

BDHE002520102R2MQ1 Datasheet



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DiGi Electronics Part Number BDHE002520102R2MQ1-DG

Manufacturer Pulse Electronics

Manufacturer Product Number BDHE002520102R2MQ1

Description FIXED IND 2.2UH 2.5A 97 MOHM SMD

Detailed Description 2.2 µH Unshielded Molded Inductor 2.5 A 97mOhm

Max 1008 (2520 Metric)



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

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Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
BDHE002520102R2MQ1	Pulse Electronics
Series:	Product Status:
BDHE	Active
Type:	Material - Core:
Molded	
Inductance:	Tolerance:
2.2 μΗ	±20%
Current Rating (Amps):	Current - Saturation (Isat):
2.5 A	3A
Shielding:	DC Resistance (DCR):
Unshielded	97mOhm Max
Q @ Freq:	Frequency - Self Resonant:
Ratings:	Operating Temperature:
	-40°C ~ 125°C
Inductance Frequency - Test:	Features:
2 MHz	
Mounting Type:	Package / Case:
Surface Mount	1008 (2520 Metric)
Supplier Device Package:	Size / Dimension:
1008	0.098" L x 0.079" W (2.50mm x 2.00mm)
Height - Seated (Max):	
0.039" (1.00mm)	

Environmental & Export classification

8504.50.8000

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	

BDHE Series



The BDHE Series is designed specifically to enhance both PFM and PWM application performance.Q(Rac) value at light load and the RDC value at heavy load are both exceptional. Furthermore, the saturated current performance is also optimal, helping to reduce the ripple current and enhance the efficiency.

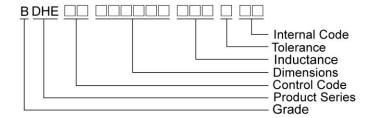
Features

- RoHS, Halogen Free and REACH Compliance
- High Efficiency
- Excellent Q, RDC and saturation current
- Low profile and miniature size down to 1.6*0.8*0.8mm

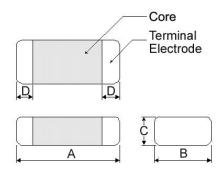
Applications

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

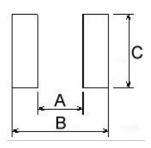
Product Identification



Shape and Dimensions



Recommended Pattern



Dimensions in mm					Dimensions in mm			
TYPE	Α	В	С	D	TYPE	Α	В	С
BDHE00160808	1.6±0.2	0.80±0.2	0.8Max	0.3±0.2	BDHE00160808	0.7	1.8	1
BDHE00201208	2.0±0.2	1.25±0.2	0.8Max	0.5±0.3	BDHE00201208	0.8	2.4	1.45
BDHE00201210	2.0±0.2	1.25±0.2	1.0Max	0.5±0.3	BDHE00201210	0.8	2.4	1.45
BDHE00201608	2.0±0.2	1.60±0.2	0.8Max	0.5±0.3	BDHE00201608	0.7	2.3	1.8
BDHE00201610	2.0±0.2	1.60±0.2	1.0Max	0.5±0.3	BDHE00201610	0.7	2.3	1.8
BDHE00201612	2.0±0.2	1.60±0.2	1.2Max	0.5±0.3	BDHE00201612	0.7	2.3	1.8
BDHE00252010	2.5±0.3	2.00±0.3	1.0Max	0.6±0.3	BDHE00252010	1.2	2.8	2.3
BDHE00252012	2.5±0.3	2.00±0.3	1.2Max	0.6±0.3	BDHE00252012	1.2	2.8	2.3
BDHE00322510	3.2±0.3	2.50±0.3	1.0Max	0.5±0.3	BDHE00322510	1.7	3.5	2.8
BDHE00322512	3.2±0.3	2.50±0.3	1.2Max	0.5±0.3	BDHE00322512	1.7	3.5	2.8
BDHE00322525	3.2±0.3	2.50±0.3	2.50±0.3	0.5±0.3	BDHE00322525	1.7	3.5	2.8



Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(m Ω) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDHE00160808R47MQ1	0.47	20	2	100(87)	2.2(2.6)	1.6(2.0)
BDHE001608081R0MQ1	1.0	20	2	195(170)	1.6(1.8)	1.5(1.7)

