

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.

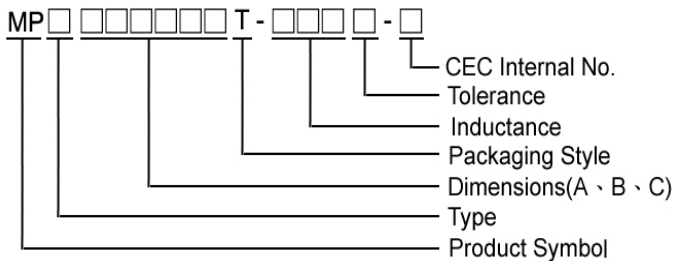
Features

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

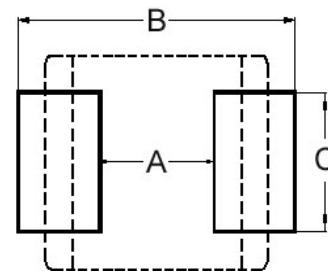
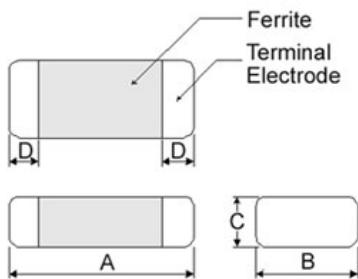
Applications

- 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
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
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

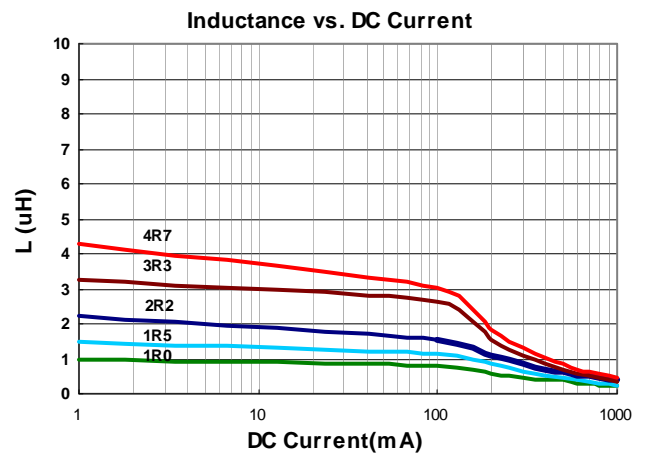
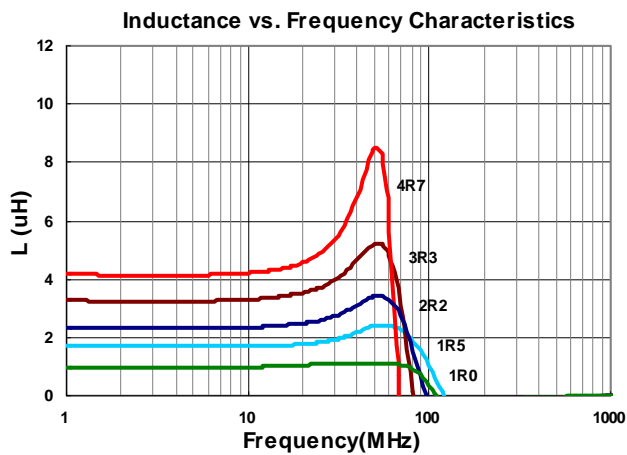
MPA : General Series

