

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

| | | | | | | |
|-------------|---------------|----------|------------|---|----------|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| MWTC | 201608 | S | XXX | □ | T | □□□ |

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

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

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

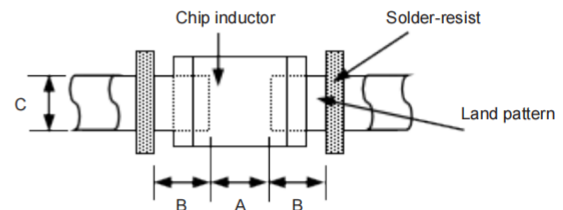
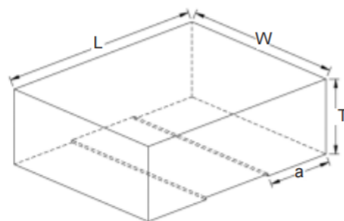
| 2 External Dimensions(L×W×H) [mm] | |
|-----------------------------------|--------------|
| 1412065 | 1.4×1.2×0.65 |
| 141208 | 1.4×1.2×0.8 |
| 160808 | 1.6×0.8×0.8 |
| 2012065 | 2.0×1.2×0.65 |
| 201208 | 2.0×1.2×0.8 |
| 201210 | 2.0×1.2×1.0 |
| 201608 | 2.0×1.6×0.8 |
| 201610 | 2.0×1.6×1.0 |
| 252008 | 2.5×2.0×0.8 |
| 252010 | 2.5×2.0×1.0 |

| 3 Feature Type | |
|----------------|----------|
| S | Standard |

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

| 7 Design Code | |
|-----------------------------|-------------|
| □□□ | Design Code |
| * Standard product is blank | |

SHAPE AND DIMENSIONS



| Series | L | W | T Max. | a | A Typ. | B Typ. | C Typ. |
|-------------|---------|---------|--------|----------|--------|--------|--------|
| MWTC1412065 | 1.4±0.2 | 1.2±0.2 | 0.65 | 0.4±0.15 | 0.5 | 0.6 | 1.2 |
| MWTC141208 | 1.4±0.2 | 1.2±0.2 | 0.8 | 0.4±0.15 | 0.5 | 0.6 | 1.2 |
| MWTC160808 | 1.6±0.2 | 0.8±0.2 | 0.8 | 0.4±0.2 | 0.7 | 0.6 | 0.8 |
| MWTC2012065 | 2.0±0.2 | 1.2±0.2 | 0.65 | 0.6±0.2 | 0.7 | 0.8 | 1.2 |
| MWTC201208 | 2.0±0.2 | 1.2±0.2 | 0.8 | 0.6±0.2 | 0.7 | 0.8 | 1.2 |
| MWTC201210 | 2.0±0.2 | 1.2±0.2 | 1.0 | 0.6±0.2 | 0.7 | 0.8 | 1.2 |
| MWTC201608 | 2.0±0.2 | 1.6±0.2 | 0.8 | 0.6±0.2 | 0.7 | 0.8 | 1.6 |
| MWTC201610 | 2.0±0.2 | 1.6±0.2 | 1.0 | 0.6±0.2 | 0.7 | 0.8 | 1.6 |
| MWTC252008 | 2.5±0.2 | 2.0±0.2 | 0.8 | 0.8±0.2 | 0.8 | 1.0 | 2.0 |
| MWTC252010 | 2.5±0.2 | 2.0±0.2 | 1.0 | 0.8±0.2 | 0.8 | 1.0 | 2.0 |

Unit: mm

SPECIFICATIONS MWTC1412065 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 | |
| MWTC1412065SR33 □ T | 0.33 | 0.032 | 0.028 | 120 | 5.4 | 5.7 | 3.5 | 3.7 |
| MWTC1412065SR47 □ T | 0.47 | 0.041 | 0.036 | 115 | 3.0 | 3.3 | 2.9 | 3.2 |

