

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.

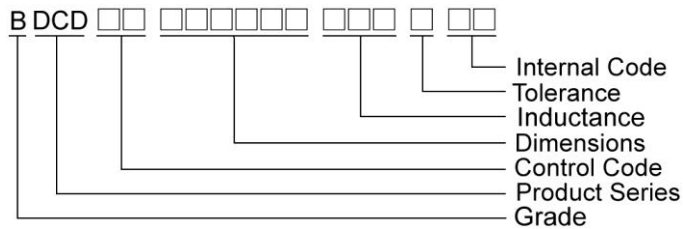
Features

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

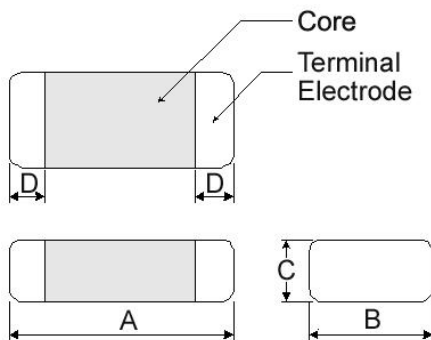
Applications

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

Product Identification



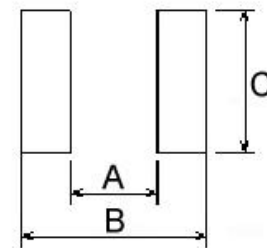
Shape and Dimensions



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

Recommended Pattern



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

Molding Power Inductors – BDCD Series

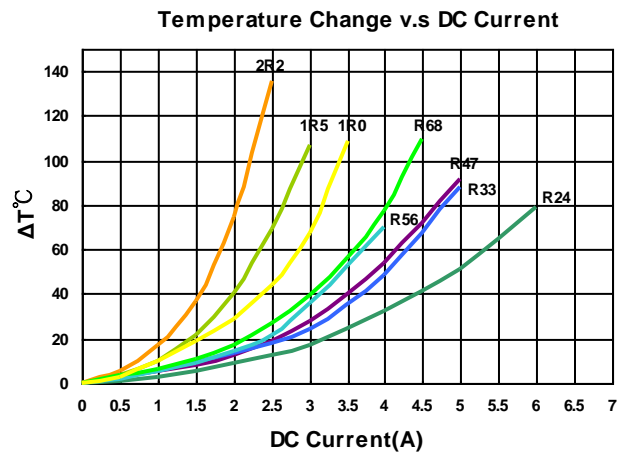
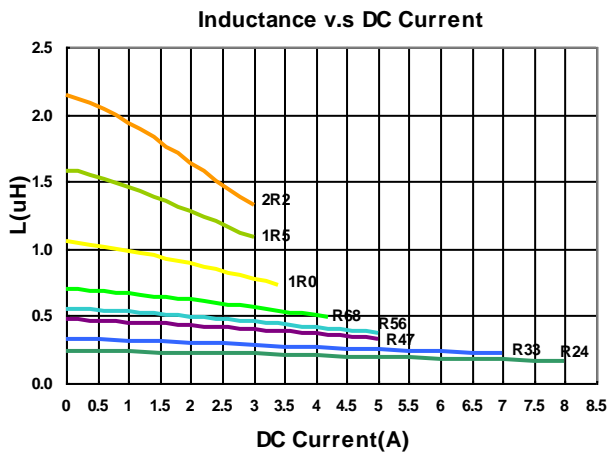
Electrical Characteristics

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°C ~ 125°C (Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- I rms for a 40°C temperature rise from 25°C ambient with current
- Rated current : Isat or I rms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment :
 L : Agilent E4991/HP4286A+16197A (or equivalent), 2MHz
 RDC : CHEN HWA502BC/HP4338B (or equivalent)
 Isat : Agilent E4980A+HP42841A (or equivalent)
 I rms : Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

