

# Mini Molded Chip Power Inductors - MWTC-S 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

□□□

⑦

①

Type	
MWTC	Mini Molded Chip Power Inductor

②

External Dimensions(L×W×H) [mm]	
1412065	1.4×1.2×0.65
141208	1.4×1.2×0.8
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
252010	2.5×2.0×1.0

③

Feature Type	
S	Standard

④

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

⑤

Inductance Tolerance	
M	±20%
N	±30%

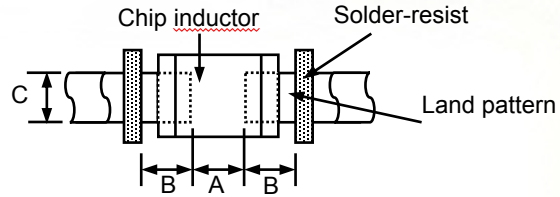
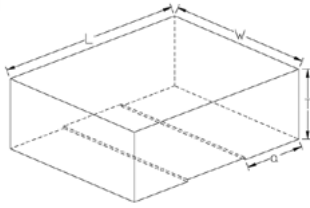
⑥

Packing	
T	Tape & Reel

⑦

Internal Code	
□□□	Design code
* Conventional product is blank	

## 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		I <sub>rms</sub>	
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		I <sub>rms</sub>	
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	3.8	4.2
MWTC141208SR47 □ T	0.47	0.032	0.028	110	4.0	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		I <sub>rms</sub>	
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

## SPECIFICATIONS

### MWTC201208 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		Min.	A		A	
Symbol	L	DCR		S.R.F	Isat		Irms	
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
MWTC201208SR47 □ TD01	0.47	0.025	0.022	96	4.5	4.8	4.0	4.4
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
MWTC201208S2R2 □ TD01	2.2	0.130	0.120	42	1.9	2.1	1.8	2.0

### 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		Min.	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	
		Max.	Typ.		Max.	Typ.	Max.	Typ.
Units	@1MHz, 1V μH	Ω		Min.	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	6.6	7.2	5.1	5.7
MWTC201608SR47 □ T	0.47	0.024	0.021	104	5.0	5.5	3.6	4.1
MWTC201608SR68 □ T	0.68	0.049	0.042	74	4.4	4.8	3.7	4.2
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	
		Max.	Typ.		Max.	Typ.	Max.	Typ.
Units	@1MHz, 1V μH	Ω		Min.	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

## SPECIFICATIONS

### MWTC201610 Series

Part Number	Inductance	DC Resistance		Self-resonant Frequency	Saturation Current		Heat Rating Current	
		@1MHz, 1V	Max.		Typ.	Min.	Max.	Typ.
Units	μH	Ω		MHz	A		A	
Symbol	L	DCR		S.R.F	Isat		Irms	
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.
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	1.65	1.85
MWTC252008S100 □ T	10	0.570	0.507	14	1.2	1.4	0.95	1.05

### MWTC252010 Series

Part Number	Inductance	DC Resistance		Self-resonant Frequency	Saturation Current		Heat Rating Current	
		@1MHz, 1V	Max.		Typ.	Min.	Max.	Typ.
Units	μH	Ω		MHz	A		A	
Symbol	L	DCR		S.R.F	Isat		Irms	
MWTC252010SR24 □ T	0.24	0.014	0.0115	144	8.4	9.4	6.0	7.0
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 □ TD01	0.47	0.022	0.019	88	6.0	6.5	4.3	4.8
MWTC252010SR47 □ TD02	0.47	0.020	0.016	81	6.5	7.0	4.7	5.0
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 Irms, whichever is smaller;

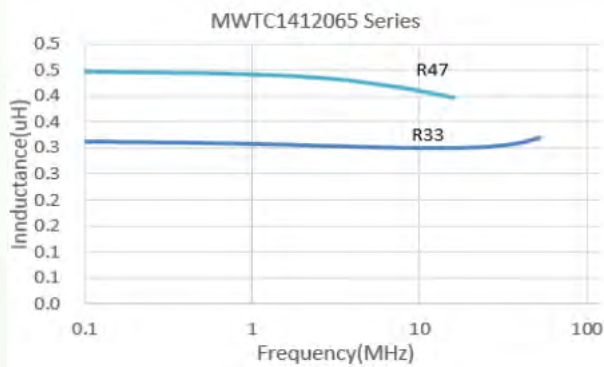
※3: Isat: DC current at which the inductance drops approximate 30% from its value without current;

※4: Irms: DC current that causes the temperature rise (ΔT=40°C) from 20°C ambient.

