Innovative Service Around the Globe YAGEO

DATA SHEET

INDUCTOR

Power Inductors

BDCD Series

RoHS compliant & Halogen Free

YAGEO

Product specification – March 26, 2021 V.0

BDCD Series

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

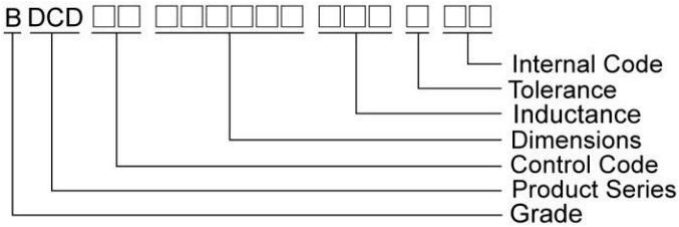
Features

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

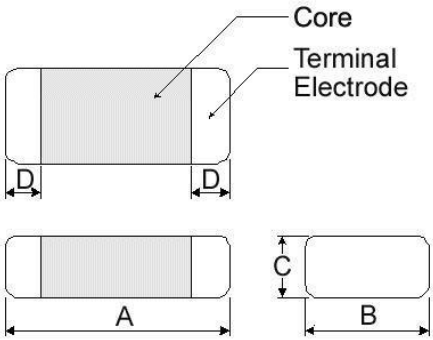
Applications

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

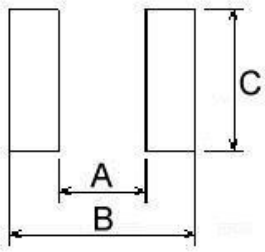
Product Identification



Shape and Dimensions



Recommended Pattern



Dimensions in mm

TYPE	A	B	C	D
BDCD00201610	2.0±0.2	1.6±0.2	1.0Max	0.5±0.3
BDCD00201612	2.0±0.2	1.6±0.2	1.2Max	0.5±0.3
BDCD00252010	2.5±0.2	2.0±0.2	1.0Max	0.6±0.3
BDCD00252012	2.5±0.2	2.0±0.2	1.2Max	0.6±0.3
BDCD00322510	3.2±0.3	2.5±0.3	1.0Max	0.5±0.3
BDCD00322512	3.2±0.3	2.5±0.3	1.2Max	0.5±0.3

Dimensions in mm

TYPE	A	B	C
BDCD00201610	0.7	2.3	1.8
BDCD00201612	0.7	2.3	1.8
BDCD00252010	1.2	2.8	2.3
BDCD00252012	1.2	2.8	2.3
BDCD00322510	1.7	3.5	2.8
BDCD00322512	1.7	3.5	2.8

Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDCD00201610R24MS1	0.24	20	2	40(28)	4.2(6.0)	4.0(4.5)
BDCD00201610R33MS1	0.33	20	2	48(40)	4.0(5.5)	3.5(3.8)
BDCD00201610R47MS1	0.47	20	2	54(44)	3.2(5.0)	3.0(3.6)
BDCD00201610R56MS1	0.56	20	2	59(46)	2.8(4.6)	2.8(3.3)
BDCD00201610R68MS1	0.68	20	2	72(55)	2.7(4.2)	2.4(3.0)
BDCD002016101R0MS1	1.0	20	2	96(81)	2.2(3.4)	2.0(2.3)
BDCD002016101R5MS1	1.5	20	2	150(122)	2.1(2.8)	1.6(2.0)
BDCD002016102R2MS1	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℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Rated current：Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment：

