Mini Molded Chip Power Inductors - MWTC-S Series

Operating Temp. : -40℃ ~+125℃ (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	201608	S	XXX	□	T	□□□
①	②	③	④	⑤	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

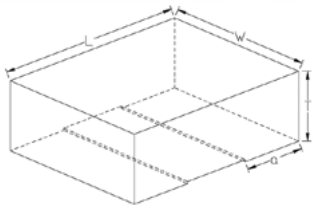
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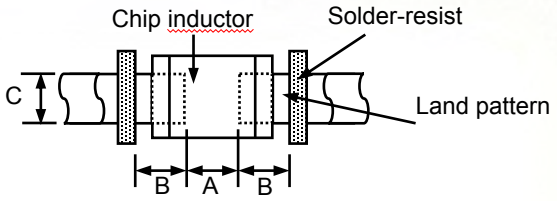
Internal Code	
□□□	Design code
* Conventional product is blank	

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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	
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	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		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

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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	4.0	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	
	@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	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	
	@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

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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	
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	1.65	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.	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;

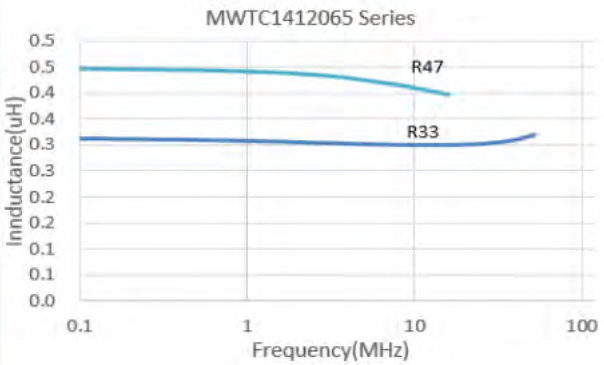
※4: Irms: DC current that causes the temperature rise (△ T =40°C) from 20°C ambient.

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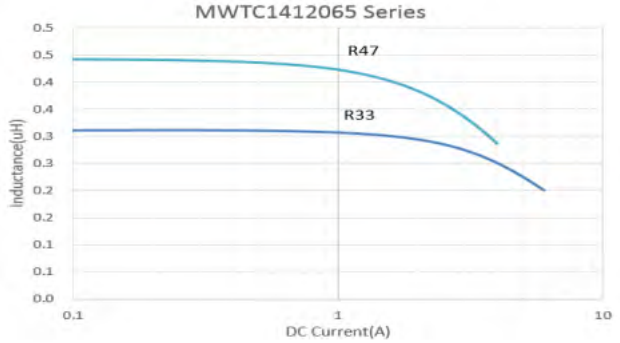
TYPICAL ELECTRICAL CHARACTERISTICS

