

Mini Molded Chip Power Inductors – MWTC Series



Operating Temp ◆ $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$ (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

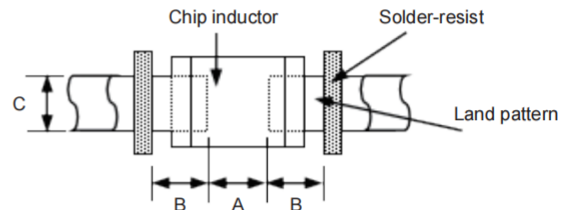
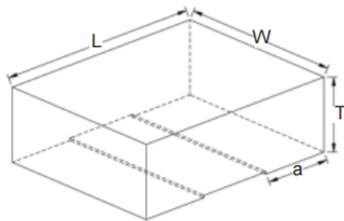
- ◆ Smart phone, pad
- ◆ Notebooks, VR, AR
- ◆ Portable gaming devices, Smart wear, Wi-Fi module

Product Identification

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

1	Type	2	External Dimensions(L×W×H) [mm]	3	Feature Type	5	Inductance Tolerance	7	Design Code
MWTC	Mini Molded Chip Power Inductor	1412065	1.4×1.2×0.65	S	Standard	M	±20%	□□□	Design Code
		141208	1.4×1.2×0.8			N	±30%		* Standard product is blank
		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						
4	Nominal Inductance								
Example	Nominal Value								
R47	0.47μH								
1R0	1.0μH								
6	Packing								
T	Tape & Reel								

Shape and Dimensions



Unit: mm

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

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	
MWTC1412065SR24 □ T	0.24	0.026	0.024	125	5.5	6.0	4.0	4.5
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	
MWTC160808SR24 □ T	0.24	0.027	0.023	105	4.8	5.3	3.5	3.9
MWTC160808SR47 □ T	0.47	0.043	0.038	100	3.3	3.6	3.0	3.3
MWTC160808SR56 □ T	0.56	0.058	0.050	80	2.7	3.0	2.2	2.5
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
MWTC2012065SR47 □ TY01	0.47	0.034	0.032	96	4.8	5.1	3.8	4.1
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

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	
MWTC201208SR47 □ TY02	0.47	0.025	0.020	96	4.8	5.3	4.0	4.4
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
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	
	@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
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
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
MWTC201608S1R5 □ T	1.5	0.086	0.073	56	3.0	3.3	2.3	2.5
MWTC201608S2R2 □ T	2.2	0.148	0.134	40	2.3	2.6	1.8	2.0
MWTC201608S2R2 □ TD01	2.2	0.090	0.080	33	2.3	2.5	2.3	2.5
MWTC201608S2R2 □ TY01	2.2	0.110	0.100	33	2.9	3.2	2.4	2.6

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

Specifications

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	
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

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	
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 □ TD02	0.47	0.020	0.016	81	6.5	7.0	5.7	6.1
MWTC252010SR47 □ TB01	0.47	0.023	0.018	61	8.0	8.3	6.0	7.0
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;

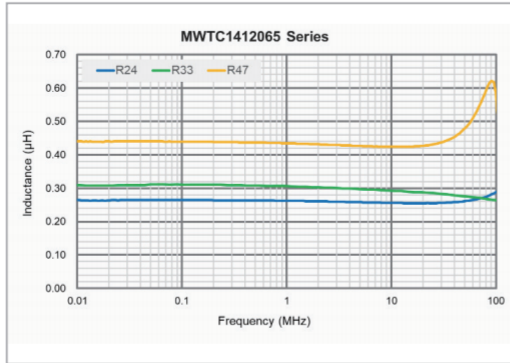
※2: Rated current: Isat or Irms, whichever is smaller;

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

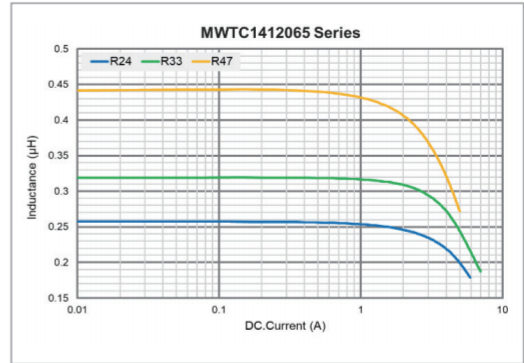
※4: Irms: DC current that causes the temperature rise (ΔT=40°C) from 20°C ambient.