  L：Agilent E4991/HP4286A+16197A (or equivalent), 2MHz 0.2V

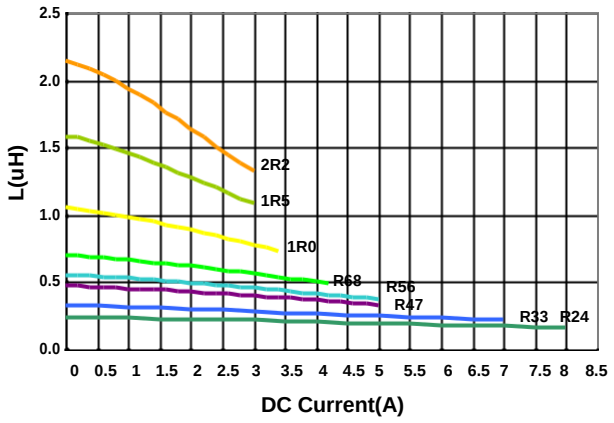
  RDC：CHEN HWA502BC/HP4338B (or equivalent)

  Isat：Agilent E4980A+HP42841A (or equivalent)

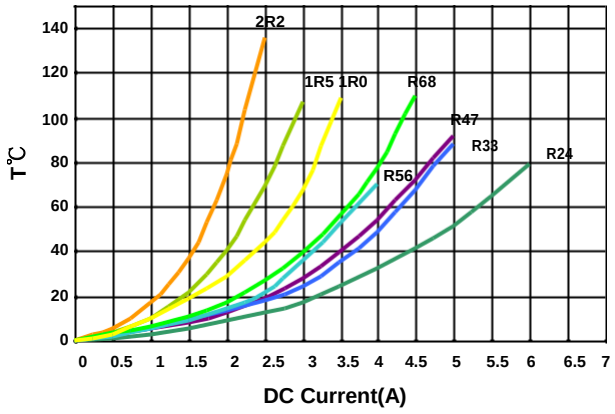
  Irms：Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

Test Instruments：E4991A Impedance / Material Analyzer

Inductance v.s DC Current



Temperature Change v.s DC Current



Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDCD00201610R24ML1	0.24	20	2	30(23)	5.0(6.0)	3.8(4.4)
BDCD00201610R33ML1	0.33	20	2	35(27)	4.5(5.0)	3.4(3.8)
BDCD00201610R47ML1	0.47	20	2	41(34)	4.0(4.5)	2.9(3.3)
BDCD00201610R68ML1	0.68	20	2	53(44)	3.3(3.6)	2.5(2.9)
BDCD002016101R0ML1	1.0	20	2	72(60)	2.8(3.2)	2.2(2.5)
BDCD002016101R5ML1	1.5	20	2	110(92)	2.2(2.8)	1.8(2.1)
BDCD002016102R2ML1	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℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Rated current：Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment：

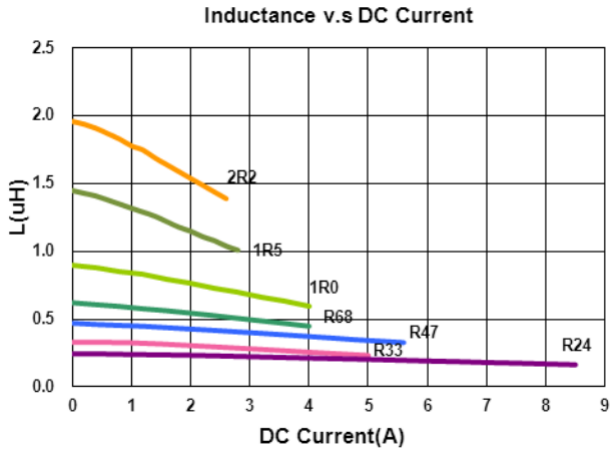
  L：Agilent E4991/HP4286A+16197A (or equivalent), 2MHz 0.2V

