Innovative Service Around the Globe YAGEO

DATA SHEET

INDUCTOR

Power Inductors

BWVC Series

RoHS compliant & Halogen Free

YAGEO

Product specification – March 26, 2021 V.0



BWVC Series



BWVC series, an automatic assembly constructed power inductor, is shielded with magnetic resin and suitable for portable DC-DC converter application.

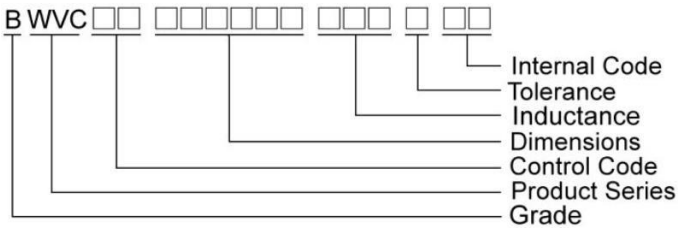
Features

- RoHS, Halogen Free and REACH Compliance
- Shielded with magnetic resin
- Various package size and wide inductance range
- Optimize electrical characteristics by using different ferrite core figures

Applications

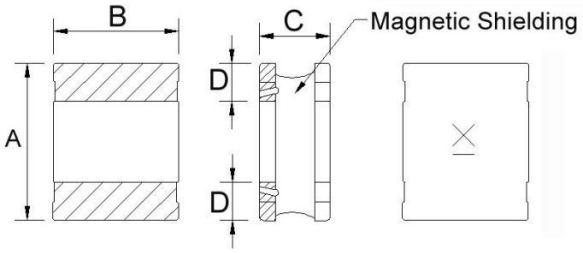
- Smartphones, tablets and wearable devices
- DSC, camcorders
- AP Routers
- STBs
- LCD TVs, monitors and panels
- Game consoles
- DC/DC converters

Product Identification

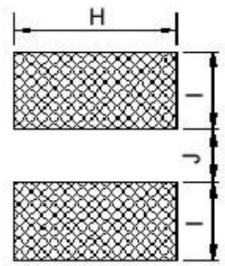


Shape and Dimensions

Figure 1



Recommended Pattern

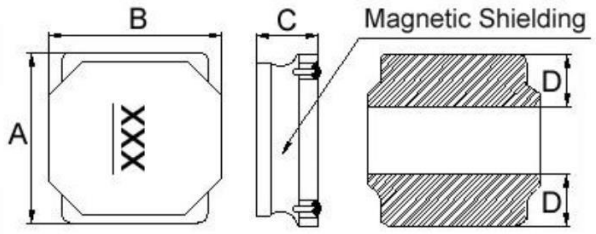


Dimensions in mm

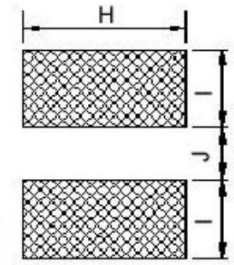
TYPE	FIG	A	B	C	D	H	I	J
BWVC00201610	1	2.0±0.25	1.6±0.25	1.00 Max	0.6	1.8	0.80	0.8
BWVC00201612	1	2.0±0.25	1.6±0.25	1.2±0.05	0.6	1.8	0.80	0.8
BWVC00252012	1	2.5±0.25	2.0±0.25	1.2±0.05	0.8	2.2	0.85	0.8

Shape and Dimensions

Figure 2



Recommended Pattern

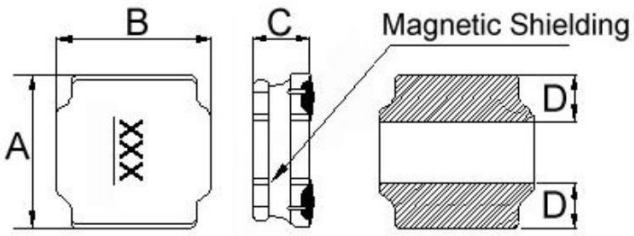


Dimensions in mm

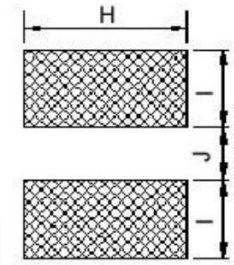
TYPE	FIG	A	B	C	D	H	I	J
BWVC00404018	2	4.0±0.20	4.0±0.20	1.9 Max	1.3	3.7	1.5	1.2

