

Power Inductor



BWVN Series



Overview

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

Benefits

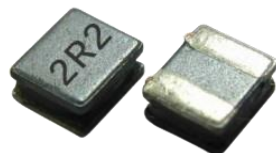
1. Highly accurate dimensions can be mounted automatically
2. Terminals are highly resistant to pull forces
3. Highly reliable in environments of sudden temperature change

Applications

1. Portable equipment: PDA,MP3,HDD, Mobil phone, DSC etc
2. Game Console
3. DC/DC converters

Product Information

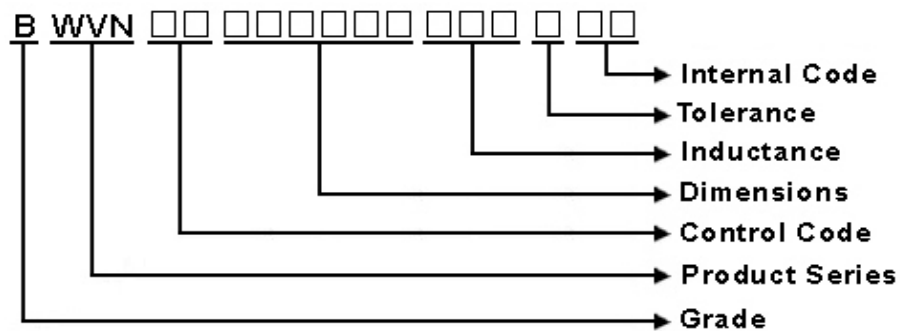
Series	L (mm)	W(mm)	T (mm)	Inductance (μH)
BWVN	3.2	2.5	1.5	0.47 ~ 47



BWVN00322515 Series Specification

1 Scope: This specification applies to Wire Wound Power Inductors

2 Part Numbering:



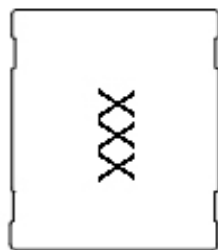
3 Rating:

Operating Temperature: - 4 0 °C ~ 1 2 5 °C(Including self - temperature rise)

Storage Temperature: - 4 0 °C ~ 1 0 5 °C

(The storage temperature range is for after the assembly)

4 Marking:



Ex Marking : 1R0

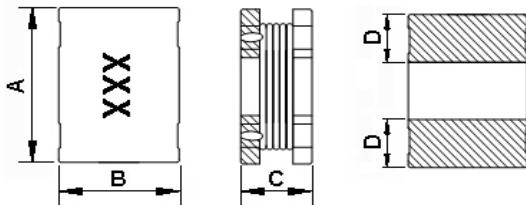
Marking color : Black

5 Standard Testing Condition

	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature(15 to 35°C)	20 to 30°C
Humidity	Ordinary Humidity(25 to 85% RH)	50 to 80 %RH

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6 Configuration and Dimensions:



Dimensions in mm

TYPE	322515
A	3.2±0.2
B	2.5±0.2
C	1.5±0.2
D	1.0typ

Net Weight (grms)

SIZE CODE	Net Weight (grms)
322515	0.043 (typ).

7 Electrical Characteristics:

Part No.	Inductance (uH)	Test Freq.	SRF (MHZ)Min.	RDC (Ω)±20%	Isat (A)Max.	Irms (A)Max.	Tolerance (±%)	Marking
BWVN00322515R47□00	0.47	1MHz,1V	100	0.03	3.4	2.55	30	R47
BWVN003225151R0□00	1.0	1MHz,1V	100	0.045	2.3	2.05	20,30	1R0
BWVN003225151R5□00	1.5	1MHz,1V	70	0.057	1.75	1.75	20,30	1R5
BWVN003225152R2□00	2.2	1MHz,1V	70	0.076	1.55	1.6	20,30	2R2
BWVN003225153R3□00	3.3	1MHz,1V	50	0.12	1.25	1.2	20,30	3R3
BWVN003225154R7□00	4.7	1MHz,1V	40	0.18	1.00	1.00	20,30	4R7
BWVN003225156R8□00	6.8	1MHz,1V	40	0.24	0.85	0.85	20,30	6R8
BWVN00322515100□00	10	1MHz,1V	30	0.38	0.75	0.7	20,30	100
BWVN00322515150□00	15	1MHz,1V	25	0.7	0.55	0.5	20,30	150
BWVN00322515220□00	22	1MHz,1V	20	0.81	0.5	0.45	20,30	220
BWVN00322515330□00	33	1MHz,1V	14	1.05	0.36	0.32	20,30	330
BWVN00322515470□00	47	1MHz,1V	11	1.48	0.28	0.24	20,30	470