Part Number	Inductance (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



Electrical Characteristics

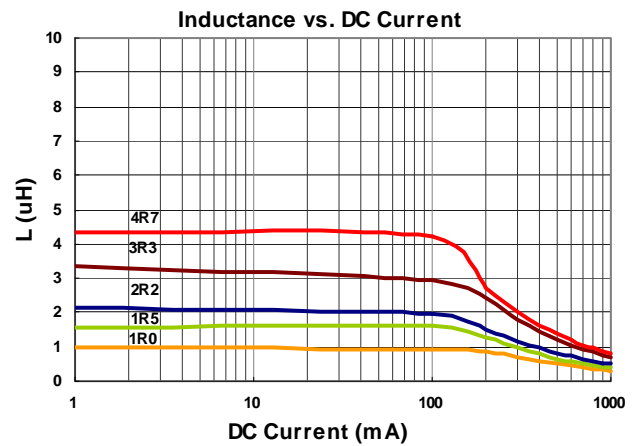
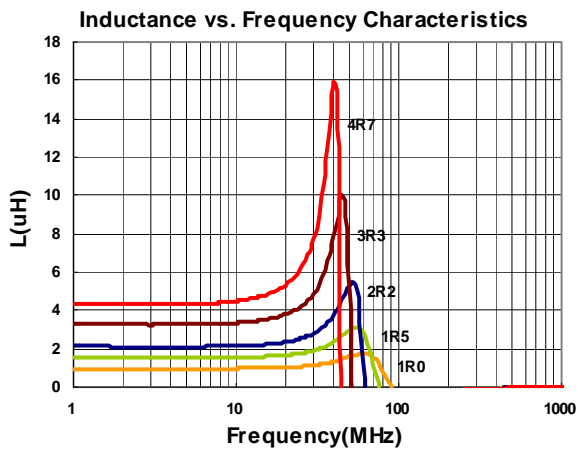
MPA : General Series

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

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

- Operating temperature range - 55°C ~ 125°C(Including self - temperature rise)
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Electrical Characteristics

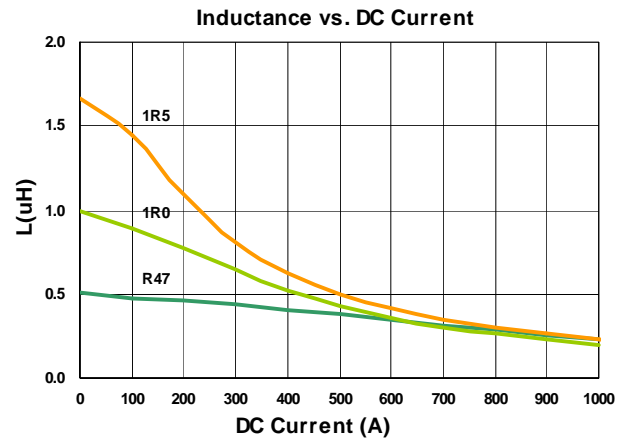
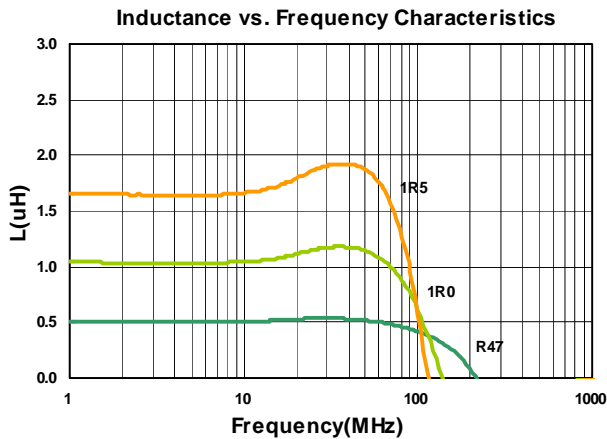
MPB : Low RDC Series

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

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 with 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

