



**THE DATASHEET OF  
AH3740A-70K**





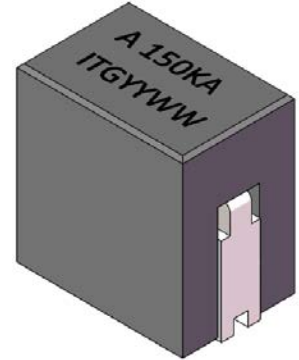
# AH3740 Series



Halogen Free

## 1. Features of AH3740 Series:

- Ferrite based SMD inductor with lower core loss.
- Inductance range: 45.0 nH to 330.0 nH , custom values are welcomed.
- High current output chokes, up to 155.0 Amp with approx. 20% roll off.
- Low profile 10.00 mm Max. height (60nH,70nH,80nH and 90nH is 10.40mm Max. , 100nH is 10.20mm Max. , 120nH is 10.10mm Max.,45L,50L is 10.70mm Max.).
- 9.60 x 6.40 mm Foot Print.
- Perfect for high density designs with limited board space.
- Operating frequency of up to 5.0MHz.
- Operating temperature range of -55° C to + 130° C. RoHS & HF compliant.
- T & R Qty's: 500pcs, 13" Reel.

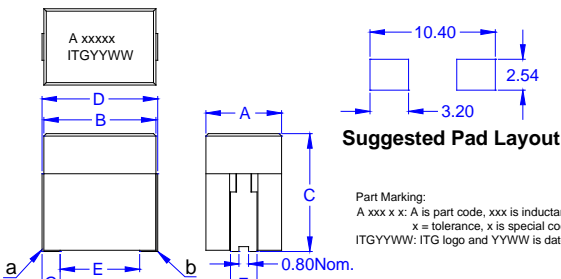


## 2. Electrical Characteristics of AH3740 Series:

| ITG Part Number | OCL <sup>1</sup><br>(nH)<br>± 10% or 15% | L @ Isat <sup>2</sup><br>(nH)<br>Min. | DCR <sup>3</sup><br>(mΩ)<br>± 5% | Isat1 <sup>4</sup><br>(A)<br>@25°C | Isat2 <sup>4</sup><br>(A)<br>@75°C | Isat3 <sup>4</sup><br>(A)<br>@100°C | Irms <sup>5</sup><br>(A)<br>@25°C | C<br>(mm)<br>Max. |
|-----------------|--|---------------------------------------|----------------------------------|------------------------------------|------------------------------------|-------------------------------------|-----------------------------------|-------------------|
| AH3740A-45L     | 45.00 , 15%                              | 32.40                                 | 0.145                            | 240.00                             | 205.00                             | 200.00                              | 78.00                             | 10.70             |
| AH3740A-50L     | 50.00 , 15%                              | 36.00                                 | 0.145                            | 210.00                             | 200.00                             | 180.00                              | 78.00                             | 10.70             |
| AH3740A-60L     | 60.00 , 15%                              | 43.20                                 | 0.145                            | 155.00                             | 150.00                             | 140.00                              | 78.00                             | 10.40             |
| AH3740A-70K     | 70.00 , 10%                              | 50.40                                 | 0.145                            | 124.00                             | 120.00                             | 115.00                              | 78.00                             | 10.40             |
| AH3740A-80K     | 80.00 , 10%                              | 57.60                                 | 0.145                            | 118.00                             | 110.00                             | 102.00                              | 78.00                             | 10.40             |
| AH3740A-90K     | 90.00 , 10%                              | 64.80                                 | 0.145                            | 106.00                             | 98.00                              | 92.00                               | 78.00                             | 10.40             |
| AH3740A-100K    | 100.00 , 10%                             | 72.00                                 | 0.145                            | 95.00                              | 88.00                              | 82.00                               | 78.00                             | 10.20             |
| AH3740A-120K    | 120.00 , 10%                             | 86.40                                 | 0.145                            | 78.00                              | 71.00                              | 67.00                               | 78.00                             | 10.10             |
| AH3740A-150K    | 150.00 , 10%                             | 108.00                                | 0.145                            | 60.00                              | 54.00                              | 52.00                               | 78.00                             | 10.00             |
| AH3740A-180K    | 180.00 , 10%                             | 129.60                                | 0.145                            | 49.00                              | 45.00                              | 43.00                               | 78.00                             | 10.00             |
| AH3740A-220K    | 220.00 , 10%                             | 158.40                                | 0.145                            | 38.00                              | 36.00                              | 34.00                               | 78.00                             | 10.00             |
| AH3740A-270K    | 270.00 , 10%                             | 194.40                                | 0.145                            | 30.00                              | 29.00                              | 27.00                               | 78.00                             | 10.00             |
| AH3740A-300K    | 300.00 , 10%                             | 216.00                                | 0.145                            | 27.00                              | 24.00                              | 23.00                               | 78.00                             | 10.00             |
| AH3740A-330L    | 330.00 , 15%                             | 237.60                                | 0.145                            | 20.00                              | 19.00                              | 17.00                               | 78.00                             | 10.00             |

