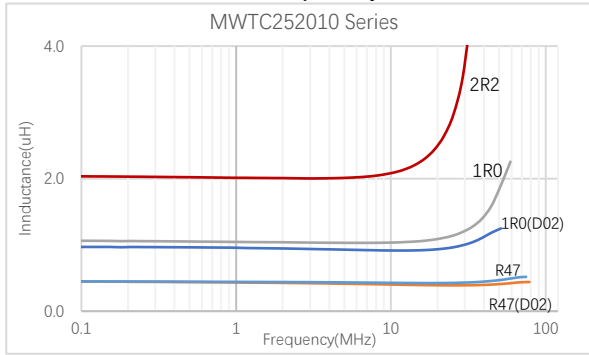
Inductance vs. DC Current Characteristics



TYPICAL ELECTRICAL CHARACTERISTICS

MWTC252010 Series

Inductance vs. Frequency Characteristics



Inductance vs. DC Current Characteristics

