MHCD Series

Chilisin's MHCD Series provides high current and low DCR in compact sizing with magnetically shielded construction. This power inductor is an excellent power solution for space-limited devices.

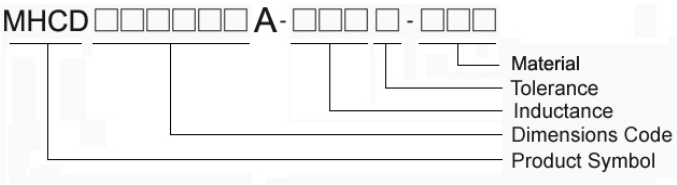
Features

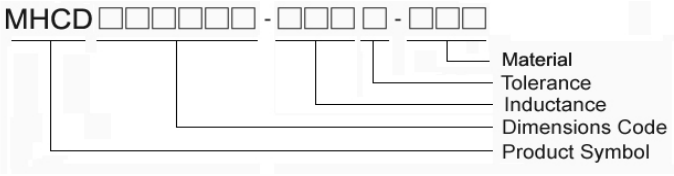
- Monolithic, magnetically shielded
- Compact high saturation current
- Minimum height=1.0mm Max

Applications

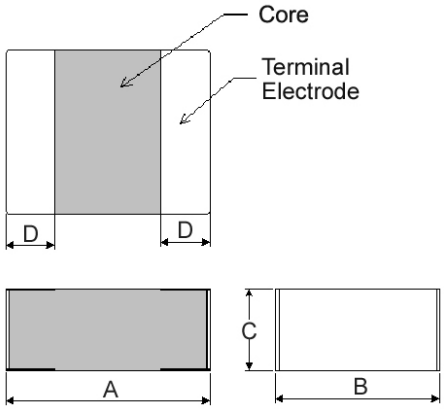
- Smartphone
- Tablet PC
- Hard disk of ultrabook
- LTE module
- Portable device

Product Identification





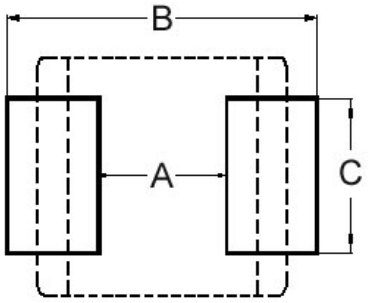
Shape and Dimensions



Dimensions in mm

TYPE	A	B	C	D
201210	2.0±0.2	1.25±0.2	1.0Max	0.5±0.3
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±0.2
252012	2.5±0.2	2.0±0.2	1.2Max	0.6±0.2
322510	3.2±0.2	2.5±0.2	1.0Max	0.6±0.2
322512	3.2±0.2	2.5±0.2	1.2Max	0.6±0.2

Recommended Pattern



Dimensions in mm

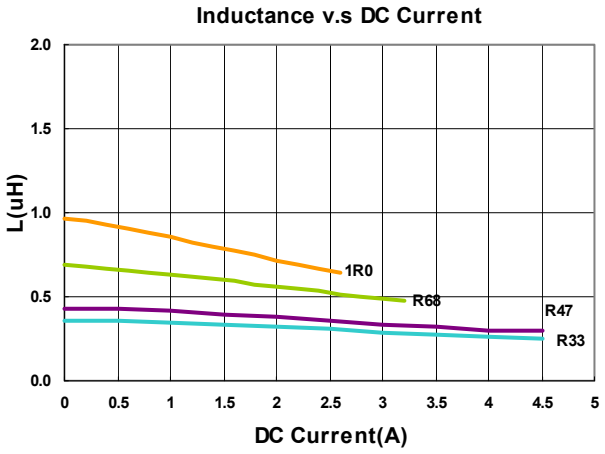
TYPE	A	B	C
201210	0.8~1.2	2.3~2.9	1.0~1.4
201610	0.9	2.0	1.6
201612	0.9	2.0	1.6
252010	1.2	2.8	2.0
252012	1.2	2.8	2.0
322510	1.7	3.2	2.5
322512	1.7	3.2	2.5