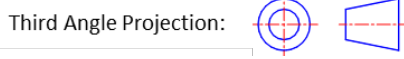
## 3. Mechanical Dimension of AH3740 Series:

| A    | B    | C               | D    | E      | F      | G      |
|------|------|-----------------|------|--------|--------|--------|
| Max. | Max. | Max.            | Max. | (Ref.) | ± 0.20 | ± 0.30 |
| 6.40 | 9.50 | See table above | 9.60 | 6.60   | 2.20   | 1.50   |



Part Marking:  
A xxx x x: A is part code, xxx is inductance value in nH,  
x = tolerance, x is special code.  
ITGYWW: ITG logo and YWWW is date code.

### Notes:



1. Open Circuit Inductance (OCL) test condition: 500KHz , 0.25Vrms , 0A DC at 25°C.
2. L @ Isat and L @ Irms Test condition: 500KHz , 0.25Vrm (Ta=25°C).
3. The nominal DCR is measured from point "a" to point "b" as shown above in the mechanical drawing (Ta=25°C).
4. Isat1, Isat2 & Isat3: DC current that will cause inductance to drop approximately by 20%.
5. Irms: DC current for an approximate temperature rise of 40°C without core loss.
6. Derating is necessary for AC currents. Verify and check PCB pad layout, trace thickness, width, air-flow and proximity of other heat generating components as it will have an effect on the temperature rise.
7. It is recommended that the part temperature should not exceed 130° C under worst operating conditions.

