

## Cautions and Warnings

Please be noted that this spec is only for reference if you have projects designed with the product number listed in. If you are looking for new project design-in, please find BKPx Series specification/datasheet on Chilisin website. Or you may find our sales contact for more information on old part number at your convenience. Appreciated your attention and understanding.

**Note:** Please be sure to request approval specifications that provide further details of the products. Kindly note that the content of these specifications are subject to change or may be discontinued without prior notice. This product may not be designed/used in medical or high risk applications without Chilisin approval. Please contact our sales department before ordering.

## Multilayer Power Inductors



The MPx Series is a miniature type of multilayer power inductor constructed using low-loss ferrite material to support high-speed switching frequencies. The compact size and high efficiency is ideal for DC-DC converter applications in space-limited boards.

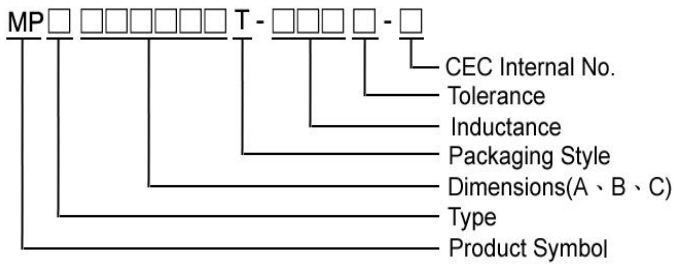
### Features

- RoHS, Halogen Free and REACH Compliance
- Small size
- Low profile
- High current
- Magnetically shielded configuration allowing for high density mounting

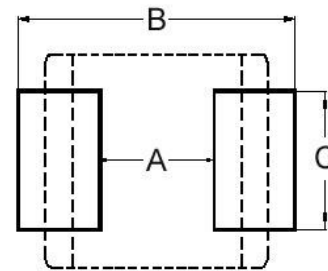
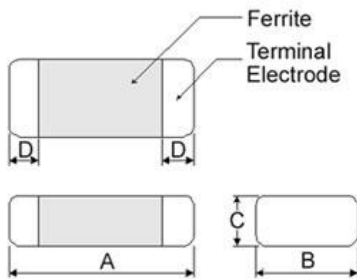
### Applications

- DC-DC converters
- Power modules
- Cellular phones
- DSC, PND, DVD
- Wireless card and other electronic devices

### Product Identification



- Product Symbol : MPA, MPB, MPE
- Packaging : T : Tape and Reel , B : Bulk
- Tolerance : M =  $\pm 20\%$  , T =  $\pm 30\%$



Dimensions in mm

TYPE	A	B	C	D
160805	1.6 $\pm$ 0.15	0.8 $\pm$ 0.15	0.5 $\pm$ 0.05	0.3 $\pm$ 0.2
160806	1.6 $\pm$ 0.15	0.8 $\pm$ 0.15	0.6 $\pm$ 0.15	0.3 $\pm$ 0.2
160808	1.6 $\pm$ 0.15	0.8 $\pm$ 0.15	0.8 $\pm$ 0.15	0.3 $\pm$ 0.2
201205	2.0 $\pm$ 0.20	1.25 $\pm$ 0.20	0.55 Max	0.5 $\pm$ 0.3
201210	2.0 $\pm$ 0.20	1.25 $\pm$ 0.20	1.0 Max	0.5 $\pm$ 0.3
201610	2.0 $\pm$ 0.20	1.6 $\pm$ 0.20	1.0 Max	0.5 $\pm$ 0.3
252010	2.5 $\pm$ 0.20	2.0 $\pm$ 0.20	1.0 Max	0.6 $\pm$ 0.2
252012	2.5 $\pm$ 0.20	2.0 $\pm$ 0.20	1.2 Max	0.6 $\pm$ 0.2

Dimensions in mm

TYPE	A	B	C
160805	0.7 ~ 0.8	1.8 ~ 2.0	0.6 ~ 0.8
160806	0.7 ~ 0.8	1.8 ~ 2.0	0.6 ~ 0.8
160808	0.7 ~ 0.8	1.8 ~ 2.0	0.6 ~ 0.8
201205	0.8 ~ 1.2	2.3 ~ 2.9	1.0 ~ 1.4
201210	0.8 ~ 1.2	2.3 ~ 2.9	1.0 ~ 1.4
201610	0.8 ~ 1.2	2.1 ~ 2.7	1.6 ~ 2.0
252010	1.3 ~ 1.9	2.7 ~ 3.5	2.0 ~ 2.6
252012	1.3 ~ 1.9	2.7 ~ 3.5	2.0 ~ 2.6