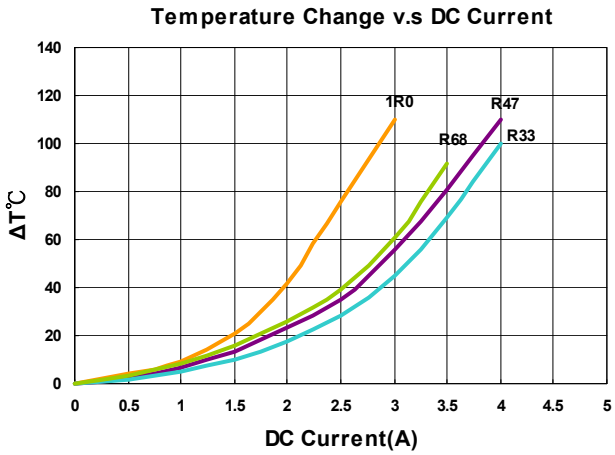
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	Irms(A) Max(Typ)	Isat(A) Max(Typ)	RDC(mΩ) Max(Typ)
MHCD201210A-R33M-A8S	0.33	20	2	2.4(3.0)	3.6(4.2)	75(58)
MHCD201210A-R47M-A8S	0.47	20	2	2.2(2.8)	3.2(4.0)	80(61)
MHCD201210A-R68M-A8S	0.68	20	2	2.0(2.5)	3.0(3.6)	105(82)
MHCD201210A-1R0M-A8S	1.0	20	2	1.6(2.0)	2.0(2.6)	155(137)

- **Irms** DC current (A) that will cause an approximate ΔT of 40℃.
- **Isat** DC current (A) that will cause L to drop approximately 30%
- Tolerance：M = ±20%
- L : Agilent E4991A/HP4287A+16197A, 2MHz 0.2V
- Rdc : CHEN HWA502
- Isat : Agilent E4980A+HP42841A
- Irms : Agilent 6641 SYSTEM DC POWER SUPPLY
- Operating temperature range from -40℃ to 125℃. (Including self - temperature rise)

Test Instruments：E4991A Impedance / Material Analyzer





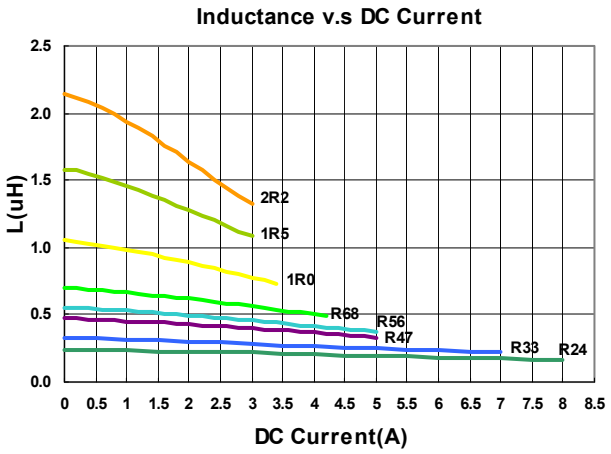
CHILISIN ELECTRONICS CORP.

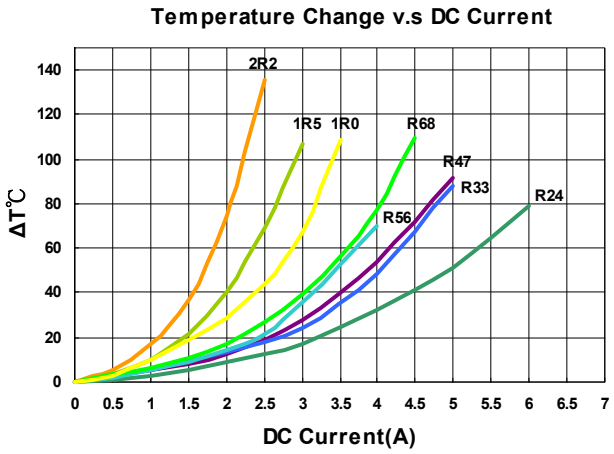
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	Irms(A) Max(Typ)	Isat(A) Max(Typ)	RDC(mΩ) Max(Typ)
MHCD201610A-R24M-A8S	0.24	20	2	4.0(4.5)	4.2(6.0)	40(28)
MHCD201610A-R33M-A8S	0.33	20	2	3.5(3.8)	4.0(5.5)	48(40)
MHCD201610A-R47M-A8S	0.47	20	2	3.0(3.6)	3.2(5.0)	54(44)
MHCD201610A-R56M-A8S	0.56	20	2	2.8(3.3)	2.8(4.6)	59(46)
MHCD201610A-R68M-A8S	0.68	20	2	2.4(3.0)	2.7(4.2)	72(55)
MHCD201610A-1R0M-A8S	1.0	20	2	2.0(2.3)	2.2(3.4)	96(81)
MHCD201610A-1R5M-A8S	1.5	20	2	1.6(2.0)	2.1(2.8)	150(122)
MHCD201610A-2R2M-A8S	2.2	20	2	1.3(1.6)	2.0(2.4)	204(170)

