

# 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

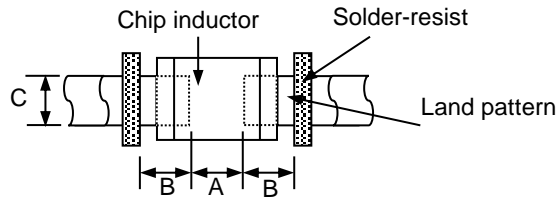
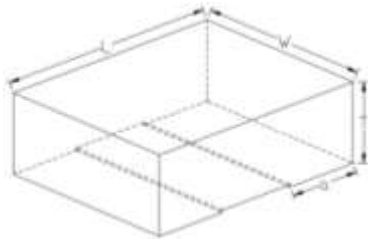
② External Dimensions(LxWxH) [mm]	
1412065	1.4x1.2x0.65
141208	1.4x1.2x0.8
201208	2.0x1.2x0.8
201210	2.0x1.2x1.0
201608	2.0x1.6x0.8
201610	2.0x1.6x1.0
252010	2.5x2.0x1.0

⑤ Inductance Tolerance	
M	±20%
N	±30%

③ Feature Type	
S	Standard

⑥ Packing	
T	Tape & Reel

## SHAPE AND DIMENSIONS



Unit: mm

Series	L	W	T	a	A	B	C
MWTC1412065	1.4 ±0.2	1.2±0.2	0.65MAX	0.4±0.15	0.5~0.7	0.55~0.75	1.3~1.5
MWTC141208	1.4 ±0.2	1.2±0.2	0.8MAX	0.4±0.15	0.5~0.7	0.55~0.75	1.3~1.5
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

### 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	
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	0.022	0.019	135	6.0	6.6	4.9	5.3
MWTC141208SR33□T	0.33	0.032	0.028	130	5.0	5.5	3.8	4.2
MWTC141208SR47□T	0.47	0.037	0.033	110	3.6	4.2	3.2	3.6

### 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

## SPECIFICATIONS

### MWTC201210 Series

Part Number	Inductance	DC Resistance		Self-resonant Frequency	Saturation Current		Heat Rating Current	
		Max.	Typ.		Max.	Typ.	Max.	Typ.
Units	@1MHz,1V 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	
		Max.	Typ.		Max.	Typ.	Max.	Typ.
Units	@1MHz,1V 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

### MWTC201610 Series

Part Number	Inductance	DC Resistance		Self-resonant Frequency	Saturation Current		Heat Rating Current	
		Max.	Typ.		Max.	Typ.	Max.	Typ.
Units	@1MHz,1V 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□	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	
		Max.	Typ.		Max.	Typ.	Max.	Typ.
Units	@1MHz,1V 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	
		Max.	Typ.		Max.	Typ.	Max.	Typ.
Units	@1MHz 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;

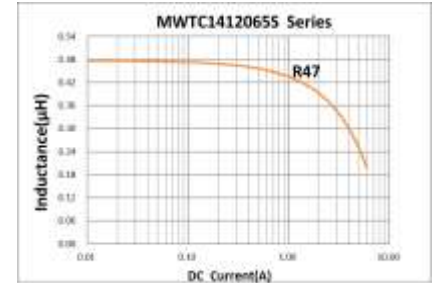
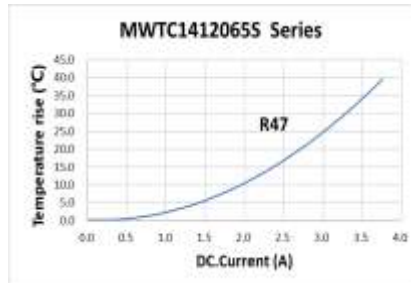
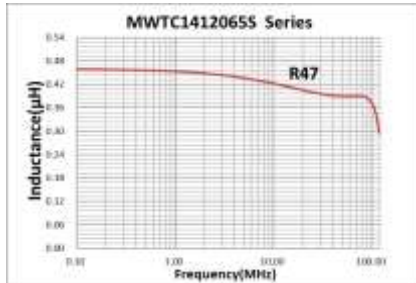
※2: Rated current: Isat or Irms, whichever is smaller;