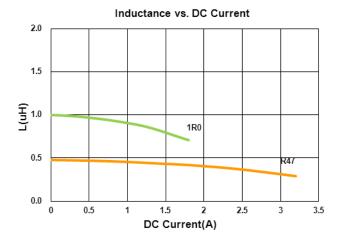
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

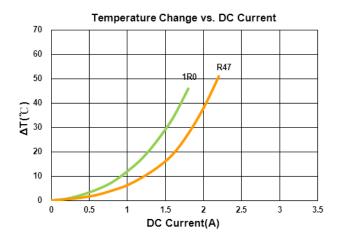
- Operating temperature range 40°C ~ 125°C(Including self temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40^o temperature rise from 25^o ambient with current
- Rated current : Isat or Irms, whichever is smaller
- Absolute maximum voltage 15VDC
- Measure Equipment :

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)







Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(m Ω) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDHE00201208R24MQ1	0.24	20	2	25(19)	4.8(5.4)	4.2(4.8)
BDHE00201208R47MQ1	0.47	20	2	48(40)	3.2(3.6)	3.0(3.4)

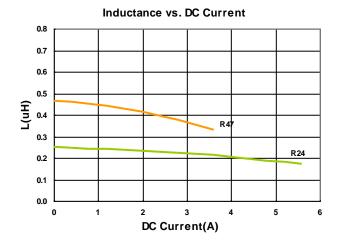
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

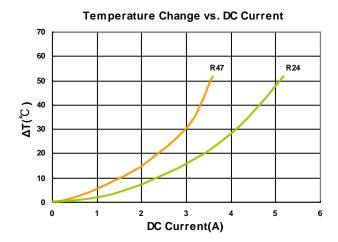
- Operating temperature range 40°C ~ 125°C(Including self temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40°C temperature rise from 25°C ambient with current
- Rated current : Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment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

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

RDC: CHEN HWA502BC/HP4338B (or equivalent)
Isat: Agilent E4980A+HP42841A (or equivalent)

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





Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(m Ω) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDHE00201210R24MQ1	0.24	20	2	28(22)	4.5(5.7)	3.7(4.6)
BDHE00201210R47MQ1	0.47	20	2	42(33)	3.3(4.2)	3.0(3.7)
BDHE002012101R0MQ1	1.0	20	2	78(69)	2.3(2.8)	2.2(2.7)
BDHE002012101R5MQ1	1.5	20	2	126(108)	1.7(2.2)	1.6(2.1)
BDHE002012102R2MQ1	2.2	20	2	176(166)	1.6(1.7)	1.4(1.5)

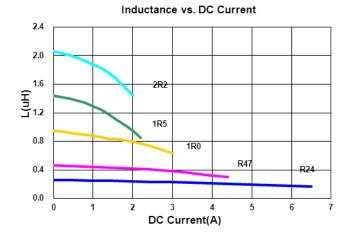
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

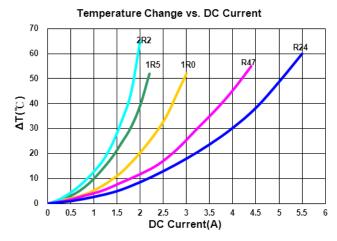
- Operating temperature range 40°C ~ 125°C(Including self temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40°C temperature rise from 25°C ambient with current
- Rated current: Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment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

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

RDC: CHEN HWA502BC/HP4338B (or equivalent)
Isat: Agilent E4980A+HP42841A (or equivalent)

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





Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(m Ω) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDHE00201608R47MQ1	0.47	20	2	51(42)	3.3(3.6)	3.1(3.4)
BDHE002016081R0MQ1	1.0	20	2	87(76)	2.5(2.8)	2.3(2.7)

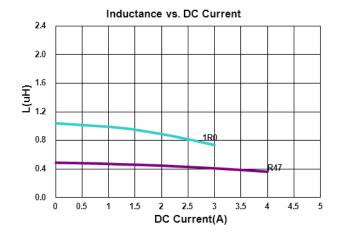
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

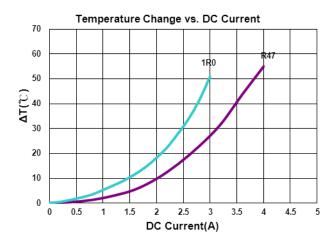
- Operating temperature range 40°C ~ 125°C(Including self temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40^oC temperature rise from 25^oC ambient with current
- Rated current : Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure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







Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(m Ω) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDHE00201610R24MQ1	0.24	20	2	27(21)	5.6(7.0)	3.9(4.8)
BDHE00201610R47MQ1	0.47	20	2	42(33)	3.9(4.8)	3.5(4.2)
BDHE00201610R68MQ1	0.68	20	2	56(43)	3.2(4.0)	2.7(3.4)
BDHE002016101R0MQ1	1.0	20	2	65(53)	2.9(3.6)	2.5(3.1)
BDHE002016101R5MQ1	1.5	20	2	85(75)	2.5(2.8)	2.3(2.7)
BDHE002016102R2MQ1	2.2	20	2	135(112)	2.4(2.7)	1.8(2.2)

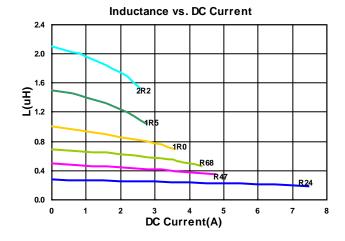
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

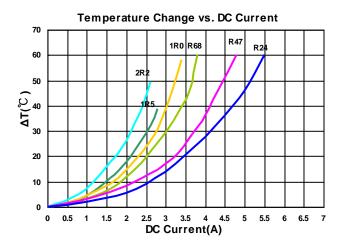
- Operating temperature range 40°C ~ 125°C(Including self temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40^oC temperature rise from 25^oC ambient with current
- Rated current: Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure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





Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(m Ω) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDHE002016121R0MQ1	1.0	20	2	52(43)	3.2(3.8)	3.0(3.5)
BDHE002016121R2MQ1	1.2	20	2	78(69)	3.0(3.4)	2.7(3.1)

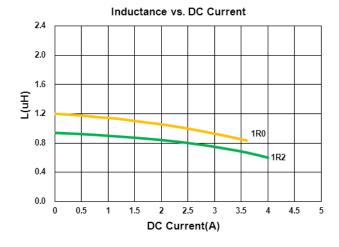
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

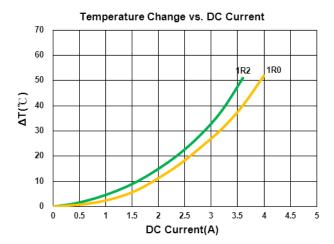
- Operating temperature range 40°C ~ 125°C(Including self temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40^o temperature rise from 25^o ambient with current
- Rated current: Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment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

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)





Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(m Ω) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDHE00252010R24MQ1	0.24	20	2	18(13)	8.0(9.5)	5.5(6.5)
BDHE00252010R33MQ1	0.33	20	2	24(18)	6.5(8.0)	4.8(5.5)
BDHE00252010R47MQ1	0.47	20	2	35(27)	5.0(6.2)	3.9(4.5)
BDHE00252010R68MQ1	0.68	20	2	40(32)	4.5(5.6)	3.7(4.2)
BDHE002520101R0MQ1	1.0	20	2	53(45)	3.7(4.6)	3.0(3.5)
BDHE002520101R5MQ1	1.5	20	2	75(68)	3.1(3.8)	2.4(2.8)
BDHE002520102R2MQ1	2.2	20	2	97(87)	2.5(3.0)	2.2(2.5)

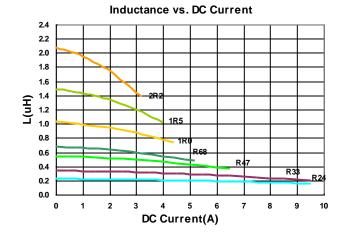
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

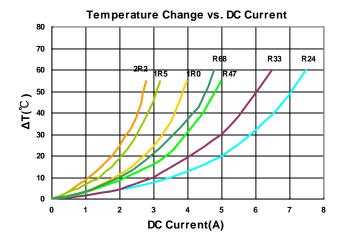
- Operating temperature range 40°C ~ 125°C(Including self temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40°C temperature rise from 25°C ambient with current
- Rated current: Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure Equipment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

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

RDC: CHEN HWA502BC/HP4338B (or equivalent)
Isat: Agilent E4980A+HP42841A (or equivalent)