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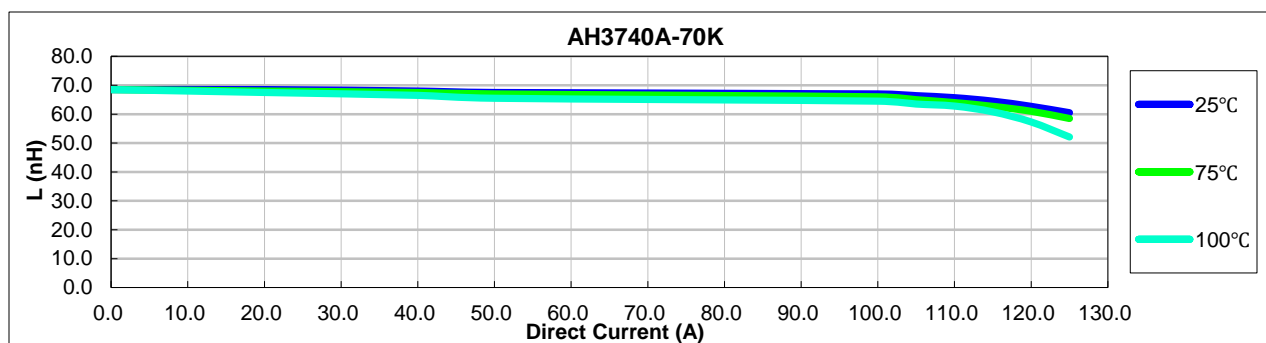
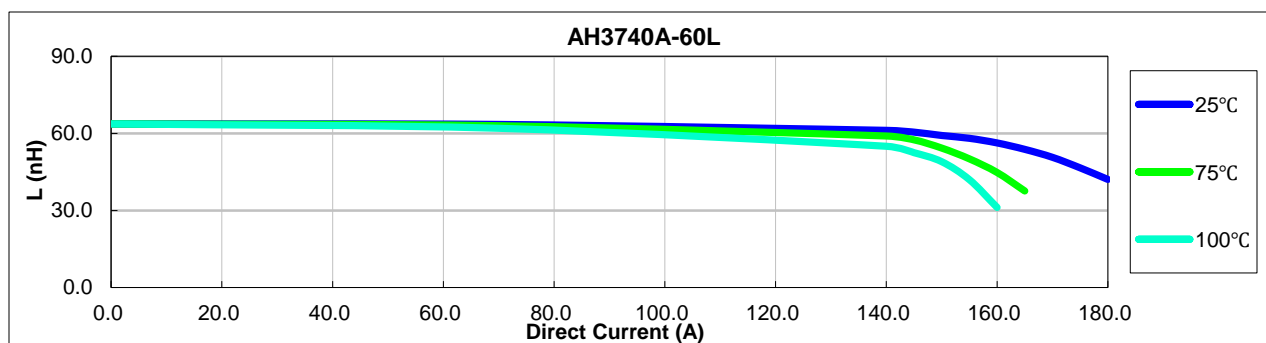
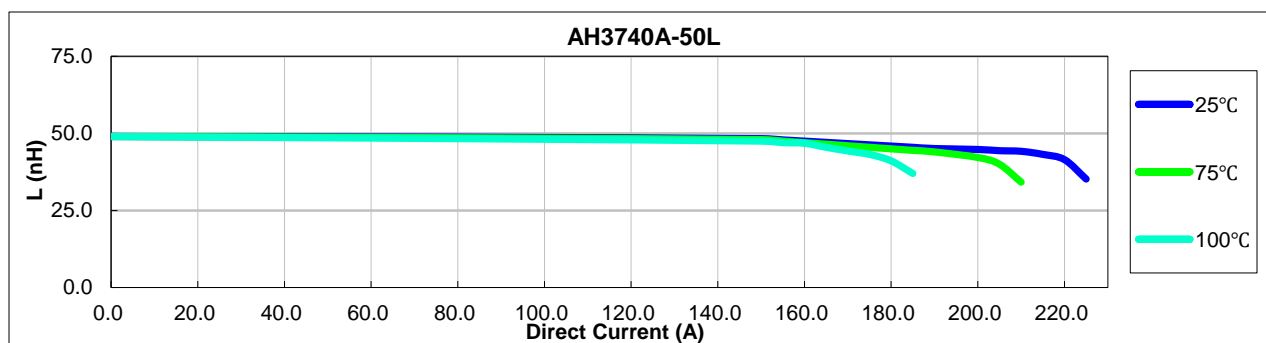
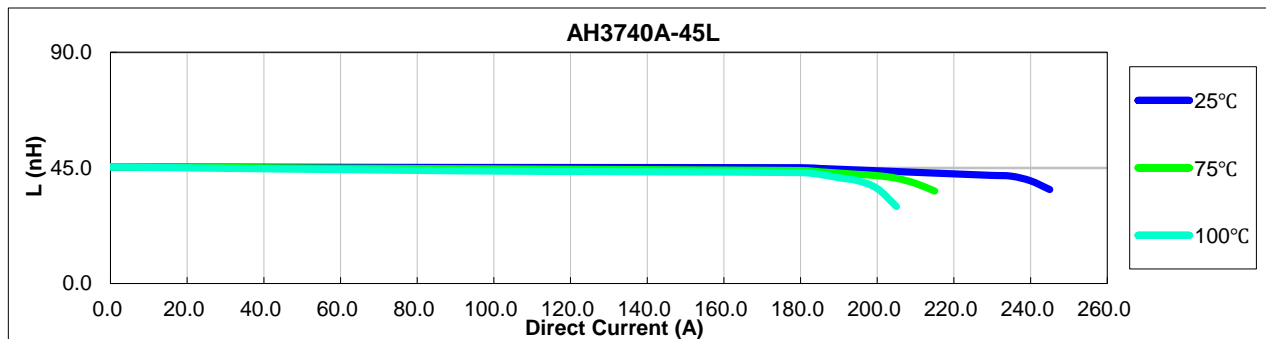
\*Due to continuous product improvement, all specifications are subject to change without prior notice. Kindly contact an ITG field application engineer or a sales representative prior to purchase.