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

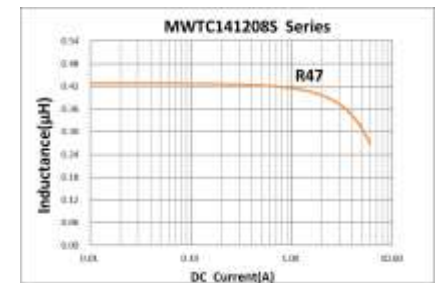
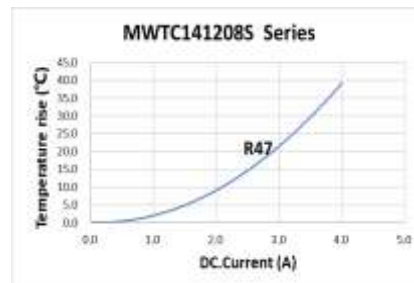
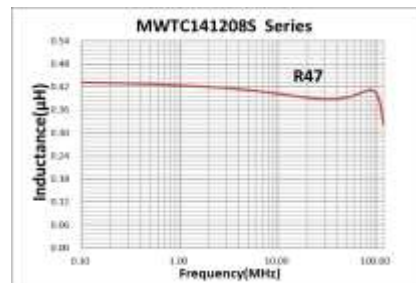
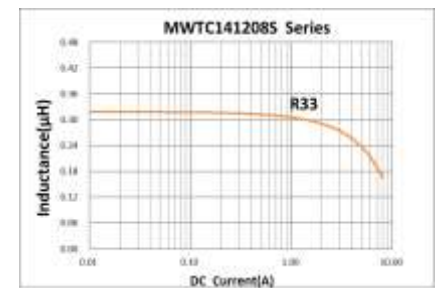
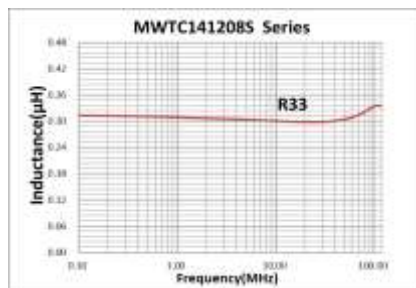
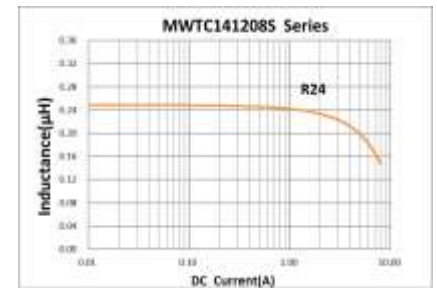
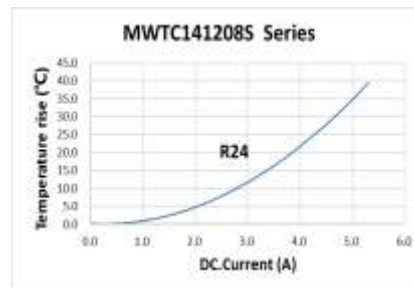
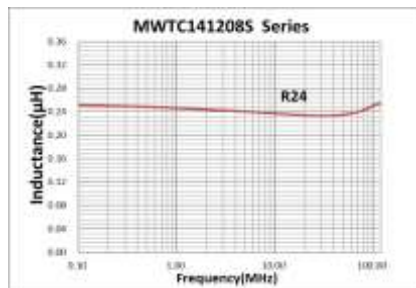
※4: Irms: DC current that causes the temperature rise ( $\Delta T = 40^\circ\text{C}$ ) from 20°C ambient.