MWTC141208 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 | |
| MWTC141208SR24 □ T | 0.24 | 0.024 | 0.020 | 135 | 6.5 | 7.0 | 4.9 | 5.3 |
| MWTC141208SR33 □ T | 0.33 | 0.027 | 0.023 | 130 | 5.2 | 5.6 | 4.0 | 4.2 |
| MWTC141208SR47 □ T | 0.47 | 0.032 | 0.028 | 110 | 4.0 | 4.2 | 3.2 | 3.6 |

MWTC160808 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 | |
| MWTC160808SR47 □ T | 0.47 | 0.043 | 0.038 | 100 | 3.3 | 3.6 | 3.0 | 3.3 |
| MWTC160808S1R0 □ T | 1.0 | 0.110 | 0.095 | 60 | 2.1 | 2.3 | 1.8 | 2.0 |
| MWTC160808S2R2 □ T | 2.2 | 0.290 | 0.240 | 40 | 1.2 | 1.3 | 1.0 | 1.1 |

MWTC2012065 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 | |
| MWTC2012065SR47 □ T | 0.47 | 0.034 | 0.032 | 96 | 4.5 | 4.8 | 4.0 | 4.3 |
| MWTC2012065S1R0 □ T | 1.0 | 0.086 | 0.078 | 53 | 2.5 | 2.7 | 2.4 | 2.7 |
| MWTC2012065S2R2 □ T | 2.2 | 0.200 | 0.173 | 50 | 1.6 | 1.8 | 1.5 | 1.8 |

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 | |
| MWTC201208SR11 □ T | 0.11 | 0.013 | 0.010 | 185 | 10 | 11 | 5.6 | 6.5 |
| MWTC201208SR24 □ T | 0.24 | 0.019 | 0.016 | 130 | 6.5 | 7.2 | 5.4 | 6.0 |
| MWTC201208SR33 □ T | 0.33 | 0.028 | 0.023 | 125 | 5.6 | 6.2 | 4.0 | 4.3 |
| MWTC201208SR47 □ T | 0.47 | 0.042 | 0.037 | 96 | 5.5 | 6.2 | 3.7 | 3.9 |
| MWTC201208S1R0 □ T | 1.0 | 0.102 | 0.092 | 74 | 2.8 | 3.1 | 2.0 | 2.3 |
| MWTC201208S1R0 □ TD01 | 1.0 | 0.050 | 0.046 | 60 | 3.3 | 3.5 | 3.2 | 3.5 |
| MWTC201208S2R2 □ T | 2.2 | 0.238 | 0.216 | 45 | 2.2 | 2.5 | 1.1 | 1.3 |

SPECIFICATIONS 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 | |
| MWTC201210SR11 □ T | 0.11 | 0.010 | 0.008 | 264 | 13.0 | 14.5 | 6.4 | 7.1 |
| MWTC201210SR24 □ T | 0.24 | 0.022 | 0.019 | 136 | 6.2 | 6.7 | 4.5 | 5.0 |
| MWTC201210SR24 □ TD01 | 0.24 | 0.015 | 0.012 | 136 | 6.8 | 7.5 | 5.0 | 5.5 |
| MWTC201210SR47 □ T | 0.47 | 0.024 | 0.021 | 96 | 5.1 | 5.7 | 4.8 | 5.2 |
| MWTC201210S1R0 □ T | 1.0 | 0.051 | 0.046 | 56 | 3.6 | 4.0 | 3.1 | 3.5 |
| MWTC201210S2R2 □ T | 2.2 | 0.112 | 0.100 | 36 | 2.1 | 2.4 | 1.9 | 2.2 |