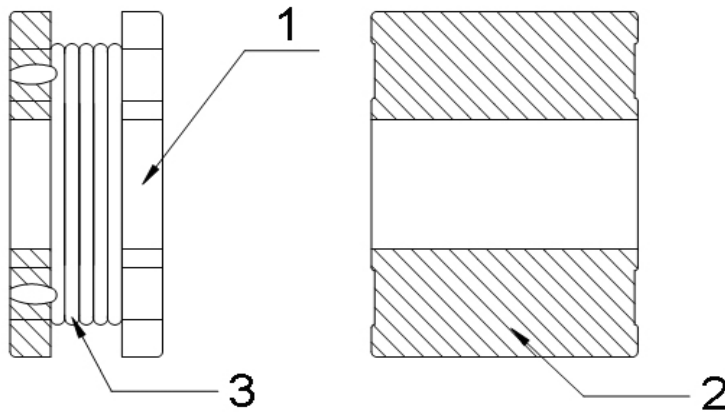
NOTE: □-tolerance M=±20% / T=±30%

1. Operating temperature range - 4 0 °C ~ 1 2 5 °C(Including self - temperature rise)
2. Isat for Inductance drop 30% from its value without current.
3. Irms for a 40°C temperature rise from 25°C ambient.

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8.1 Construction:



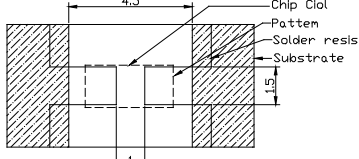
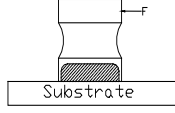
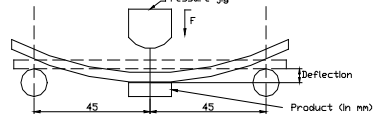
8.2 Material List:

NO	Part	Material
1	Core	Ferrite
2	Terminal	Ag/Cu/Ni/Sn
3	Wire	Copper(180°C)

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9 Reliability Of Ferrite Wire Wound Chip Coil

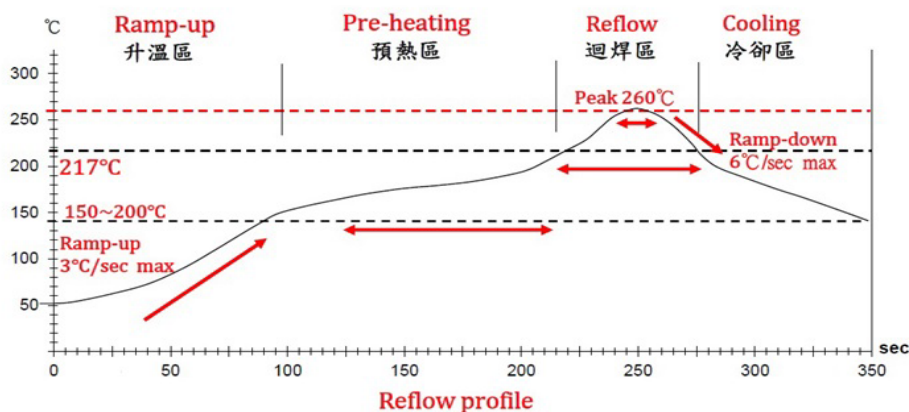
1-1.Mechanical Performance

No	Item	Specification	Test Method
1-1-1	Shear Test	Chip coil shall not be damaged after tested as test method	Substrate: Glass-epoxy substrate  Solder: Sn/Ag3.0/Cu0.5 Applied Direction:  Force : 10N Hold Duration: 5s±1s
1-1-2	Bending Test		Substrate: Glass-epoxy substrate (100mm*40mm*1.6mm) speed of Applying Force: 1mm/s Deflection: 2mm Hold Duration: 30s 
1-1-3	Vibration		Oscillation Frequency: 10Hz to 55 Hz to 10 hZ for 1 min Total Amplitude: 1.5mm Testing Time: A period of 2 hours in each of 3 mutually perpendicular directions (Total 6 hours)
1-1-4	Solderability	The wetting area of the electrode shall be at least 95% covered with new solder coating	Solder: Sn/Ag3.0/Cu0.5 per-Heating: 150°C±10°C/1min to 2min solder Temperature: 245°C±5°C Immersion Time: 4s±1s
1-1-5	Resistance to Soldering Heat	Appearance: No damage	Solder: Sn/Ag3.0/Cu0.5 per-Heating: 150°C±10°C/1min to 2min solder Temperature: 260°C±5°C Immersion Time: 10s±1s
1-1-6	Resistance to solvent	There must be no change in appearance or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.

