

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.

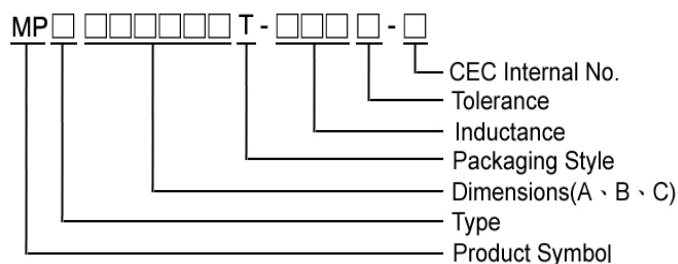
Features

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

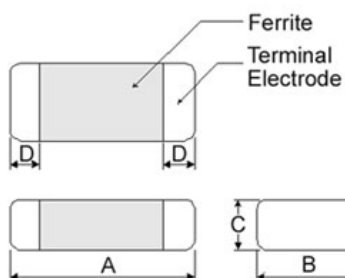
Applications

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

Product Identification

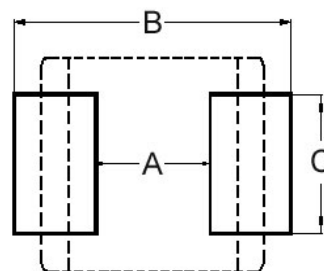


- Product Symbol : MPA, MPB, MPE
- Type : A : General , B : Low RDC , E: High Isat
- Packaging : T : Tape and Reel , B : Bulk
- Tolerance : M = $\pm 20\%$, T = $\pm 30\%$



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

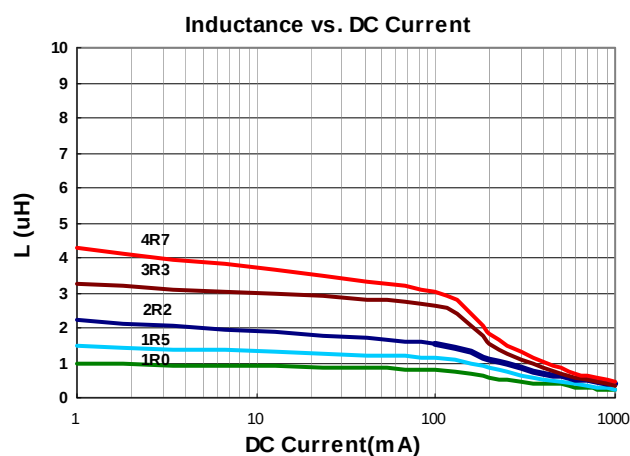
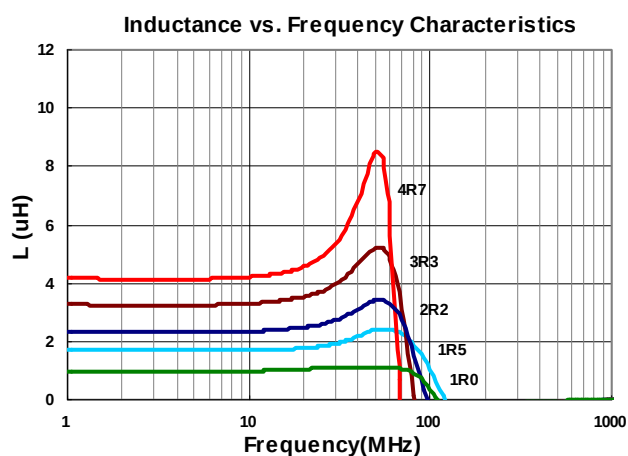
MPA : General Series

Part Number	Inductance (μ H)	Tolerance ($\pm\%$)	Test Frequency (MHz)	RDC (Ω) $\pm 30\%$	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= $\pm 20\%$, T= $\pm 30\%$