## TYPICAL ELECTRICAL CHARACTERISTICS

### MWTC1412065 Series



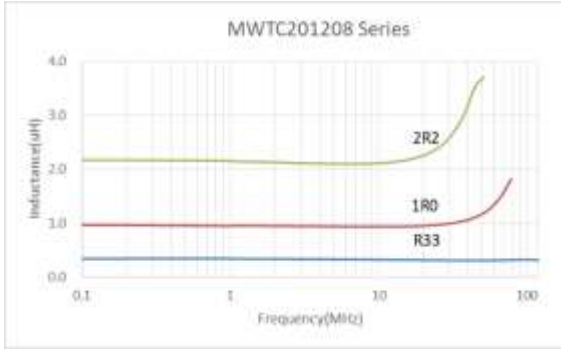
### MWTC141208 Series



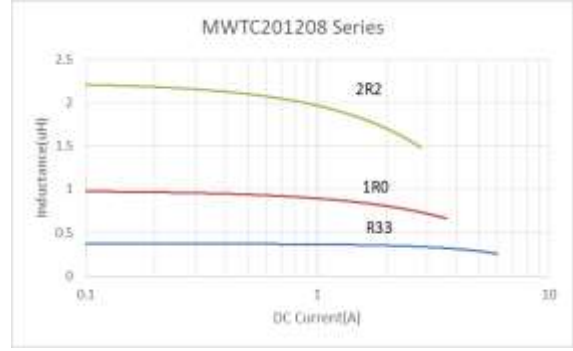
# TYPICAL ELECTRICAL CHARACTERISTICS

## MWTC201208 Series

Inductance vs. Frequency Characteristics

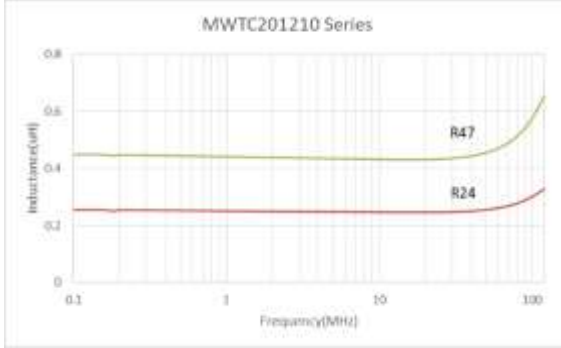


Inductance vs. DC Current Characteristics



## MWTC201210 Series

Inductance vs. Frequency Characteristics

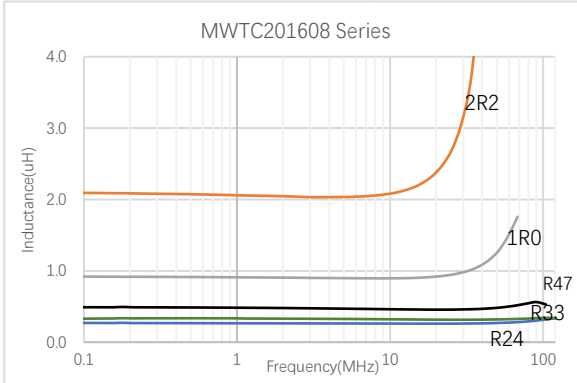


Inductance vs. DC Current Characteristics

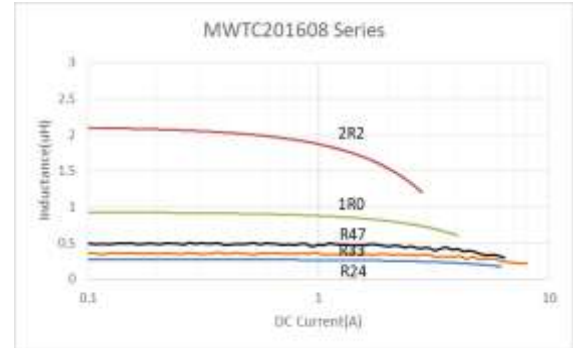


## MWTC201608 Series

Inductance vs. Frequency Characteristics