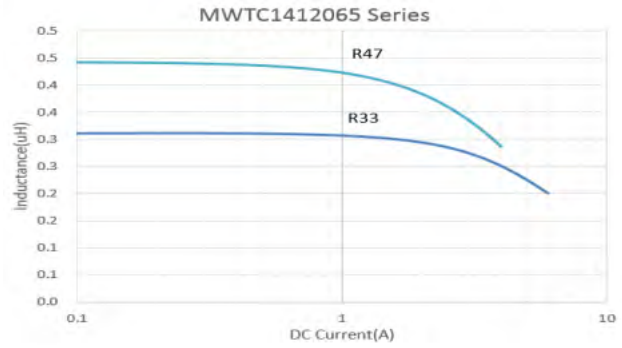
# TYPICAL ELECTRICAL CHARACTERISTICS

## MWTC1412065 Series

Inductance vs. Frequency Characteristics

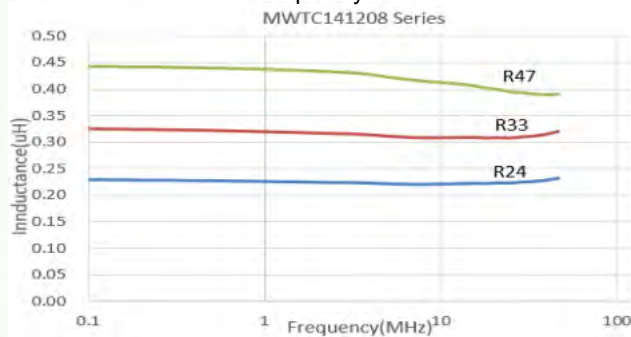


Inductance vs. DC Current Characteristics

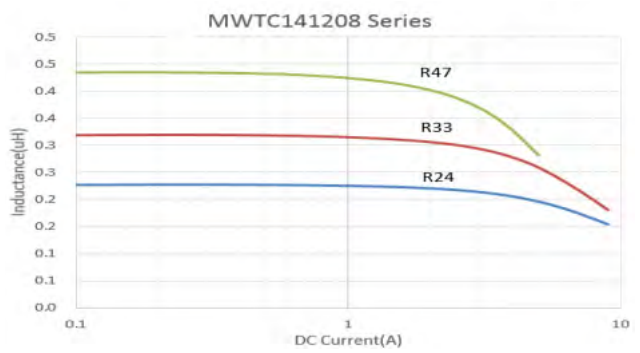


## MWTC141208 Series

Inductance vs. Frequency Characteristics

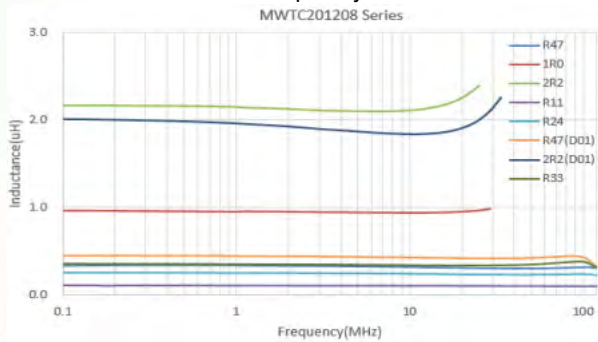


Inductance vs. DC Current Characteristics

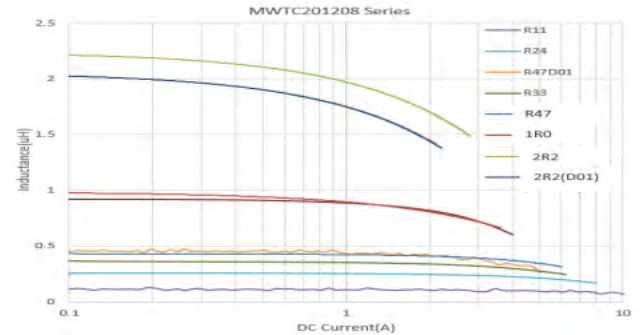


## MWTC201208 Series

Inductance vs. Frequency Characteristics

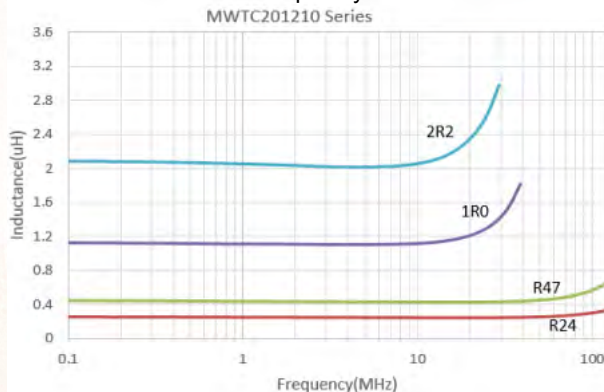


Inductance vs. DC Current Characteristics



## MWTC201210 Series

Inductance vs. Frequency Characteristics



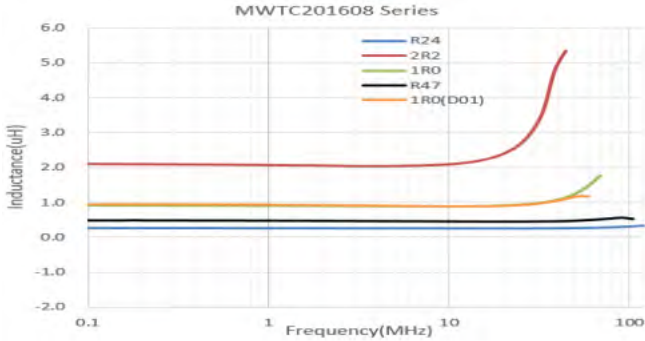
Inductance vs. DC Current Characteristics