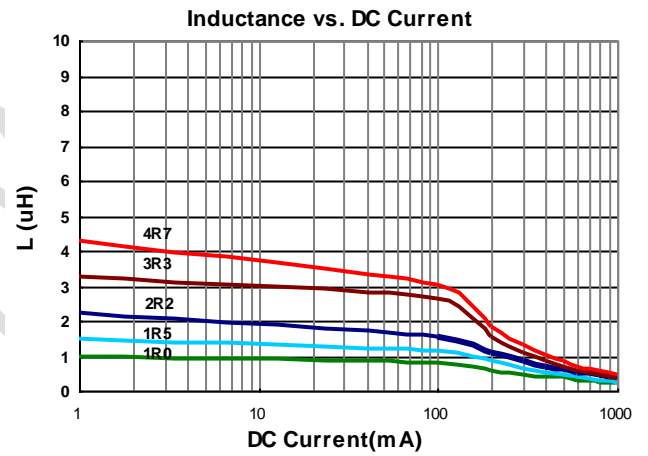
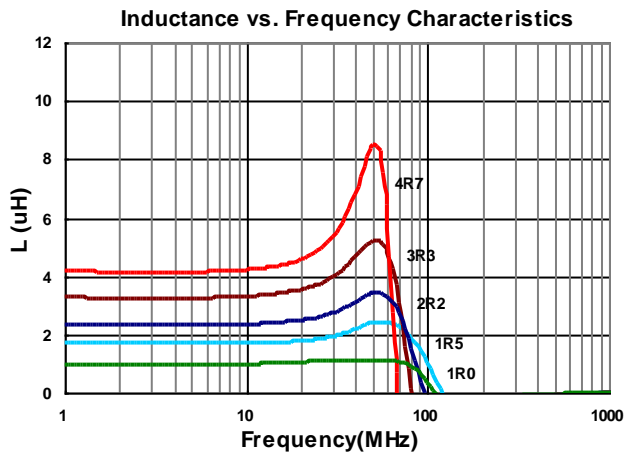
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±30%	Rated current (mA) Max
MPA201210T-1R0□-N	1.0	20, 30	1	0.18	1100
MPA201210T-1R5□-N	1.5	20, 30	1	0.19	1000
MPA201210T-2R2□-N	2.2	20, 30	1	0.22	900
MPA201210T-3R3□-N	3.3	20, 30	1	0.25	700
MPA201210T-4R7□-N	4.7	20, 30	1	0.35	600

**Note:** When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%

- Operating temperature range - 55°C ~ 125°C(Including self - temperature rise)
- Rated Current for a 40°C temperature rise from 25°C ambient with current
- Measure Equipment :  
 L : Agilent HP4287A+16197A, 1MHz 200mV  
 RDC : HP 4338B, or equivalent

**Test Instruments :** HP4287A Inductance / Material Analyzer



# SMD Multilayer Power Inductors – MP Series

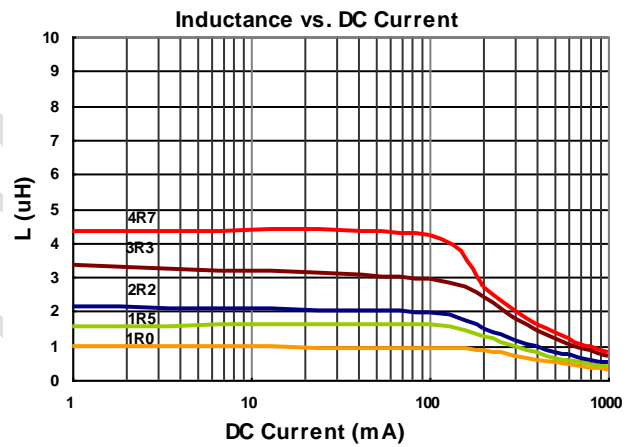
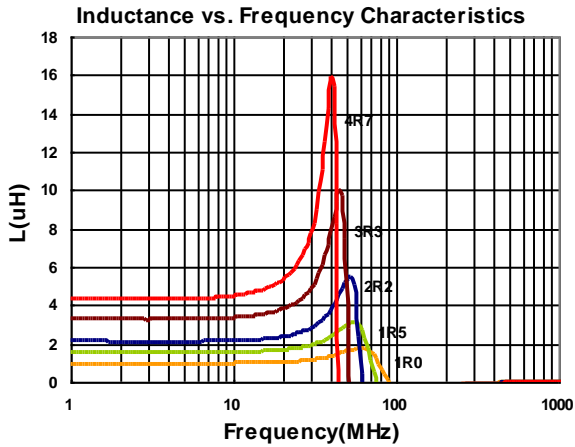
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±30%	Rated current (mA) Max
MPA252010T-1R0□-N	1.0	20, 30	1	0.11	1200
MPA252010T-1R5□-N	1.5	20, 30	1	0.13	1100
MPA252010T-2R2□-N	2.2	20, 30	1	0.15	1000
MPA252010T-3R3□-N	3.3	20, 30	1	0.18	1000
MPA252010T-4R7□-N	4.7	20, 30	1	0.25	900

