



## SHCI13M SERIES

### HIGH CURRENT INDUCTOR



ALL PARTS AVAILABLE AS CLASS S OR CLASS B

MIL-STD-981

| Inductance Range | DCR max (Ohms) | Current Rating (A) |
|------------------|----------------|--------------------|
| 1.25 uH - 10 mH  | 0.004 - 13.4   | 15.9 - 0.25        |

ALL DIMENSIONS: INCHES

### ELECTRICAL SPECIFICATIONS

- **Operating Temperature:** -55°C to +130°C
- **Storage Temperature:** -60°C to +135°C
- **Temperature Rise:** < 30°C
- **Dielectric Withstanding Voltage:** 100 V<sub>RMS</sub>
- **Different electrical values available upon request**

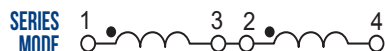
### FEATURES

- **Compact**, low profile, ideal for automatic placement
- **Terminations:** Tin-lead
- **Welded Internal Connections**
- **Moisture, Shock and Immersion Resistant**
- **Magnetically Shielded**
- **Other termination finishes available upon request**
- **Multiple Configurations:** Series, parallel, transformer, dual inductor
- Built to meet **MIL-STD-981** specifications
- **NASA outgassing compliant per ASTM E595** (TML <1%, CVCM <0.1%)

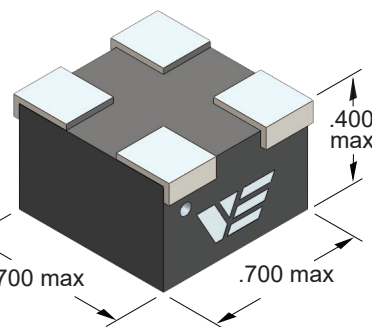
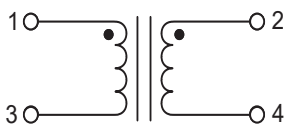
### APPLICATIONS

- Filter inductors
- Power supplies
- Ripple suppressors
- DC/DC converters
- Common mode chokes
- SEPIC converters
- Isolation transformers

#### TYPICAL USER CONNECTIONS

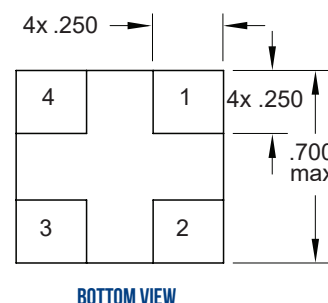
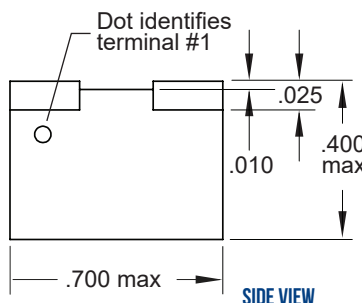


#### SCHEMATIC

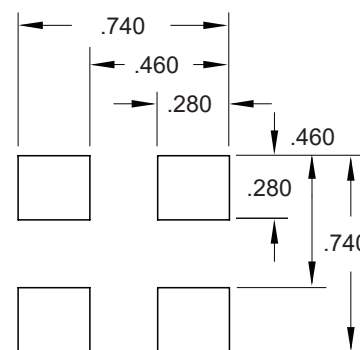


THRU-HOLE &  
GULL-WING PACKAGES ALSO  
AVAILABLE

MARKINGS: LASER ETCH OR INK



| IN    | MM    |
|-------|-------|
| 0.740 | 18.80 |
| 0.700 | 17.78 |
| 0.460 | 11.68 |
| 0.400 | 10.16 |
| 0.280 | 7.11  |
| 0.250 | 6.35  |
| 0.025 | 0.64  |
| 0.010 | 0.25  |



RECOMMENDED MOUNTING PAD CIRCUIT SIDE

#### CUSTOM DESIGNS & MODIFICATIONS:

Other electrical configurations and performance characteristics are available in various sizes and package types