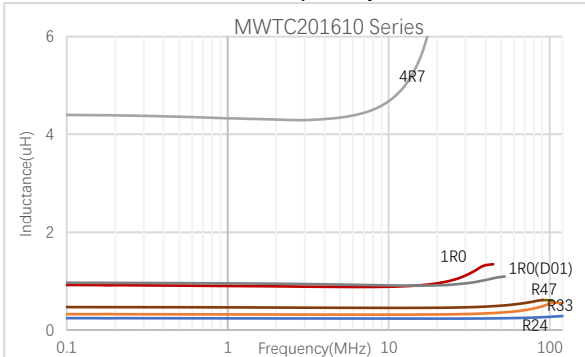


Inductance vs. DC Current Characteristics

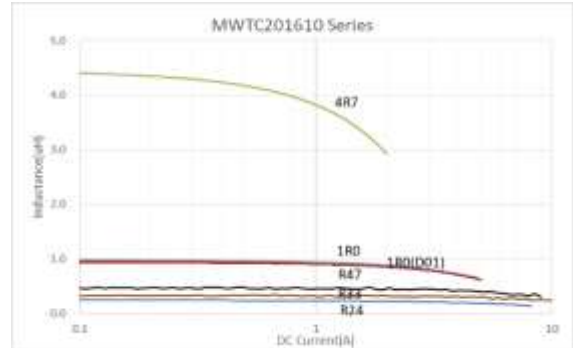


## MWTC201610 Series

Inductance vs. Frequency Characteristics



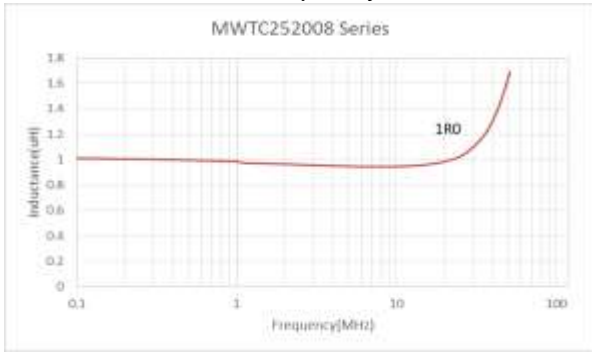
Inductance vs. DC Current Characteristics



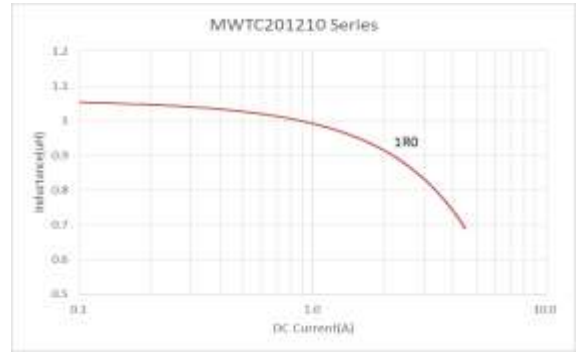
# TYPICAL ELECTRICAL CHARACTERISTICS

## MWTC252008 Series

### Inductance vs. Frequency Characteristics

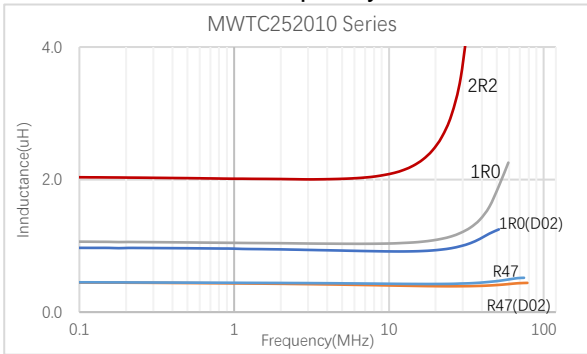


### Inductance vs. DC Current Characteristics



## MWTC252010 Series

### Inductance vs. Frequency Characteristics



### Inductance vs. DC Current Characteristics

