

## MHCL Series



MHCL Series provides high current in compact package size with magnetically shielded construction. This power inductor is an excellent power solution for space-limited devices.

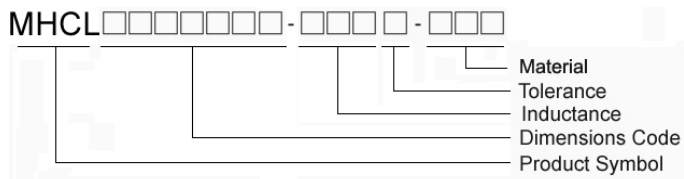
### Features

- RoHS, Halogen Free and REACH Compliance
- Monolithic, magnetically shielded
- Capable for large current

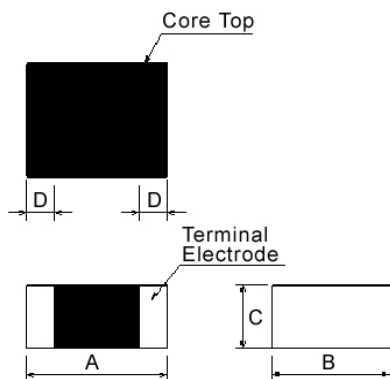
### Applications

- Smartphones, tablets and wearable devices
- HDD, SSD and PC peripheral devices
- DSC, camcoders
- PND
- DC/DC converters

### Product Identification



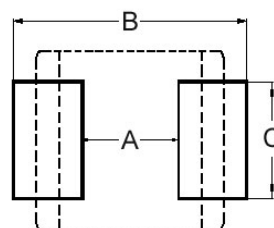
### Shape and Dimensions



Dimensions in mm

TYPE	A	B	C	D
201610	2.0±0.2	1.6±0.2	1.0Max	0.5±0.3
201612	2.0±0.2	1.6±0.2	1.2Max	0.5±0.3
252010	2.5±0.2	2.0±0.2	1.0Max	0.6±0.3
252012	2.5±0.2	2.0±0.2	1.2Max	0.6±0.3

### Recommended Pattern



Dimensions in mm

TYPE	A	B	C
201610	0.9	2.0	1.6
201612	0.9	2.0	1.6
252010	1.2	2.8	2.0
252012	1.2	2.8	2.0

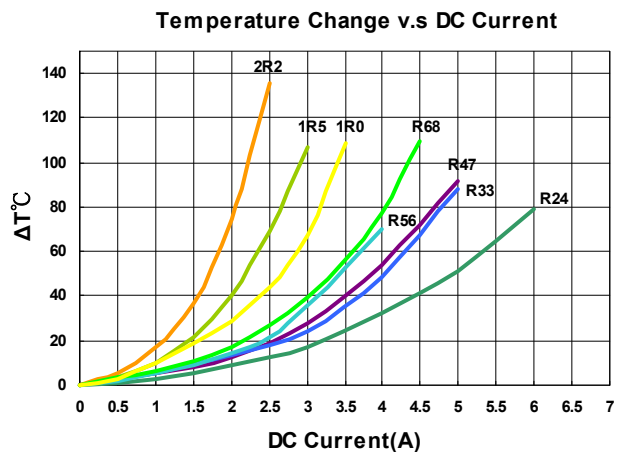
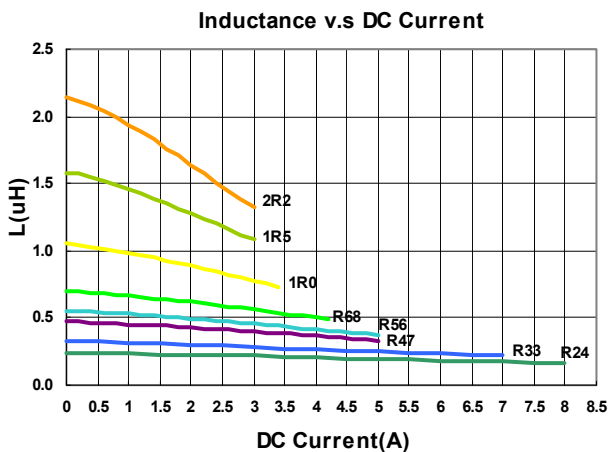
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
MHCL201610A-R24M-A8S	0.24	20	2	40(28)	4.2(6.0)	4.0(4.5)
MHCL201610A-R33M-A8S	0.33	20	2	48(40)	4.0(5.5)	3.5(3.8)
MHCL201610A-R47M-A8S	0.47	20	2	54(44)	3.2(5.0)	3.0(3.6)
MHCL201610A-R56M-A8S	0.56	20	2	59(46)	2.8(4.6)	2.8(3.3)
MHCL201610A-R68M-A8S	0.68	20	2	72(55)	2.7(4.2)	2.4(3.0)
MHCL201610A-1R0M-A8S	1.0	20	2	96(81)	2.2(3.4)	2.0(2.3)
MHCL201610A-1R5M-A8S	1.5	20	2	150(122)	2.1(2.8)	1.6(2.0)
MHCL201610A-2R2M-A8S	2.2	20	2	204(170)	2.0(2.4)	1.3(1.6)