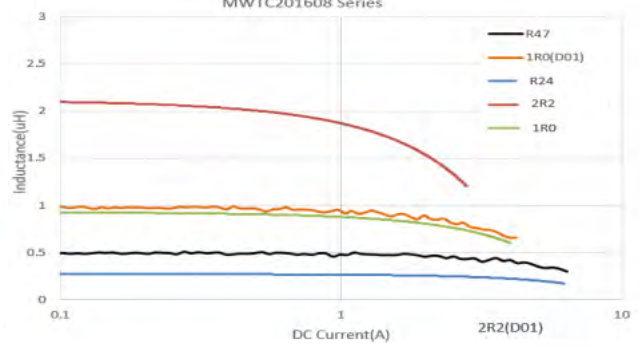
# TYPICAL ELECTRICAL CHARACTERISTICS

## MWTC201608 Series

Inductance vs. Frequency Characteristics

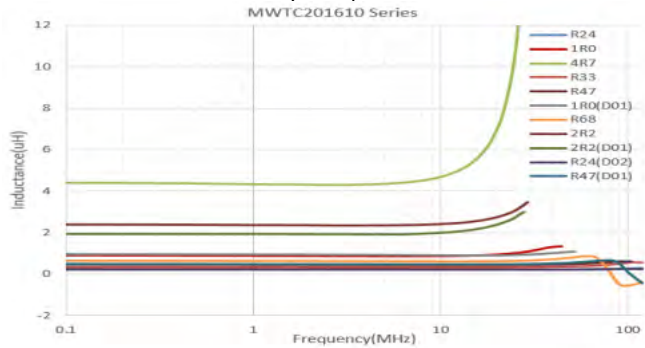


Inductance vs. DC Current Characteristics

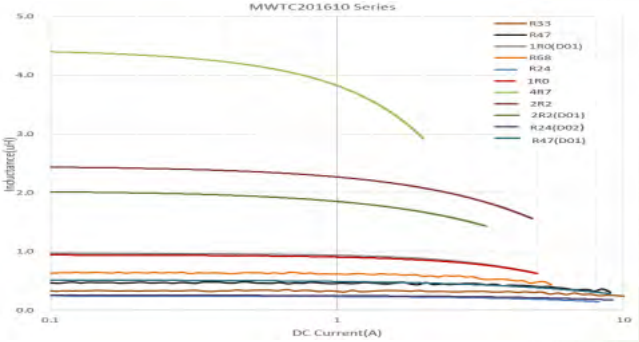


## MWTC201610 Series

Inductance vs. Frequency Characteristics

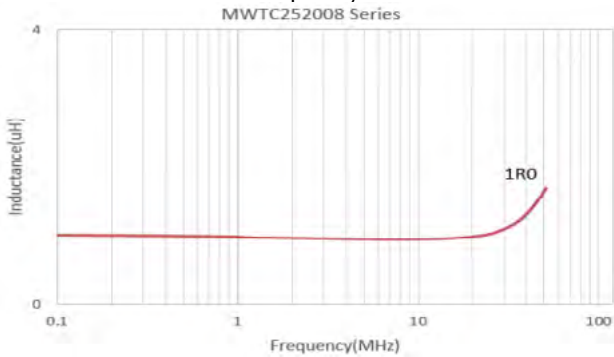


Inductance vs. DC Current Characteristics

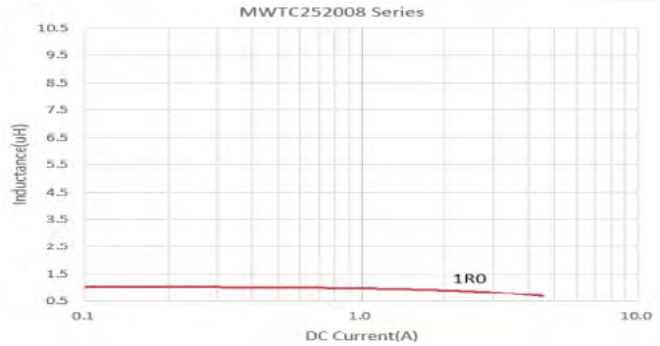


## MWTC252008 Series

Inductance vs. Frequency Characteristics

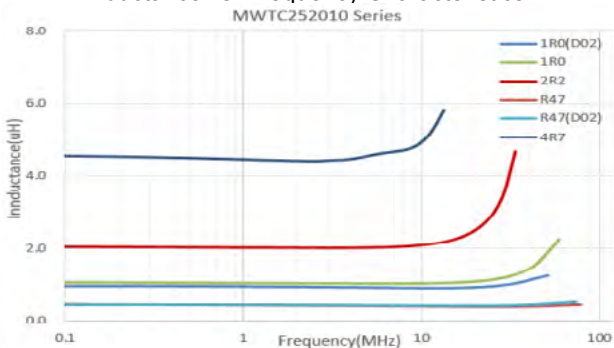


Inductance vs. DC Current Characteristics



## MWTC252010 Series

Inductance vs. Frequency Characteristics



Inductance vs. DC Current Characteristics