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## 4. Inductance Characteristics of AH3740 Series (Inductance vs Current):



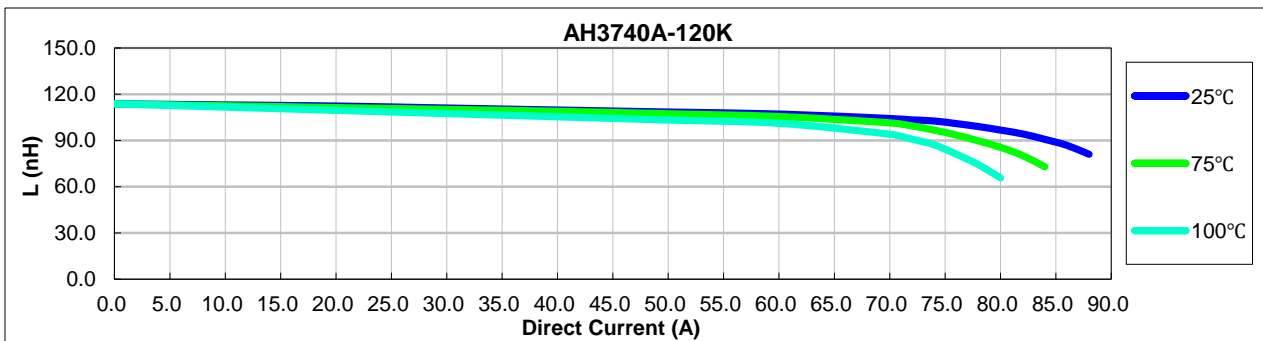