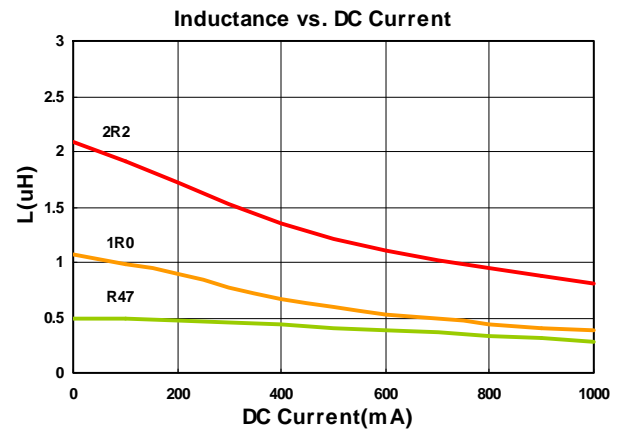
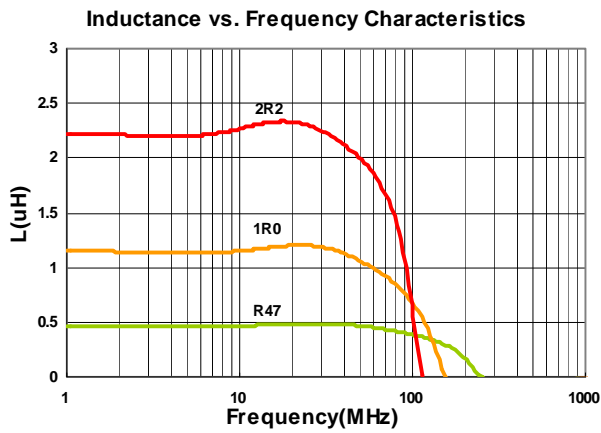
MPB : Low RDC Series

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 with 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



Electrical Characteristics

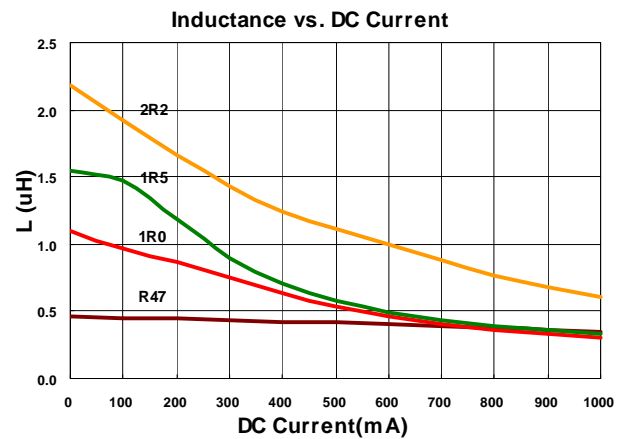
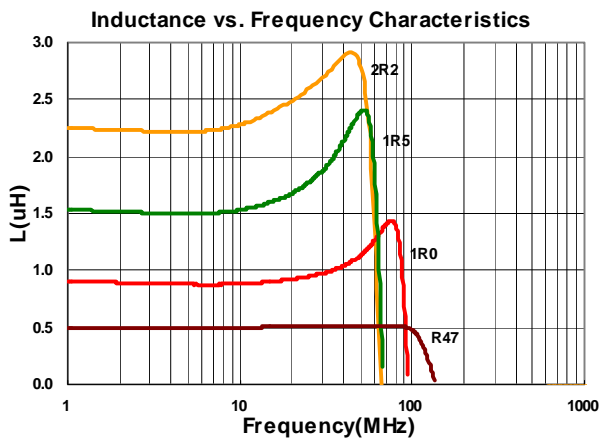
MPB : Low RDC Series

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-4R7□-NA2	4.7	20, 30	3	0.50	100	700
MPB201206T-2R2□-NA2	2.2	20, 30	3	0.29	200	600

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 with 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