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

- Operating temperature range - 40°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 E4991AHP4287A+16197A, 2MHz 0.2V  
 RDC : CHEN HWA502  
 Isat : Agilent E4980A+HP42841A  
 I rms : Agilent 6641 SYSTEM DC POWER SUPPLY

**Test Instruments :** E4991A Impedance / Material Analyzer



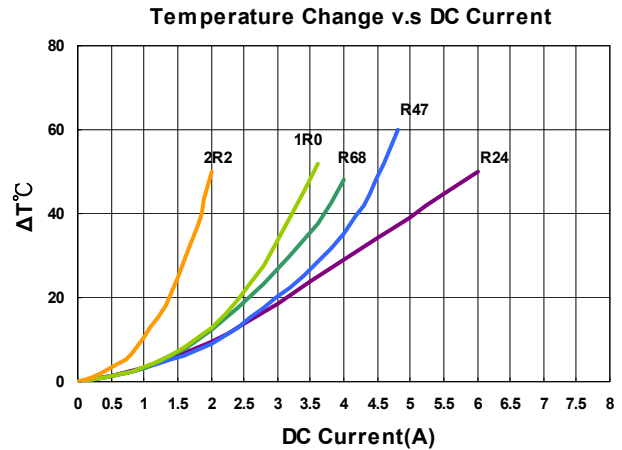
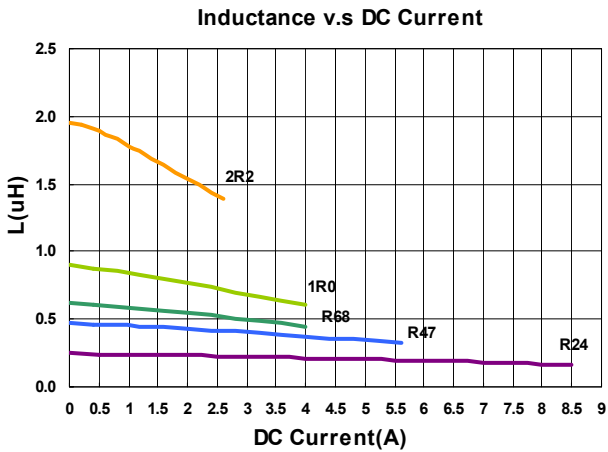
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
MHCL201610B-R24M-A8L	0.24	20	2	30(23)	5.0(6.0)	3.8(4.4)
MHCL201610B-R47M-A8L	0.47	20	2	41(34)	4.0(4.5)	2.9(3.3)
MHCL201610B-R68M-A8L	0.68	20	2	53(44)	3.3(3.6)	2.5(2.9)
MHCL201610B-1R0M-A8L	1.0	20	2	72(60)	2.8(3.2)	2.2(2.5)
MHCL201610B-2R2M-A8L	2.2	20	2	170(142)	1.8(2.1)	1.5(1.7)

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

- Operating temperature range - 40°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 E4991A/HP4287A+16197A, 2MHz 0.2V  
 RDC : CHEN HWA502  
 Isat : Agilent E4980A+HP42841A  
 I rms : Agilent 6641 SYSTEM DC POWER SUPPLY