Shape and Dimensions

Figure 3



Recommended Pattern



Dimensions in mm

TYPE	FIG	A	B	C	D	H	I	J
BWVC00505040	3	5.0±0.20	5.0±0.20	4.0±0.2	1.5	4.2	1.6	2.0
BWVC00606028	3	6.0±0.20	6.0±0.20	2.8±0.2	1.9±0.3	5.7	1.8	2.6
BWVC00606045	3	6.0±0.20	6.0±0.20	$4.5^{+0.2}_{-0.30}$	1.8±0.3	5.7	2.0	2.4

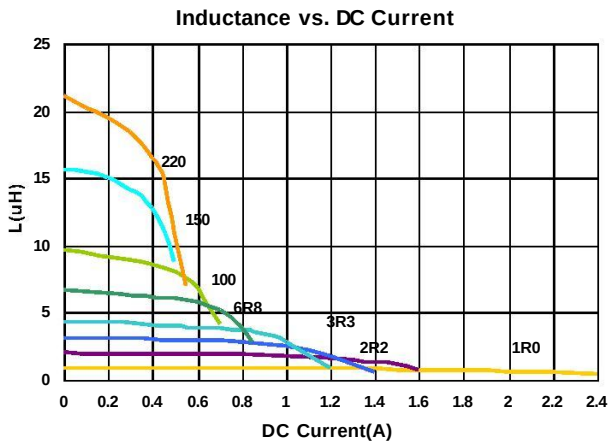
Electrical Characteristics

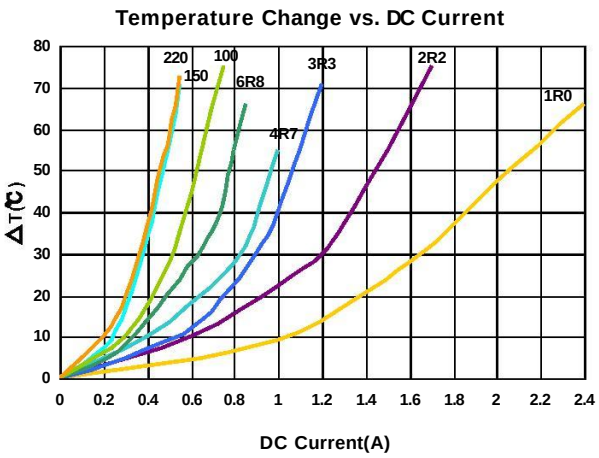
Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±30%	Isat (A) Typ. (Max)	Irms (A) Typ. (Max)	Marking
BWVC00201610R24□00	0.24	20, 30	1	0.026	3.20(2.80)	3.00(2.70)	M
BWVC002016101R0□00	1.0	20, 30	1	0.095	1.86(1.67)	1.86(1.67)	B
BWVC002016101R5□00	1.5	20, 30	1	0.140	1.64(1.47)	1.65(1.48)	C
BWVC002016102R2□00	2.2	20, 30	1	0.190	1.30(1.17)	1.30(1.17)	D
BWVC002016103R3□00	3.3	20, 30	1	0.295	0.96(0.86)	0.98(0.88)	E
BWVC002016104R7□00	4.7	20, 30	1	0.360	0.84(0.75)	0.90(0.81)	F
BWVC002016106R8□00	6.8	20, 30	1	0.640	0.66(0.59)	0.70(0.63)	G
BWVC00201610100□00	10	20, 30	1	1.000	0.54(0.48)	0.56(0.50)	H
BWVC00201610150□00	15	20, 30	1	1.500	0.39(0.35)	0.42(0.37)	K
BWVC00201610180□00	18	20, 30	1	1.600	0.39(0.35)	0.41(0.36)	J
BWVC00201610220□00	22	20, 30	1	1.700	0.38(0.34)	0.40(0.36)	I

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%

- Operating temperature range－55℃～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
- Measure Equipment：
- L：Agilent HP4287A+Agilent HP16197A, 1MHz 200mV
  RDC：DIGITAL MILLINHM METER CHROMA 16502, or equivalent
  Isat & Irms：Agilent HP4284A