- 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



Electrical Characteristics

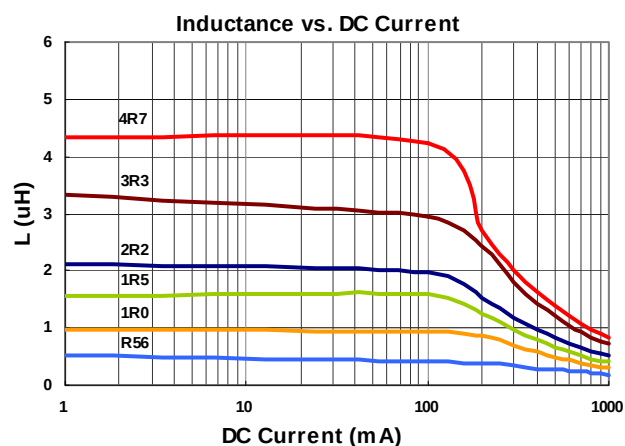
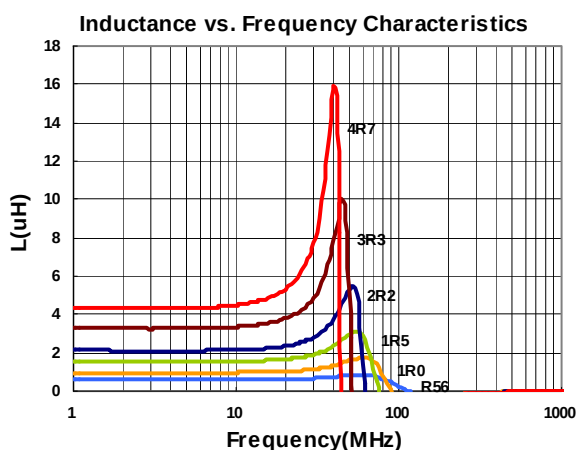
MPA : General Series

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±30%	Rated current (mA) Max
MPA252010T-R56□-N	0.56	20, 30	1	0.05	1300
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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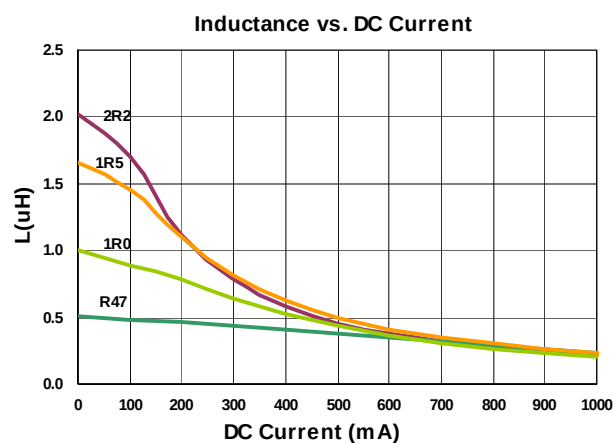
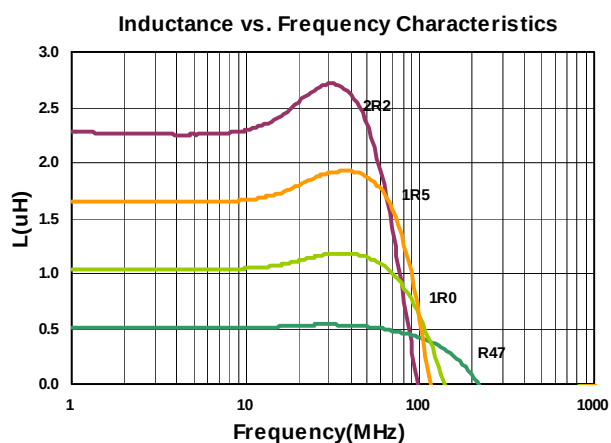
MPB : Low Profile Series

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%

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- Isat for Inductance drop 30% from its value with current
- I rms for a 40°C temperature rise from 25°C ambient with current
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Electrical Characteristics