## Test Instruments : E4991A Impedance / Material Analyzer



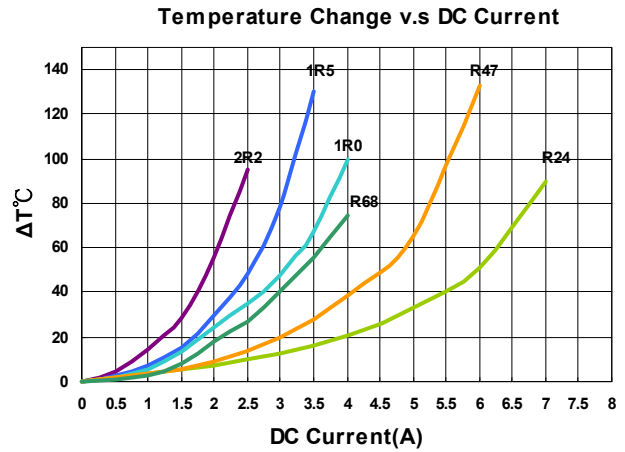
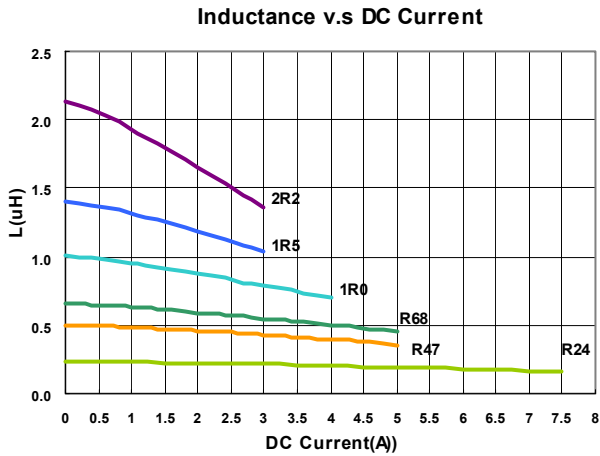
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
MHCL201612A-R24M-A8S	0.24	20	2	35(25)	5.5(6.5)	4.2(4.8)
MHCL201612A-R47M-A8S	0.47	20	2	52(40)	3.8(5.1)	3.2(3.8)
MHCL201612A-R68M-A8S	0.68	20	2	70(53)	3.3(4.8)	2.6(3.2)
MHCL201612A-1R0M-A8S	1.0	20	2	82(67)	3.1(3.9)	2.3(2.7)
MHCL201612A-1R5M-A8S	1.5	20	2	120(95)	2.6(3.2)	2.2(2.6)
MHCL201612A-2R2M-A8S	2.2	20	2	195(165)	2.0(2.6)	1.3(1.7)

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

- Operating temperature range - 40°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 E4991A/HP4287A+16197A, 2MHz 0.2V
  - RDC : CHEN HWA502
  - Isat : Agilent E4980A+HP42841A
  - I rms : Agilent 6641 SYSTEM DC POWER SUPPLY

## Test Instruments : E4991A Impedance / Material Analyzer



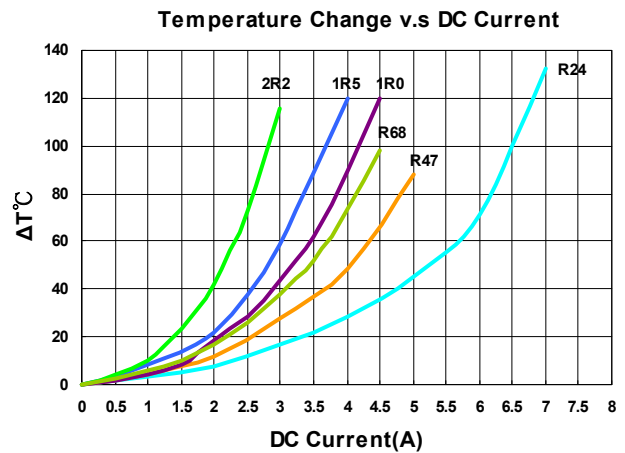
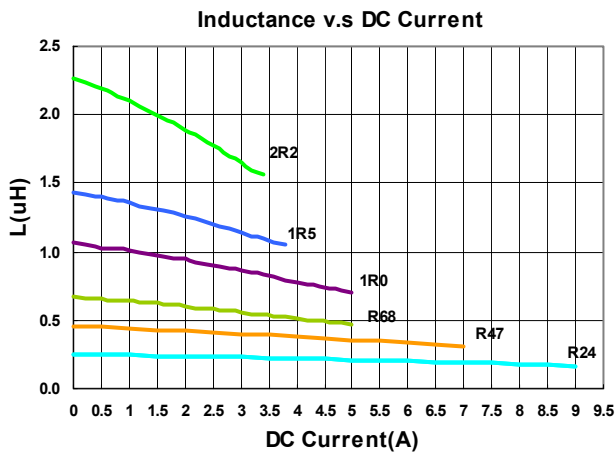
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
MHCL252010A-R24M-A8S	0.24	20	2	40(24)	7.5(9.5)	4.5(5.0)
MHCL252010A-R47M-A8S	0.47	20	2	46(36)	5.2(6.5)	3.1(3.6)
MHCL252010A-R68M-A8S	0.68	20	2	65(49)	3.8(5.0)	2.9(3.3)
MHCL252010A-1R0M-A8S	1.0	20	2	78(60)	3.4(4.3)	2.5(3.0)
MHCL252010A-1R5M-A8S	1.5	20	2	105(82)	3.2(4.0)	2.2(2.9)
MHCL252010A-2R2M-A8S	2.2	20	2	156(130)	2.6(3.2)	1.4(1.8)