- **Irms** DC current (A) that will cause an approximate ΔT of 40℃.
- **Isat** DC current (A) that will cause L to drop approximately 30%
- Tolerance：M = ±20%
- L : Agilent E4991/HP4287A+16197A, 2MHz 0.2V
- Rdc : CHEN HWA502
- Isat : Agilent E4980A+HP42841A
- Irms : Agilent 6641 SYSTEM DC POWER SUPPLY
- Operating temperature range from -40℃ to 125℃. (Including self - temperature rise)

Test Instruments：E4991A Impedance / Material Analyzer





CHILISIN ELECTRONICS CORP.

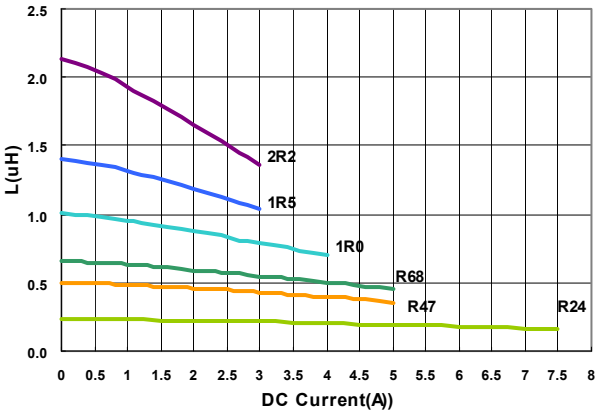
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	Irms(A) Max(Typ)	Isat(A) Max(Typ)	RDC(mΩ) Max(Typ)
MHCD201612A-R24M-A8S	0.24	20	2	4.2(4.8)	5.5(6.5)	35(25)
MHCD201612A-R47M-A8S	0.47	20	2	3.2(3.8)	3.8(5.1)	52(40)
MHCD201612A-R68M-A8S	0.68	20	2	2.6(3.2)	3.3(4.8)	70(53)
MHCD201612A-1R0M-A8S	1.0	20	2	2.3(2.7)	3.1(3.9)	82(67)
MHCD201612A-1R5M-A8S	1.5	20	2	2.2(2.6)	2.6(3.2)	120(95)
MHCD201612A-2R2M-A8S	2.2	20	2	1.3(1.7)	2.0(2.6)	195(165)

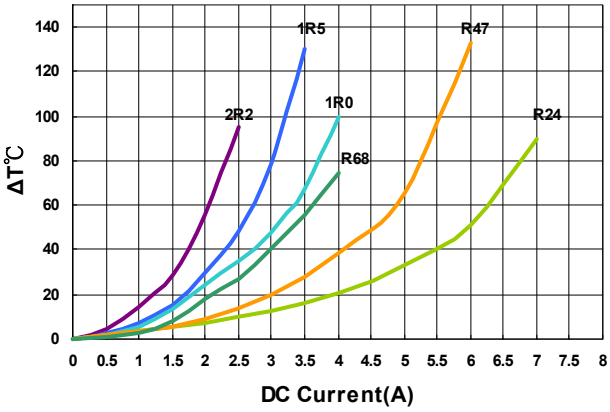
- **Irms** DC current (A) that will cause an approximate ΔT of 40℃.
- **Isat** DC current (A) that will cause L to drop approximately 30%
- Tolerance：M = ±20%
- L : Agilent E4991A/HP4287A+16197A, 2MHz 0.2V
- Rdc : CHEN HWA502
- Isat : Agilent E4980A+HP42841A
- Irms : Agilent 6641 SYSTEM DC POWER SUPPLY
- Operating temperature range from -40℃ to 125℃. (Including self - temperature rise)