Electrical Characteristics

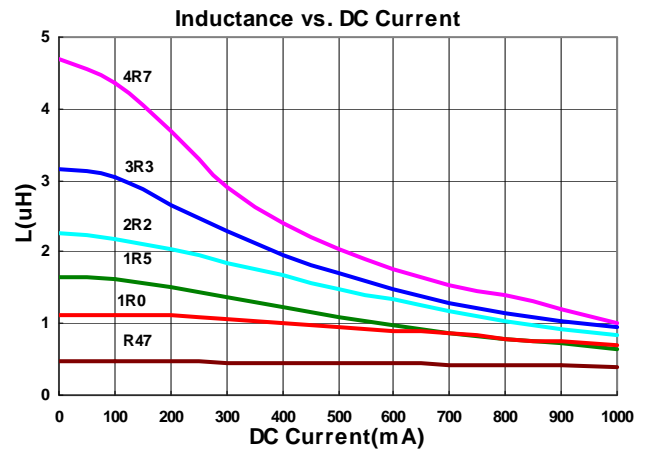
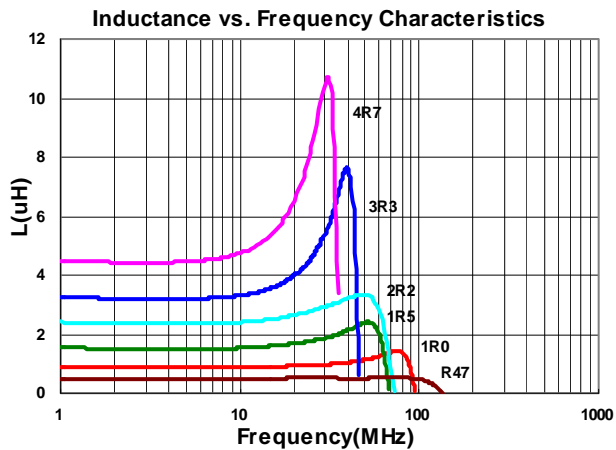
MPB : Low RDC Series

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□-NA6	3.3	20, 30	3	0.15±25%	300	1000
MPB201210T-4R7□-NA6	4.7	20, 30	3	0.23±25%	200	800

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 with 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

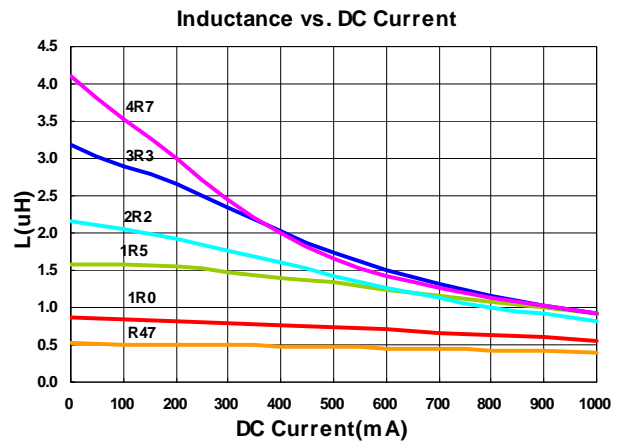
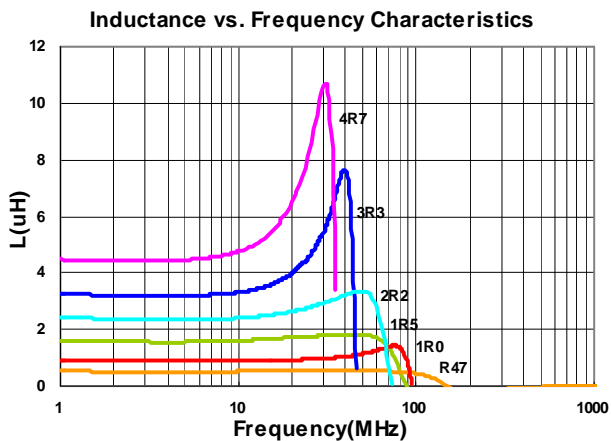
MPB : Low RDC Series

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

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 with 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

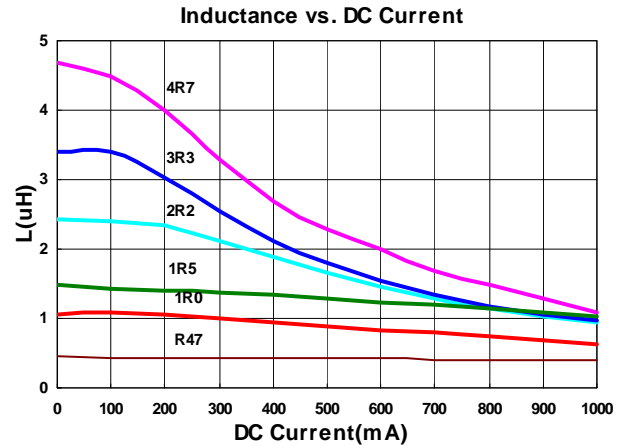
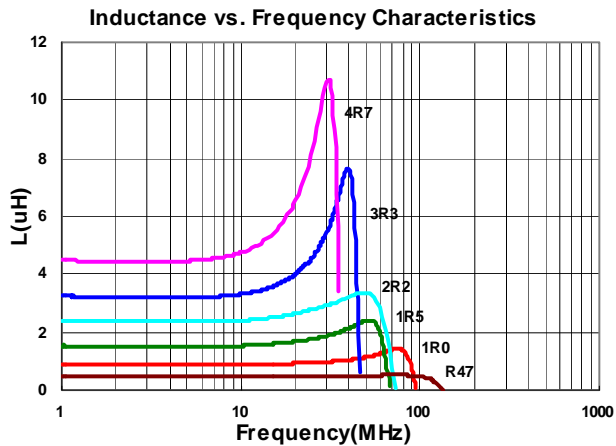
MPB : Low RDC Series