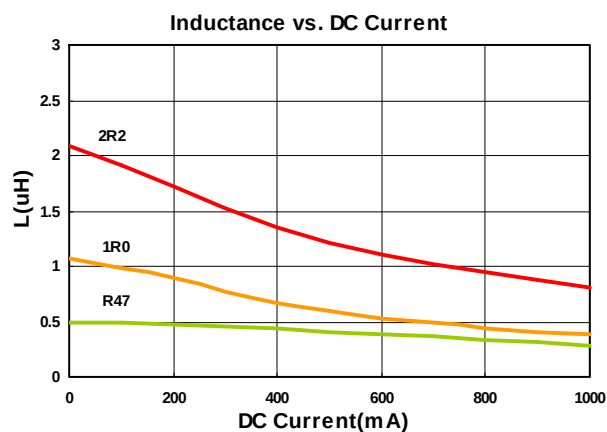
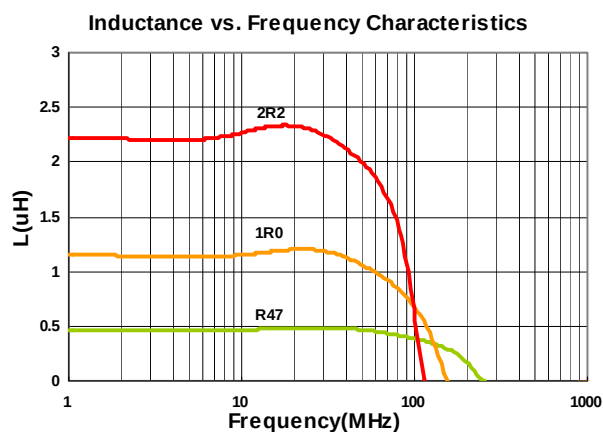
MPB : Low RDC Series

Part Number	Inductance (μ H)	Tolerance ($\pm$ %)	Test Frequency (MHz)	RDC (Ω) $\pm 30\%$	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= $\pm 20\%$, T= $\pm 30\%$

- Operating temperature range - 55°C ~ 125°C(Including self - temperature rise)
- Isat for Inductance drop 30% from its value with current
- I rms for a 40°C temperature rise from 25°C ambient with current
- Measure Equipment :
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RDC : HP 4338B, or equivalent

Test Instruments : HP4287A Inductance / Material Analyzer



Electrical Characteristics

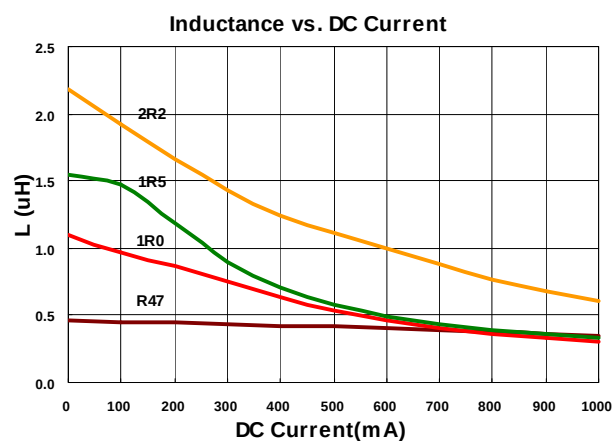
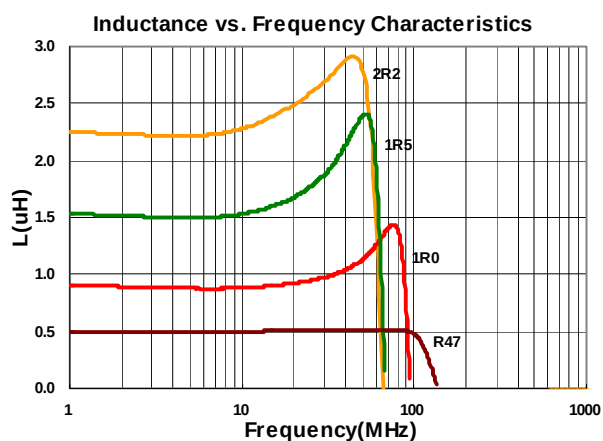
MPB : Low Profile Series

Part Number	Inductance (μ H)	Tolerance ($\pm$ %)	Test Frequency (MHz)	RDC (Ω) $\pm 30\%$	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= $\pm 20\%$, T= $\pm 30\%$