Test Instruments：E4991A Impedance / Material Analyzer

Inductance v.s DC Current



Temperature Change v.s DC Current



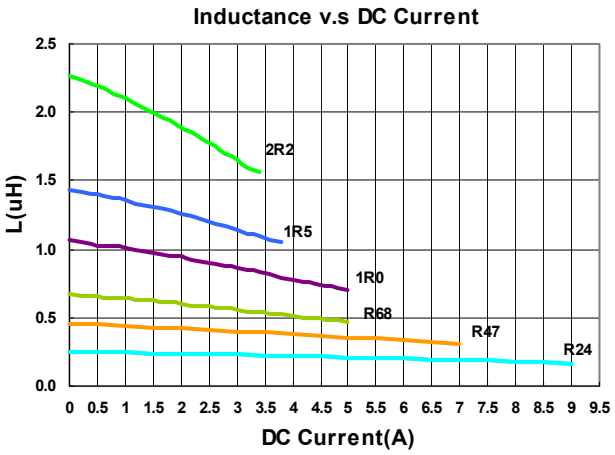
CHILISIN ELECTRONICS CORP.

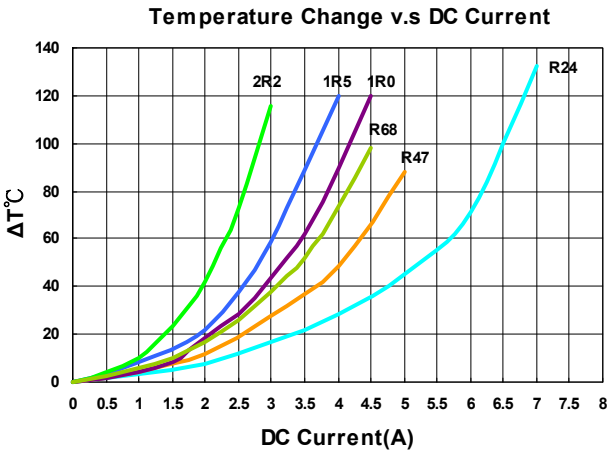
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	Irms(A) Max(Typ)	Isat(A) Max(Typ)	RDC(mΩ) Max(Typ)
MHCD252010A-R24M-A8S	0.24	20	2	4.5(5.0)	7.5(9.5)	40(24)
MHCD252010A-R47M-A8S	0.47	20	2	3.1(3.6)	5.2(6.5)	46(36)
MHCD252010A-R68M-A8S	0.68	20	2	2.9(3.3)	3.8(5.0)	65(49)
MHCD252010A-1R0M-A8S	1.0	20	2	2.5(3.0)	3.4(4.3)	78(60)
MHCD252010A-1R5M-A8S	1.5	20	2	2.2(2.9)	3.2(4.0)	105(82)
MHCD252010A-2R2M-A8S	2.2	20	2	1.4(1.8)	2.6(3.2)	156(130)

- **Irms** DC current (A) that will cause an approximate ΔT of 40℃.
- **Isat** DC current (A) that will cause L to drop approximately 30%
- Tolerance：M = ±20%
- L : Agilent E4991A/HP4287A+16197A, 2MHz 0.2V
- Rdc : CHEN HWA502
- Isat : Agilent E4980A+HP42841A
- Irms : Agilent 6641 SYSTEM DC POWER SUPPLY
- Operating temperature range from -40℃ to 125℃. (Including self - temperature rise)