1-2.Environmental Performance

No	Item	Specification	Test Method														
1-2-1	Heat Resistance	Appearance: No damage Inductance Change:within±10%	Temperature:85℃±3℃ Time:1000hrs Then measured after exposure in the room Condition for 24h±2h														
1-2-2	Cold Resistance		Temperature: -40℃±3℃ Time:1000hrs Then measured after exposure in the room Condition for 24h±2h														
1-2-3	Humidity		Temperature: 40℃±2℃ Humidity:90%(RH) to 95%(RH) Time:1000hrs Then measures after exposure in the room Condition for 24h±2h														
1-2-4	Temperature Cycle		One cycle: <table><tr><th>Step</th><th>Temperature (℃)</th><th>Time (min)</th></tr><tr><td>1</td><td>-40±3</td><td>30</td></tr><tr><td>2</td><td>25±2</td><td>3</td></tr><tr><td>3</td><td>125±3</td><td>30</td></tr><tr><td>4</td><td>25±2</td><td>3</td></tr></table> Total: 100cycles Measured after exposure in the room condition for 24hrs	Step	Temperature (℃)	Time (min)	1	-40±3	30	2	25±2	3	3	125±3	30	4	25±2
Step	Temperature (℃)	Time (min)															
1	-40±3	30															
2	25±2	3															
3	125±3	30															
4	25±2	3															

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Lead-Free(LF)標準溫度分析範圍

Refer to J-STD-020C

管制項目 Item.	升温區 Ramp-up	預熱區 Pre-heating	迴焊區 Reflow	Peak Temp	冷卻區 Cooling
溫度範圍 Temp.scope	R.T ~ 150°C	150°C ~ 200°C	Above 217°C	260±5°C	Peak Temp.~150°C
標準時間 Time spec.	—	60 ~ 180 sec	60 ~ 150 sec	20 ~ 40 sec	—
實際時間 Time result	—	75 ~ 100 sec	90 ~ 120 sec	20 ~ 35 sec	—

NOTE :

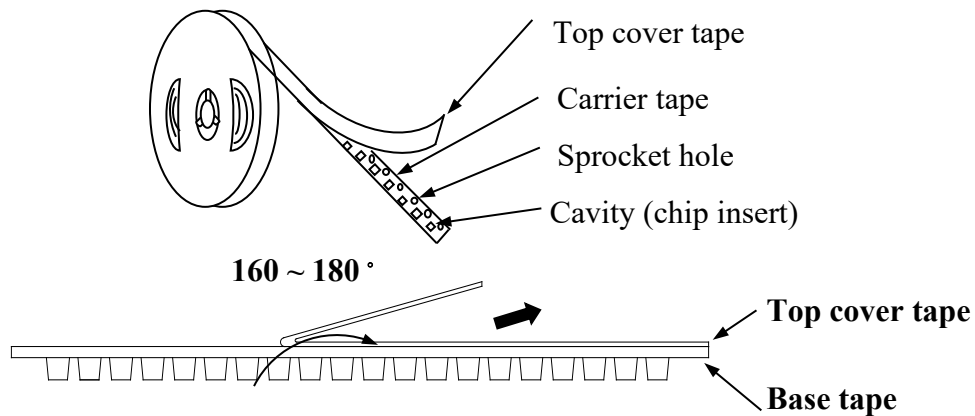
1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow
3. Products can only be soldered with reflow