Test Instruments : E4991A Impedance / Material Analyzer



Molding Power Inductors – BDCD Series

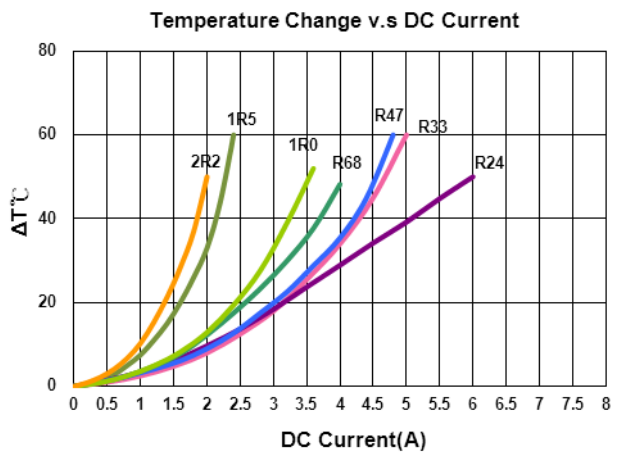
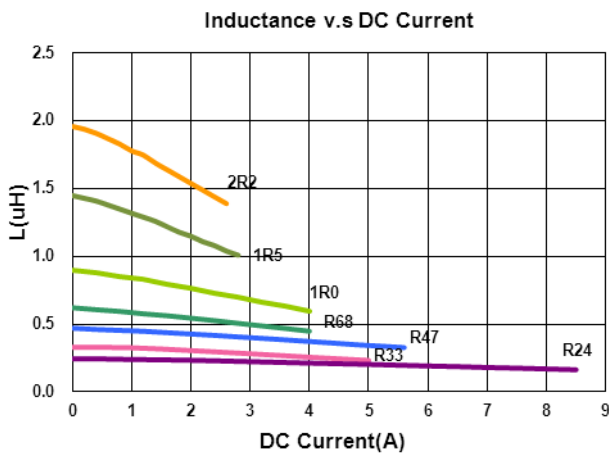
Electrical Characteristics

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°C ~ 125°C (Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- I rms for a 40°C temperature rise from 25°C ambient with current
- Rated current : Isat or I rms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment :
 - L : Agilent E4991/HP4286A+16197A (or equivalent), 2MHz
 - RDC : CHEN HWA502BC/HP4338B (or equivalent)
 - Isat : Agilent E4980A+HP42841A (or equivalent)
 - I rms : Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

Test Instruments : E4991A Impedance / Material Analyzer



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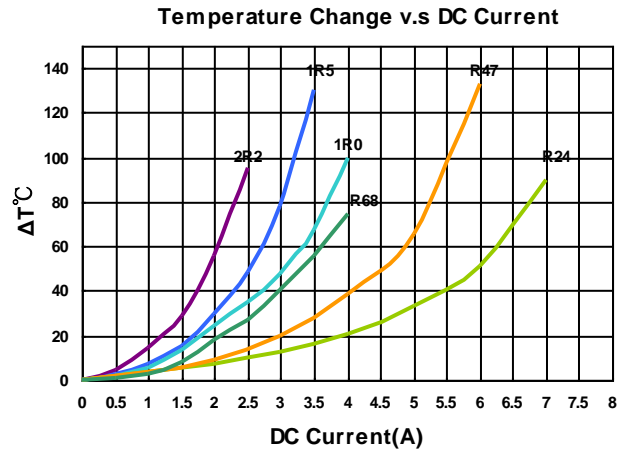
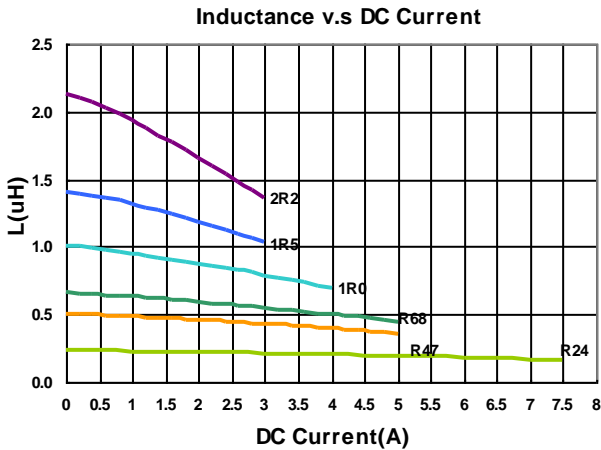
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
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°C ~ 125°C (Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40°C temperature rise from 25°C 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
 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