**Note:** When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%

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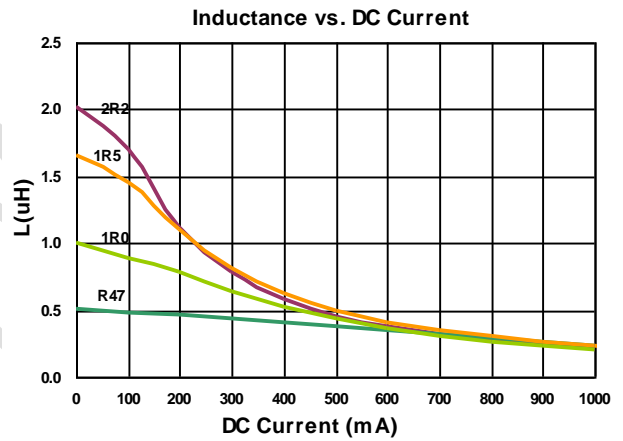
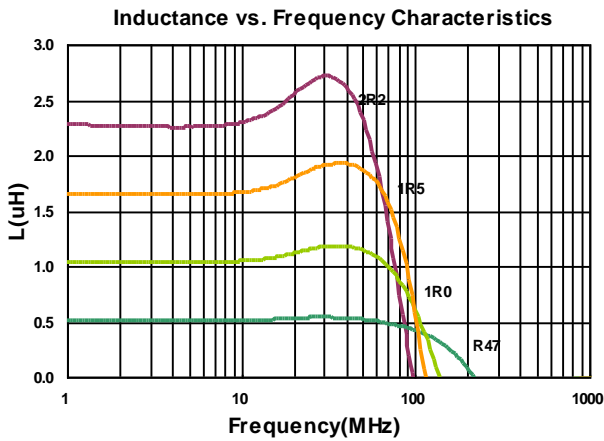
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±25%	Isat (mA) Max	Irms (mA) Max
MPB160805T-R47□-NA6	0.47	20, 30	3	0.15	420	1200
MPB160805T-1R0□-NA6	1.0	20, 30	3	0.20	180	1200
MPB160805T-1R5□-NA6	1.5	20, 30	3	0.22	130	1000
MPB160805T-2R2□-NA6	2.2	20, 30	3	0.24	100	1000

**Note:** When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%

- Operating temperature range - 55°C ~ 125°C(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
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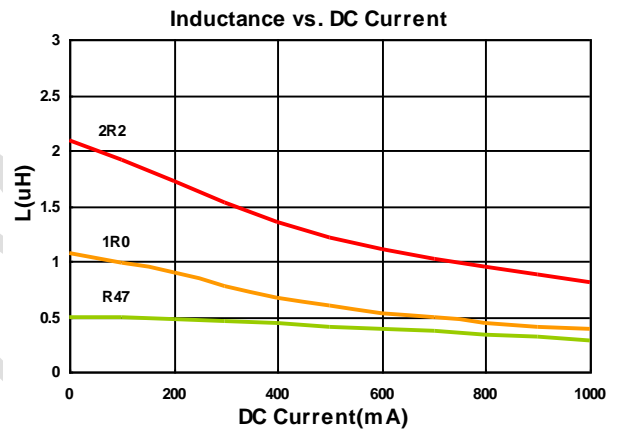
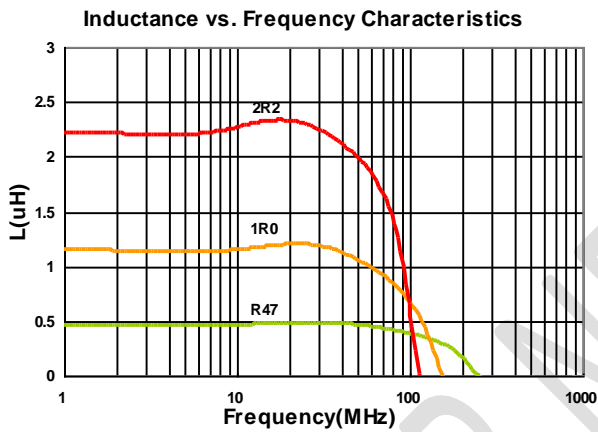
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±30%	Isat (mA) Max	Irms (mA) Max
MPB160808T-R47□-NA2	0.47	20, 30	3	0.15	400	1100
MPB160808T-1R0□-NA2	1.0	20, 30	3	0.20	200	950
MPB160808T-2R2□-NA2	2.2	20, 30	3	0.30	150	750

**Note:** When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%

- Operating temperature range - 55°C ~ 125°C(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40°C temperature rise from 25°C ambient with current
- Measure Equipment :  
 L : Agilent HP4287A+16197A, 3MHz 200mV  
 RDC : HP 4338B, or equivalent