**Typical
Electrical
Characteristics**

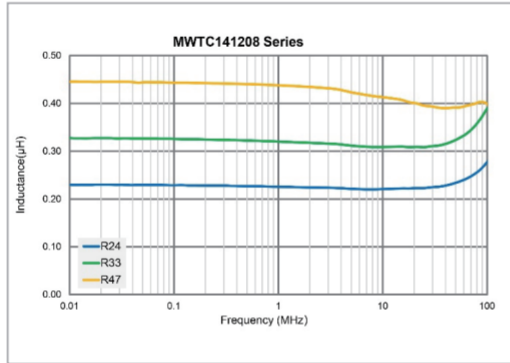
MWTC1412065 Series
Inductance vs. Frequency Characteristics



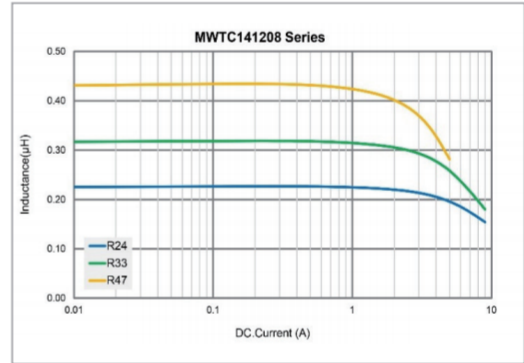
Inductance vs. DC Current Characteristics



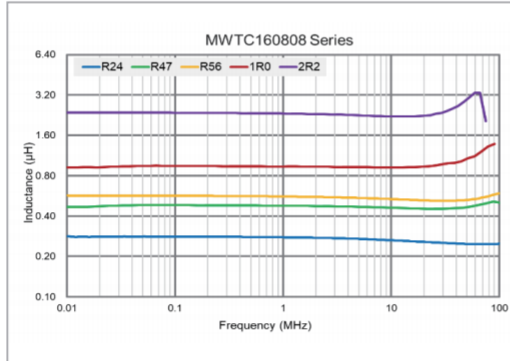
MWTC141208 Series
Inductance vs. Frequency Characteristics



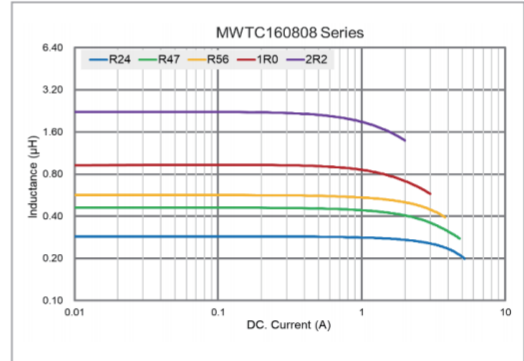
Inductance vs. DC Current Characteristics



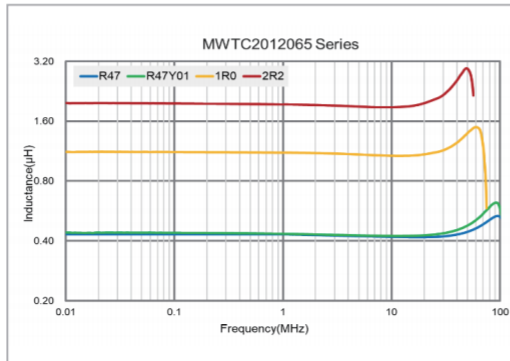
MWTC160808 Series
Inductance vs. Frequency Characteristics