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%

- Operating temperature range - 55°C ~ 125°C(Including self - temperature rise)
- Isat for Inductance drop 30% from its value with current
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- Measure Equipment :
 L : Agilent HP4287A+16197A, 3MHz 200mV
 RDC : HP 4338B, or equivalent

Test Instruments : HP4287A Inductance / Material Analyzer



Electrical Characteristics

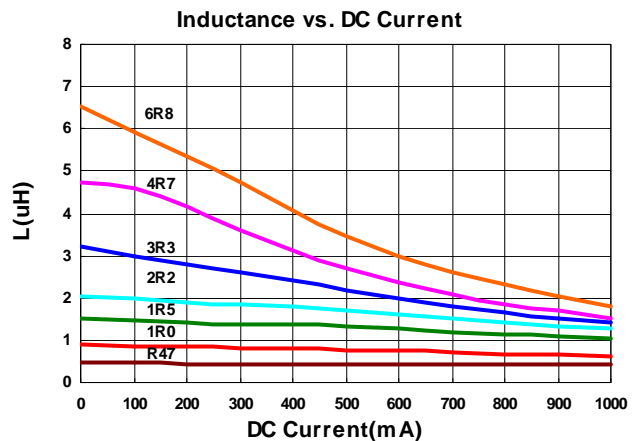
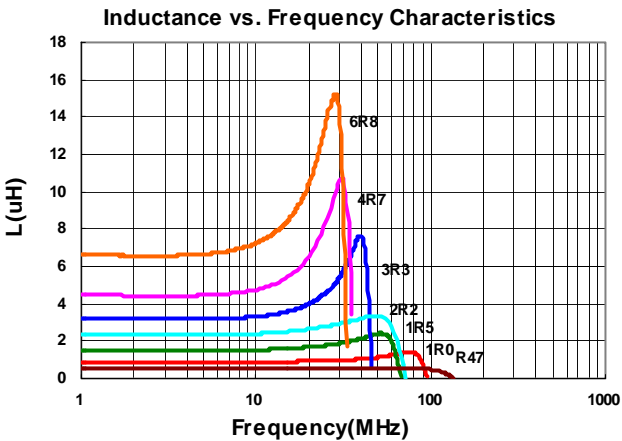
MPB : Low RDC Series

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%

- Operating temperature range - 55°C ~ 125°C(Including self - temperature rise)
- 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 :
 - L : Agilent HP4287A+16197A, 3MHz 200mV
 - RDC : HP 4338B, or equivalent