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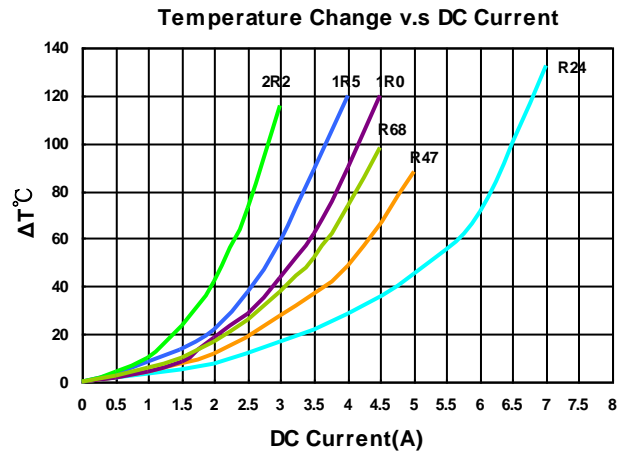
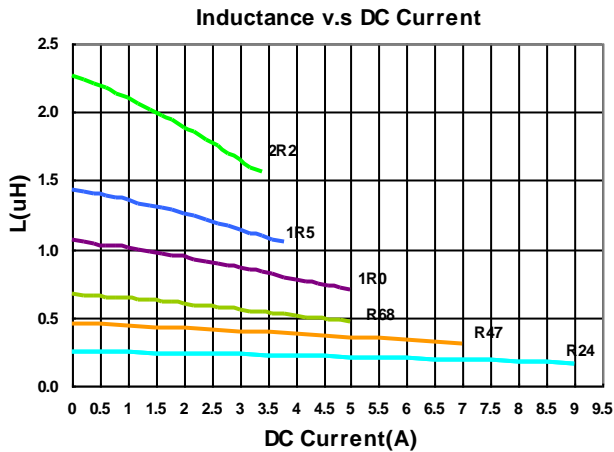
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
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°C ~ 125°C (Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- I rms for a 40°C temperature rise from 25°C ambient with current
- Rated current : Isat or I rms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment :
 - L : Agilent E4991/HP4286A+16197A (or equivalent), 2MHz
 - RDC : CHEN HWA502BC/HP4338B (or equivalent)
 - Isat : Agilent E4980A+HP42841A (or equivalent)
 - I rms : Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

Test Instruments : E4991A Impedance / Material Analyzer



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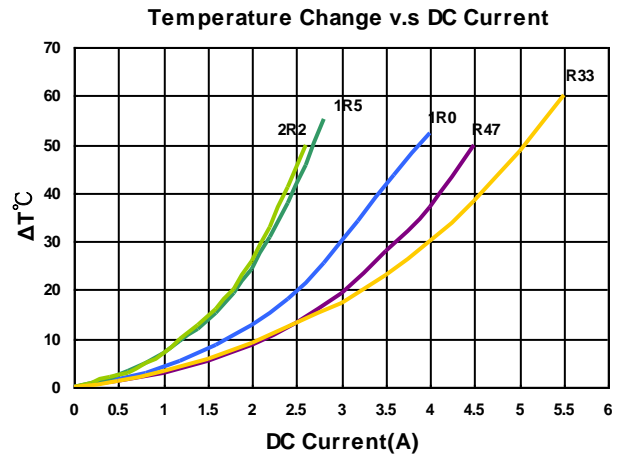
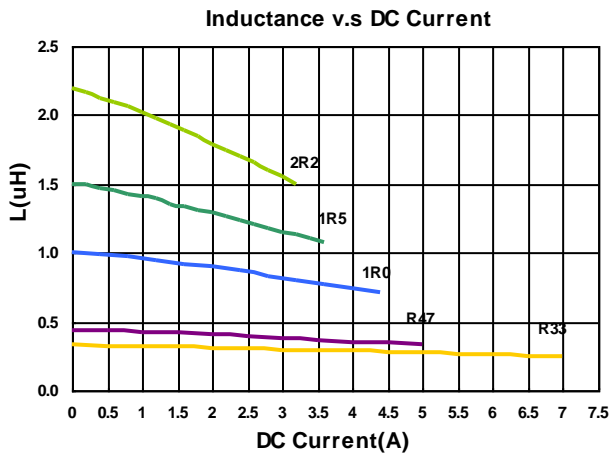
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
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°C ~ 125°C (Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- I rms for a 40°C temperature rise from 25°C ambient with current
- Rated current : Isat or I rms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment :
 - L : Agilent E4991/HP4286A+16197A (or equivalent), 2MHz
 - RDC : CHEN HWA502BC/HP4338B (or equivalent)
 - Isat : Agilent E4980A+HP42841A (or equivalent)
 - I rms : Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