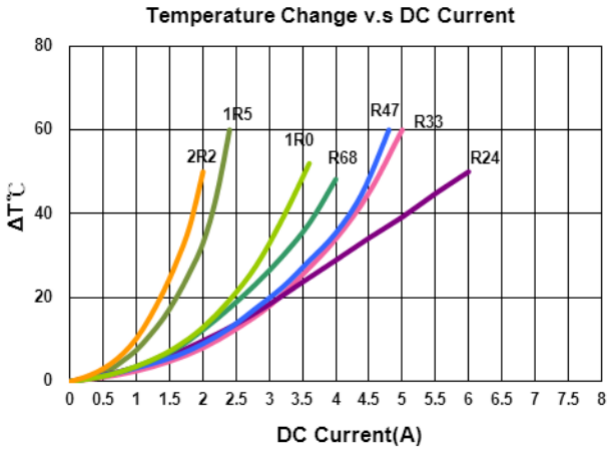
  RDC：CHEN HWA502BC/HP4338B (or equivalent)

  Isat：Agilent E4980A+HP42841A (or equivalent)

  Irms：Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

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.)
BDCD00201612R24MS1	0.24	20	2	35(25)	5.5(6.5)	4.2(4.8)
BDCD00201612R47MS1	0.47	20	2	52(40)	3.8(5.1)	3.2(3.8)
BDCD00201612R68MS1	0.68	20	2	70(53)	3.3(4.8)	2.6(3.2)
BDCD002016121R0MS1	1.0	20	2	82(67)	3.1(3.9)	2.3(2.7)
BDCD002016121R5MS1	1.5	20	2	120(95)	2.6(3.2)	2.2(2.6)
BDCD002016122R2MS1	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℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Rated current：Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment：

  L：Agilent E4991/HP4286A+16197A (or equivalent), 2MHz 0.2V

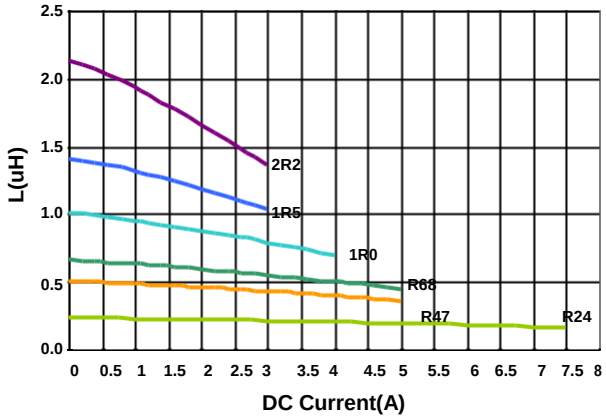
  RDC：CHEN HWA502BC/HP4338B (or equivalent)

  Isat：Agilent E4980A+HP42841A (or equivalent)

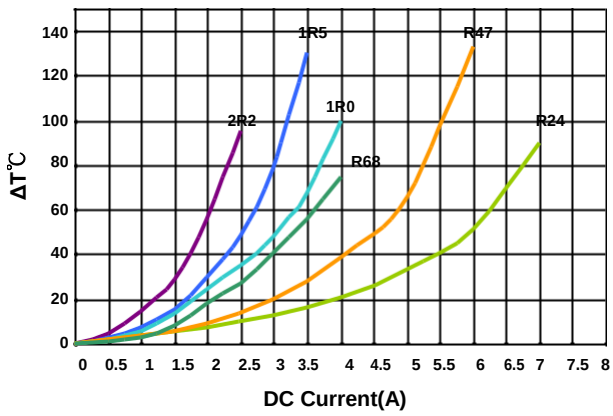
  Irms：Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

Test Instruments：E4991A Impedance / Material Analyzer

Inductance v.s DC Current



Temperature Change v.s DC Current



Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDCD00252010R24MS1	0.24	20	2	40(24)	7.5(9.5)	4.5(5.0)
BDCD00252010R47MS1	0.47	20	2	46(36)	5.2(6.5)	3.1(3.6)
BDCD00252010R68MS1	0.68	20	2	65(49)	3.8(5.0)	2.9(3.3)
BDCD002520101R0MS1	1.0	20	2	78(60)	3.4(4.3)	2.5(3.0)
BDCD002520101R5MS1	1.5	20	2	105(82)	3.2(4.0)	2.2(2.9)
BDCD002520102R2MS1	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℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Rated current：Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment：