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Electrical Characteristics

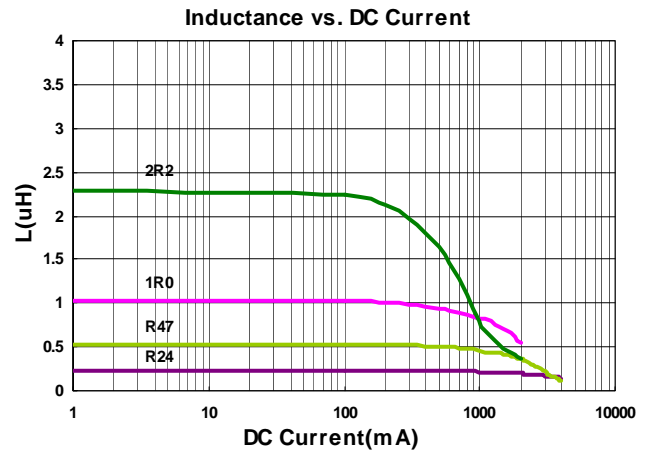
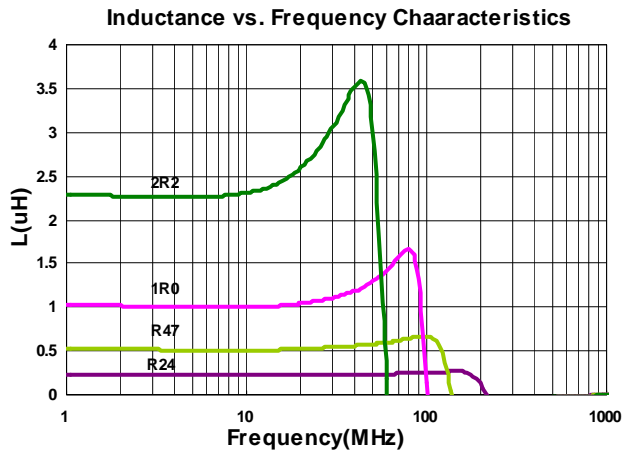
MPE : High Isat Series

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	2400(3200)	2700(3300)
MPE201210T-R47□-NA2	0.47	20, 30	3	0.06	2200(3000)	1600(2000)
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=±20% , T=±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 :
 L : Agilent HP4287A+16197A, 3MHz 200mV
 RDC : HP 4338B, or equivalent

Test Instruments : HP4287A Inductance / Material Analyzer



Electrical Characteristics

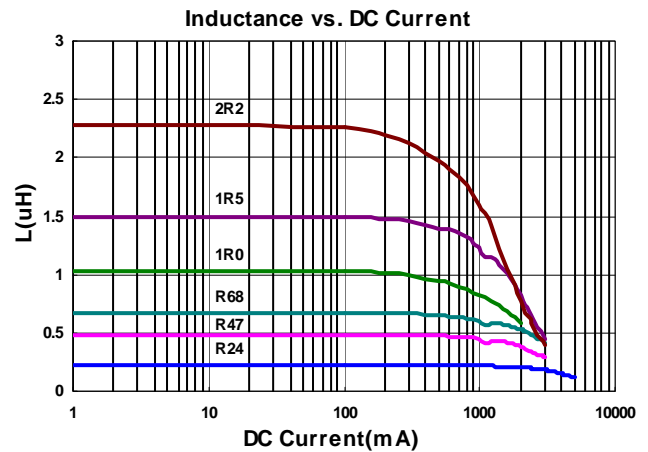
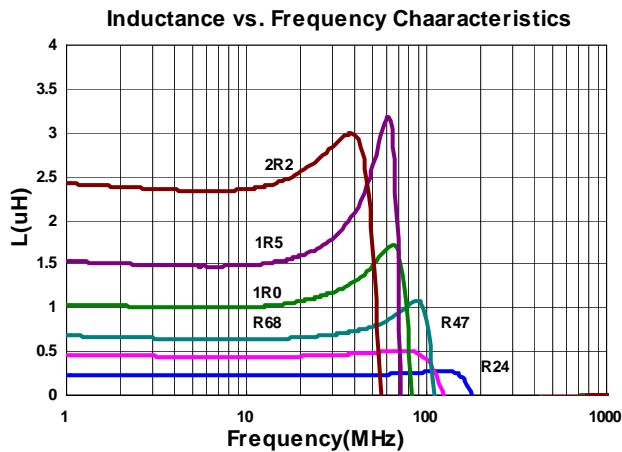
MPE : High Isat Series