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## DATA TABLE

| Vanguard P/N | Series Inductance (uH) | Series DCR max (Ohms) | Series Rated Current (Adc) | Series Inc. Current $\Delta L$ 10% (Adc) | Series Inc. Current $\Delta L$ 20% (Adc) |
|--------------|------------------------|-----------------------|----------------------------|------------------------------------------|------------------------------------------|
| SHCI13M-501K | 5.0                    | 0.017                 | 7.1                        | 5.8                                      | 7.9                                      |
| SHCI13M-102K | 10.0                   | 0.024                 | 6.0                        | 4.1                                      | 5.7                                      |
| SHCI13M-182K | 18.0                   | 0.036                 | 4.8                        | 3.2                                      | 4.4                                      |
| SHCI13M-252K | 25.0                   | 0.051                 | 4.1                        | 2.9                                      | 4.0                                      |
| SHCI13M-502K | 50.0                   | 0.075                 | 3.3                        | 1.9                                      | 2.6                                      |
| SHCI13M-752K | 75.0                   | 0.090                 | 3.1                        | 1.6                                      | 2.2                                      |
| SHCI13M-103K | 100.0                  | 0.17                  | 2.2                        | 1.4                                      | 1.9                                      |
| SHCI13M-203K | 200.0                  | 0.35                  | 1.6                        | 1.1                                      | 1.1                                      |
| SHCI13M-253K | 250.0                  | 0.50                  | 1.3                        | 1.0                                      | 1.0                                      |
| SHCI13M-503K | 500.0                  | 0.85                  | 1.0                        | 0.68                                     | 0.71                                     |
| SHCI13M-753K | 750.0                  | 1.3                   | 0.81                       | 0.56                                     | 0.58                                     |
| SHCI13M-104K | 1.0 mH                 | 1.4                   | 0.79                       | 0.55                                     | 0.48                                     |
| SHCI13M-204K | 2.0 mH                 | 3.1                   | 0.52                       | 0.38                                     | 0.33                                     |
| SHCI13M-304K | 3.0 mH                 | 4.7                   | 0.42                       | 0.32                                     | 0.27                                     |
| SHCI13M-504K | 5.0 mH                 | 6.1                   | 0.37                       | 0.24                                     | 0.21                                     |
| SHCI13M-754K | 7.5 mH                 | 11.6                  | 0.27                       | 0.20                                     | 0.17                                     |
| SHCI13M-105K | 10.0 mH                | 13.4                  | 0.25                       | 0.17                                     | 0.15                                     |

| Vanguard P/N | Parallel Inductance (uH) | Parallel DCR max (Ohms) | Parallel Rated Current (Adc) | Parallel Inc. Current $\Delta L$ 10% (Adc) | Parallel Inc. Current $\Delta L$ 20% (Adc) |
|--------------|--------------------------|-------------------------|------------------------------|--------------------------------------------|--------------------------------------------|
| SHCI13M-501K | 1.25                     | 0.004                   | 15.9                         | 14.1                                       | 11.5                                       |
| SHCI13M-102K | 2.50                     | 0.006                   | 11.3                         | 11.9                                       | 8.2                                        |
| SHCI13M-182K | 4.50                     | 0.009                   | 8.8                          | 9.7                                        | 6.4                                        |
| SHCI13M-252K | 6.25                     | 0.013                   | 7.9                          | 8.2                                        | 5.8                                        |
| SHCI13M-502K | 12.50                    | 0.019                   | 5.3                          | 6.7                                        | 3.8                                        |
| SHCI13M-752K | 18.75                    | 0.023                   | 4.4                          | 6.1                                        | 3.2                                        |
| SHCI13M-103K | 25.00                    | 0.042                   | 3.8                          | 4.5                                        | 2.7                                        |
| SHCI13M-203K | 50.00                    | 0.083                   | 2.3                          | 3.2                                        | 2.2                                        |
| SHCI13M-253K | 62.50                    | 0.12                    | 2.1                          | 2.7                                        | 2.0                                        |
| SHCI13M-503K | 125.0                    | 0.22                    | 1.4                          | 2.0                                        | 1.4                                        |
| SHCI13M-753K | 187.5                    | 0.33                    | 1.2                          | 1.6                                        | 1.1                                        |
| SHCI13M-104K | 250.0                    | 0.33                    | 0.96                         | 1.6                                        | 1.1                                        |
| SHCI13M-204K | 500.0                    | 0.77                    | 0.66                         | 1.0                                        | 0.77                                       |
| SHCI13M-304K | 750.0                    | 1.2                     | 0.55                         | 0.85                                       | 0.63                                       |
| SHCI13M-504K | 1.250 mH                 | 1.5                     | 0.42                         | 0.74                                       | 0.49                                       |
| SHCI13M-754K | 1.875 mH                 | 2.9                     | 0.34                         | 0.54                                       | 0.40                                       |
| SHCI13M-105K | 2.500 mH                 | 3.4                     | 0.30                         | 0.50                                       | 0.34                                       |