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 | 7.5 | 8.2 | 5.5 | 6.2 |
| MWTC201608SR47 □ T | 0.47 | 0.024 | 0.021 | 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 |
| MWTC201608S1R0 □ TD01 | 1.0 | 0.052 | 0.045 | 57 | 4.1 | 4.5 | 3.7 | 4.2 |
| MWTC201608S2R2 □ T | 2.2 | 0.148 | 0.134 | 40 | 2.3 | 2.6 | 1.8 | 2.0 |

MWTC201610 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 | |
| MWTC201610SR24 □ T | 0.24 | 0.017 | 0.014 | 142 | 7.0 | 7.8 | 5.0 | 5.6 |
| MWTC201610SR24 □ TD02 | 0.24 | 0.015 | 0.011 | 120 | 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 | 0.029 | 0.026 | 98 | 6.0 | 6.5 | 4.0 | 4.4 |
| MWTC201610SR47 □ TD01 | 0.47 | 0.021 | 0.018 | 72 | 5.6 | 6.2 | 4.8 | 5.5 |
| MWTC201610SR68 □ T | 0.68 | 0.035 | 0.030 | 68 | 4.8 | 5.4 | 3.5 | 3.9 |
| 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 |
| MWTC201610S1R5 □ T | 1.5 | 0.074 | 0.064 | 40 | 3.2 | 3.5 | 2.8 | 3.2 |
| MWTC201610S2R2 □ T | 2.2 | 0.135 | 0.123 | 40 | 3.8 | 4.2 | 2.1 | 2.3 |
| MWTC201610S2R2 □ TD01 | 2.2 | 0.074 | 0.066 | 30 | 2.6 | 2.9 | 2.0 | 2.3 |
| 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, 1V | 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 |
| MWTC252008S1R0 □ TD01 | 1.0 | 0.046 | 0.039 | 56 | 4.3 | 4.8 | 3.5 | 3.8 |
| MWTC252008S4R7 □ T | 4.7 | 0.180 | 0.165 | 20 | 1.75 | 1.95 | 1.8 | 2.0 |
| MWTC252008S100 □ T | 10 | 0.570 | 0.507 | 14 | 1.2 | 1.4 | 0.95 | 1.05 |

SPECIFICATIONS MWTC252010 Series

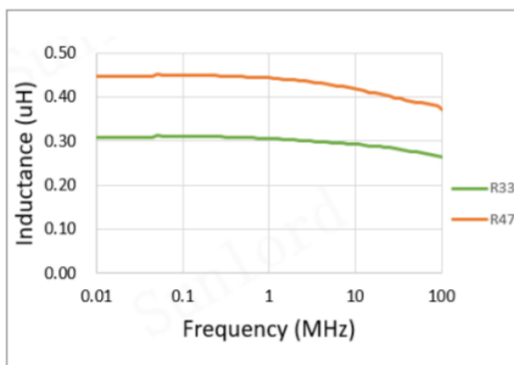
| Part Number | Inductance | DC Resistance | | Self-resonant Frequency | Saturation Current | | Heat Rating Current | |
|-----------------------|---------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
| | @1MHz,1V | Max. | Typ. | Min. | Max. | Typ. | Max. | Typ. |
| Units | μH | Ω | | MHz | A | | A | |
| Symbol | L | DCR | | S.R.F | Isat | | Irms | |
| MWTC252010SR33 □ T | 0.33 | 0.016 | 0.013 | 95 | 7.5 | 8.5 | 5.0 | 5.5 |
| 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 | 5.7 | 6.1 |
| MWTC252010SR68 □ T | 0.68 | 0.029 | 0.024 | 63 | 5.8 | 6.6 | 4.5 | 5.2 |
| MWTC252010S1R0 □ T | 1.0 | 0.043 | 0.038 | 53 | 4.5 | 5.0 | 3.4 | 3.7 |
| MWTC252010S1R0 □ TD01 | 1.0 | 0.039 | 0.032 | 55 | 5.8 | 6.5 | 3.6 | 3.9 |
| MWTC252010S1R0 □ TD02 | 1.0 | 0.030 | 0.027 | 53 | 5.0 | 5.4 | 4.5 | 4.7 |
| MWTC252010S1R5 □ T | 1.5 | 0.042 | 0.037 | 35 | 3.7 | 4.0 | 3.6 | 4.1 |
| MWTC252010S2R2 □ T | 2.2 | 0.065 | 0.057 | 27 | 3.2 | 3.5 | 2.3 | 2.6 |
| MWTC252010S3R3 □ T | 3.3 | 0.110 | 0.095 | 22 | 2.6 | 2.9 | 1.9 | 2.2 |
| MWTC252010S4R7 □ T | 4.7 | 0.136 | 0.124 | 19 | 1.9 | 2.2 | 1.6 | 1.7 |
| MWTC252010S100 □ T | 10 | 0.420 | 0.360 | 14 | 1.5 | 1.7 | 1.2 | 1.4 |

