

## SDT Series



Chilisin's SDT Series represents the ultimate in cost effective miniature power inductors. They are constructed of materials specially developed for surface mount applications to ensure the best possible reliability and ease of using and handling.

Because of their "swinging" inductance vs. current characteristics, the SSL0402 Series can be used as ultra high L inductors at zero or low current.

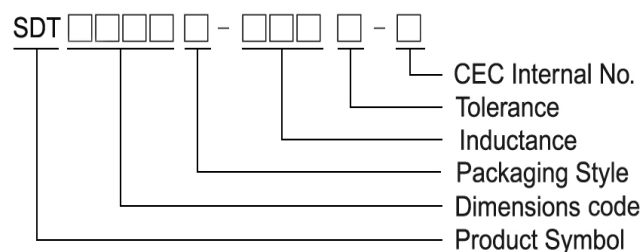
### Features

- RoHS compliant
- High L shielded power inductors
- Functions equally well in filter and smoothing circuit applications.

### Applications

- Board mounted DC-DC converters
- Miniature power supplies, and voltage multiplying circuits.

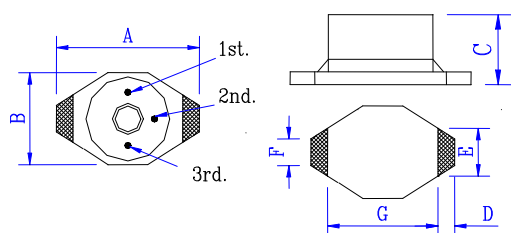
### Product Identification



- Packaging: T : Tape and Reel

### Shapes and Dimensions

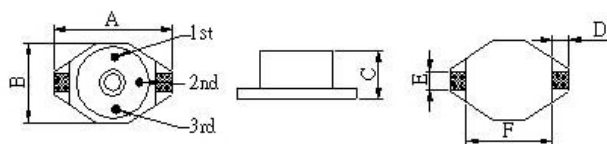
#### SDT 0402



Dimensions in mm

| A                  | B                  | C                  | D    | E    | F    | G    |
|--------------------|--------------------|--------------------|------|------|------|------|
| 6.60 <sup>+0</sup> | 4.54 <sup>+0</sup> | 2.92 <sup>+0</sup> | 1.02 | 3.05 | 1.27 | 4.32 |

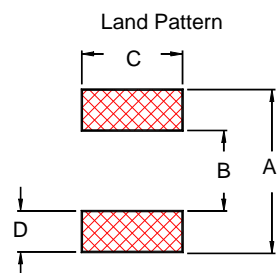
#### SDT 0804



Dimensions in mm

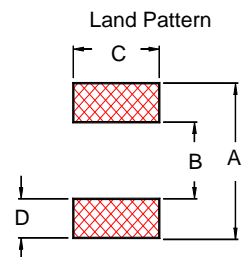
| A                   | B                 | C                  | D    | E    | F    |
|---------------------|-------------------|--------------------|------|------|------|
| 12.95 <sup>+0</sup> | 9.4 <sup>+0</sup> | 5.08 <sup>+0</sup> | 2.54 | 2.54 | 7.62 |