1/ Inductance measured at 10 kHz, 0.1 V<sub>RMS</sub>

2/ DCR measured at room temperature

3/ Current Rating is based on a 30°C maximum temperature rise at an ambient temperature of 100°C

4/ Incremental current is the approximate value that will result in a percentage drop of inductance as indicated in the table

5/ Maximum Weight: TBD

6/ Units are series mode tested only, parallel mode values are reference only

## CUSTOM DESIGNS &amp; MODIFICATIONS:

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## VE PART NUMBER STRUCTURE KEY

### INDUCTANCE ( $\mu$ H ) ( mH )

501 = 5.0  $\mu$ H  
103 = 100  $\mu$ H  
105 = 10 mH

EXAMPLE: SHCI13M-501KS-3-T

### TOLERANCE ( % )

|   |          |
|---|----------|
| K | $\pm 10$ |
| M | $\pm 20$ |

### TERMINATION

|   |      |
|---|------|
| S | SnPb |
|---|------|

### RELIABILITY

|   |                            |
|---|----------------------------|
| 2 | Group A<br>MIL-STD-981     |
| 3 | Group A+B<br>MIL-STD-981   |
| 4 | Group A+B+C<br>MIL-STD-981 |
| 7 | Other                      |

### PACKAGING ( Default Bulk )

|   |               |
|---|---------------|
| B | Bulk          |
| T | Tape and Reel |

Tape and reel specs  
Pcs. / reel maximum: (13") 250  
Pitch between parts: 24 mm  
Tape width: 32 mm