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

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

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Electrical Characteristics

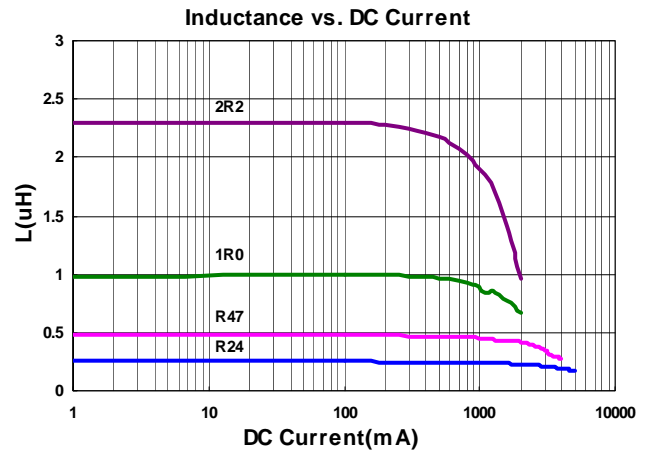
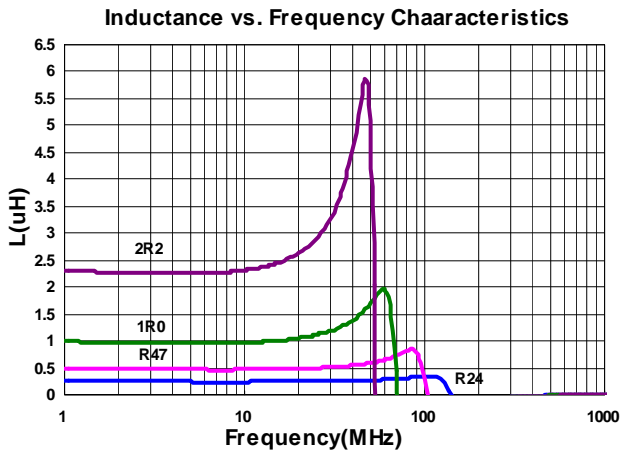
MPE : High Isat Series

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

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

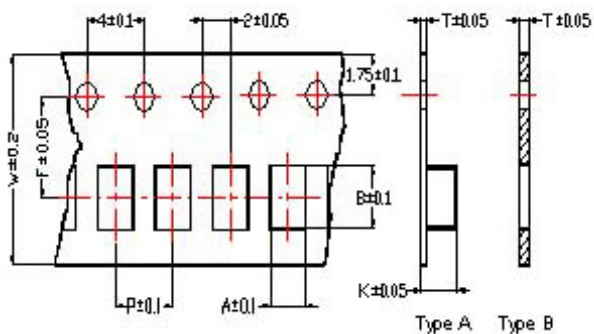
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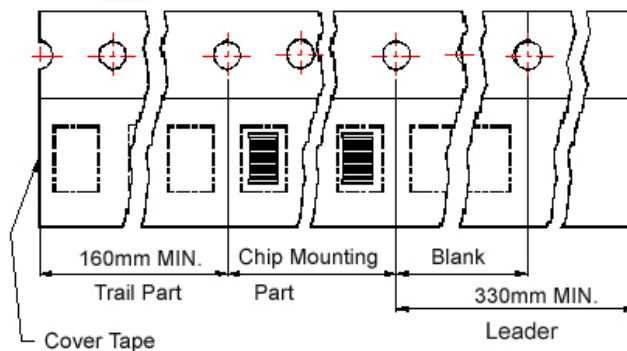
Packaging Specifications

Tape Dimensions

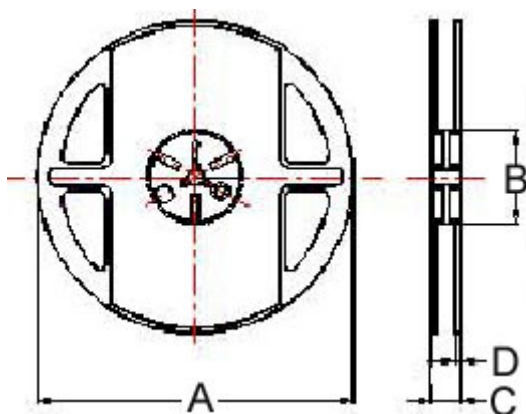


Tape Material

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
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