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

- Operating temperature range - 40°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 E4991A/HP4287A+16197A, 2MHz 0.2V  
 RDC : CHEN HWA502  
 Isat : Agilent E4980A+HP42841A  
 I rms : Agilent 6641 SYSTEM DC POWER SUPPLY

## Test Instruments : E4991A Impedance / Material Analyzer



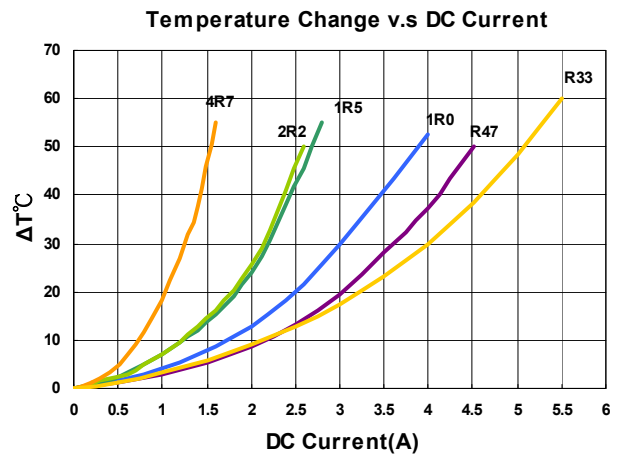
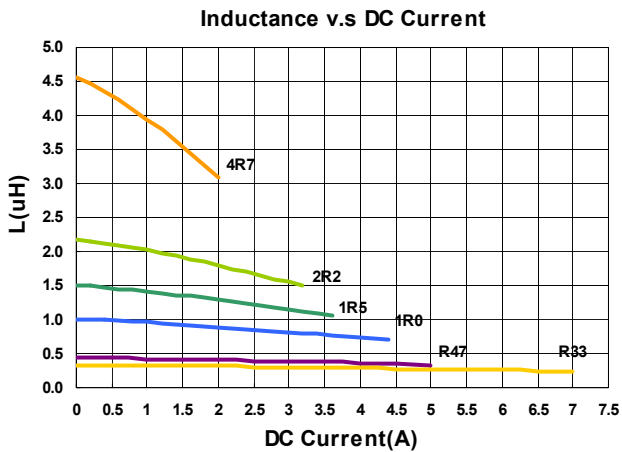
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
MHCL252010B-R33M-A8L	0.33	20	2	31(25)	5.0(6.0)	3.8(4.4)
MHCL252010B-R47M-A8L	0.47	20	2	35(29)	4.2(4.7)	3.4(3.9)
MHCL252010B-R68M-A8L	0.68	20	2	48(40)	3.7(4.0)	3.0(3.5)
MHCL252010B-1R0M-A8L	1.0	20	2	65(54)	3.2(3.6)	2.6(3.0)
MHCL252010B-1R5M-A8L	1.5	20	2	94(78)	2.9(3.3)	2.1(2.4)
MHCL252010B-2R2M-A8L	2.2	20	2	120(100)	2.3(2.7)	1.8(2.1)
MHCL252010B-4R7M-A8L	4.7	20	2	250(208)	1.8(2.1)	1.1(1.3)

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

- Operating temperature range - 40°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 E4991A/HP4287A+16197A, 2MHz 0.2V  
 RDC : CHEN HWA502  
 Isat : Agilent E4980A+HP42841A  
 I rms : Agilent 6641 SYSTEM DC POWER SUPPLY