Parts that don't meet minimum reel  
requirements will be supplied on cut tape

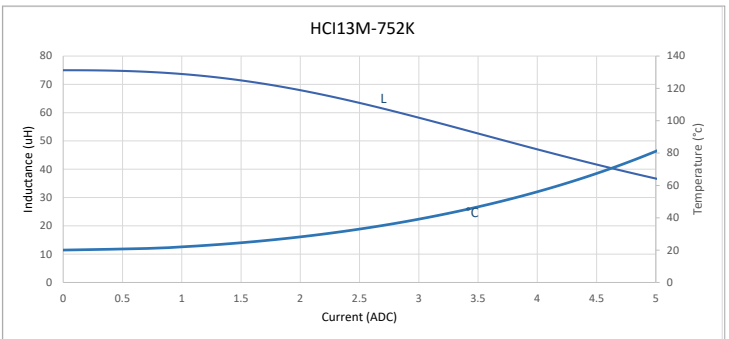
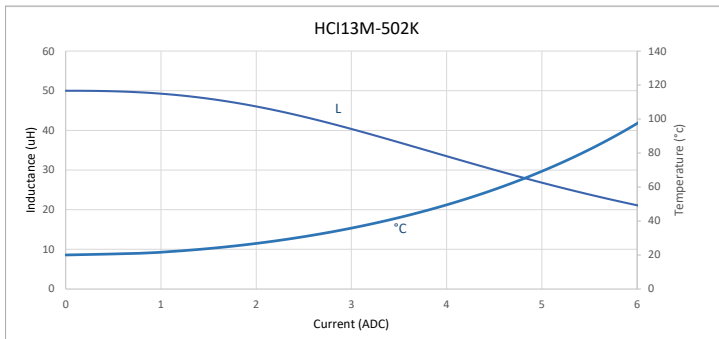
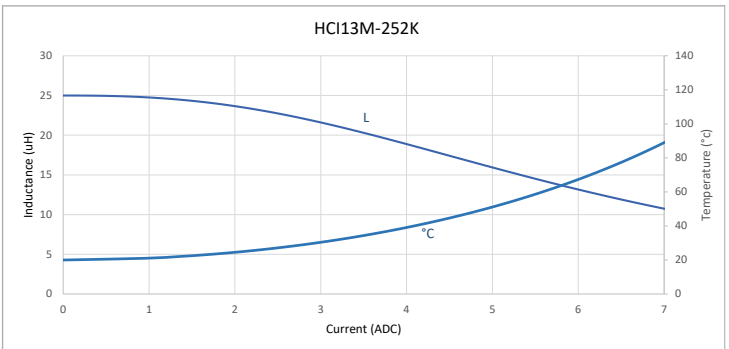
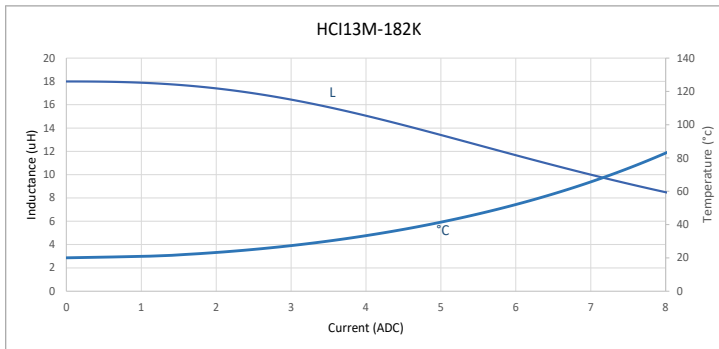
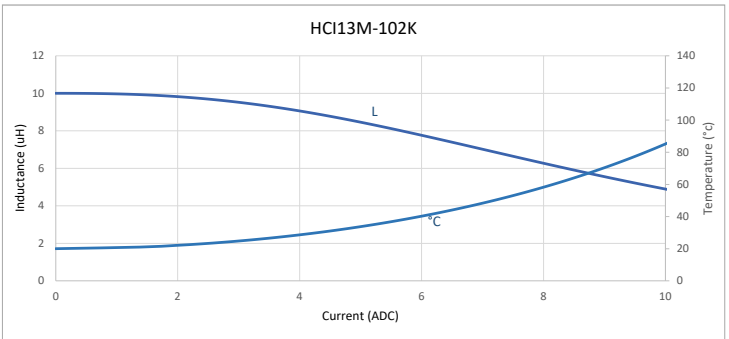
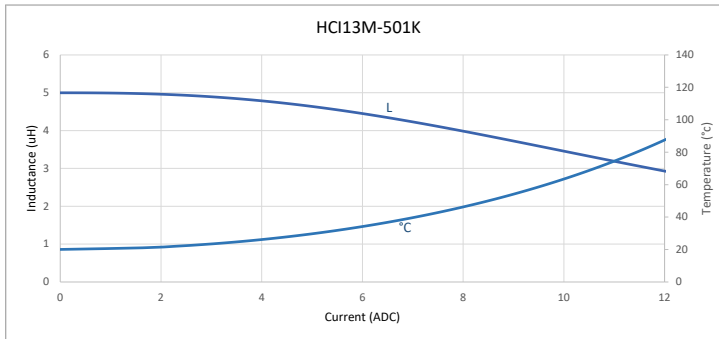
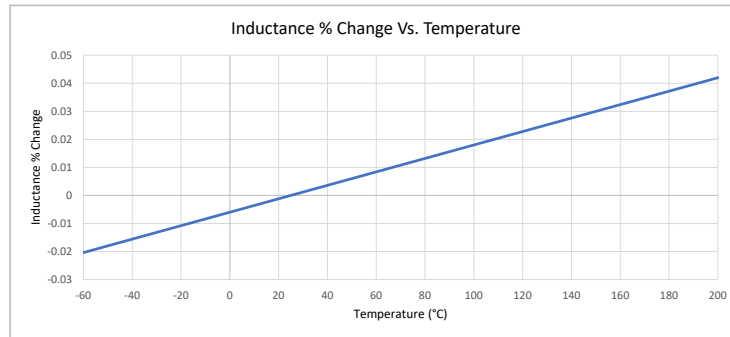
*Tape and Reel not available for  
Thru-Hole or Gull-Wing Packages*