Test Instruments：E4991A Impedance / Material Analyzer





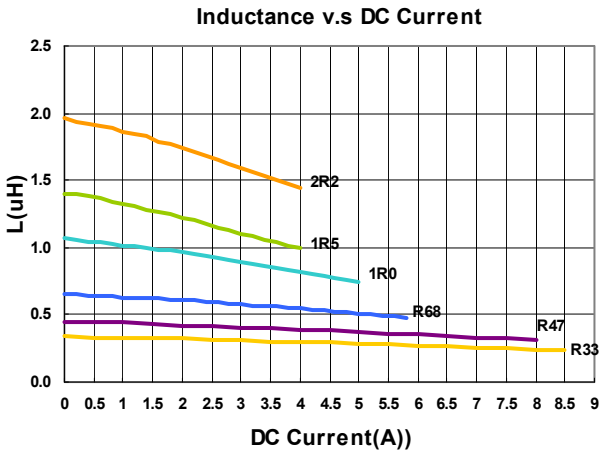
CHILISIN ELECTRONICS CORP.

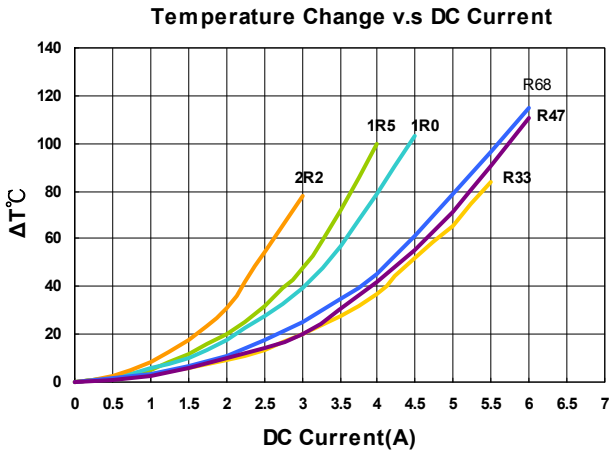
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	Irms(A) Max(Typ)	Isat(A) Max(Typ)	RDC(mΩ) Max(Typ)
MHCD252012A-R33M-A8S	0.33	20	2	4.0(4.6)	6.8(8.5)	35(27)
MHCD252012A-R47M-A8S	0.47	20	2	3.7(4.4)	6.2(7.8)	39(29)
MHCD252012A-R68M-A8S	0.68	20	2	3.3(3.7)	5.5(6.5)	46(40)
MHCD252012A-1R0M-A8S	1.0	20	2	3.0(3.5)	4.0(5.0)	59(45)
MHCD252012A-1R5M-A8S	1.5	20	2	2.5(2.7)	3.4(4.0)	70(62)
MHCD252012A-2R2M-A8S	2.2	20	2	2.0(2.3)	3.3(3.8)	115(102)

- **Irms** DC current (A) that will cause an approximate ΔT of 40℃.
- **Isat** DC current (A) that will cause L to drop approximately 30%
- Tolerance：M = ±20%
- L : Agilent E4991A/HP4287A+16197A, 2MHz 0.2V
- Rdc : CHEN HWA502
- Isat : Agilent E4980A+HP42841A
- Irms : Agilent 6641 SYSTEM DC POWER SUPPLY
- Operating temperature range from -40℃ to 125℃. (Including self - temperature rise)