BWVN00322515 Series Specification

10 Packaging:

10.1 Packaging -Cover tape

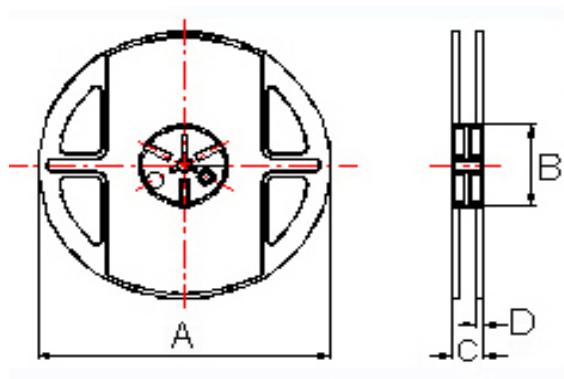
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



10.2 Packaging Quantity

TYPE	PCS/REEL
322515	2000

10.3 Reel Dimensions



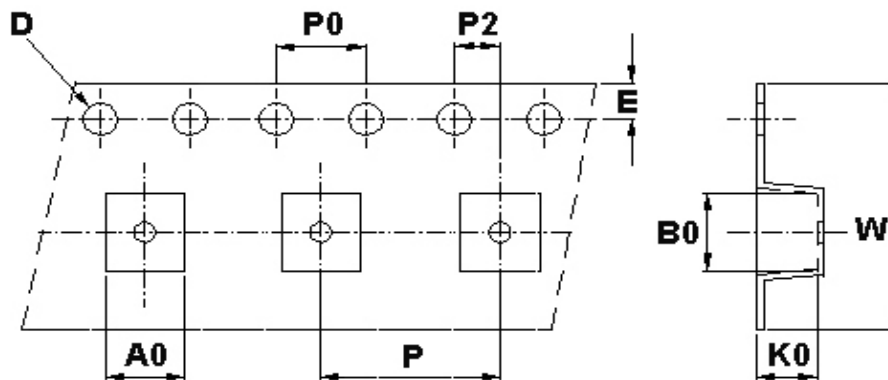
Dimensions in mm

TYPE	A	B	C	D
322515	178	60	9	1.5

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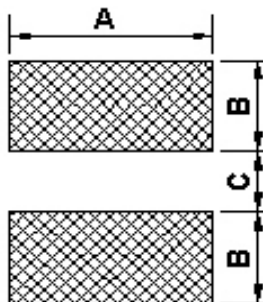
10 Packaging:

10.4 Tape Dimensions in mm



TYPE	A0	B0	K0	D	E	W	P	P0	P2
322515	2.85	3.56	1.80	1.55	1.75	8	4	4	2

11 Recommended Land Pattern:



Dimensions in mm

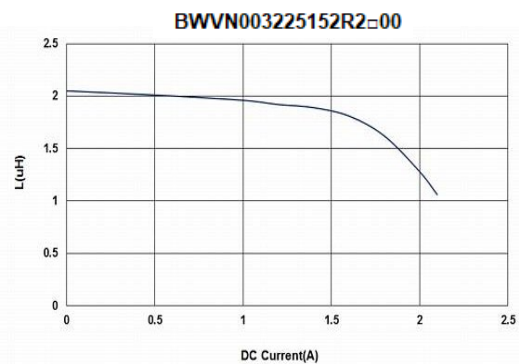
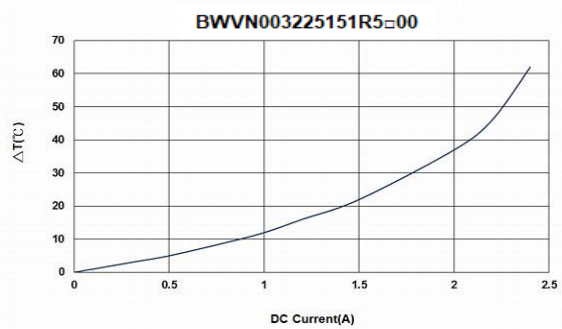
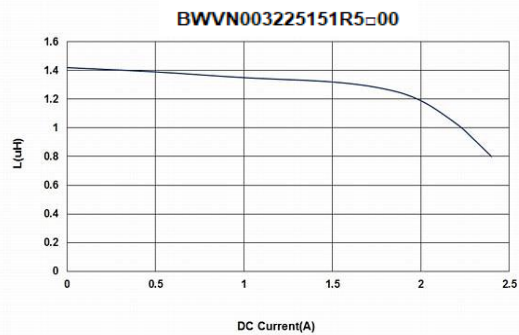
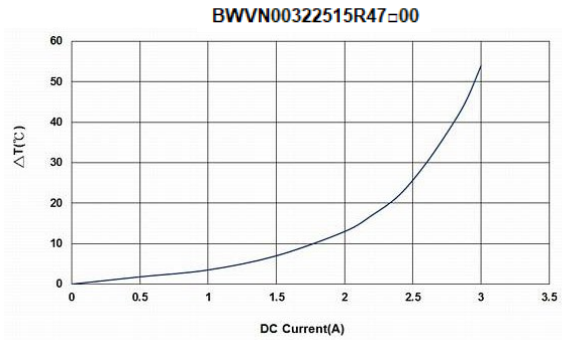
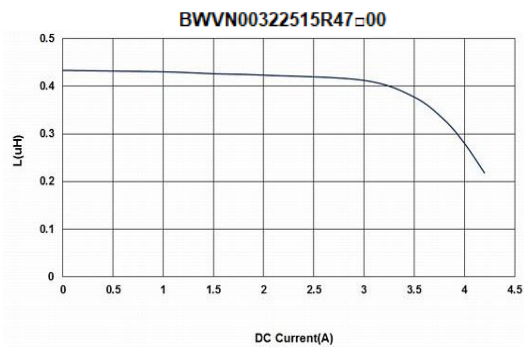
TYPE	A	B	C
322515	2.6	1.2	1.0