- ※□: 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 Iirms, whichever is smaller;
- ※3: Isat: DC current at which the inductance drops approximate 30% from its value without current;
- ※4: Iirms: DC current that causes the temperature rise ($\Delta T = 40^\circ\text{C}$) from 20°C ambient.

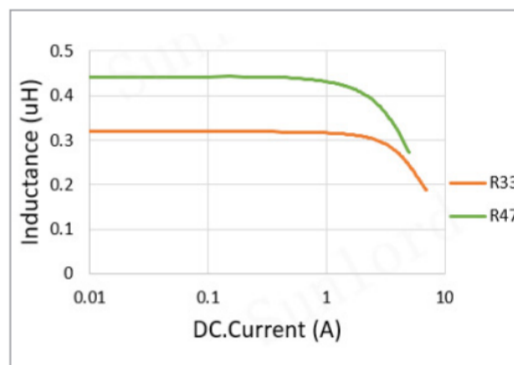
TYPICAL ELECTRICAL CHARACTERISTICS

MWTC1412065 Series

Inductance vs. Frequency Characteristics

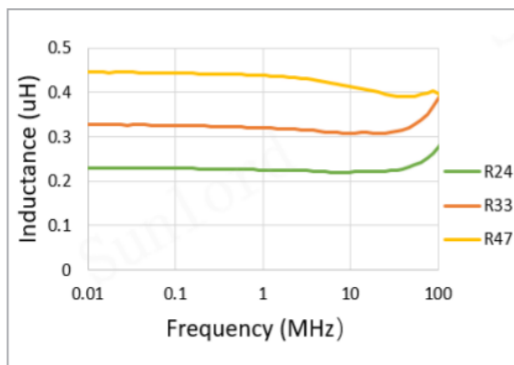


Inductance vs. DC Current Characteristics

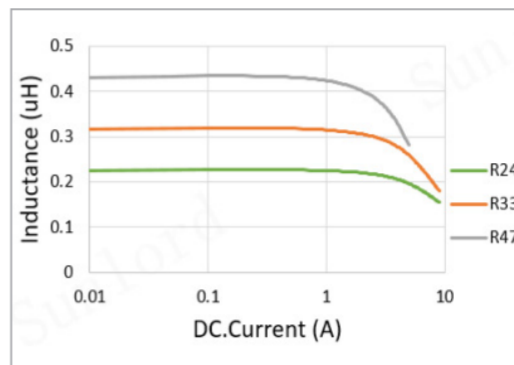


MWTC141208 Series

Inductance vs. Frequency Characteristics



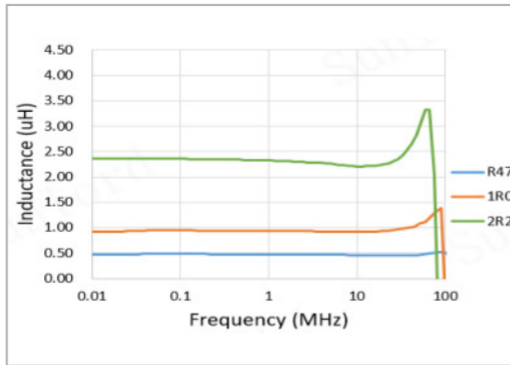
Inductance vs. DC Current Characteristics