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RDC : HP 4338B, or equivalent

Test Instruments : HP4287A Inductance / Material Analyzer



Electrical Characteristics

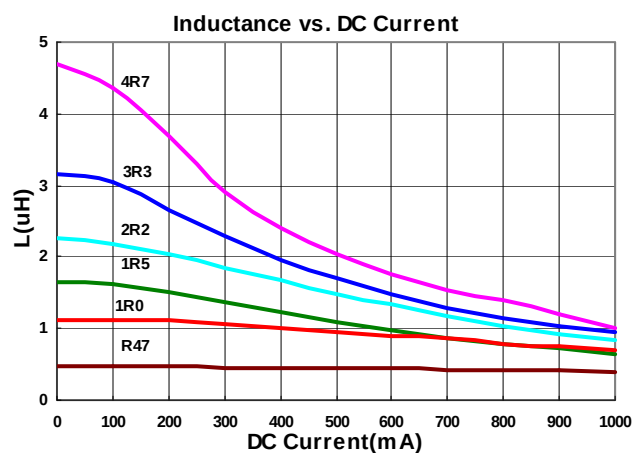
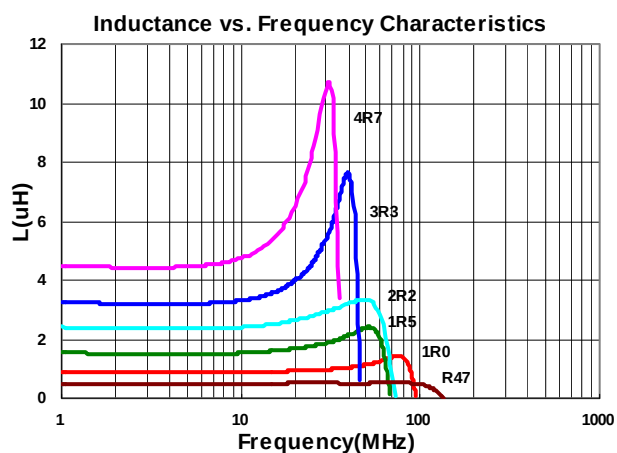
MPB : Low RDC Series

Part Number	Inductance (μ H)	Tolerance ($\pm$ %)	Test Frequency (MHz)	RDC (Ω) $\pm 30\%$	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

Note: When ordering, please specify tolerance code. Tolerance: M= $\pm 20\%$, T= $\pm 30\%$

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- Irms for a 40°C temperature rise from 25°C ambient with current
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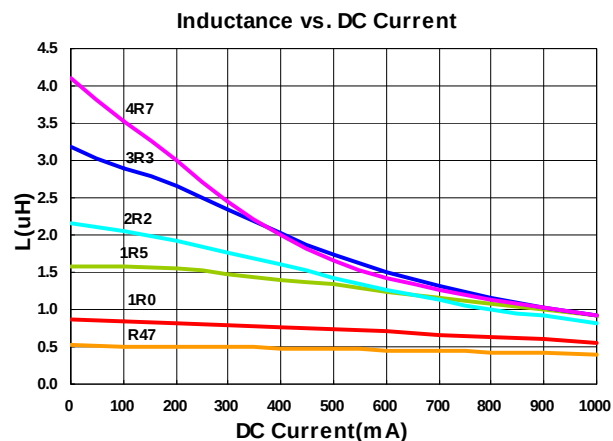
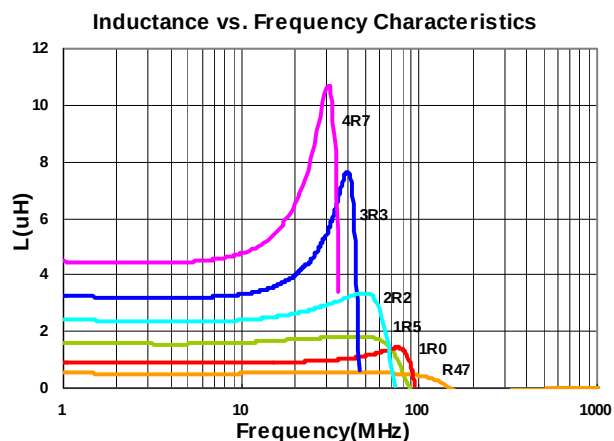
MPB : Low RDC Series