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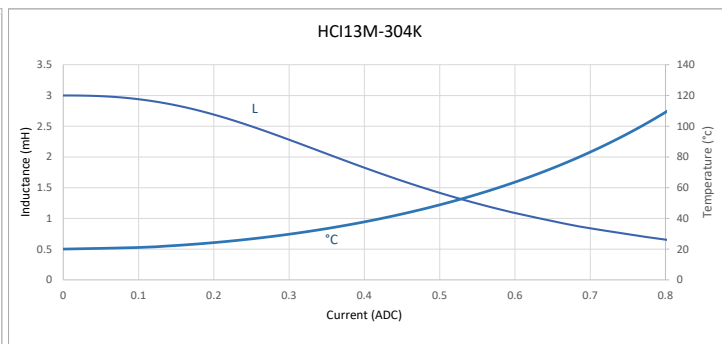
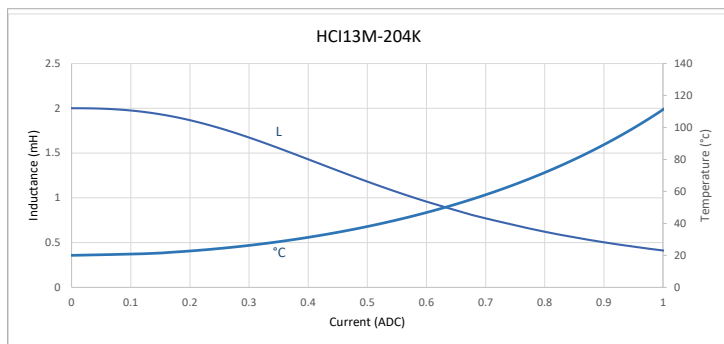
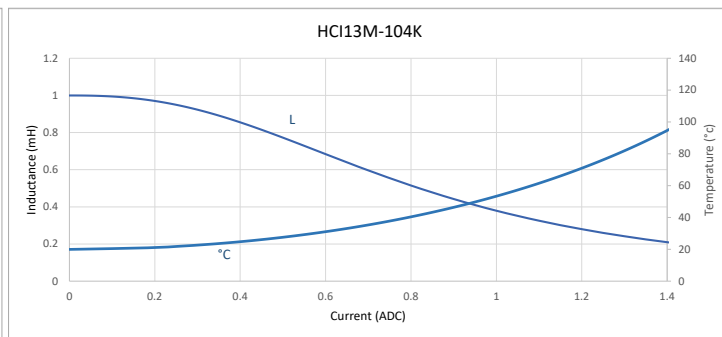
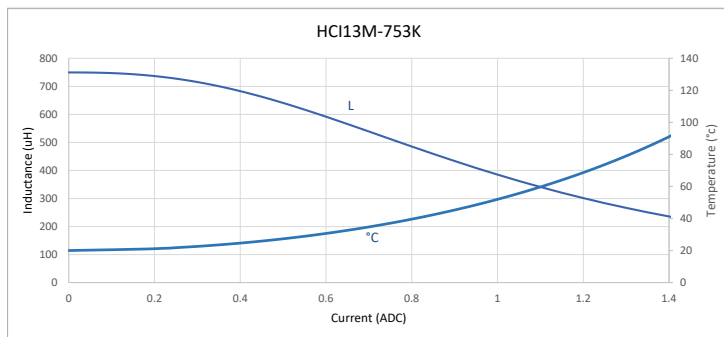
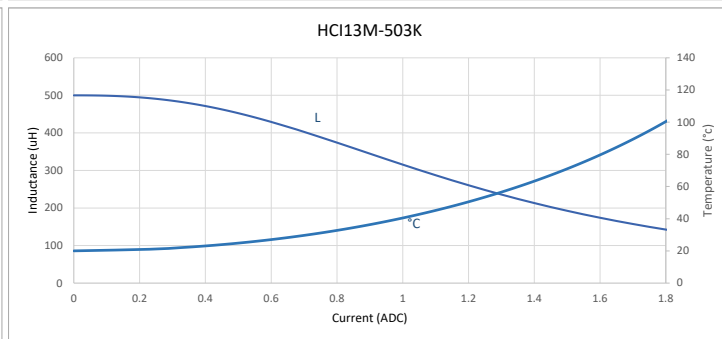
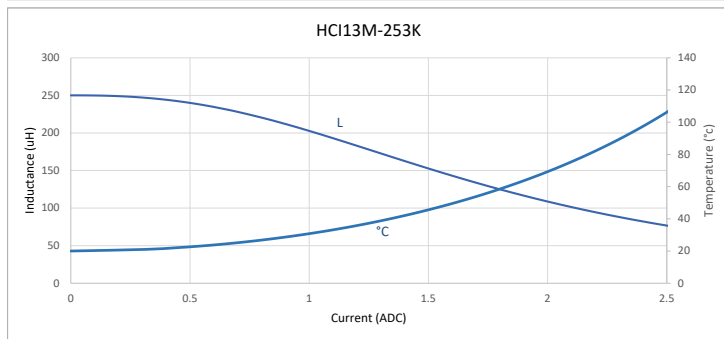
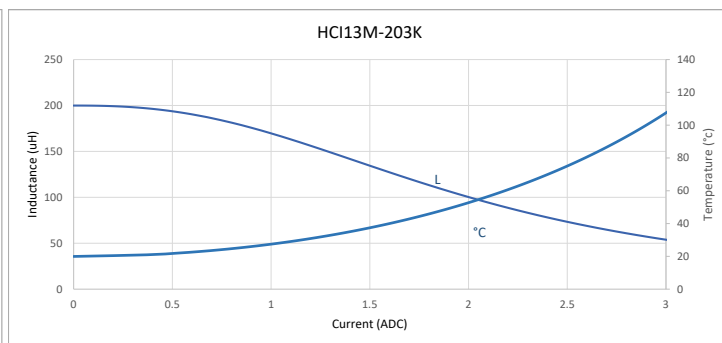
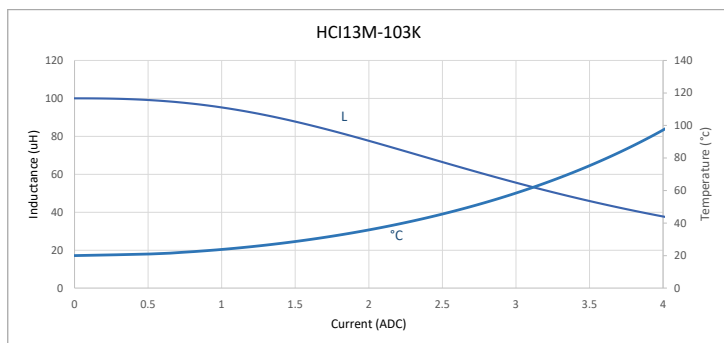