MWTC1412065 Series

Inductance vs. Frequency Characteristics

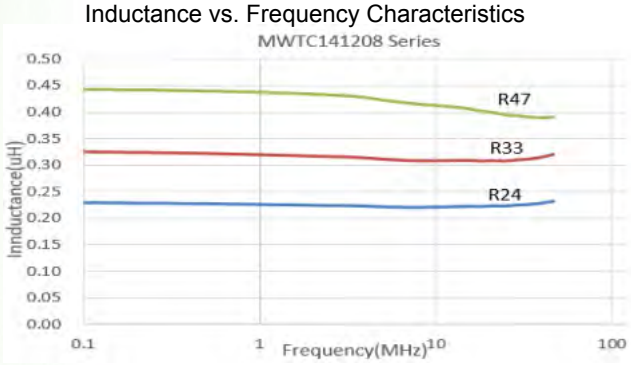


Inductance vs. DC Current Characteristics

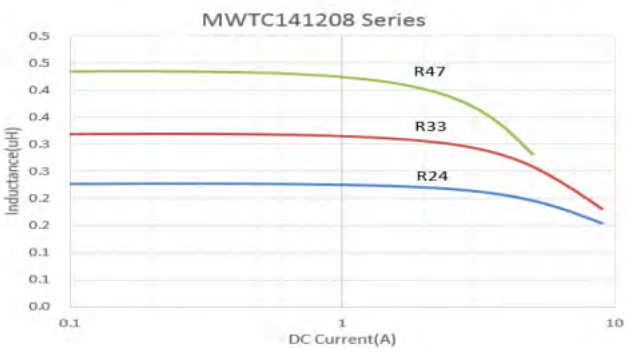


MWTC141208 Series

Inductance vs. Frequency Characteristics

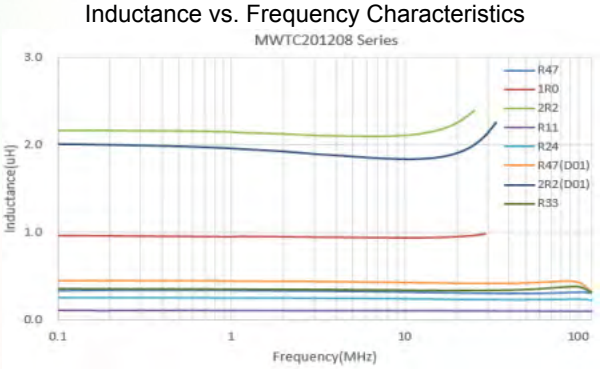


Inductance vs. DC Current Characteristics

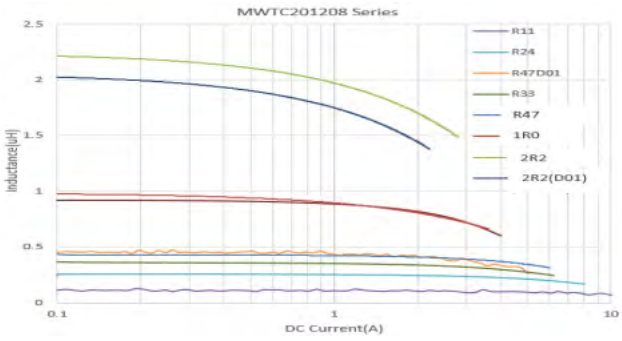


MWTC201208 Series

Inductance vs. Frequency Characteristics

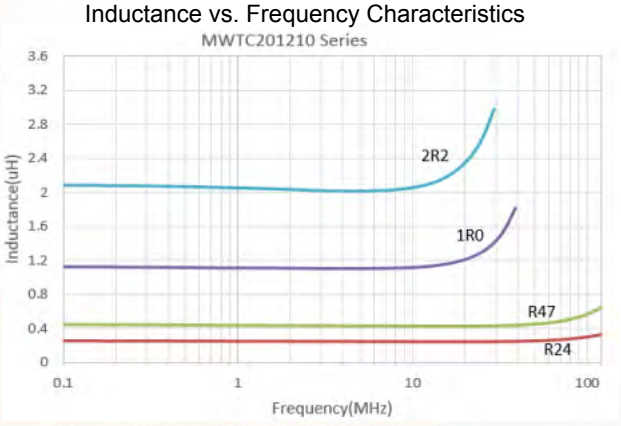


Inductance vs. DC Current Characteristics

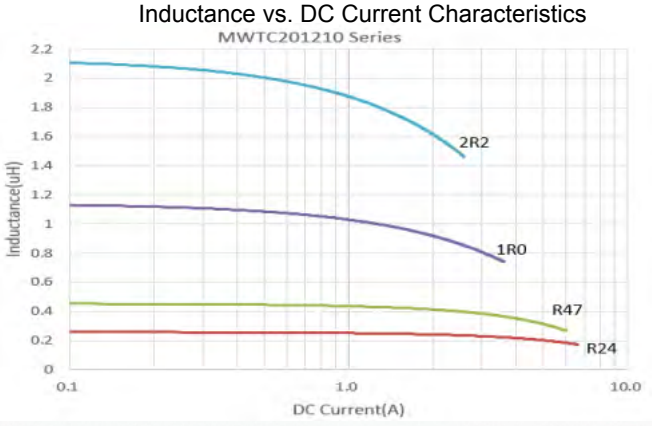


MWTC201210 Series

Inductance vs. Frequency Characteristics



Inductance vs. DC Current Characteristics



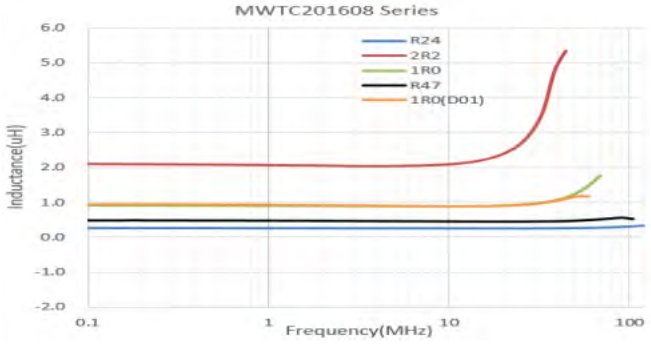
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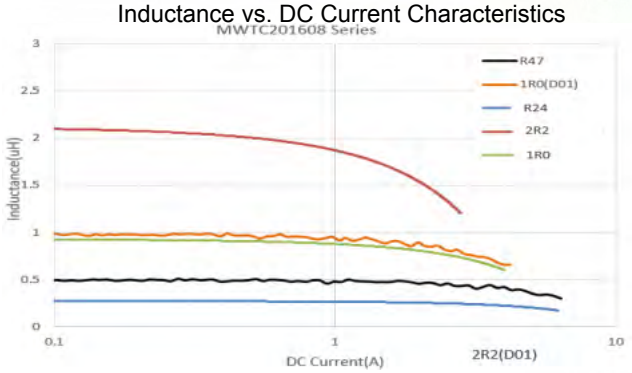
TYPICAL ELECTRICAL CHARACTERISTICS