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





Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(mΩ) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDHE00252012R24MQ1	0.24	20	2	15(11.5)	9.0(10.5)	6.2(7.3)
BDHE00252012R33MQ1	0.33	20	2	18(14.5)	8.5(10)	5.8(6.4)
BDHE00252012R47MQ1	0.47	20	2	33(28)	5.6(7.0)	3.8(4.5)
BDHE00252012R68MQ1	0.68	20	2	36(30)	5.0(6.2)	3.8(4.4)
BDHE002520121R0MQ1	1.0	20	2	42(35)	4.4(5.5)	3.6(4.1)
BDHE002520121R2MQ1	1.2	20	2	54(45)	3.9(4.4)	3.2(3.8)
BDHE002520121R5MQ1	1.5	20	2	65(57)	3.4(4.2)	2.7(3.1)
BDHE002520122R2MQ1	2.2	20	2	83(74)	3.0(3.7)	2.5(2.9)

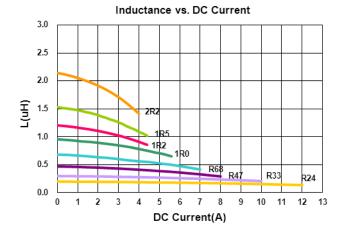
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

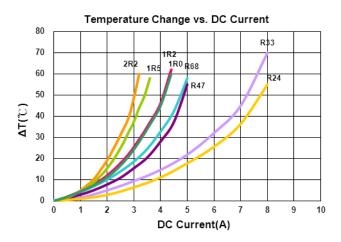
- Operating temperature range 40°C ~ 125°C(Including self temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40^oC temperature rise from 25^oC ambient with current
- Rated current: Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure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







Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(m Ω) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDHE00322510R24MQ1	0.24	20	2	16(12)	9.0(11.5)	6.0(6.8)
BDHE00322510R33MQ1	0.33	20	2	17(12.5)	8.0(9.5)	5.8(6.5)
BDHE00322510R47MQ1	0.47	20	2	24(19)	6.0(7.3)	4.5(5.4)
BDHE003225101R0MQ1	1.0	20	2	46(39)	4.1(4.7)	3.3(3.7)
BDHE003225101R5MQ1	1.5	20	2	58(50)	3.5(4.0)	3.2(3.5)
BDHE003225102R2MQ1	2.2	20	2	85(73)	3.0(3.5)	2.5(2.8)

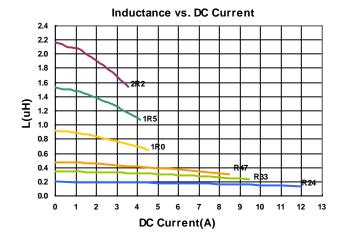
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

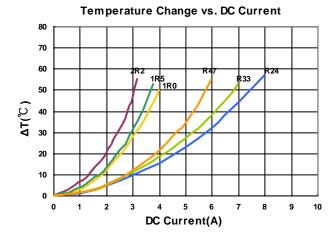
- Operating temperature range 40°C ~ 125°C(Including self temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40^oC temperature rise from 25^oC ambient with current
- Rated current: Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure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





Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC(m Ω) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)
BDHE00322512R47MQ1	0.47	20	2	25(19)	7.0(8.2)	4.6(5.2)
BDHE003225121R0MQ1	1.0	20	2	34(27.5)	5.7(6.5)	3.7(4.2)
BDHE003225121R5MQ1	1.5	20	2	59(51)	4.0(4.6)	2.8(3.2)
BDHE003225122R2MQ1	2.2	20	2	73(64)	3.5(4.0)	2.7(3.0)

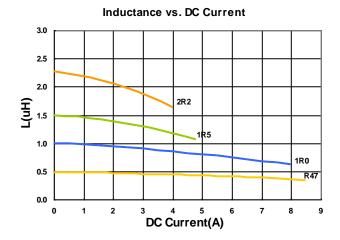
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

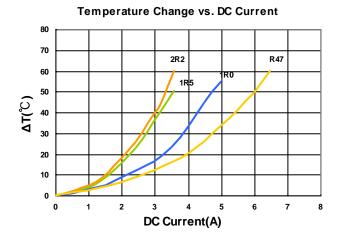
- Operating temperature range 40°C ~ 125°C(Including self temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40^oC temperature rise from 25^oC ambient with current
- Rated current : Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure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