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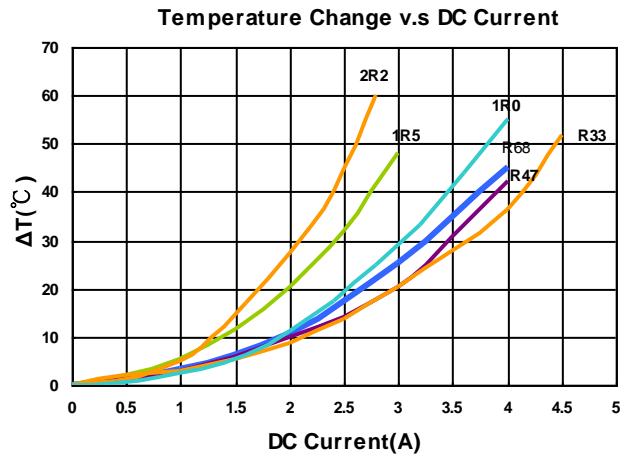
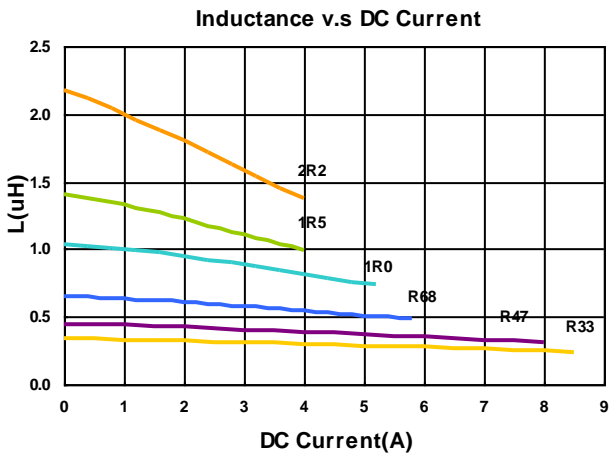
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
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°C ~ 125°C (Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- I rms for a 40°C temperature rise from 25°C ambient with current
- Rated current : Isat or I rms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment :
 - L : Agilent E4991/HP4286A+16197A (or equivalent), 2MHz
 - RDC : CHEN HWA502BC/HP4338B (or equivalent)
 - Isat : Agilent E4980A+HP42841A (or equivalent)
 - I rms : Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

Test Instruments : E4991A Impedance / Material Analyzer



Please be sure to request approval specifications that provide further details of the products. Kindly note that the content of these specifications are subject to change or may be discontinued without prior notice. This product may not be designed/used in medical or high risk applications without Chilisin approval. Please contact our sales department before ordering.

Molding Power Inductors – BDCD Series

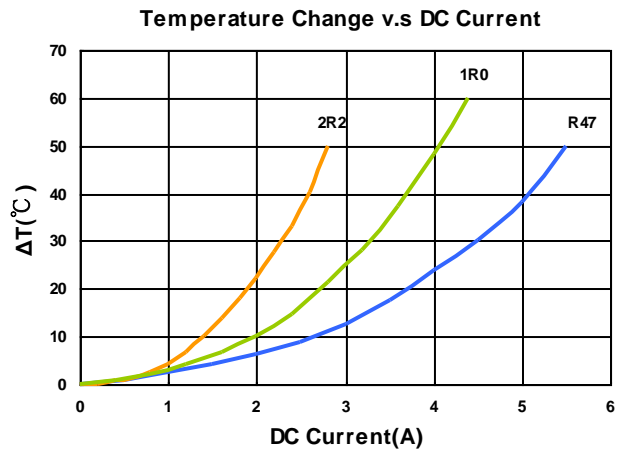
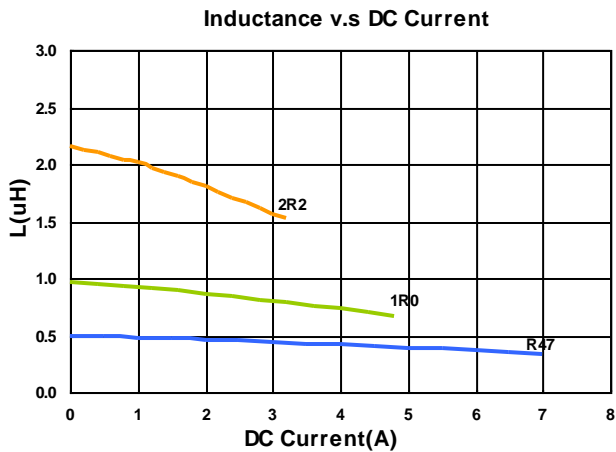
Electrical Characteristics