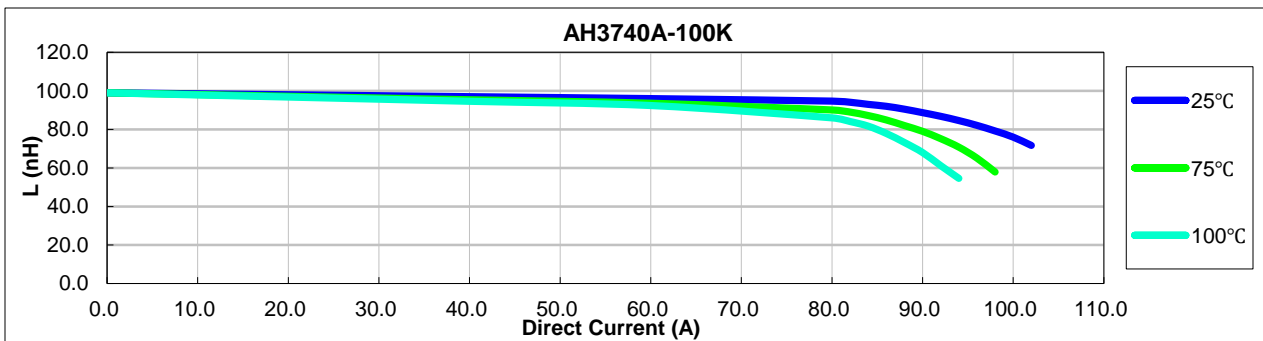
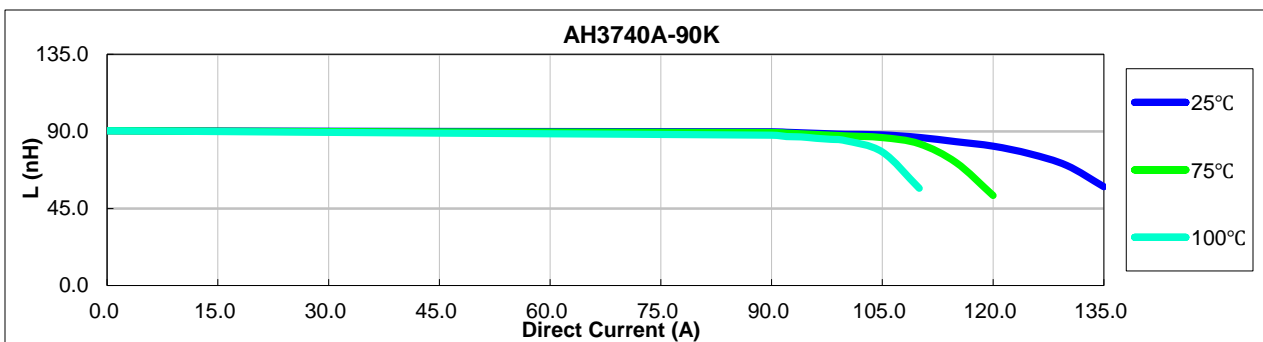
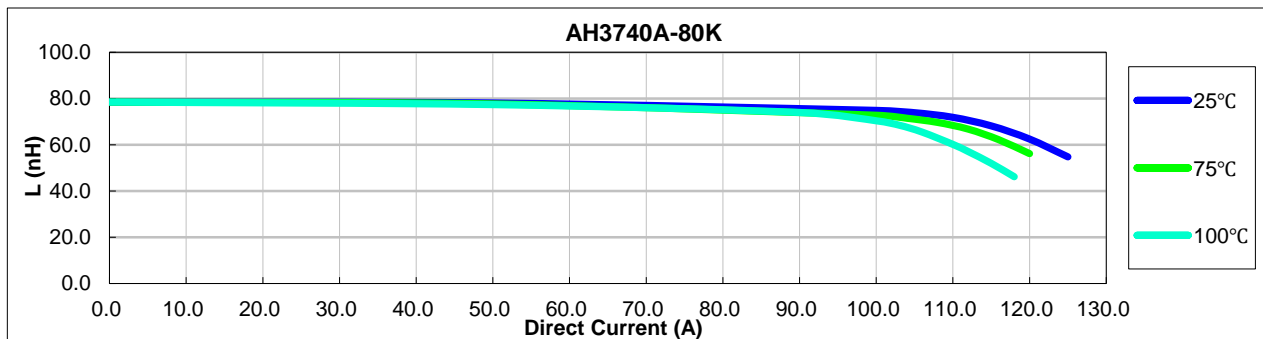
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