### Recommended Pattern



Dimensions in mm

| A    | B    | C    | D    |
|------|------|------|------|
| 6.86 | 4.06 | 3.56 | 1.40 |



Dimensions in mm

| A     | B    | C    | D    |
|-------|------|------|------|
| 13.21 | 7.37 | 2.79 | 2.92 |

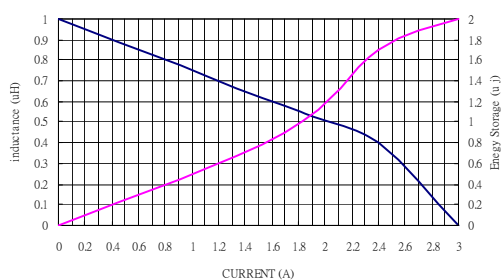
## Electrical Characteristics

| Specifications  |                     |                   |                             | Operating Parameters                       |                               |                           |                                     |                               |
|-----------------|---------------------|-------------------|-----------------------------|--|-------------------------------|---------------------------|-------------------------------------|-------------------------------|
| Part Number     | Inductance①<br>(μH) | Tolerance<br>(±%) | DC<br>Resistance<br>(Ω) Max | Self<br>Resonant<br>Frequency<br>(MHz) Typ | Inductance<br>Rating②<br>(μH) | Current<br>Rating③<br>(A) | Energy<br>Storage<br>(μ Joules) Max | Switching<br>Frequency<br>Max |
| SDT0402T-1R0M-N | 1.0                 | 20                | 0.045                       | 157  | 0.60                          | 2.0                       | 1.8                                 | 1 MHz                         |
| SDT0402T-1R5M-N | 1.5                 | 20                | 0.050                       | 108  | 0.80                          | 1.9                       | 1.8                                 | 1 MHz                         |
| SDT0402T-2R2M-N | 2.2                 | 20                | 0.060                       | 92   | 0.90                          | 1.5                       | 1.8                                 | 1 MHz                         |
| SDT0402T-3R3M-N | 3.3                 | 20                | 0.070                       | 69   | 1.5                           | 1.2                       | 1.4                                 | 1 MHz                         |
| SDT0402T-4R7M-N | 4.7                 | 20                | 0.080                       | 59   | 2.0                           | 1.2                       | 1.6                                 | 1 MHz                         |
| SDT0402T-6R8M-N | 6.8                 | 20                | 0.085                       | 51   | 3.0                           | 1.0                       | 1.9                                 | 1 MHz                         |
| SDT0402T-100M-N | 10                  | 20                | 0.095                       | 33   | 5.0                           | 0.7                       | 1.2                                 | 1 MHz                         |
| SDT0402T-150M-N | 15                  | 20                | 0.135                       | 26   | 6.0                           | 0.6                       | 1.1                                 | 1 MHz                         |
| SDT0402T-220M-N | 22                  | 20                | 0.160                       | 20   | 10                            | 0.5                       | 1.2                                 | 1 MHz                         |
| SDT0402T-330M-N | 33                  | 20                | 0.275                       | 17   | 12                            | 0.45                      | 1.5                                 | 1 MHz                         |
| SDT0402T-470M-N | 47                  | 20                | 0.340                       | 12   | 20                            | 0.34                      | 1.3                                 | 1 MHz                         |
| SDT0402T-680M-N | 68                  | 20                | 0.575                       | 11   | 30                            | 0.29                      | 1.4                                 | 1 MHz                         |
| SDT0402T-101M-N | 100                 | 20                | 1.100                       | 9.4  | 40                            | 0.24                      | 1.5                                 | 1 MHz                         |
| SDT0402T-151M-N | 150                 | 20                | 1.400                       | 6.7  | 60                            | 0.20                      | 1.4                                 | 500 KHz                       |
| SDT0402T-221M-N | 220                 | 20                | 2.250                       | 6.1  | 90                            | 0.17                      | 1.6                                 | 500 KHz                       |
| SDT0402T-331M-N | 330                 | 20                | 2.900                       | 4.7  | 100                           | 0.16                      | 1.4                                 | 500 KHz                       |
| SDT0402T-471M-N | 470                 | 20                | 3.600                       | 3.85                                       | 150                           | 0.14                      | 1.5                                 | 500 KHz                       |
| SDT0402T-681M-N | 680                 | 20                | 4.550                       | 3.1  | 200                           | 0.12                      | 1.4                                 | 500 KHz                       |
| SDT0402T-102M-N | 1000                | 20                | 8.100                       | 2.3  | 400                           | 0.08                      | 1.4                                 | 500 KHz                       |

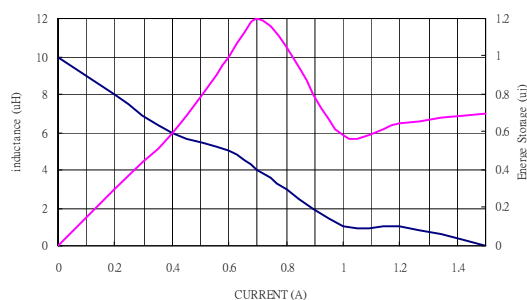
1. Inductance tested at 100 KHz.
  2. Measured at the rated current. Refer to curves below for more detail.
  3. Average maximum allowable current. SDT Series inductors are designed for current spikes as high as 2X the current rating
- Tolerance: M = ±20%
  - Operating temperature range - 40 °C ~ 125 °C (Including self - temperature rise )