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°C ~ 125°C (Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- I rms for a 40°C temperature rise from 25°C ambient with current
- Rated current : Isat or I rms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment :
 L : Agilent E4991/HP4286A+16197A (or equivalent), 2MHz
 RDC : CHEN HWA502BC/HP4338B (or equivalent)
 Isat : Agilent E4980A+HP42841A (or equivalent)
 I rms : Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

Test Instruments : E4991A Impedance / Material Analyzer



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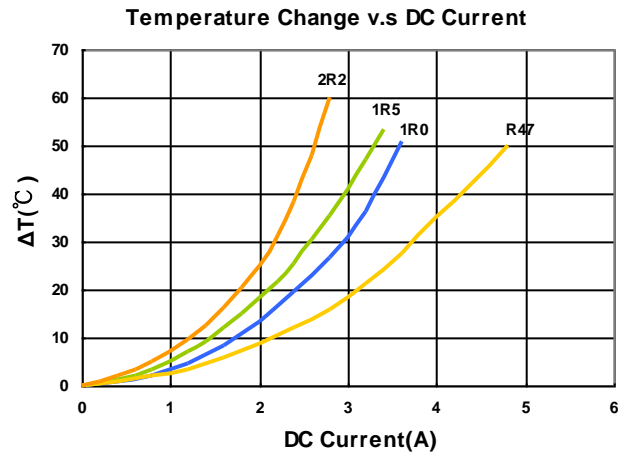
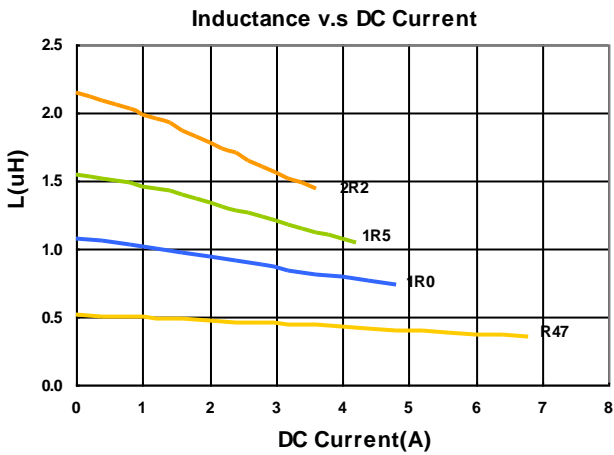
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
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°C ~ 125°C (Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- I rms for a 40°C temperature rise from 25°C ambient with current
- Rated current : Isat or I rms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment :
 - L : Agilent E4991/HP4286A+16197A (or equivalent), 2MHz
 - RDC : CHEN HWA502BC/HP4338B (or equivalent)
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Molding Power Inductors – BDCD Series

Electrical Characteristics

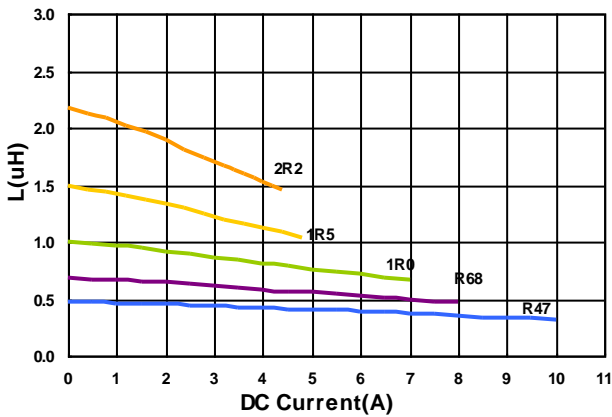
Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDCD00322512R47MS1	0.47	20	2	27(21)	8.0(9.0)	5.0(5.8)
BDCD00322512R68MS1	0.68	20	2	34(26)	6.3(7.5)	4.0(4.6)
BDCD003225121R0MS1	1.0	20	2	42(34)	5.8(6.3)	3.8(4.2)
BDCD003225121R5MS1	1.5	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%