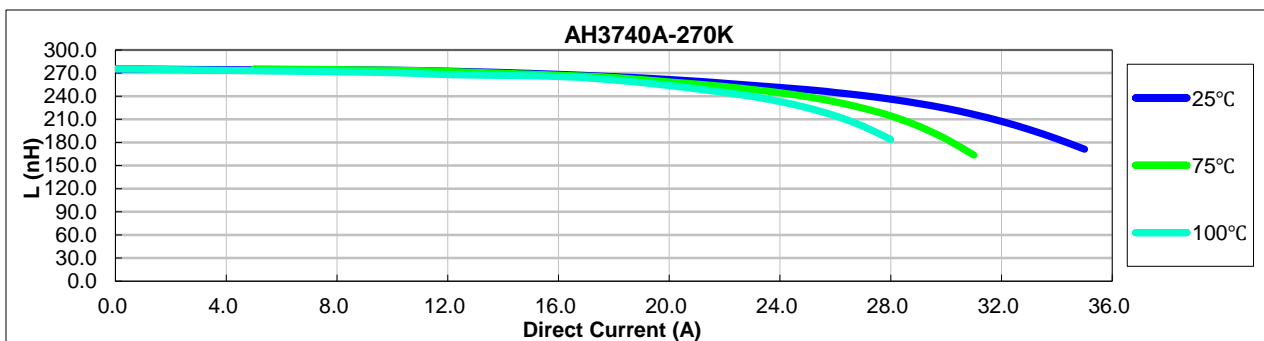
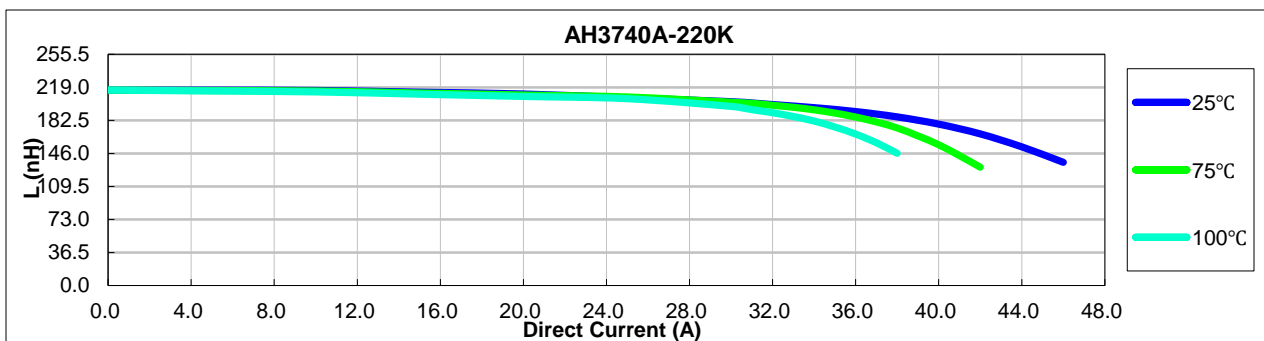
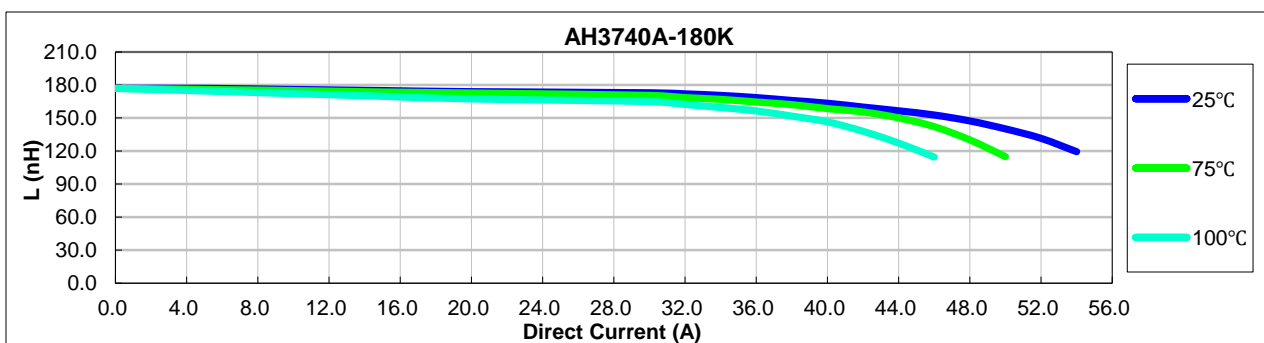
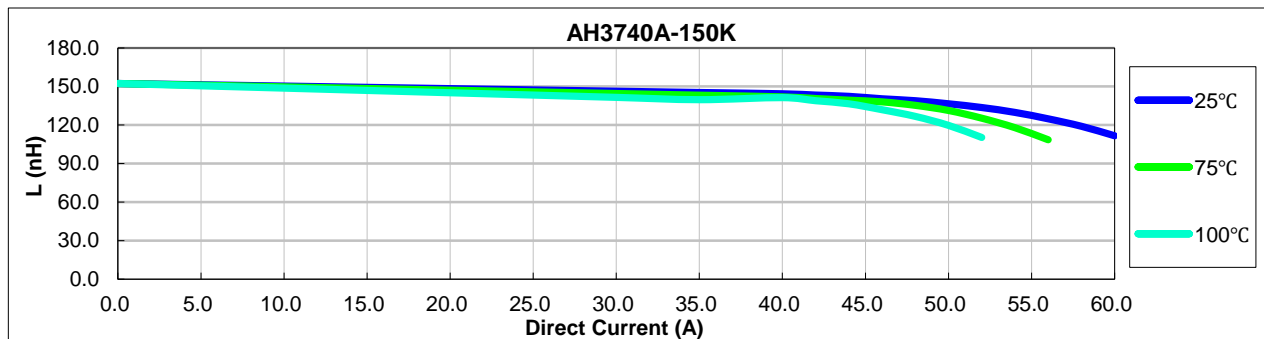