Part Number	Inductance (μ H)	Tolerance ($\pm$ %)	Test Frequency (MHz)	RDC (Ω) $\pm 25\%$	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

Note: When ordering, please specify tolerance code. Tolerance: M= $\pm 20\%$, T= $\pm 30\%$

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- I rms for a 40°C temperature rise from 25°C ambient with current
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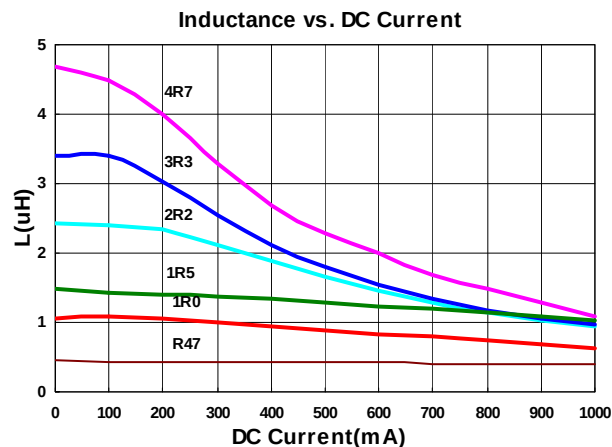
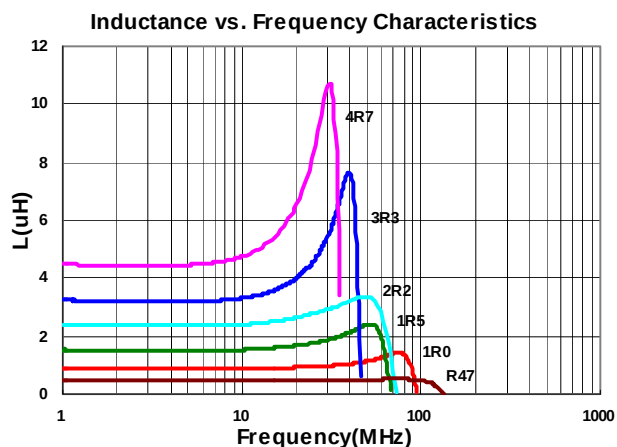
MPB : Low RDC Series

Part Number	Inductance (μ H)	Tolerance ($\pm$ %)	Test Frequency (MHz)	RDC (Ω) $\pm 25\%$	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 $\pm 30\%$	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= $\pm 20\%$, T= $\pm 30\%$

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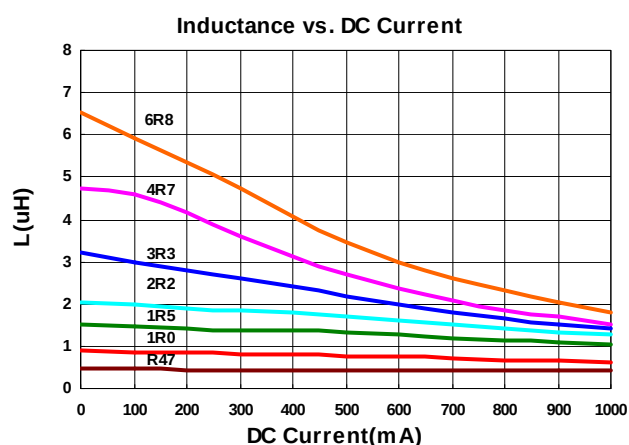
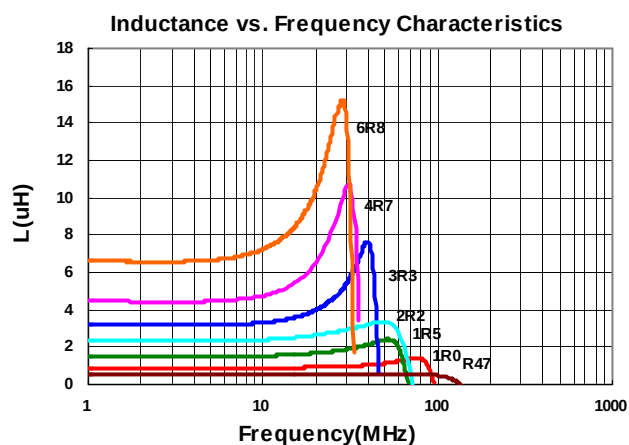
MPB : Low RDC Series