## Test Instruments : HP4287A Inductance / Material Analyzer



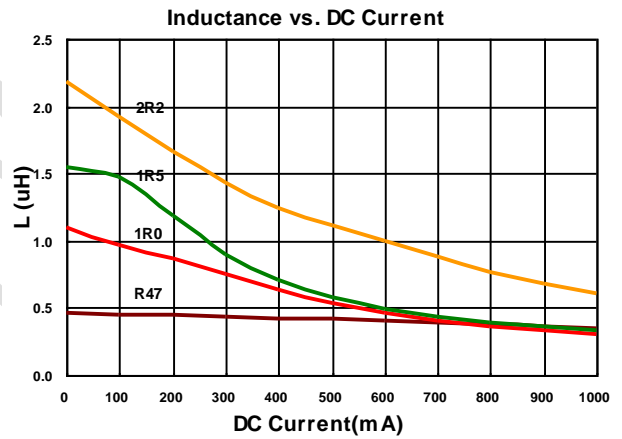
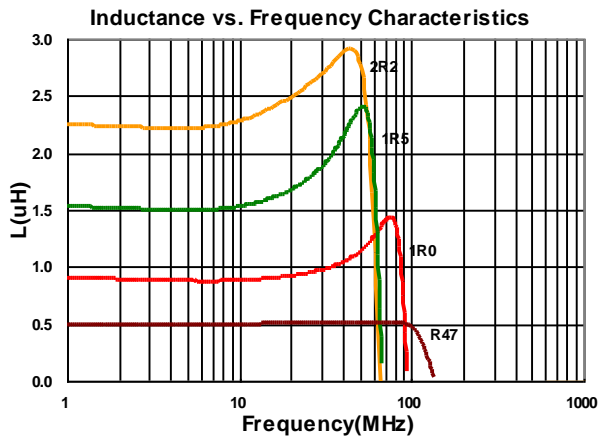
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±30%	Isat (mA) Max	Irms (mA) Max
MPB201205T-R47□-NA2	0.47	20, 30	3	0.11	900	1200
MPB201205T-1R0□-NA2	1.0	20, 30	3	0.16	300	900
MPB201205T-1R5□-NA2	1.5	20, 30	3	0.18	250	800
MPB201205T-2R2□-NA2	2.2	20, 30	3	0.29	200	600
MPB201205T-4R7□-NA2	4.7	20, 30	3	0.50	100	700

**Note:** When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%

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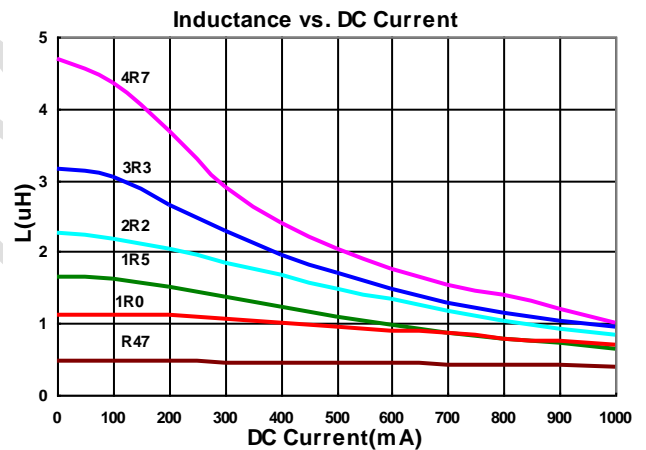
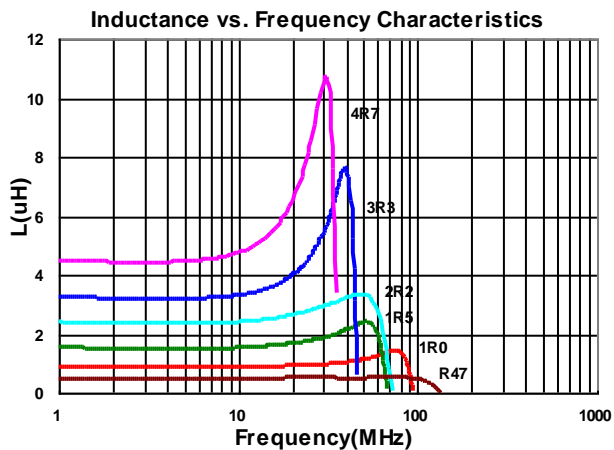
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±30%	Isat (mA) Max	Irms (mA) Max
MPB201210T-R47□-NA2	0.47	20, 30	3	0.09	1100	1300
MPB201210T-1R0□-NA2	1.0	20, 30	3	0.12	650	1200
MPB201210T-1R5□-NA2	1.5	20, 30	3	0.15	450	1100
MPB201210T-2R2□-NA2	2.2	20, 30	3	0.19	400	1100
MPB201210T-3R3□-NA2	3.3	20, 30	3	0.24	300	800
MPB201210T-4R7□-NA2	4.7	20, 30	3	0.26	200	700

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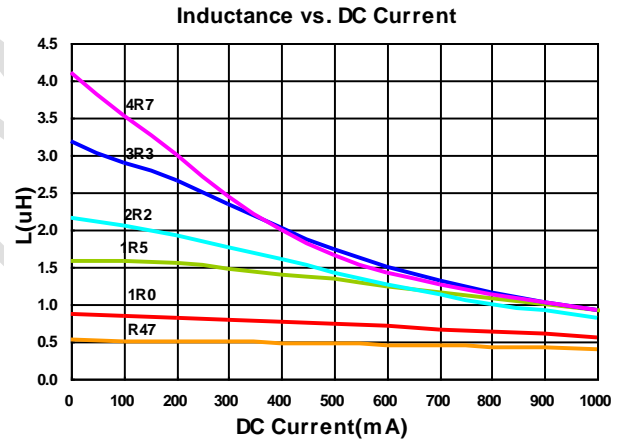
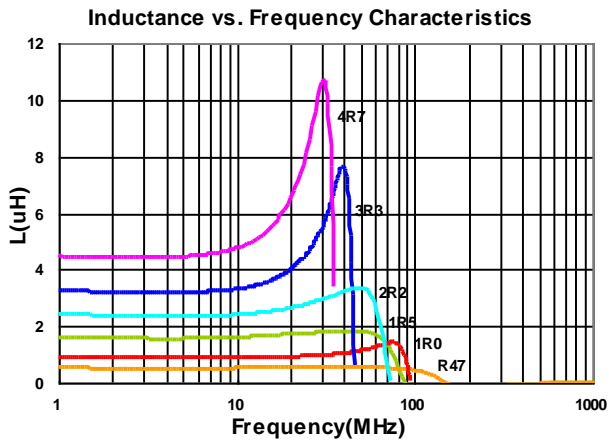
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±25%	Isat (mA) Max	Irms (mA) Max
MPB201610T-R47□-NA6	0.47	20, 30	3	0.06	1200	1600
MPB201610T-1R0□-NA6	1.0	20, 30	3	0.085	850	1300
MPB201610T-1R5□-NA6	1.5	20, 30	3	0.11	600	1200
MPB201610T-2R2□-NA6	2.2	20, 30	3	0.11	400	1200
MPB201610T-3R3□-NA6	3.3	20, 30	3	0.12	350	850
MPB201610T-4R7□-NA6	4.7	20, 30	3	0.14	200	1100