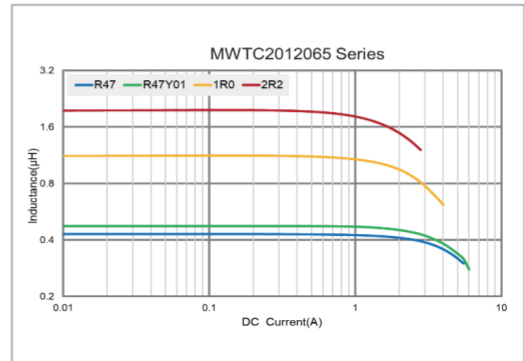
Inductance vs. DC Current Characteristics



MWTC2012065 Series
Inductance vs. Frequency Characteristics

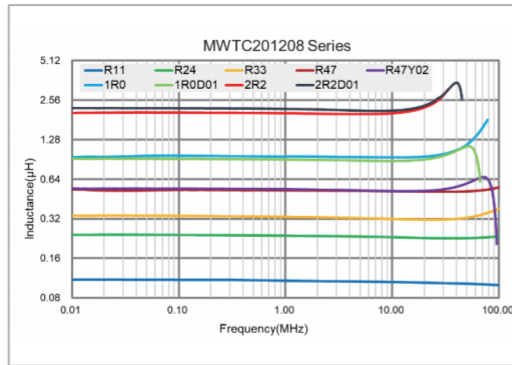


Inductance vs. DC Current Characteristics

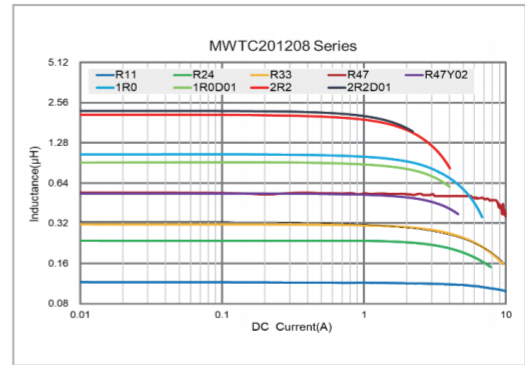


Typical Electrical Characteristics

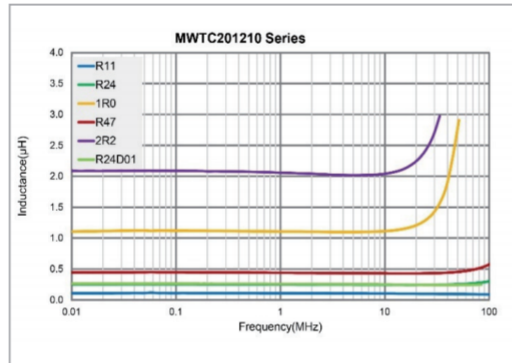
MWTC201208 Series Inductance vs. Frequency Characteristics



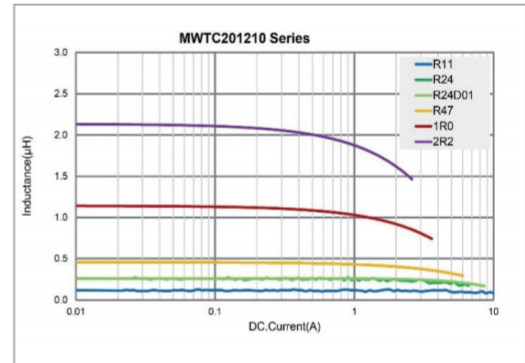
Inductance vs. DC Current Characteristics



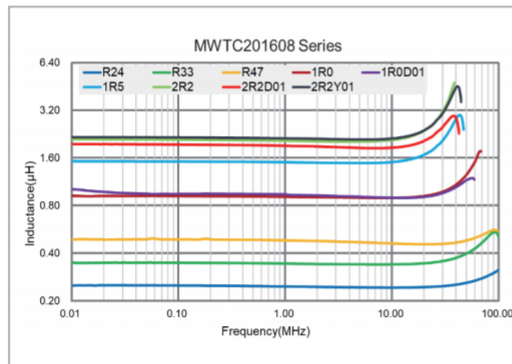
MWTC201210 Series Inductance vs. Frequency Characteristics