12 Note:

- Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
- Do not knock nor drop.
- All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose, under the condition and in the environment agreed upon between you and us. You are requested not to use our product deviating from such agreement.
- The storage period is less than 12 months. Be sure to follow the storage conditions (Temperature: 5 to 40°C, Humidity: 10 to 75% RH or less).
If the storage period elapses, the soldering of the terminal electrodes may deteriorate.
- Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
- The moisture sensitivity level (MSL) of products is classified as level 1.

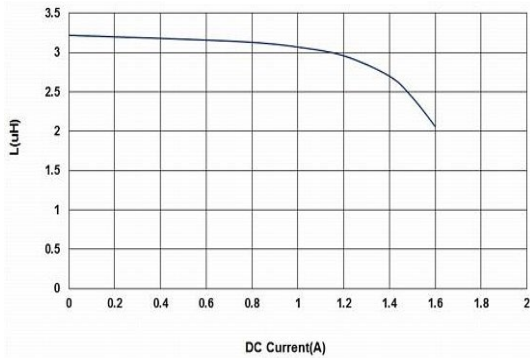
BWVN00322515 Series Specification

13 Graph: BWVN00322515 Series Graph

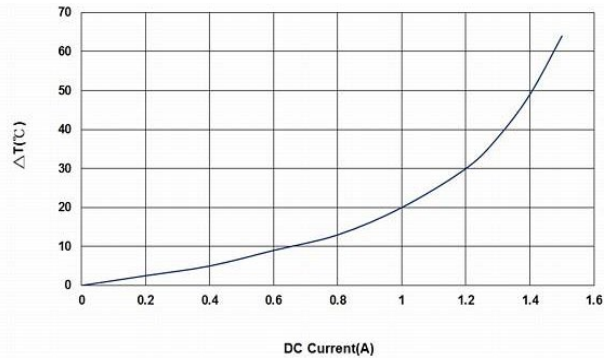


BWVN00322515 Series Specification

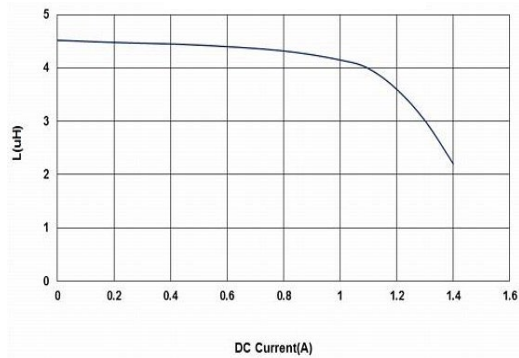
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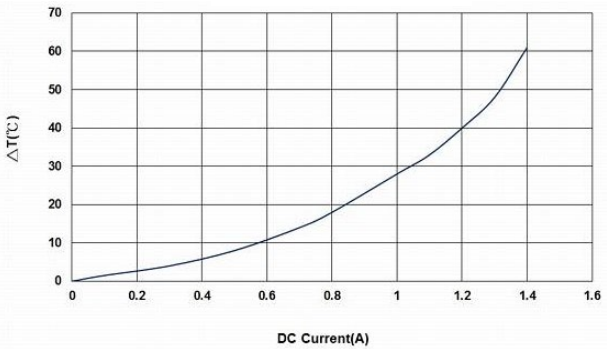
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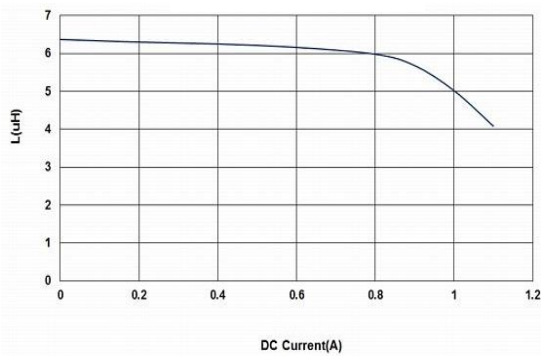
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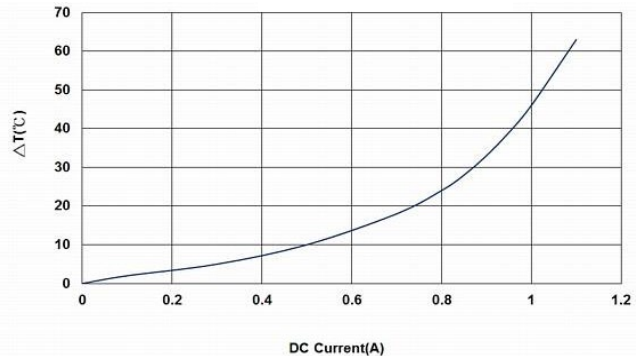
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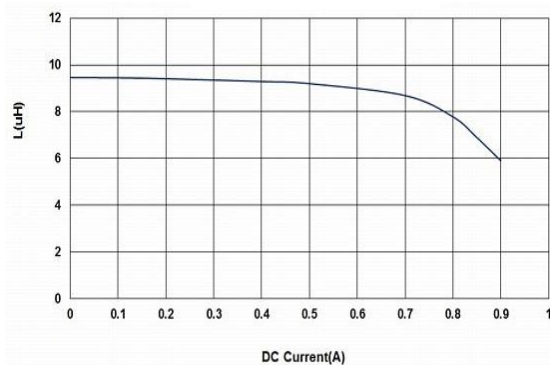
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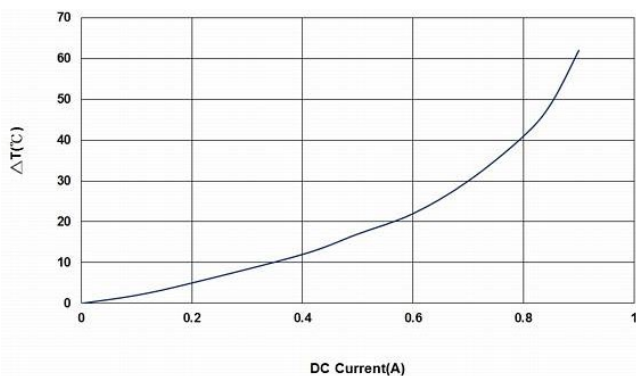
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BWVN00322515100□00

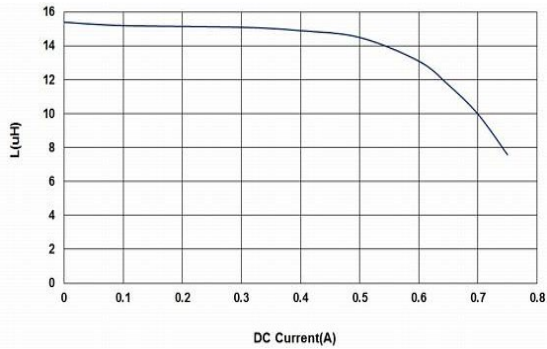


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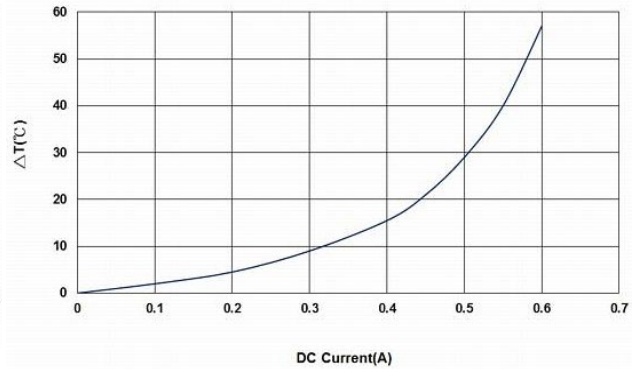