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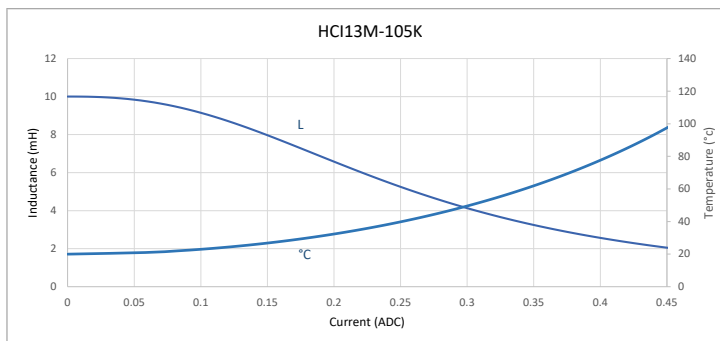
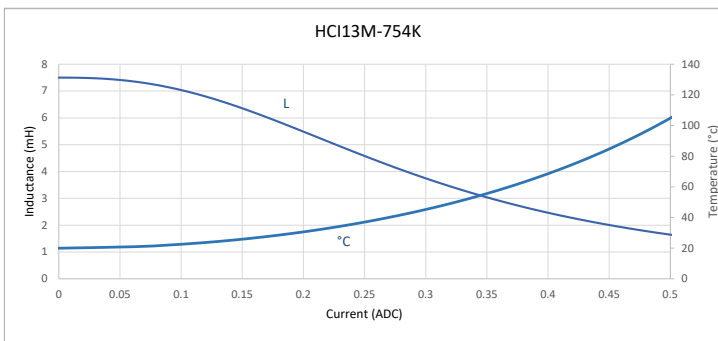
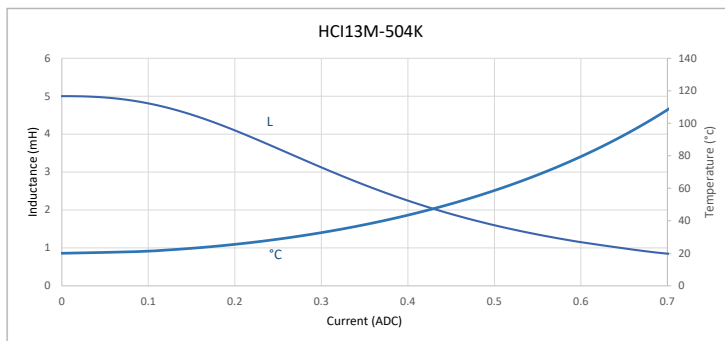


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