  L：Agilent E4991/HP4286A+16197A (or equivalent), 2MHz 0.2V

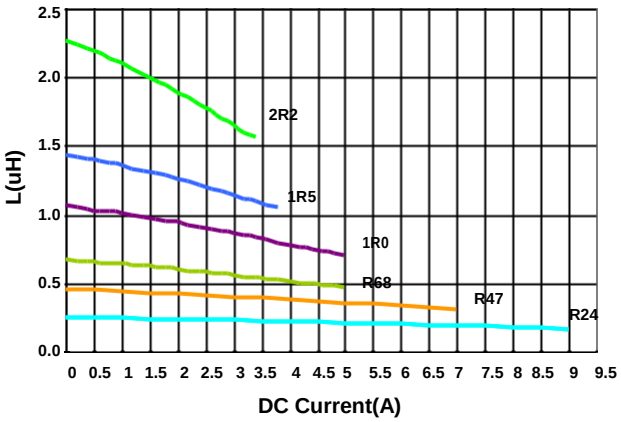
  RDC：CHEN HWA502BC/HP4338B (or equivalent)

  Isat：Agilent E4980A+HP42841A (or equivalent)

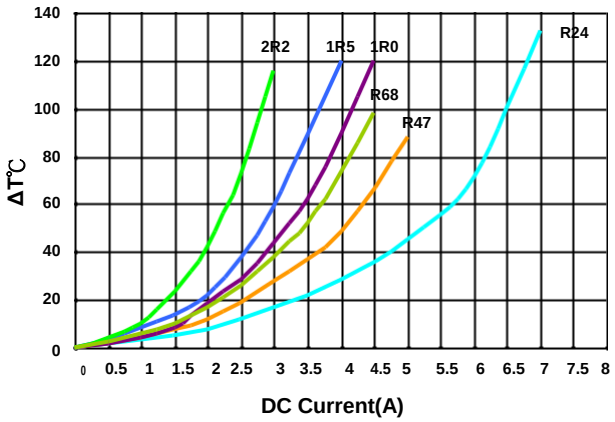
  Irms：Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

Test Instruments：E4991A Impedance / Material Analyzer

Inductance v.s DC Current



Temperature Change v.s DC Current



Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDCD00252010R33ML1	0.33	20	2	31(25)	5.0(6.0)	3.8(4.4)
BDCD00252010R47ML1	0.47	20	2	35(29)	4.2(4.7)	3.4(3.9)
BDCD00252010R68ML1	0.68	20	2	48(40)	3.7(4.0)	3.0(3.5)
BDCD002520101R0ML1	1.0	20	2	65(54)	3.2(3.6)	2.6(3.0)
BDCD002520101R5ML1	1.5	20	2	94(78)	2.9(3.3)	2.1(2.4)
BDCD002520102R2ML1	2.2	20	2	120(100)	2.3(2.7)	1.8(2.1)

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

- Operating temperature range - 40℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Rated current：Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment：

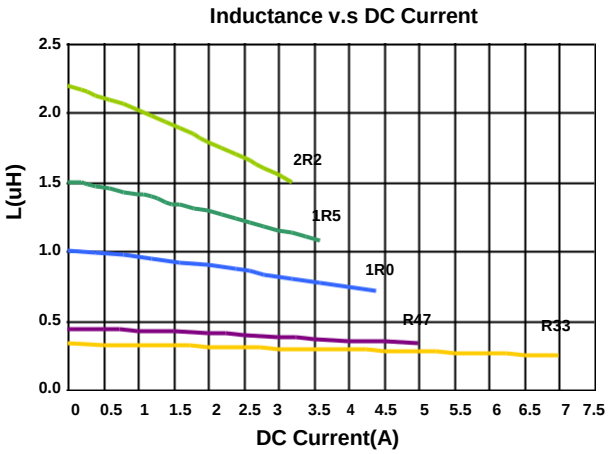
  L：Agilent E4991/HP4286A+16197A (or equivalent), 2MHz 0.2V