MWTC201608 Series

Inductance vs. Frequency Characteristics

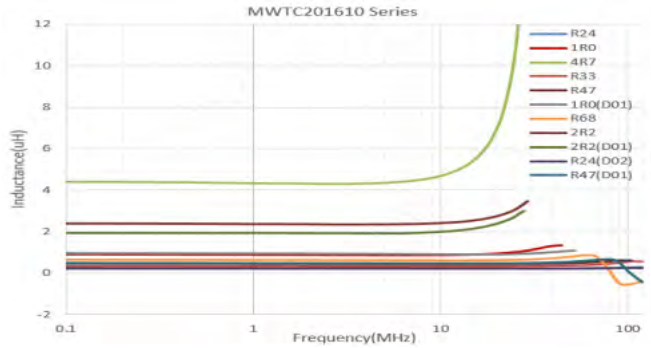


Inductance vs. DC Current Characteristics

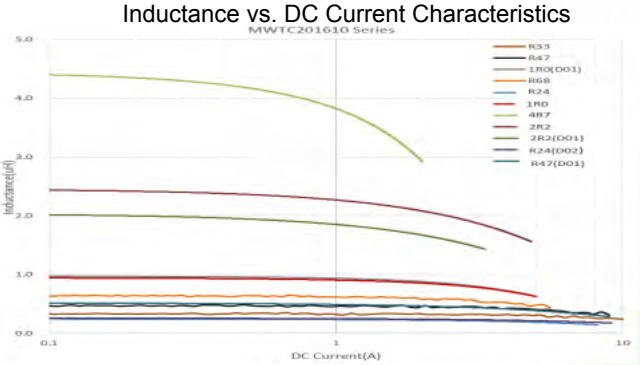


MWTC201610 Series

Inductance vs. Frequency Characteristics

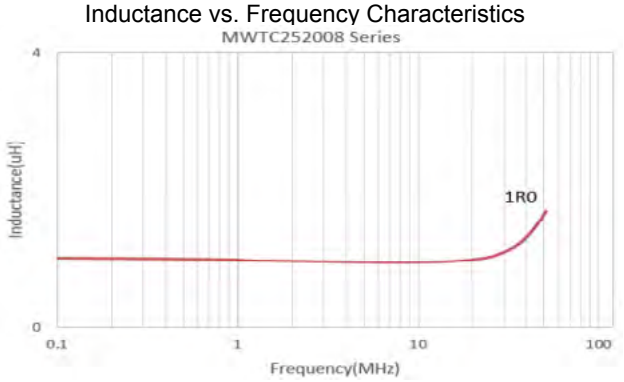


Inductance vs. DC Current Characteristics

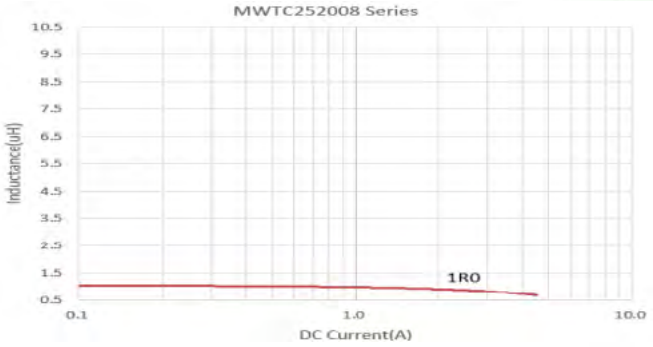


MWTC252008 Series

Inductance vs. Frequency Characteristics

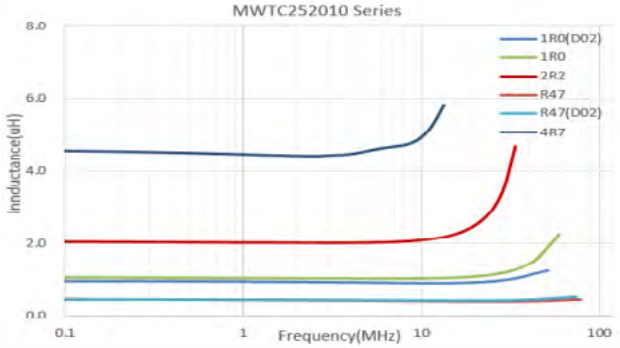


Inductance vs. DC Current Characteristics



MWTC252010 Series

Inductance vs. Frequency Characteristics



Inductance vs. DC Current Characteristics



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