## Typical Inductance Energy Storage VS. Current

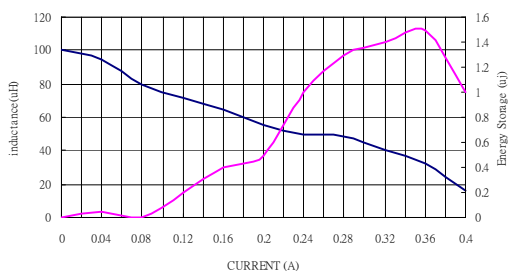
SDT0402T-1R0M-N



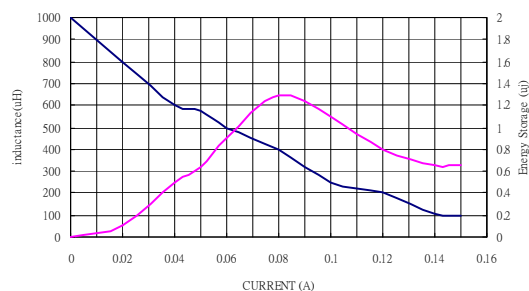
SDT0402T-100M-N



SDT0402T-101M-N



SDT0402T-102M-N



## Electrical Characteristics

| Specifications  |                           |                         |                                      | Operating Parameters                       |                                     |                           |  |                               |
|-----------------|---------------------------|-------------------------|--------------------------------------|--|-------------------------------------|---------------------------|--|-------------------------------|
| Part Number     | Inductance①<br>( $\mu$ H) | Tolerance<br>( $\pm$ %) | DC<br>Resistance<br>( $\Omega$ ) Max | Self<br>Resonant<br>Frequency<br>(MHz) Typ | Inductance<br>Rating②<br>( $\mu$ H) | Current<br>Rating③<br>(A) | Energy<br>Storage<br>( $\mu$ Joules) Max | Switching<br>Frequency<br>Max |
| SDT0804T-1R0M-N | 1.0                       | 20                      | 0.025                                | 60   | 0.50                                | 5.0                       | 9  | 1 MHz                         |
| SDT0804T-1R5M-N | 1.5                       | 20                      | 0.030                                | 55   | 0.70                                | 5.0                       | 12                                       | 1 MHz                         |
| SDT0804T-2R2M-N | 2.2                       | 20                      | 0.035                                | 55   | 1.00                                | 5.0                       | 15                                       | 1 MHz                         |
| SDT0804T-3R3M-N | 3.3                       | 20                      | 0.040                                | 50   | 1.50                                | 5.0                       | 16                                       | 1 MHz                         |
| SDT0804T-4R7M-N | 4.7                       | 20                      | 0.045                                | 45   | 2.00                                | 3.0                       | 10                                       | 1 MHz                         |
| SDT0804T-6R8M-N | 6.8                       | 20                      | 0.050                                | 40   | 4.00                                | 2.5                       | 14                                       | 1 MHz                         |
| SDT0804T-100M-N | 10                        | 20                      | 0.055                                | 35   | 5.00                                | 2.0                       | 11                                       | 1 MHz                         |
| SDT0804T-150M-N | 15                        | 20                      | 0.060                                | 25   | 6.00                                | 1.8                       | 12                                       | 1 MHz                         |
| SDT0804T-220M-N | 22                        | 20                      | 0.084                                | 22   | 10                                  | 1.5                       | 11                                       | 1 MHz                         |
| SDT0804T-330M-N | 33                        | 20                      | 0.090                                | 18   | 12                                  | 1.3                       | 13                                       | 1 MHz                         |
| SDT0804T-470M-N | 47                        | 20                      | 0.11                                 | 16   | 27                                  | 1.0                       | 13                                       | 1 MHz                         |
| SDT0804T-680M-N | 68                        | 20                      | 0.15                                 | 12   | 40                                  | 0.90                      | 17                                       | 1 MHz                         |
| SDT0804T-101M-N | 100                       | 20                      | 0.29                                 | 9  | 50                                  | 0.80                      | 15                                       | 1 MHz                         |
| SDT0804T-151M-N | 150                       | 20                      | 0.36                                 | 8  | 80                                  | 0.60                      | 15                                       | 500 KHz                       |
| SDT0804T-221M-N | 220                       | 20                      | 0.39                                 | 6  | 90                                  | 0.50                      | 10                                       | 500 KHz                       |
| SDT0804T-331M-N | 330                       | 20                      | 0.73                                 | 5  | 150                                 | 0.40                      | 13                                       | 500 KHz                       |
| SDT0804T-471M-N | 470                       | 20                      | 0.88                                 | 4  | 200                                 | 0.35                      | 13                                       | 500 KHz                       |
| SDT0804T-681M-N | 680                       | 20                      | 1.15                                 | 3  | 300                                 | 0.30                      | 13                                       | 500 KHz                       |
| SDT0804T-102M-N | 1000                      | 20                      | 1.45                                 | 2.5  | 420                                 | 0.25                      | 13                                       | 500 KHz                       |

1. Inductance tested at 100 KHz,13

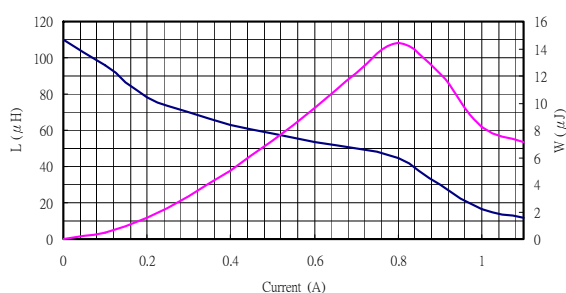
2. Measured at the rated current. Refer to curves below for more detail.