Test Instruments：HP4284A Material/Impedance Analyzer





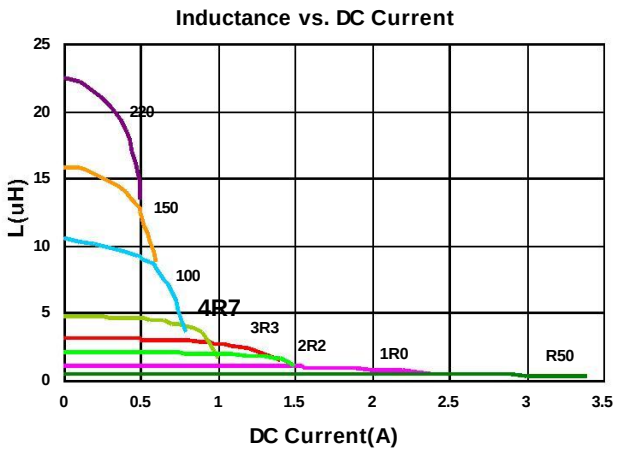
Electrical Characteristics

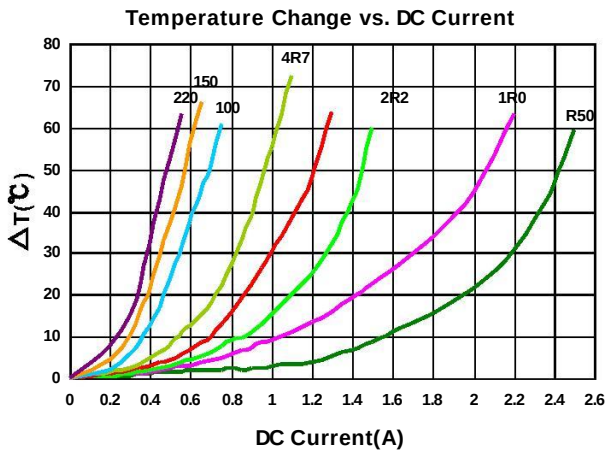
Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±30%	Isat (A) Typ. (Max)	Irms (A) Typ. (Max)	Marking
BWVC00201612R50□00	0.5	20, 30	1	0.051	2.60(2.34)	2.30(2.07)	B
BWVC002016121R0□00	1.0	20, 30	1	0.083	1.90(1.71)	1.80(1.62)	C
BWVC002016122R2□00	2.2	20, 30	1	0.159	1.36(1.22)	1.34(1.20)	E
BWVC002016123R3□00	3.3	20, 30	1	0.220	1.10(0.99)	1.06(0.95)	F
BWVC002016124R7□00	4.7	20, 30	1	0.330	0.92(0.82)	0.90(0.81)	G
BWVC00201612100□00	10	20, 30	1	0.580	0.62(0.55)	0.58(0.52)	I
BWVC00201612150□00	15	20, 30	1	0.900	0.48(0.43)	0.45(0.40)	J
BWVC00201612220□00	22	20, 30	1	1.400	0.40(0.36)	0.40(0.36)	K

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%

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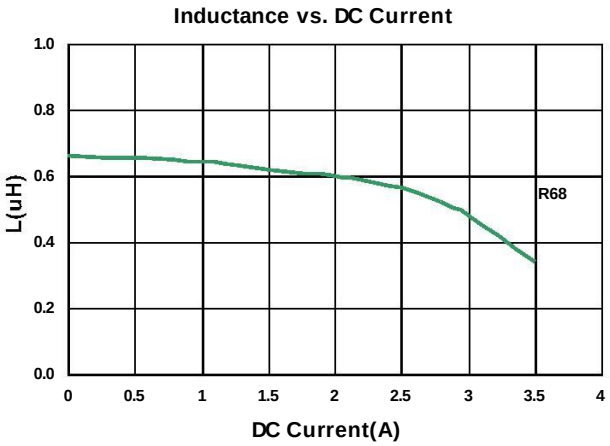
Electrical Characteristics

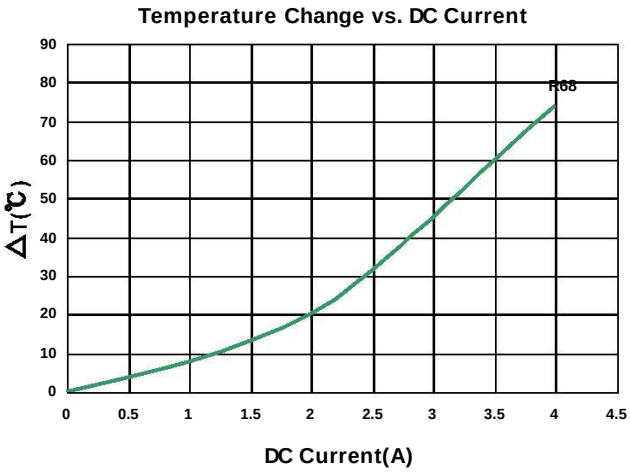
Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	RDC (Ω) ±30%	Isat (A) Typ. (Max)	Irms (A) Typ. (Max)	Marking
BWVC00252012-R68□00	0.68	20, 30	1	0.035	2.80(2.52)	2.60(2.34)	N