Part Number	Inductance (μ H)	Tolerance ($\pm$ %)	Test Frequency (MHz)	RDC (Ω) $\pm 30\%$	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= $\pm 20\%$, T= $\pm 30\%$

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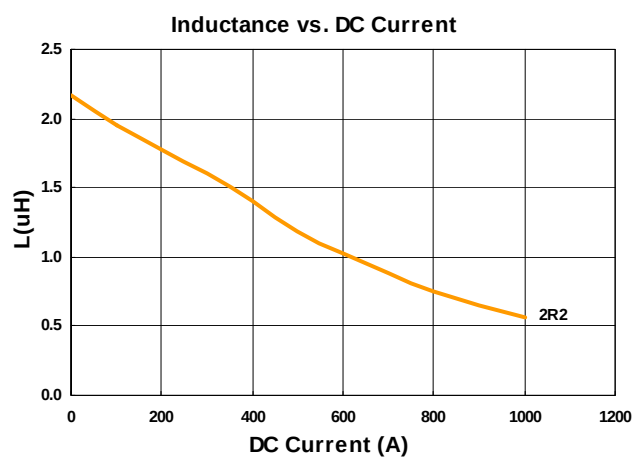
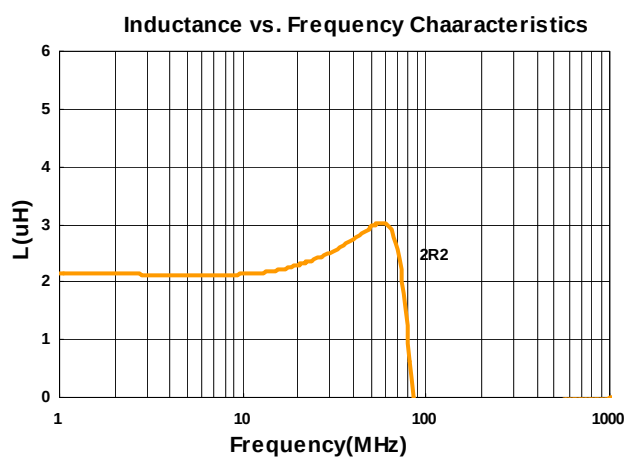
MPE : Low Profile Series

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (MHz)	RDC (Ω) $\pm 25\%$	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= $\pm 20\%$, T= $\pm 30\%$

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- Isat for Inductance drop 30% from its value with current
- Irms for a 40°C temperature rise from 25°C ambient with current
- Measure Equipment :
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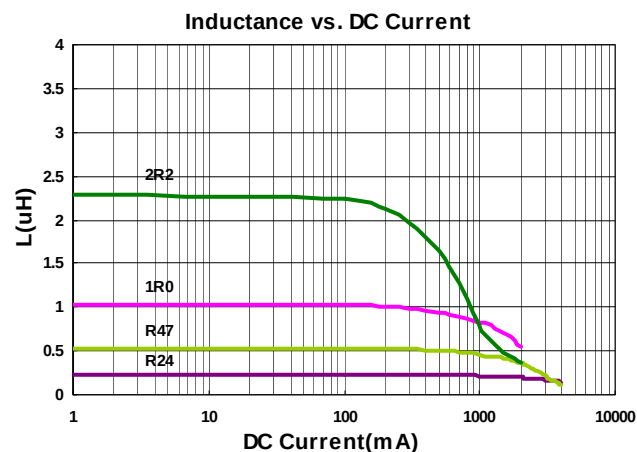
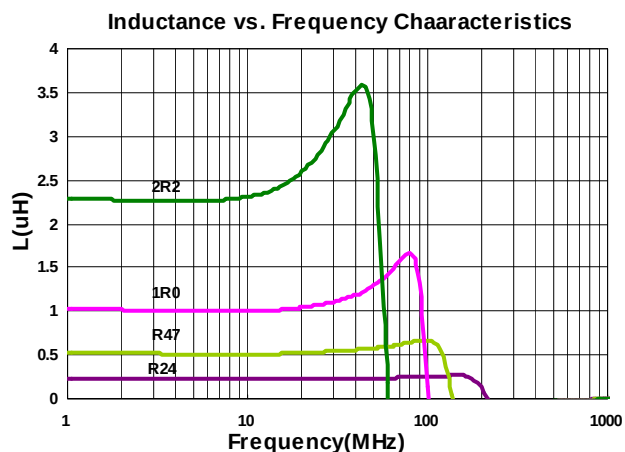
MPE : High Isat Series