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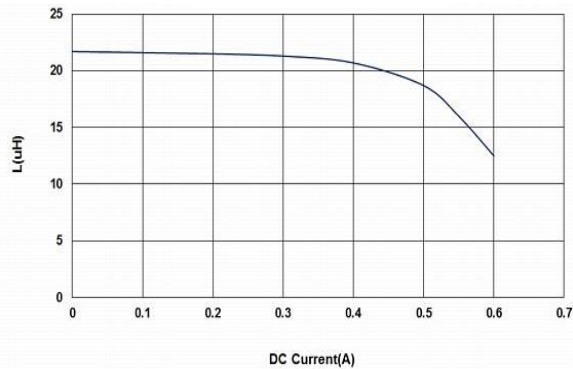
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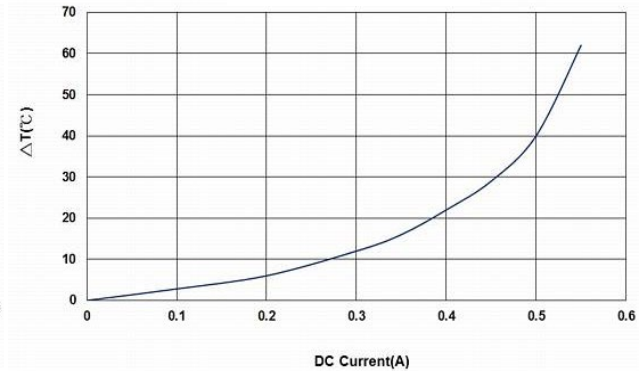
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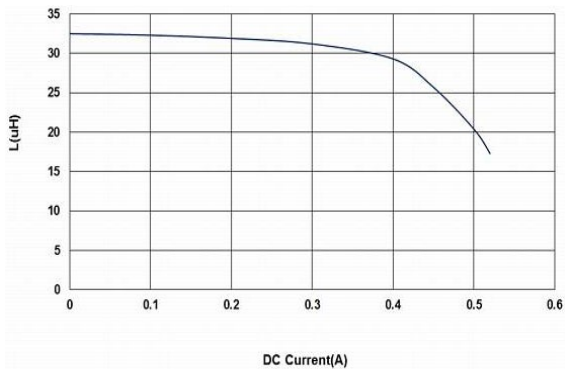
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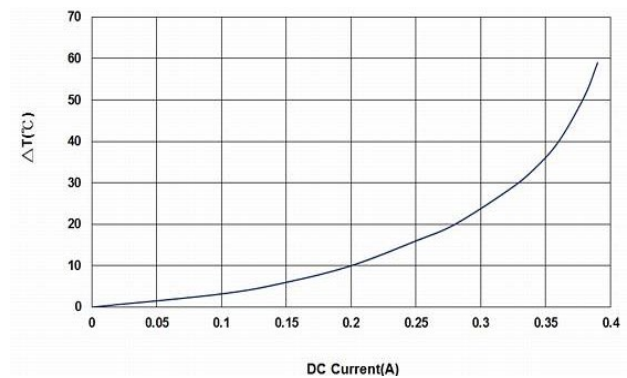
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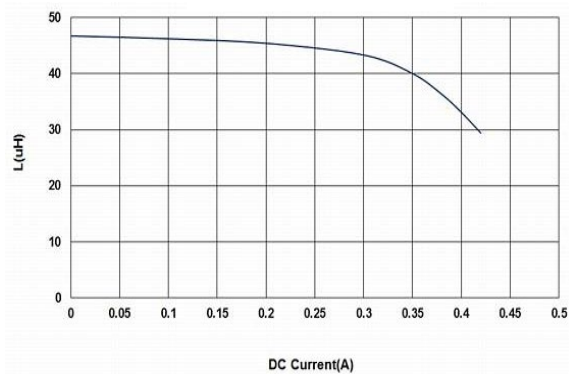
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