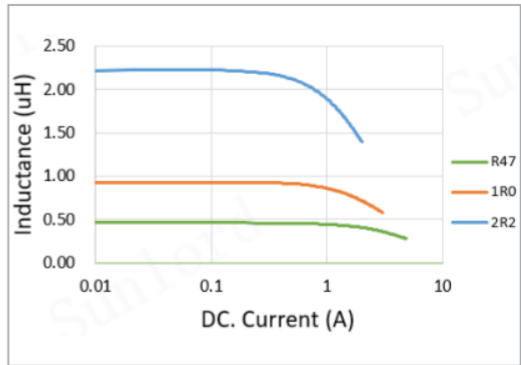
TYPICAL ELECTRICAL CHARACTERISTICS

MWTC160808 Series

Inductance vs. Frequency Characteristics

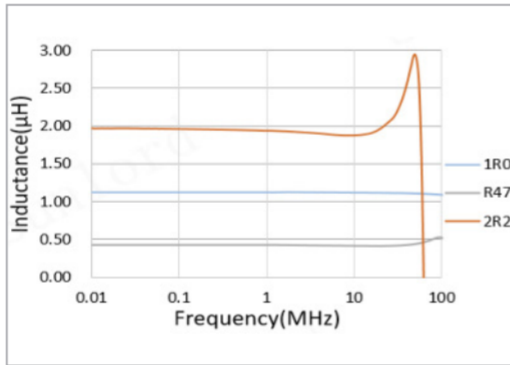


Inductance vs. DC Current Characteristics

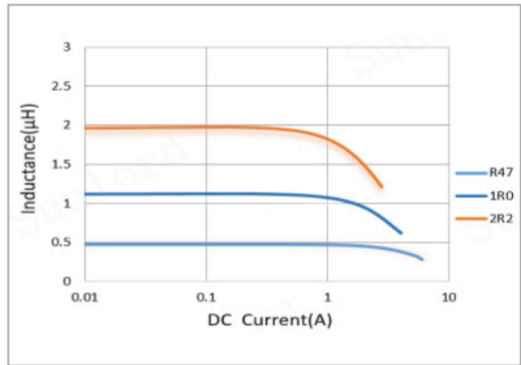


MWTC2012065 Series

Inductance vs. Frequency Characteristics

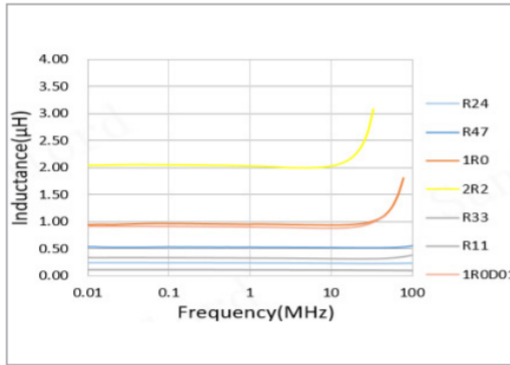


Inductance vs. DC Current Characteristics