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%

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- Measure Equipment：
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  RDC：DIGITAL MILLINHM METER CHROMA 16502, or equivalent
  Isat & Irms：Agilent HP4284A

Test Instruments：HP4284A Material/Impedance Analyzer





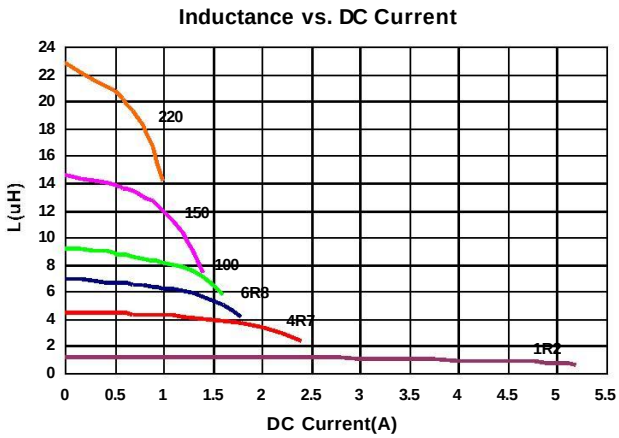
Electrical Characteristics

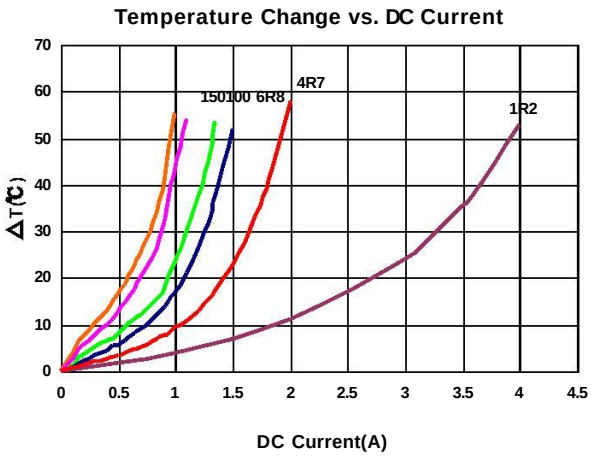
Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (kHz)	RDC (Ω) ±30%	Isat (A) Typ. (Max)	Irms (A) Typ. (Max)	Marking
BWVC004040181R2□00	1.2	20, 30	100	0.027	3.70(3.30)	3.60(3.20)	1R2
BWVC004040184R7□00	4.7	20, 30	100	0.077	2.00(1.80)	1.80(1.62)	4R7
BWVC004040186R8□00	6.8	20, 30	100	0.105	1.50(1.35)	1.35(1.21)	6R8
BWVC00404018100□00	10	20, 30	100	0.160	1.40(1.26)	1.20(1.08)	100
BWVC00404018150□00	15	20, 30	100	0.245	1.05(0.94)	0.95(0.85)	150
BWVC00404018220□00	22	20, 30	100	0.335	0.90(0.81)	0.88(0.79)	220

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%

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- Measure Equipment：
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  RDC：DIGITAL MILLINHM METER CHROMA 16502, or equivalent
  Isat & Irms：Agilent HP4284A