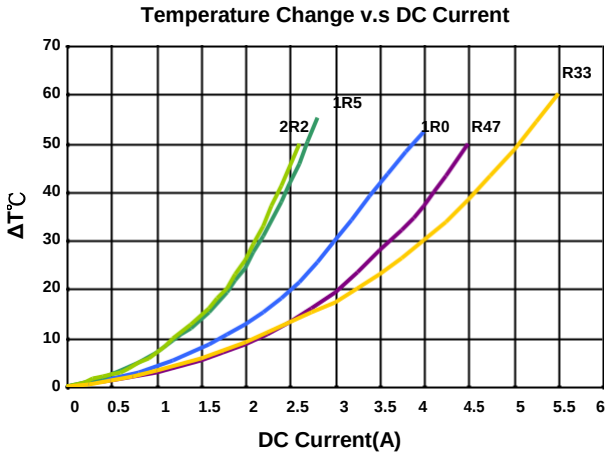
  RDC：CHEN HWA502BC/HP4338B (or equivalent)

  Isat：Agilent E4980A+HP42841A (or equivalent)

  Irms：Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

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.)
BDCD00252012R33MS1	0.33	20	2	35(27)	6.8(8.5)	4.0(4.6)
BDCD00252012R47MS1	0.47	20	2	39(29)	6.2(7.8)	3.7(4.4)
BDCD00252012R68MS1	0.68	20	2	46(40)	5.5(6.5)	3.3(3.7)
BDCD002520121R0MS1	1.0	20	2	59(45)	4.0(5.0)	3.0(3.5)
BDCD002520121R5MS1	1.5	20	2	70(62)	3.4(4.0)	2.5(2.7)
BDCD002520122R2MS1	2.2	20	2	115(102)	3.3(3.8)	2.0(2.3)

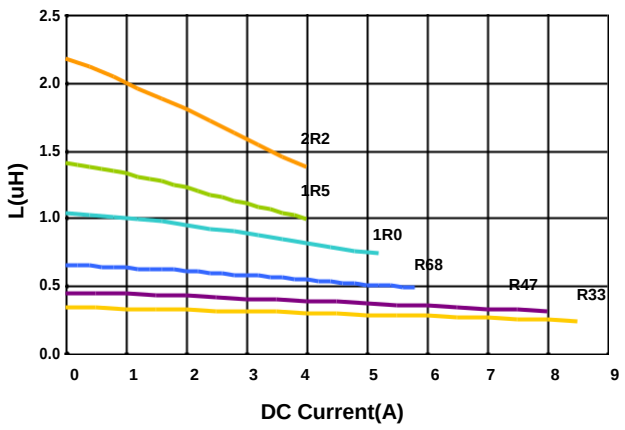
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

- Operating temperature range - 40℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Rated current：Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment：

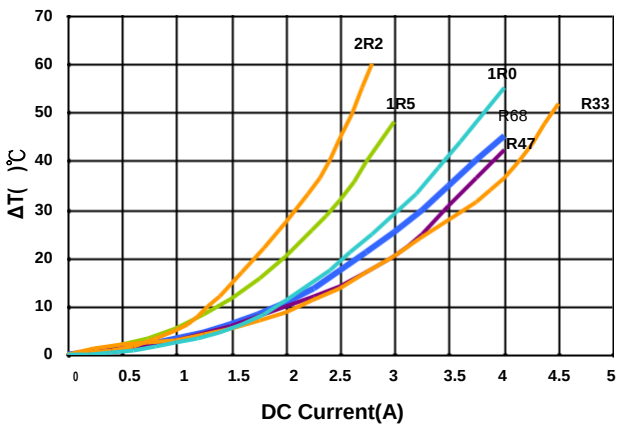
  L：Agilent E4991/HP4286A+16197A (or equivalent), 2MHz 0.2V
  RDC：CHEN HWA502BC/HP4338B (or equivalent)
  Isat：Agilent E4980A+HP42841A (or equivalent)
  Irms：Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