Test Instruments：E4991A Impedance / Material Analyzer



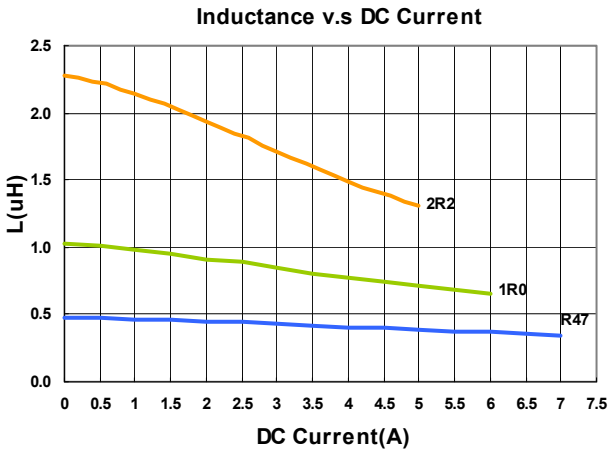


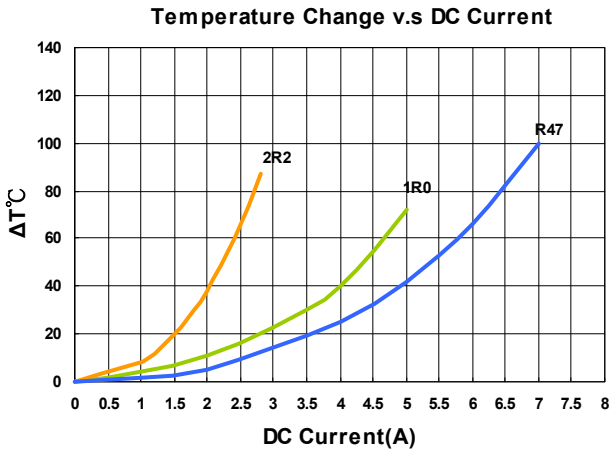
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	Irms(A) Max(Typ)	Isat(A) Max(Typ)	RDC(mΩ) Max(Typ)
MHCD322510-R47N-A8S	0.47	30	2	4.2(5.2)	6.0(7.2)	38(32)
MHCD322510-1R0N-A8S	1.0	30	2	3.0(3.7)	4.0(5.0)	62(52)
MHCD322510-1R5N-A8S	1.5	30	2	2.8(3.5)	3.2(4.0)	87(72)
MHCD322510-2R2N-A8S	2.2	30	2	2.0(2.5)	2.7(3.4)	118(98)

- **Irms** DC current (A) that will cause an approximate ΔT of 40℃.
- **Isat** DC current (A) that will cause L to drop approximately 30%
- Tolerance：N = ±30%
- L : Agilent E4991A/HP4287A+16197A, 2MHz 0.2V
- Rdc : CHEN HWA502
- Isat : Agilent E4980A+HP42841A
- Irms : Agilent 6641 SYSTEM DC POWER SUPPLY
- Operating temperature range from -40℃ to 125℃. (Including self - temperature rise)

Test Instruments：E4991A Impedance / Material Analyzer



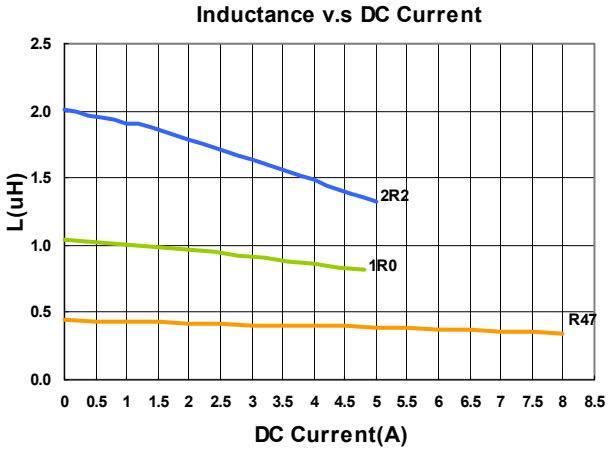


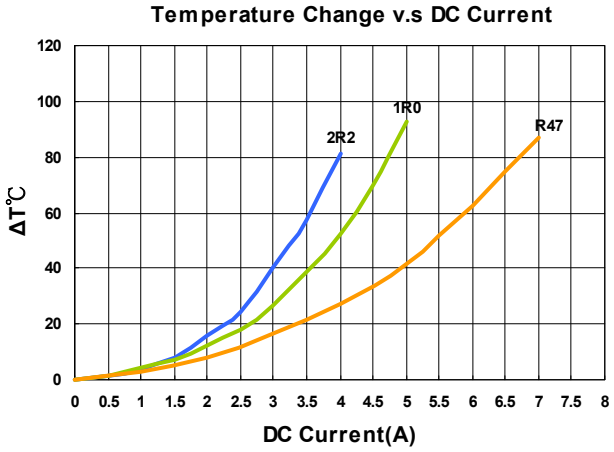
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	Irms(A) Max(Typ)	Isat(A) Max(Typ)	RDC(mΩ) Max(Typ)
MHCD322512-R47N-A8S	0.47	30	2	4.0(5.3)	3.0(10)	31(21)
MHCD322512-1R0N-A8S	1.0	30	2	3.2(3.8)	4.8(6.0)	45(39)
MHCD322512-2R2N-A8S	2.2	30	2	2.4(3.0)	3.2(4.4)	84(70)