Electrical Characteristics

Part Number	Inductance Tolerance (uH) (±%)		Test Frequency (MHz)	RDC(m Ω) Max(Typ.)	Isat(A) Max(Typ.)	Irms(A) Max(Typ.)	
BDHE003225251R0MQ1	1.0	20	2	34(28)	6.0(8.0)	3.5(4.3)	
BDHE003225251R5MQ1	1.5	20	2	45(35)	5.5(7.5)	3.2(3.9)	
BDHE003225252R2MQ1	2.2	20	2	60(49)	4.8(6.5)	3.0(3.3)	

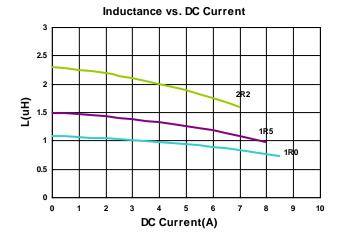
Note: When ordering, please specify tolerance code. Tolerance: M=±20%

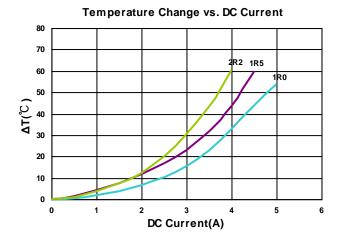
- Operating temperature range 40°C ~ 125°C(Including self temperature rise)
- Isat for Inductance drop 30% from its value without current
- Irms for a 40^oC temperature rise from 25^oC ambient with current
- Rated current: Isat or Irms, whichever is smaller
- Absolute maximum voltage 20VDC
- Measure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

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

RDC: CHEN HWA502BC/HP4338B (or equivalent)
Isat: Agilent E4980A+HP42841A (or equivalent)

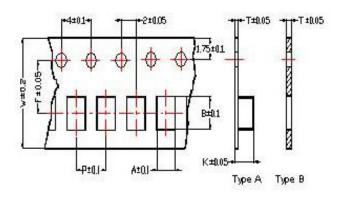
Irms: Agilent 6641 SYSTEM DC POWER SUPPLY (or equivalent)



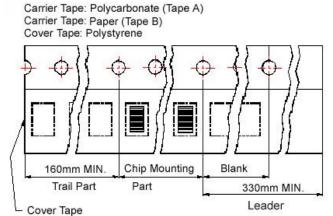


Packaging Specifications

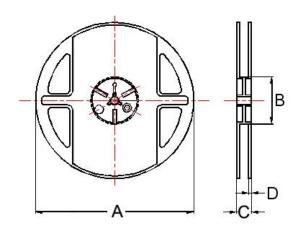
Tape Dimensions



Tape Material



Reel Dimensions



Dimensions in mm

	Tape Dimensions								Reel Dimensions				Quantity
TYPE	Таре	Α	В	т	w	Р	F	K	Α	В	С	D	PCS / REEL
BDHE00160808	В	1.20	1.88	0.95	8	4	3.5	-	178	60	12	1.5	4000
BDHE00201208	Α	1.45	2.25	0.22	8	4	3.5	1.04	178	60	12	1.5	3000
BDHE00201210	Α	1.50	2.25	0.22	8	4	3.5	1.15	178	60	12	1.5	3000
BDHE00201608	Α	1.80	2.35	0.23	8	4	3.5	0.85	178	60	12	1.5	3000
BDHE00201610	Α	1.90	2.30	0.22	8	4	3.5	1.15	178	60	12	1.5	3000
BDHE00201612	Α	1.90	2.30	0.22	8	4	3.5	1.15	178	60	12	1.5	3000
BDHE00252010	Α	2.25	2.80	0.22	8	4	3.5	1.15	178	60	12	1.5	3000
BDHE00252012	Α	2.30	2.80	0.22	8	4	3.5	1.35	178	60	12	1.5	3000
BDHE00322510	Α	2.80	3.55	0.23	8	4	3.5	1.20	178	60	12	1.5	3000
BDHE00322512	Α	2.80	3.50	0.23	8	4	3.5	1.34	178	60	12	1.5	3000
BDHE00322525	Α	2.90	3.50	0.23	8	4	3.5	2.90	178	60	12	1.5	1500





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