Test Instruments：E4991A Impedance / Material Analyzer

Inductance v.s DC Current



Temperature Change v.s DC Current



Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDCD00252012R47ML1	0.47	20	2	34(30)	5.2(6.0)	4.1(4.7)
BDCD002520121R0ML1	1.0	20	2	56(45)	3.6(4.5)	3.2(3.7)
BDCD002520122R2ML1	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℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Rated current：Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment：

  L：Agilent E4991/HP4286A+16197A (or equivalent), 2MHz 0.2V

  RDC：CHEN HWA502BC/HP4338B (or equivalent)

  Isat：Agilent E4980A+HP42841A (or equivalent)

  Irms：Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

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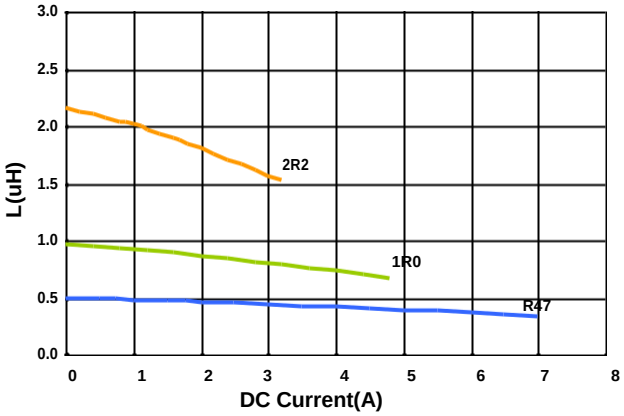
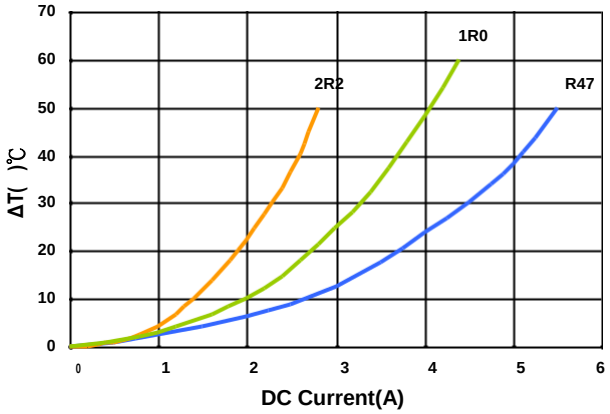
Inductance v.s DC Current



Temperature Change v.s DC Current



Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDCD00322510R47MS1	0.47	20	2	37(30)	5.8(6.6)	3.6(4.2)
BDCD003225101R0MS1	1.0	20	2	56(49)	4.0(4.6)	3.0(3.3)
BDCD003225101R5MS1	1.5	20	2	75(66)	3.4(4.0)	2.6(3.0)
BDCD003225102R2MS1	2.2	20	2	108(95)	2.7(3.2)	2.2(2.5)

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

- Operating temperature range - 40℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Rated current：Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment：

  L：Agilent E4991/HP4286A+16197A (or equivalent), 2MHz 0.2V

  RDC：CHEN HWA502BC/HP4338B (or equivalent)

  Isat：Agilent E4980A+HP42841A (or equivalent)