**Test Instruments :** E4991A Impedance / Material Analyzer



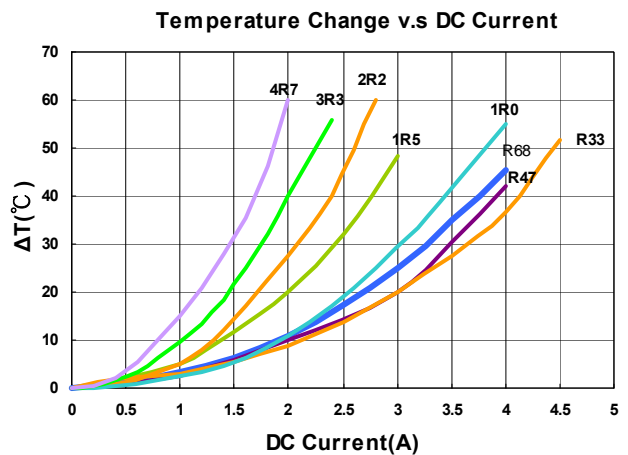
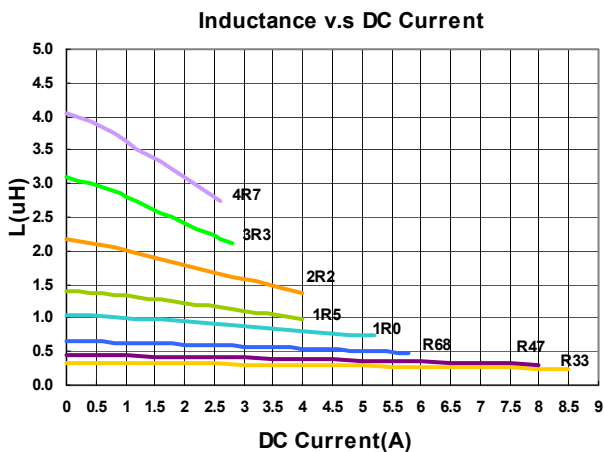
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
MHCL252012A-R33M-A8S	0.33	20	2	35(27)	6.8(8.5)	4.0(4.6)
MHCL252012A-R47M-A8S	0.47	20	2	39(29)	6.2(7.8)	3.7(4.4)
MHCL252012A-R68M-A8S	0.68	20	2	46(40)	5.5(6.5)	3.3(3.7)
MHCL252012A-1R0M-A8S	1.0	20	2	59(45)	4.0(5.0)	3.0(3.5)
MHCL252012A-1R5M-A8S	1.5	20	2	70(62)	3.4(4.0)	2.5(2.7)
MHCL252012A-2R2M-A8S	2.2	20	2	115(102)	3.3(3.8)	2.0(2.3)
MHCL252012A-3R3M-A8S	3.3	20	2	158(143)	2.5(2.8)	1.8(2.1)
MHCL252012A-4R7M-A8S	4.7	20	2	240(200)	2.1(2.7)	1.7(2.1)

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

- Operating temperature range - 40°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 E4991A/HP4287A+16197A, 2MHz 0.2V  
 RDC : CHEN HWA502  
 Isat : Agilent E4980A+HP42841A  
 I rms : Agilent 6641 SYSTEM DC POWER SUPPLY

**Test Instruments :** E4991A Impedance / Material Analyzer



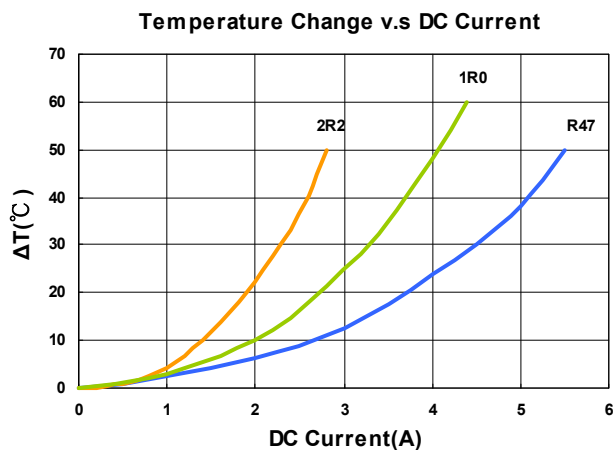
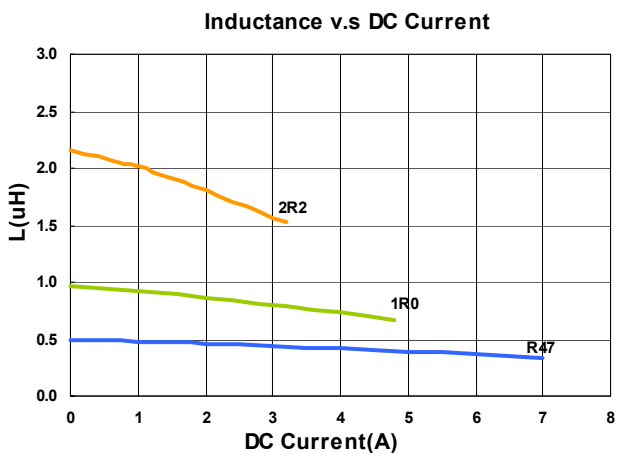
## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
MHCL252012B-R47M-A8L	0.47	20	2	34(30)	5.2(6.0)	4.1(4.7)
MHCL252012B-1R0M-A8L	1.0	20	2	56(45)	3.6(4.5)	3.2(3.7)
MHCL252012B-2R2M-A8L	2.2	20	2	102(80)	2.5(3.0)	2.2(2.6)