Test Instruments：HP4284A Material/Impedance Analyzer





Electrical Characteristics

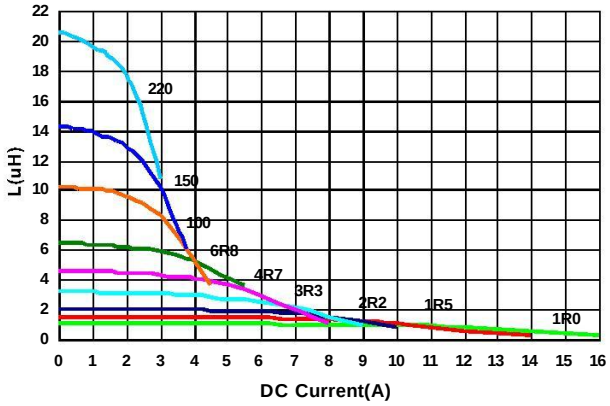
Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (kHz)	RDC (Ω) ±30%	Isat (A) Typ. (Max)	Irms (A) Typ. (Max)	Marking
BWVC005050401R0□00	1.0	20, 30	100	0.012	8.8(7.92)	5.9(5.31)	1R0
BWVC005050401R5□00	1.5	20,30	100	0.014	7.9(7.11)	5.4(4.86)	1R5
BWVC005050402R2□00	2.2	20, 30	100	0.020	6.8(6.12)	4.5(4.05)	2R2
BWVC005050402R7□00	2.7	20, 30	100	0.026	6.0(5.40)	4.2(3.70)	2R7
BWVC005050403R3□00	3.3	20, 30	100	0.026	5.3(4.77)	4.2(3.78)	3R3
BWVC005050404R7□00	4.7	20, 30	100	0.032	4.4(3.96)	3.2(2.88)	4R7
BWVC005050406R8□00	6.8	20, 30	100	0.050	3.8(3.42)	3.0(2.70)	6R8
BWVC005050408R2□00	8.2	20, 30	100	0.065	3.3(2.90)	2.4(2.10)	8R2
BWVC00505040100□00	10	20, 30	100	0.070	3.0(2.70)	2.3(2.07)	100
BWVC00505040150□00	15	20, 30	100	0.115	2.4(2.16)	1.8(1.62)	150
BWVC00505040220□00	22	20, 30	100	0.160	2.0(1.80)	1.6(1.44)	220
BWVC00505040151□00	150	20, 30	100	1.180	0.74(0.66)	0.58(0.52)	151
BWVC00505040181□00	180	20, 30	100	1.250	0.67(0.60)	0.54(0.48)	181
BWVC00505040221□00	220	20, 30	100	1.450	0.65(0.58)	0.50(0.45)	221

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%

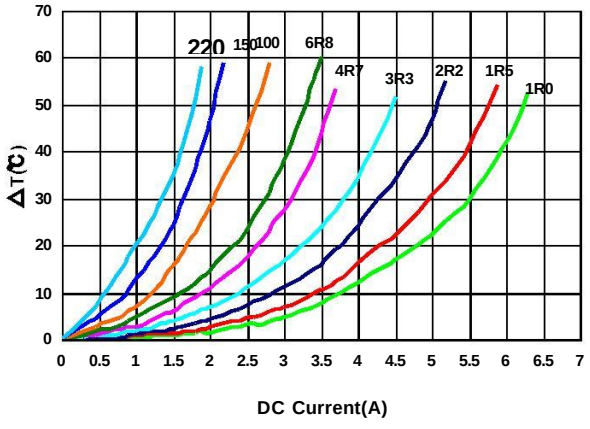
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Inductance vs. DC Current