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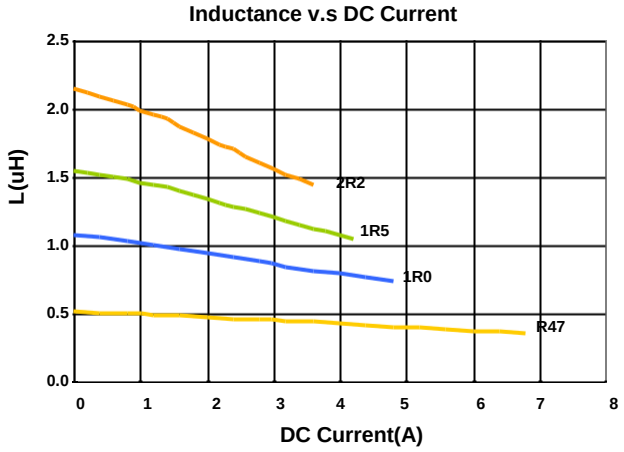
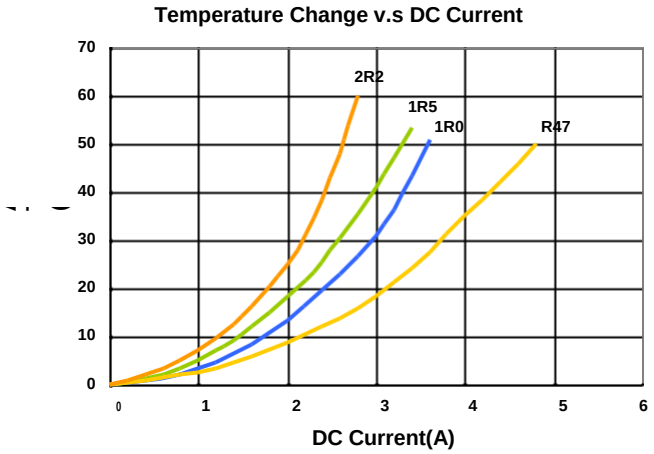




Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDCD00322512R47MS1	0.47	20	2	27(21)	8.0(9.0)	5.0(5.8)
BDCD00322512R68MS1	0.68	20	2	34(26)	6.3(7.5)	4.0(4.6)
BDCD003225121R0MS1	1.0	20	2	42(34)	5.8(6.3)	3.8(4.2)
BDCD003225121R5MS1	1.5	20	2	68(58)	4.0(4.5)	2.8(3.2)
BDCD003225122R2MS1	2.2	20	2	85(75)	3.6(4.0)	2.4(2.7)

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

- Operating temperature range - 40℃ ~ 125℃(Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40℃ temperature rise from 25℃ ambient with current
- Rated current：Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment：

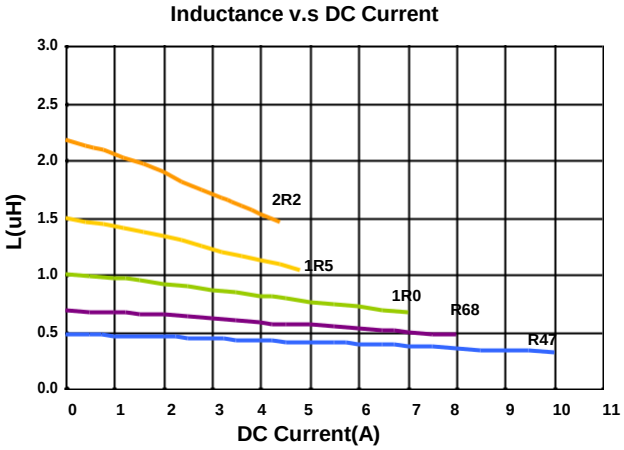
  L：Agilent E4991/HP4286A+16197A (or equivalent), 2MHz 0.2V