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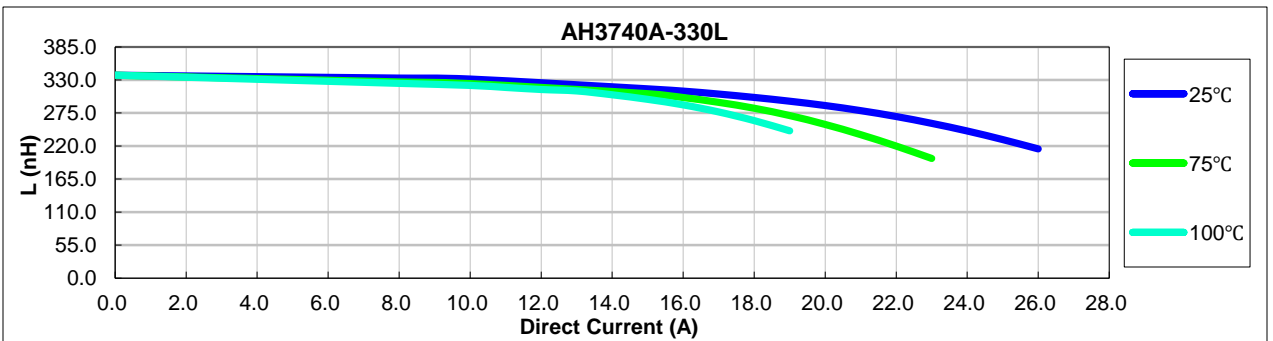
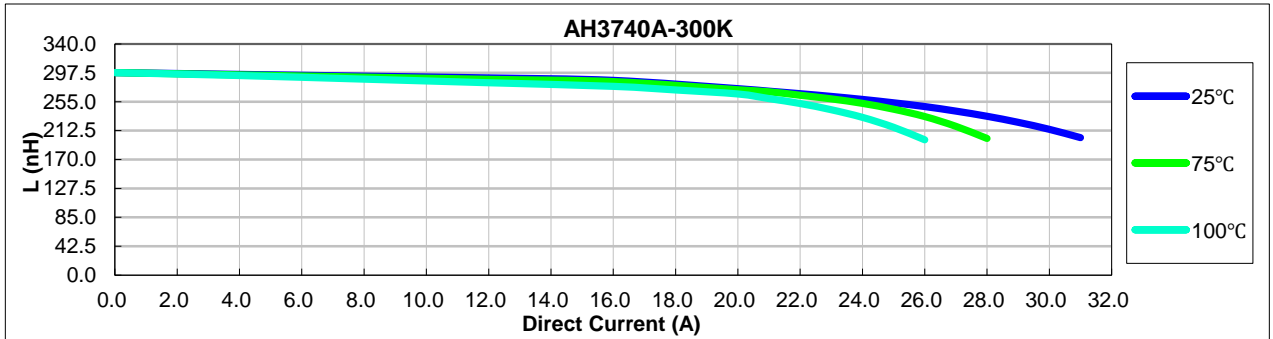


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