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## Test Instruments : HP4287A Inductance / Material Analyzer



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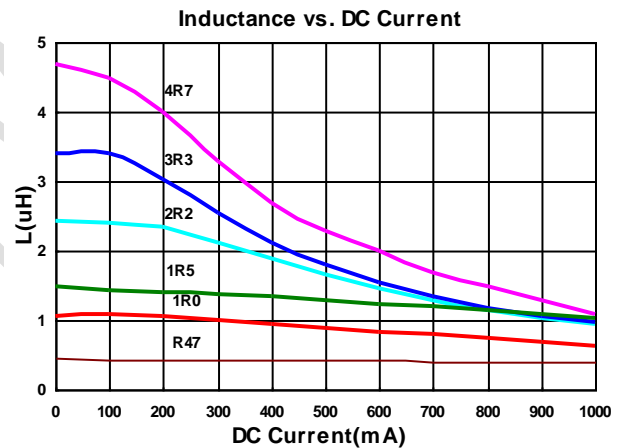
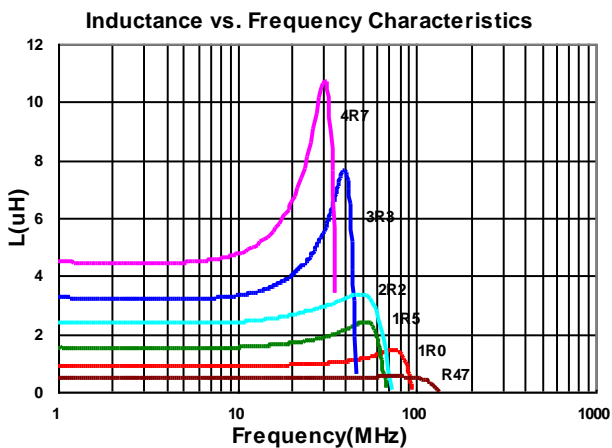
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±25%	Isat (mA) Max	Irms (mA) Max
MPB252010T-R47□-NA6	0.47	20, 30	3	0.04	1500	1800
MPB252010T-1R0□-NA6	1.0	20, 30	3	0.055	900	1600
MPB252010T-1R5□-NA2	1.5	20, 30	3	0.07±30%	800	1400
MPB252010T-2R2□-NA6	2.2	20, 30	3	0.08	500	1300
MPB252010T-3R3□-NA6	3.3	20, 30	3	0.10	400	1200
MPB252010T-4R7□-NA6	4.7	20, 30	3	0.11	300	1100

**Note:** When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%

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- Isat for Inductance drop 30% from its value without current
- Irms for a 40°C temperature rise from 25°C ambient with current
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## Electrical Characteristics

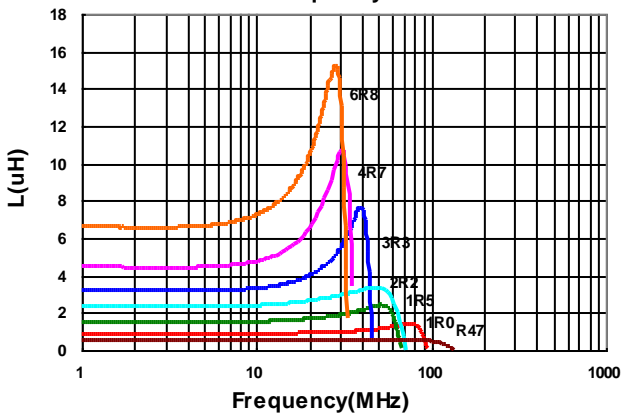
Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±30%	Isat (mA) Max	Irms (mA) Max
MPB252012T-R47□-NA2	0.47	20, 30	3	0.04	1500	1800
MPB252012T-1R0□-NA2	1.0	20, 30	3	0.05	950	1600
MPB252012T-1R5□-NA2	1.5	20, 30	3	0.07	900	1400
MPB252012T-2R2□-NA2	2.2	20, 30	3	0.10	700	1200
MPB252012T-3R3□-NA2	3.3	20, 30	3	0.12	500	1100
MPB252012T-4R7□-NA2	4.7	20, 30	3	0.14	350	1000
MPB252012T-6R8□-NA2	6.8	20, 30	3	0.16	250	900