- **Irms** DC current (A) that will cause an approximate ΔT of 40℃.
- **Isat** DC current (A) that will cause L to drop approximately 30%
- Tolerance：N = ±30%
- L : Agilent E4991A/HP4287A+16197A, 2MHz 0.2V
- Rdc : CHEN HWA502
- Isat : Agilent E4980A+HP42841A
- Irms : Agilent 6641 SYSTEM DC POWER SUPPLY
- Operating temperature range from -40℃ to 125℃. (Including self - temperature rise)

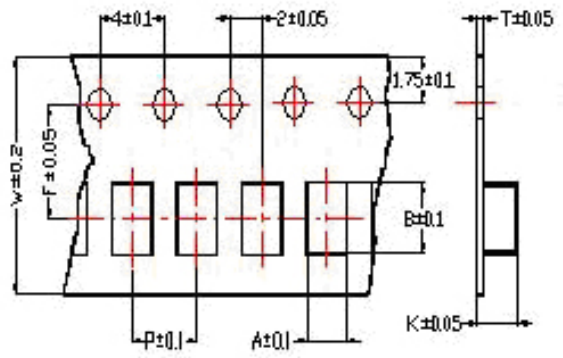
Test Instruments：E4991A Impedance / Material Analyzer



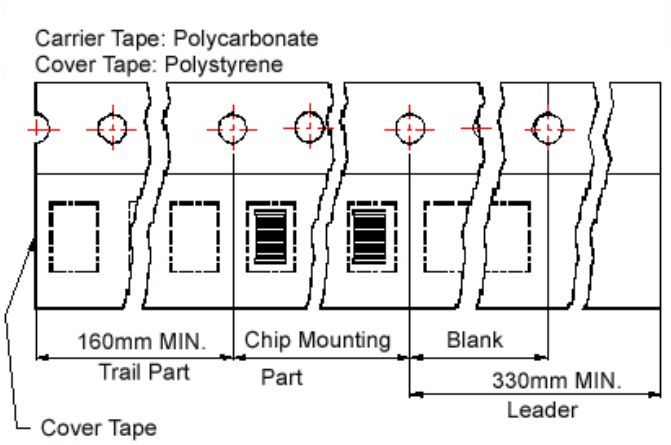


Packaging Specifications

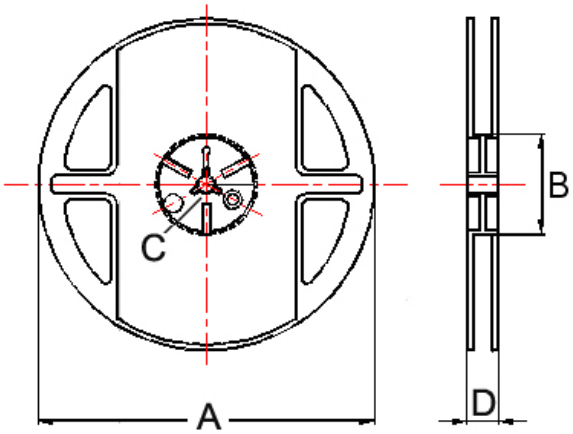
Tape Dimensions



Tape Material



Reel Dimensions



Dimensions in mm

TYPE	Tape Dimensions							Reel Dimensions				Quantity
	A	B	T	W	P	F	K	A	B	C	D	PCS / REEL
201210	1.45	2.25	0.22	8	4	3.5	1.04	178	60	12	1.5	3000
201610	1.80	2.20	0.25	8	4	3.5	1.15	178	60	12	1.5	3000
201612	1.80	2.20	0.25	8	4	3.5	1.35	178	60	12	1.5	3000
252010	2.25	2.80	0.25	8	4	3.5	1.15	178	60	12	1.5	3000
252012	2.25	2.80	0.25	8	4	3.5	1.35	178	60	12	1.5	3000
322510	2.77	3.42	0.22	8	4	3.5	1.55	178	60	12	1.5	3000
322512	2.77	3.42	0.22	8	4	3.5	1.55	178	60	12	1.5	3000