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

- Operating temperature range - 40°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 E4991A/HP4287A+16197A, 2MHz 0.2V  
 RDC : CHEN HWA502  
 Isat : Agilent E4980A+HP42841A  
 I rms : Agilent 6641 SYSTEM DC POWER SUPPLY

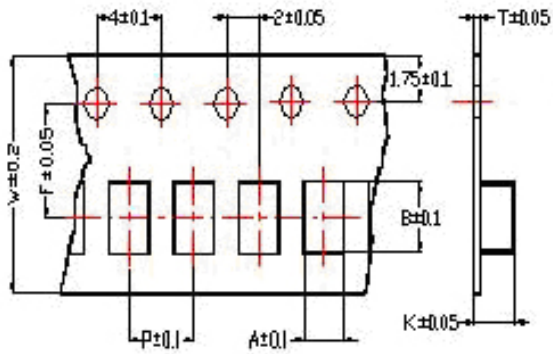
## Test Instruments : E4991A Impedance / Material Analyzer



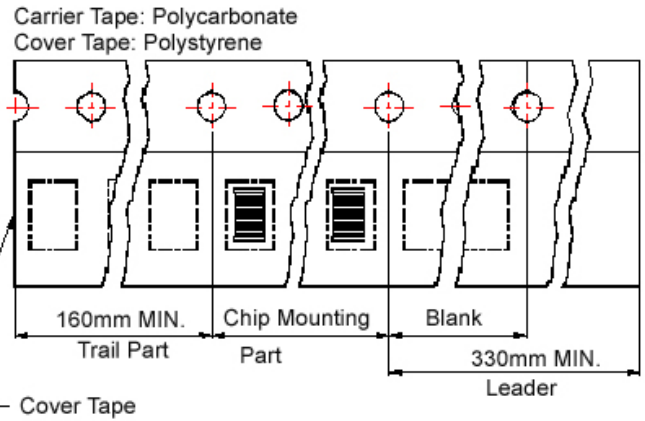


## Packaging Specifications

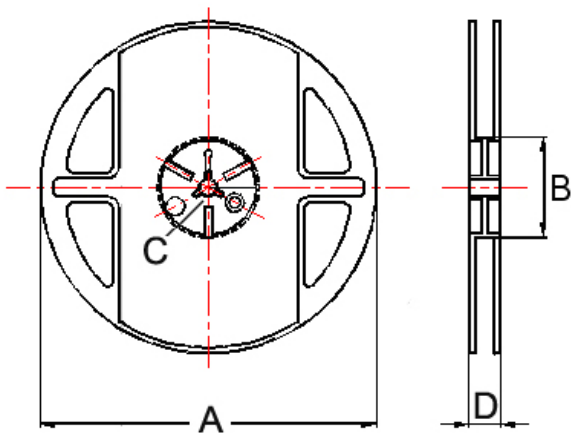
**Tape Dimensions**



**Tape Material**



**Reel Dimensions**



**Dimensions in mm**

TYPE	Tape Dimensions							Reel Dimensions				Quantity PCS / REEL
	A	B	T	W	P	F	K	A	B	C	D	
201610	1.80	2.20	0.22	8	4	3.5	1.15	178	60	12	1.5	3000
201612	1.80	2.20	0.22	8	4	3.5	1.35	178	60	12	1.5	3000
252010	2.25	2.80	0.22	8	4	3.5	1.15	178	60	12	1.5	3000
252012	2.25	2.80	0.22	8	4	3.5	1.35	178	60	12	1.5	3000