**Note:** When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%

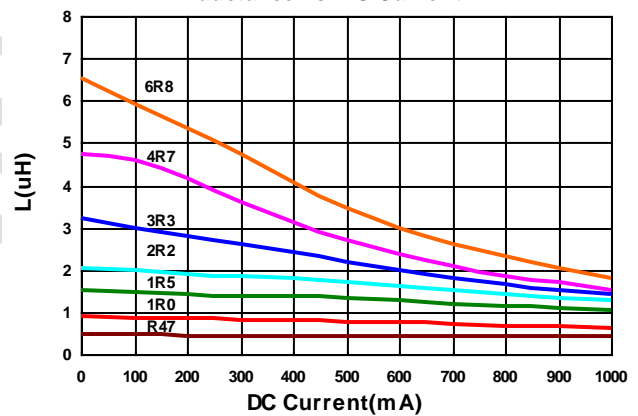
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**Inductance vs. Frequency Characteristics**



**Inductance vs. DC Current Characteristics**



# SMD Multilayer Power Inductors – MP Series

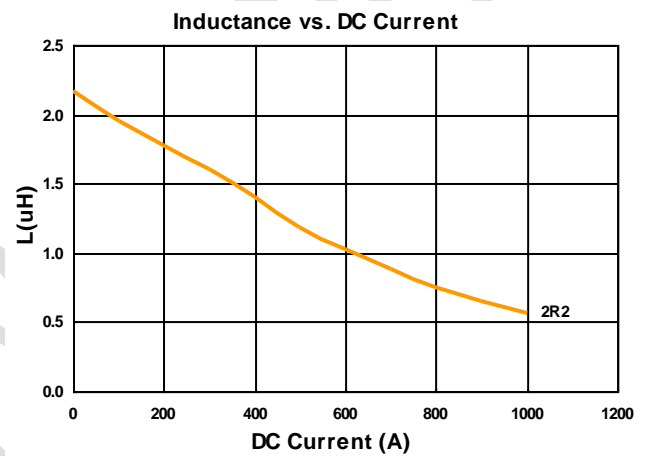
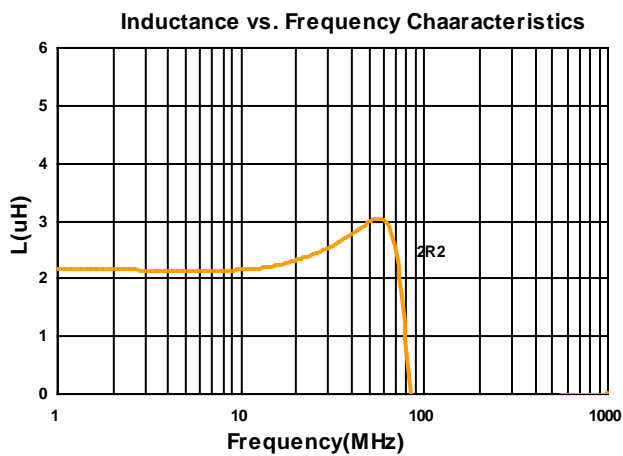
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±25%	Isat(mA) Max(Typ.)	Irms(mA) Max(Typ.)
MPE160806T-2R2□-NA6	2.2	20, 30	3	0.38	250(300)	650(750)

**Note:** When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%

- Operating temperature range - 55°C ~ 125°C(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- I rms for a 40°C temperature rise from 25°C ambient with current
- Measure Equipment :  
 L : Agilent HP4287A+16197A, 3MHz 200mV  
 RDC : HP 4338B, or equivalent

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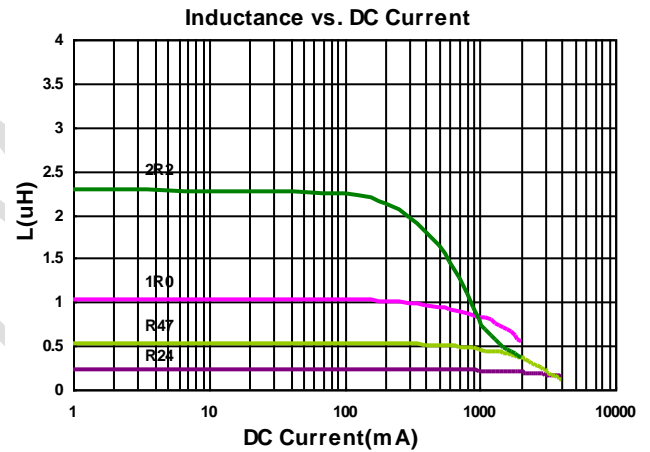
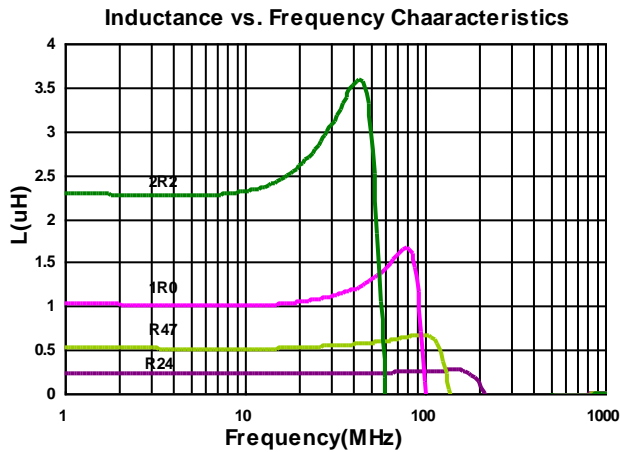
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±25%	Isat(mA) Max(Typ.)	Irms(mA) Max(Typ.)
MPE201210T-R24□-NA2	0.24	20, 30	3	0.03	2700(3300)	2400(3200)
MPE201210T-R47□-NA2	0.47	20, 30	3	0.06	1600(2000)	2200(3000)
MPE201210T-1R0□-NA2	1.0	20, 30	3	0.10	1400(1700)	1800(2100)
MPE201210T-2R2□-NA2	2.2	20, 30	3	0.125	500(800)	1600(1900)