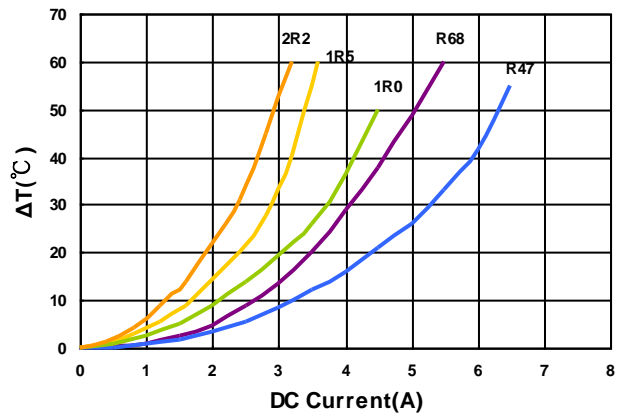
- Operating temperature range – 40°C ~ 125°C (Including self - temperature rise)
- Isat for Inductance drop 30% from its value without current
- I rms for a 40°C temperature rise from 25°C ambient with current
- Rated current : Isat or I rms, whichever is smaller
- Absolute maximum voltage 20VDC
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 - RDC : CHEN HWA502BC/HP4338B (or equivalent)
 - Isat : Agilent E4980A+HP42841A (or equivalent)
 - I rms : Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)

Test Instruments : E4991A Impedance / Material Analyzer

Inductance v.s DC Current



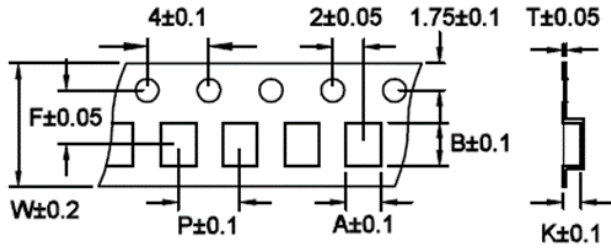
Temperature Change v.s DC Current



Molding Power Inductors – BDCD Series

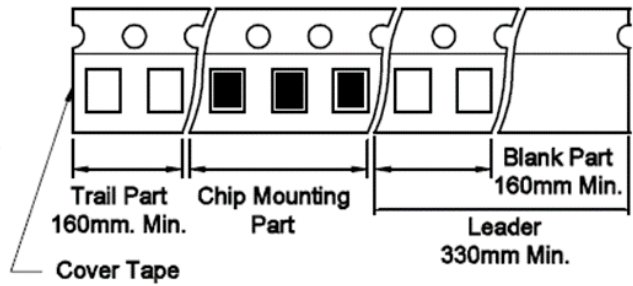
Packaging Specifications

Tape Dimensions

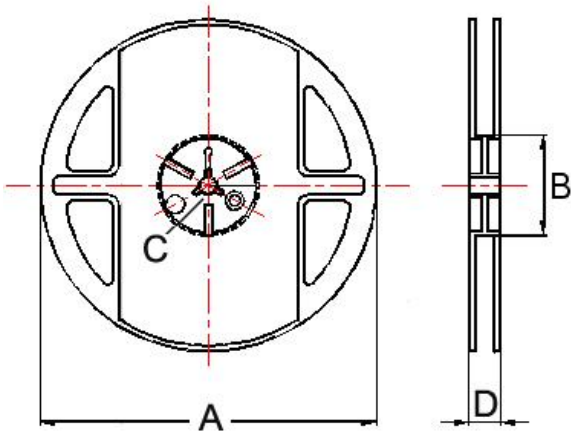


Tape Material

Tape Material
 Carrier Tape: Polycarbonate
 Cover Tape: Polyethylene



Reel Dimensions



Dimensions in mm

TYPE	Tape Dimensions							Reel Dimensions				Quantity PCS / REEL
	A	B	T	W	P	F	K	A	B	C	D	
BDCD00201610	1.90	2.30	0.22	8	4	3.5	1.15	178	60	12	1.5	3000
BDCD00201612	1.90	2.30	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	2.30	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