Temperature Change vs. DC Current



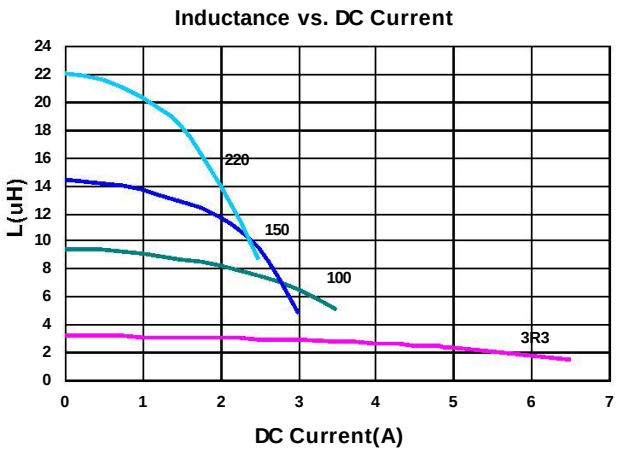
Electrical Characteristics

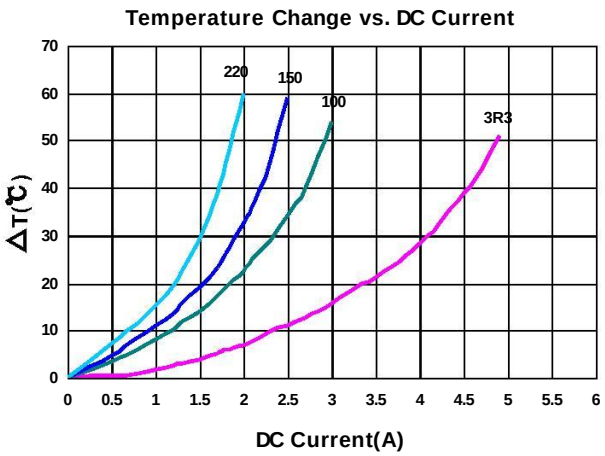
Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (kHz)	RDC (Ω) ±30%	Isat (A) Typ. (Max)	Irms (A) Typ. (Max)	Marking
BWVC006060283R3□00	3.3	20, 30	100	0.027	4.5(4.05)	4.0(3.60)	3R3
BWVC00606028100□00	10	20, 30	100	0.065	2.6(2.34)	2.5(2.25)	100
BWVC00606028150□00	15	20, 30	100	0.093	2.1(1.89)	2.0(1.80)	150
BWVC00606028220□00	22	20, 30	100	0.135	1.7(1.53)	1.65(1.48)	220

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T=±30%

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Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (kHz)	RDC (Ω) ±30%	Isat (A) Typ. (Max)	Irms (A) Typ. (Max)	Marking
BWVC006060451R0□00	1.0	20,30	100	0.010	13(11.7)	7.3(6.57)	1R0
BWVC006060451R5□00	1.5	20,30	100	0.012	12(10.8)	6.6(5.94)	1R5
BWVC006060452R2□00	2.2	20, 30	100	0.018	9.5(8.55)	5.2(4.68)	2R2
BWVC006060453R3□00	3.3	20, 30	100	0.022	7.8(7.02)	4.4(3.96)	3R3
BWVC006060454R7□00	4.7	20, 30	100	0.03	6.8(6.12)	4.0(3.60)	4R7
BWVC006060456R8□00	6.8	20, 30	100	0.042	5.7(5.13)	3.3(2.97)	6R8
BWVC00606045100□00	10	20, 30	100	0.06	4.6(4.14)	2.6(2.34)	100
BWVC00606045150□00	15	20, 30	100	0.09	3.8(3.42)	2.2(1.98)	150
BWVC00606045220□00	22	20, 30	100	0.13	3.3(2.97)	1.9(1.71)	220
BWVC00606045151□00	150	20, 30	100	0.97	0.95(0.85)	0.65(0.58)	151

Note: When ordering, please specify tolerance code. Tolerance: M=±20% , T =±30%

Operating temperature range－55℃～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

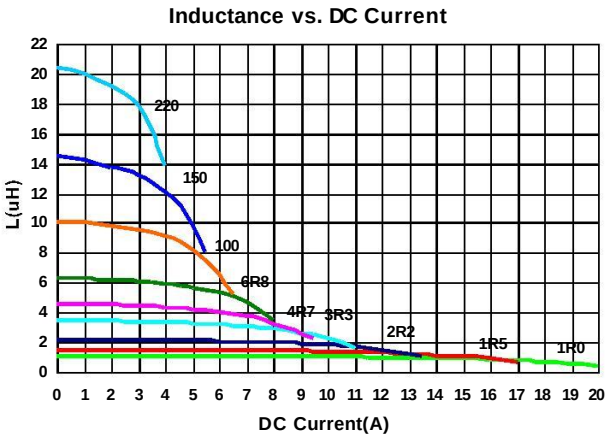
Measure Equipment：

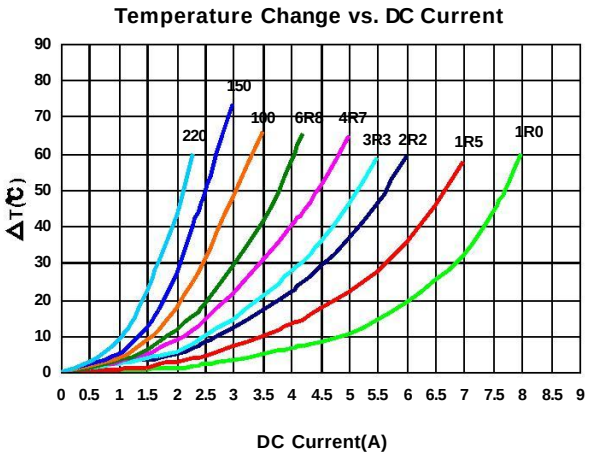
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RDC：DIGITAL MILLINHM METER CHROMA 16502, or equivalent