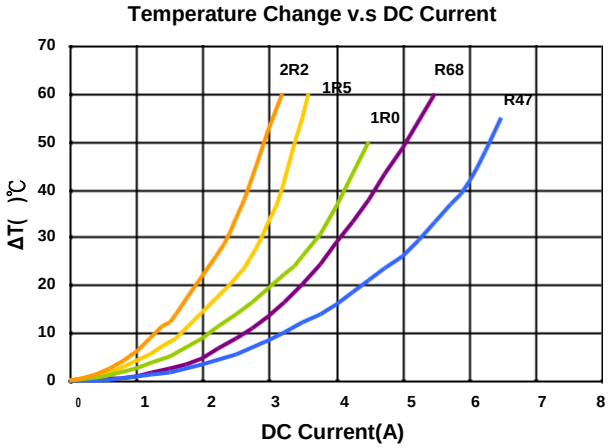
  RDC：CHEN HWA502BC/HP4338B (or equivalent)

  Isat：Agilent E4980A+HP42841A (or equivalent)

  Irms：Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

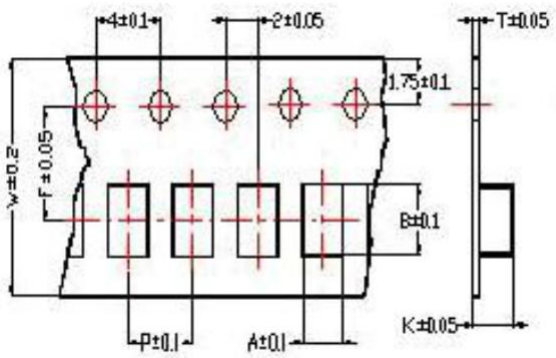
Test Instruments：E4991A Impedance / Material Analyzer



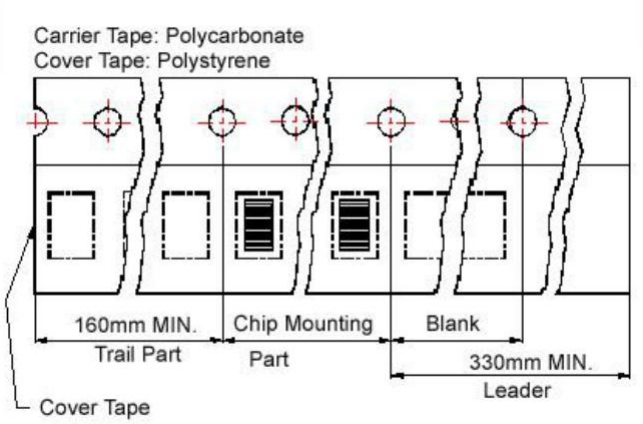


Packaging Specifications

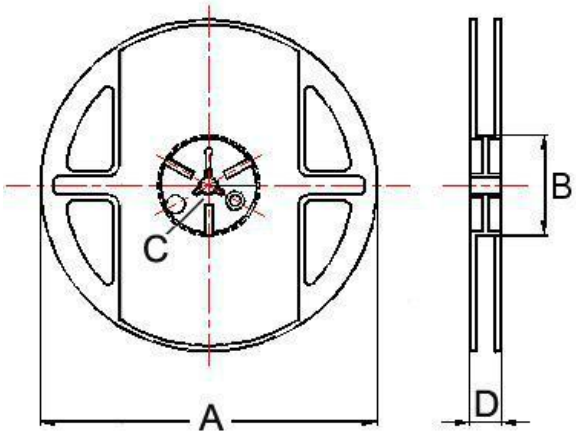
Tape Dimensions



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
BDCD00201610	1.80	2.20	0.22	8	4	3.5	1.15	178	60	12	1.5	3000
BDCD00201612	1.80	2.20	0.22	8	4	3.5	1.15	178	60	12	1.5	3000
BDCD00252010	2.25	2.80	0.22	8	4	3.5	1.15	178	60	12	1.5	3000
BDCD00252012	2.25	2.80	0.22	8	4	3.5	1.35	178	60	12	1.5	3000
BDCD00322510	2.80	3.55	0.23	8	4	3.5	1.20	178	60	12	1.5	3000
BDCD00322512	2.80	3.50	0.23	8	4	3.5	1.34	178	60	12	1.5	3000