Part Number	Inductance (μ H)	Tolerance ($\pm$ %)	Test Frequency (MHz)	RDC (Ω) $\pm$ 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)

Note: When ordering, please specify tolerance code. Tolerance: M= $\pm$ 20%, T= $\pm$ 30%

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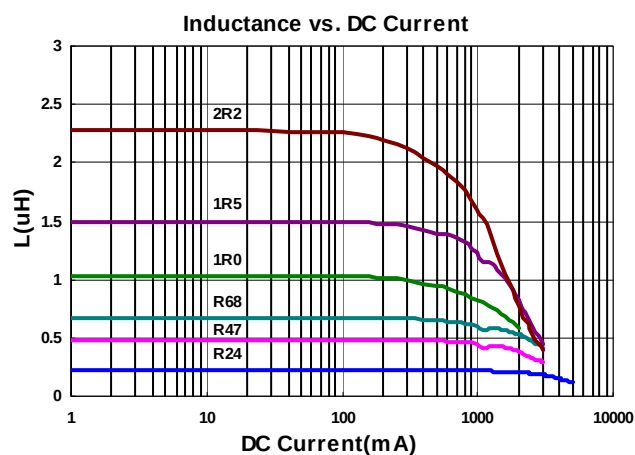
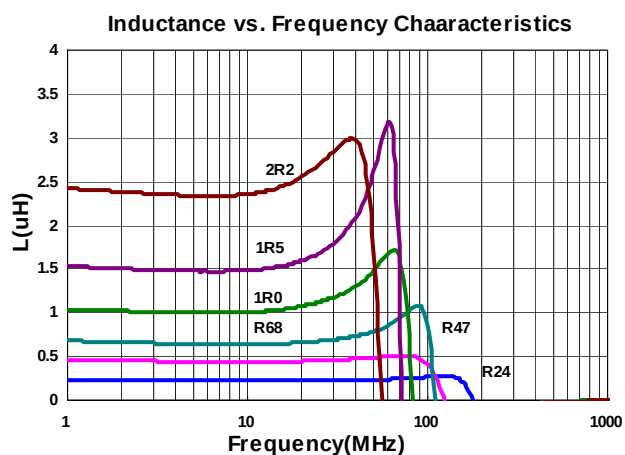
MPE : High Isat Series

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (MHz)	RDC (Ω) $\pm 25\%$	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= $\pm 20\%$, T= $\pm 30\%$