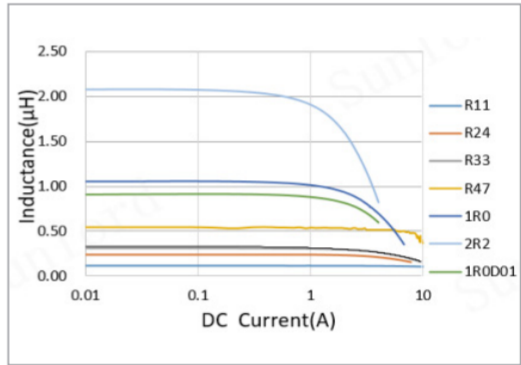


MWTC201208 Series

Inductance vs. Frequency Characteristics

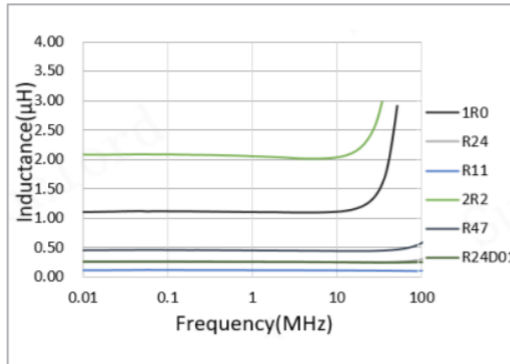


Inductance vs. DC Current Characteristics

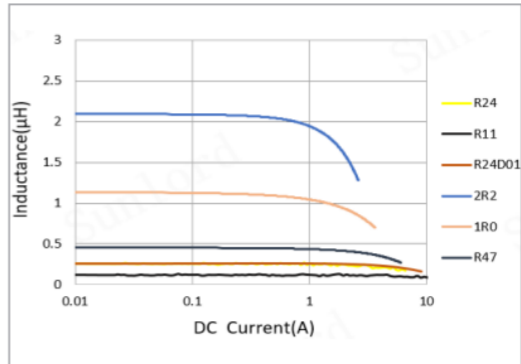


MWTC201210 Series

Inductance vs. Frequency Characteristics



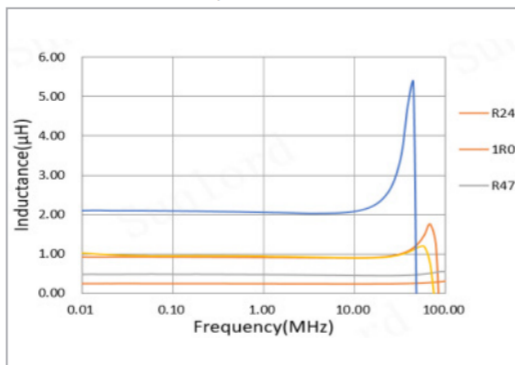
Inductance vs. DC Current Characteristics