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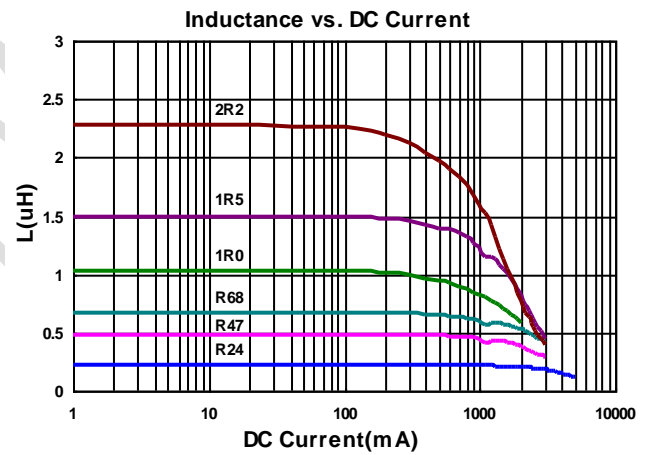
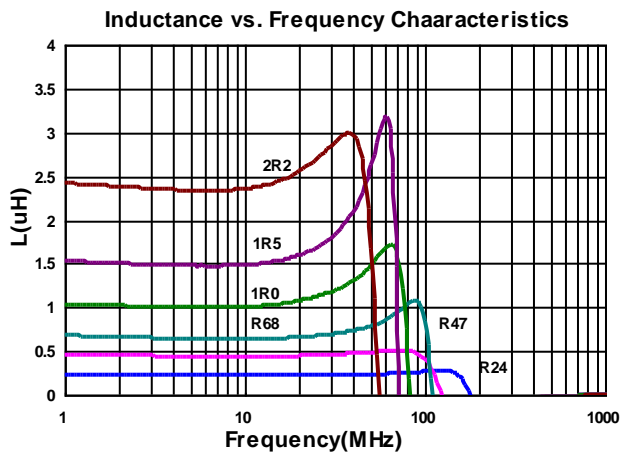
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±25%	Isat(mA) Max(Typ.)	Irms(mA) Max(Typ.)
MPE201610T-R24□-NA2	0.24	20, 30	3	0.023	3600(4000)	3500(4200)
MPE201610T-R47□-NA2	0.47	20, 30	3	0.037	2500(2900)	2600(3100)
MPE201610T-R68□-NA2	0.68	20, 30	3	0.065	2500(2800)	2400(2800)
MPE201610T-1R0□-NA2	1.0	20, 30	3	0.068	1500(1900)	2200(2600)
MPE201610T-1R5□-NA2	1.5	20, 30	3	0.100	1500(1800)	1600(1900)
MPE201610T-2R2□-NA2	2.2	20, 30	3	0.210	1000(1300)	1500(1800)