Isat & Irms：Agilent HP4284A

Test Instruments：HP4284A Material/Impedance Analyzer





Packaging Specifications

Tape Dimensions

Figure 1

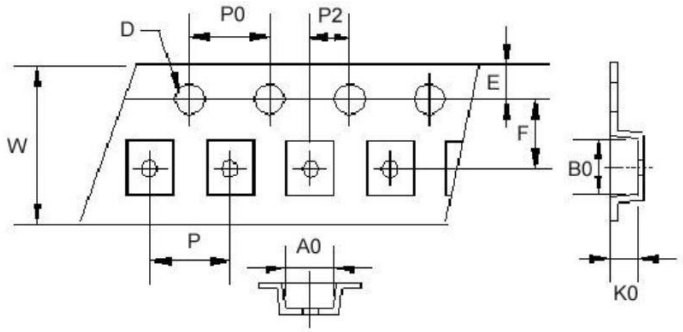
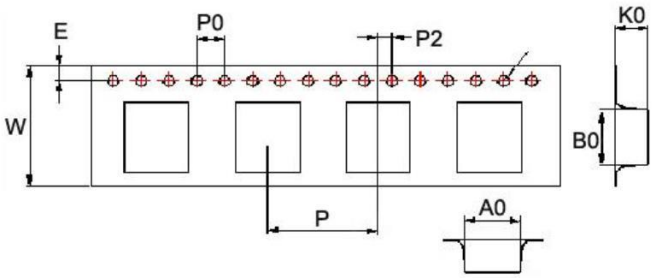
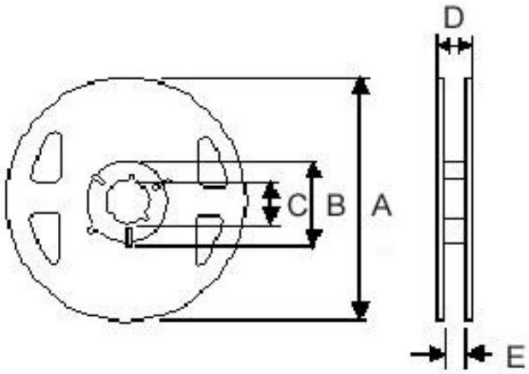


Figure 2



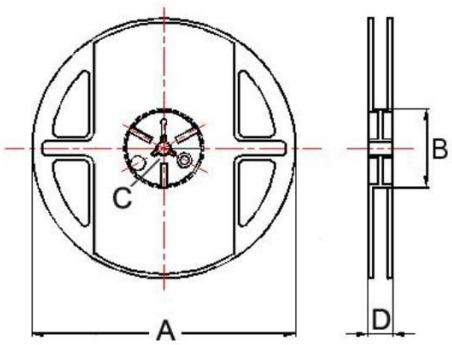
Reel Dimensions

Figure 1



Reel Dimensions

Figure 2



Dimensions in mm

TYPE	Fig	Tape Dimensions										Reel Dimensions					Quantity
		A0	B0	K0	D	E	F	W	P	P0	P2	A	B	C	D	E	PCS / Reel
BWVC00201610	1	1.90	2.20	1.15	1.55	1.75	3.5	8	4	4	2	180	60	13	14.4	8.4	2000
BWVC00201612	1	1.90	2.20	1.30	1.55	1.75	3.5	8	4	4	2	180	60	13	14.4	8.4	2000
BWVC00252012	1	2.40	2.70	1.35	1.55	1.75	3.5	8	4	4	2	180	60	13	14.4	8.4	2000
BWVC00404018	2	4.25	4.25	2.10	1.55	1.75	5.5	12	8	4	2	178	60	13	13.2	-	800
BWVC00505040	2	5.20	5.20	4.20	1.55	1.75	5.5	12	8	4	2	330	100	13	13.4	-	1500
BWVC00606028	2	6.25	6.25	3.00	1.55	1.75	7.5	16	12	4	2	330	100	13	16.0	-	1500
BWVC00606045	2	6.25	6.25	4.65	1.55	1.75	7.5	16	12	4	2	330	100	13	16.0	-	1000