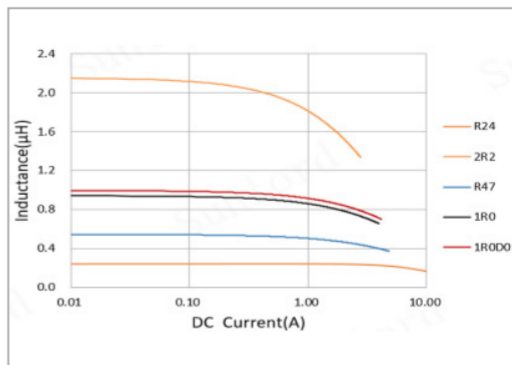
TYPICAL ELECTRICAL CHARACTERISTICS

MWTC201608 Series

Inductance vs. Frequency Characteristics

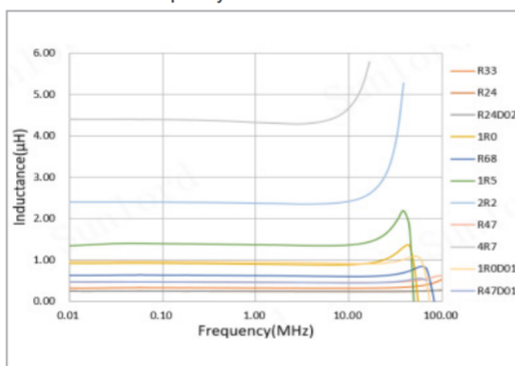


Inductance vs. DC Current Characteristics

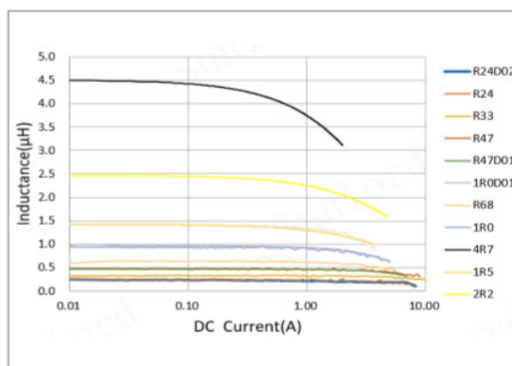


MWTC201610 Series

Inductance vs. Frequency Characteristics

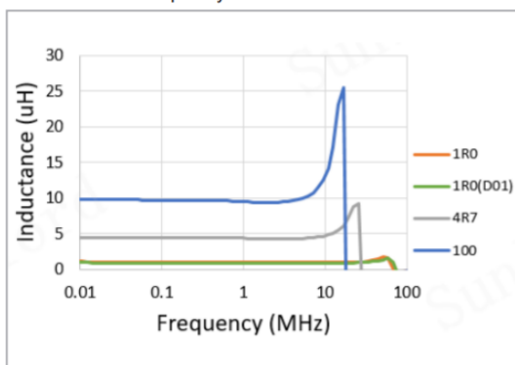


Inductance vs. DC Current Characteristics

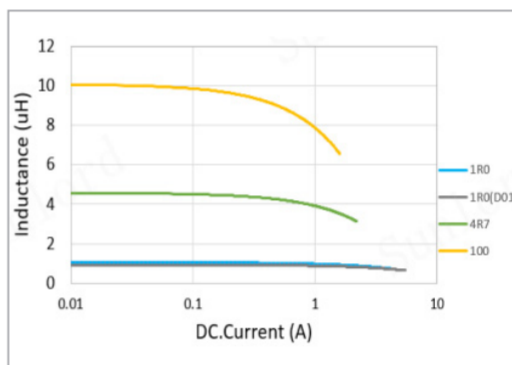


MWTC252008 Series

Inductance vs. Frequency Characteristics

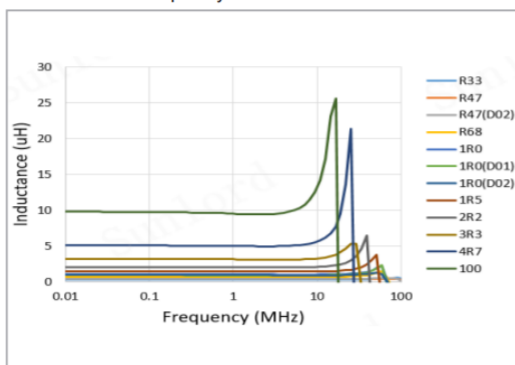


Inductance vs. DC Current Characteristics

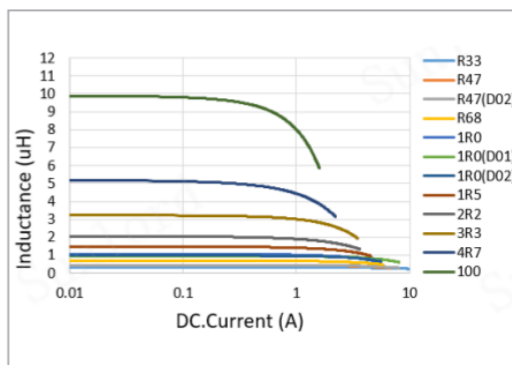


MWTC252010 Series

Inductance vs. Frequency Characteristics



Inductance vs. DC Current Characteristics



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[MHQ1005P5N1S](#) [MHQ1005P8N2J](#) [PE-53601NL](#) [PE-53602NL](#) [PG0936.113NLT](#) [9220-20](#) [9310-16](#) [PM06-2N7](#) [PM06-39NJ](#) [A01TK](#)
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