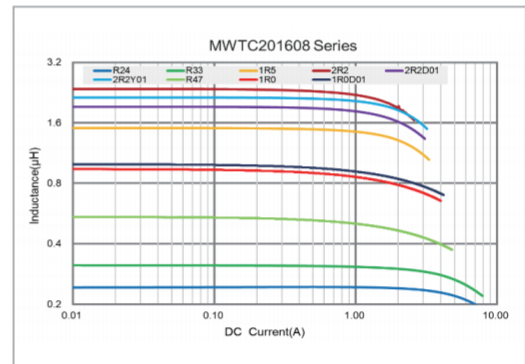
Inductance vs. DC Current Characteristics



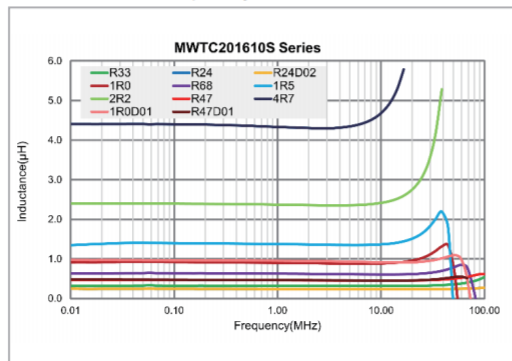
MWTC201608 Series Inductance vs. Frequency Characteristics



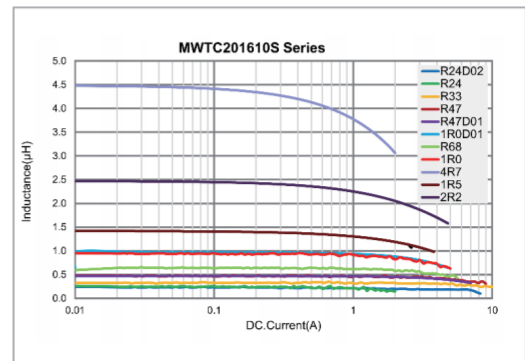
Inductance vs. DC Current Characteristics



MWTC201610 Series Inductance vs. Frequency Characteristics

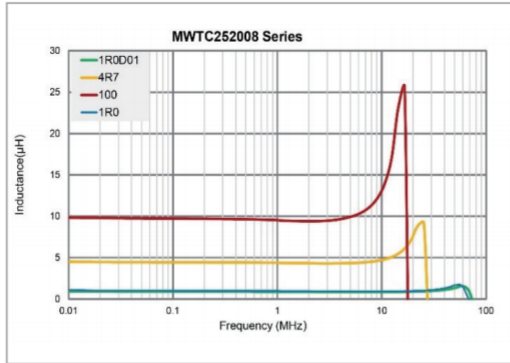


Inductance vs. DC Current Characteristics

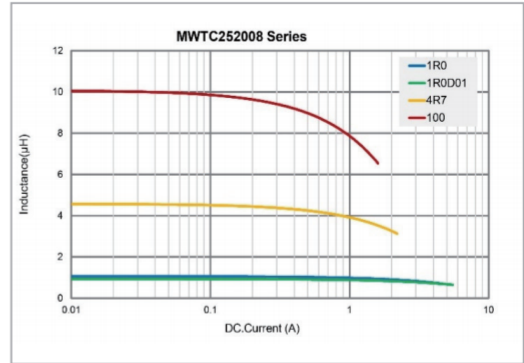


**Typical
Electrical
Characteristics**

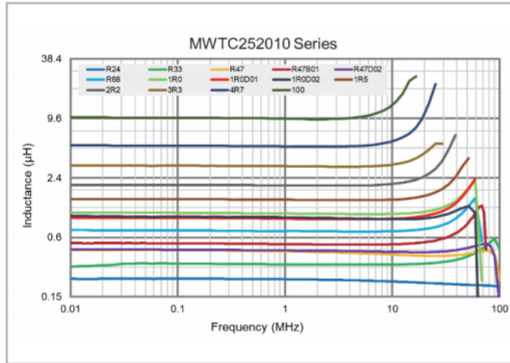
**MWTC252008 Series
Inductance vs. Frequency Characteristics**



Inductance vs. DC Current Characteristics



**MWTC252010 Series
Inductance vs. Frequency Characteristics**



Inductance vs. DC Current Characteristics