**Note:** When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%

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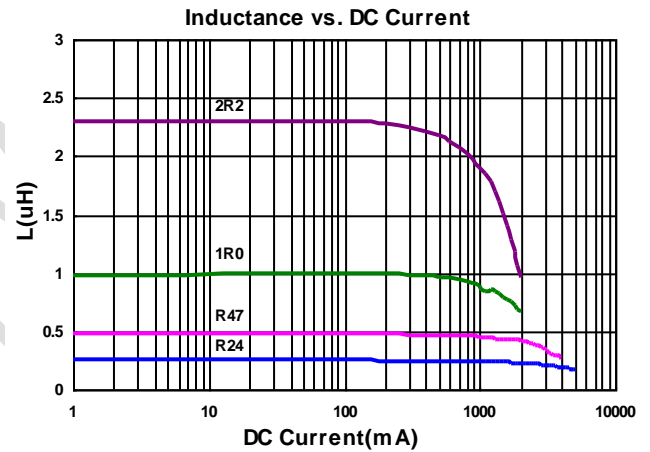
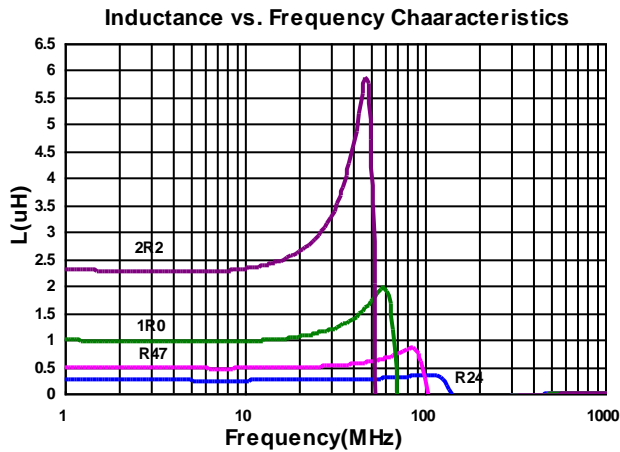
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±25%	Isat(mA) Max(Typ.)	Irms(mA) Max(Typ.)
MPE252010T-R24□-NA2	0.24	20, 30	3	0.024	4800(5200)	4100(4900)
MPE252010T-R47□-NA2	0.47	20, 30	3	0.040	3100(3500)	3000(3600)
MPE252010T-1R0□-NA2	1.0	20, 30	3	0.050	1500(1900)	2900(3500)
MPE252010T-2R2□-NA2	2.2	20, 30	3	0.110	1400(1700)	1600(1900)

**Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%**

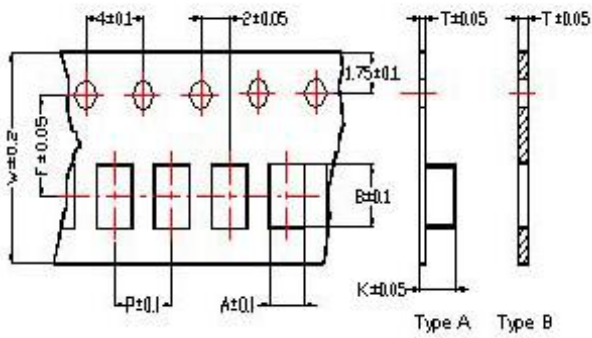
- Operating temperature range - 55°C ~ 125°C(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- I rms for a 40°C temperature rise from 25°C ambient with current
- Measure Equipment :  
L : Agilent HP4287A+16197A, 3MHz 200mV  
RDC : HP 4338B, or equivalent

**Test Instruments : HP4287A Inductance / Material Analyzer**



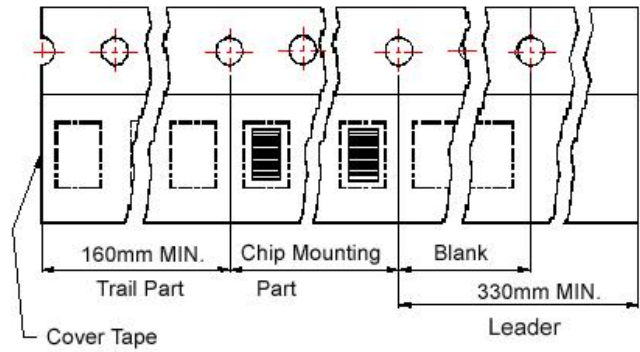
## Packaging Specifications

**Tape Dimensions**

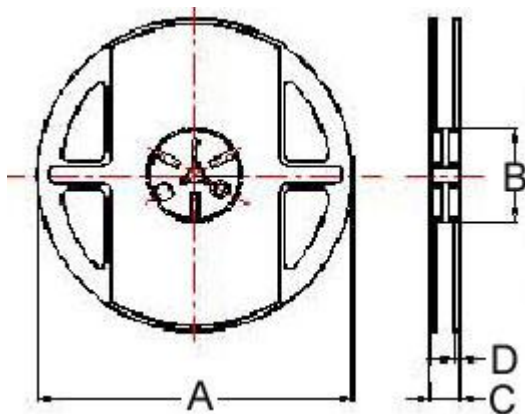


**Tape Material**

Carrier Tape: Polycarbonate (Tape A)  
 Carrier Tape: Paper (Tape B)  
 Cover Tape: Polystyrene



**Reel Dimensions**



Dimensions in mm

TYPE	Tape Dimensions								Tape Type	Reel Dimensions				Quantity PCS / REEL
	A	B	T	W	P	F	K	A		B	C	D		
160805	1.05	1.85	0.60	8.0	2.0	3.5	-	B	178	60	12	1.5	10000	
160806	1.05	1.85	0.75	8.0	4.0	3.5	-	B	178	60	12	1.5	4000	
160808	1.05	1.85	0.95	8.0	4.0	3.5	-	B	178	60	12	1.5	4000	
201205	1.42	2.25	0.22	8.0	4.0	3.5	0.80	A	178	60	12	1.5	4000	
201210	1.45	2.25	0.22	8.0	4.0	3.5	1.04	A	178	60	12	1.5	3000	
201610	1.80	2.20	0.22	8.0	4.0	3.5	1.15	A	178	60	12	1.5	3000	
252010	2.25	2.8	0.25	8.0	4.0	3.5	1.35	A	178	60	12	1.5	3000	
252012	2.25	2.8	0.25	8.0	4.0	3.5	1.35	A	178	60	12	1.5	3000	



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