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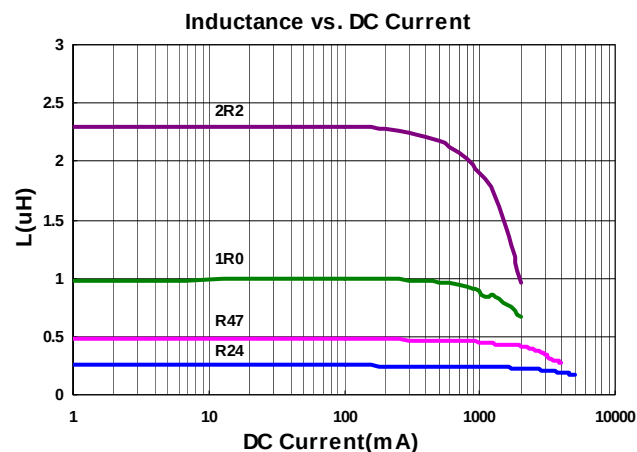
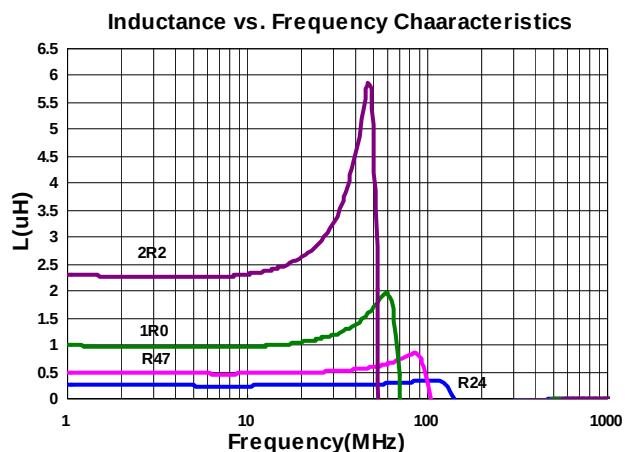
MPE : High Isat Series

Part Number	Inductance (μ H)	Tolerance ($\pm$ %)	Test Frequency (MHz)	RDC (Ω) $\pm 25\%$	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= $\pm 20\%$, T= $\pm 30\%$

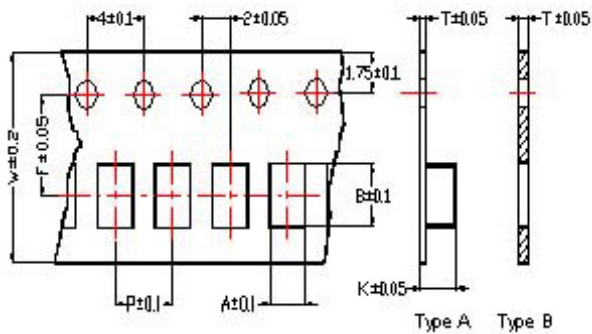
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RDC : HP 4338B, or equivalent

Test Instruments : HP4287A Inductance / Material Analyzer



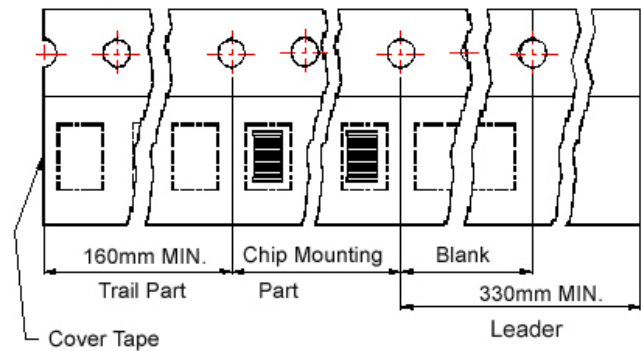
Packaging Specifications

Tape Dimensions

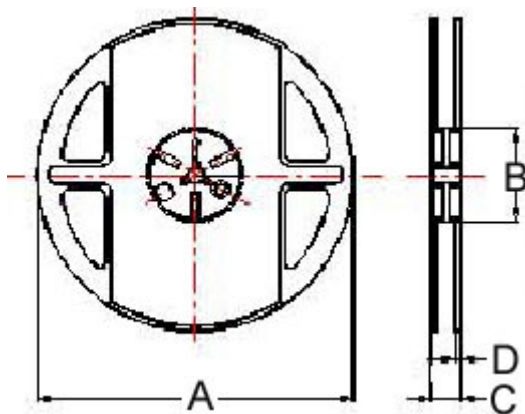


Tape Material

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



Reel Dimensions



Dimensions in mm

TYPE	Tape Dimensions								Reel Dimensions				Quantity PCS / REEL
	A	B	T	W	P	F	K	Tape Type	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