3. Average maximum allowable current. SDT Series inductors are designed for current spikes as high as 2X the current rating

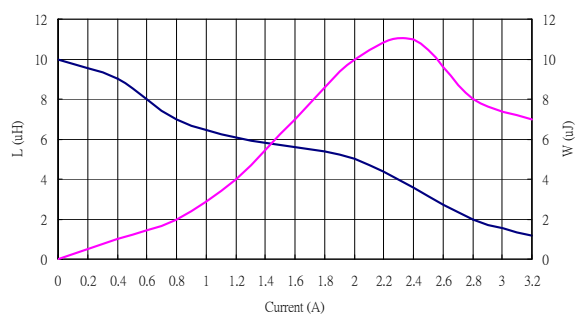
- Tolerance: M =  $\pm 20\%$
- Operating temperature range  $-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$  (Including self - temperature rise )

## Typical Inductance Energy Storage VS. Current

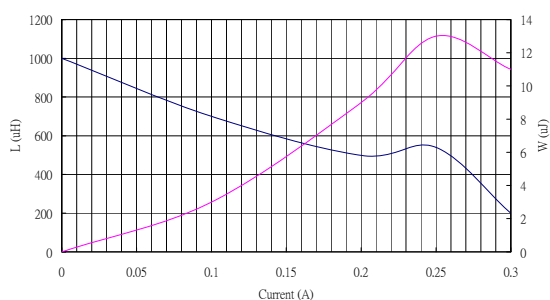
SDT0804T-1R0M-N



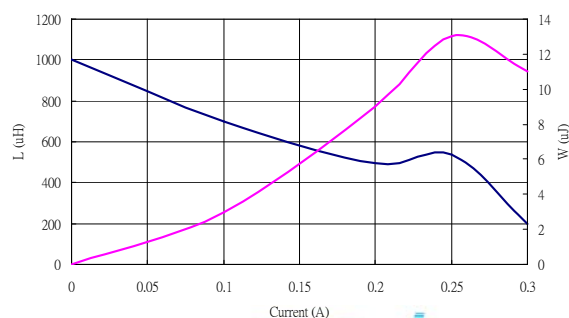
SDT0804T-100M-N



SDT0804T-102M-N



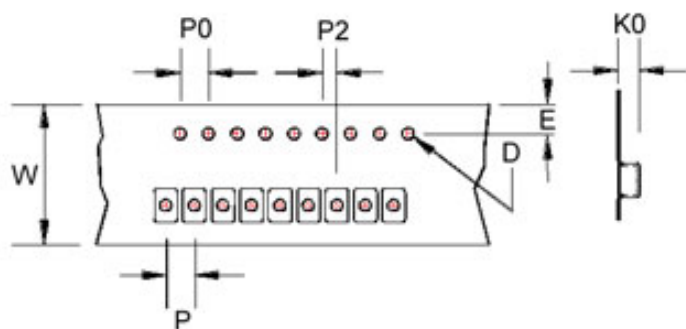
SDT0804T-102M-N



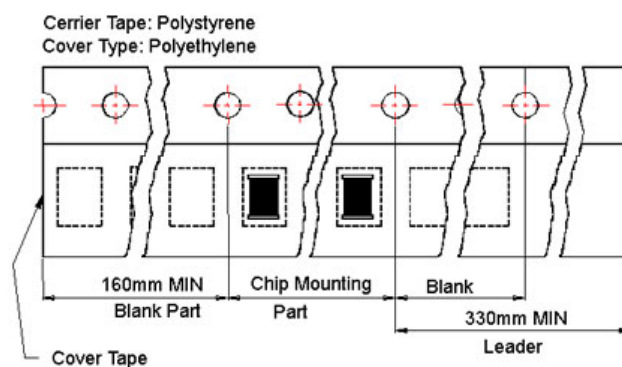
CHILISIN ELECTRONICS CORP.

## Packaging Specifications

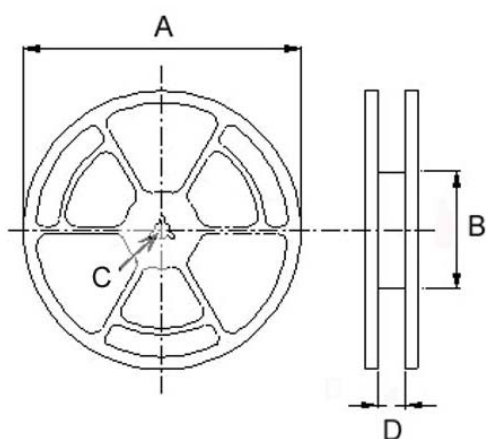
Tape Dimensions



Tape Material



Reel Dimensions



Dimensions in mm

| TYPE     | Tape Dimensions |      |      |    |    |    |    | Reel Dimensions |     |    |      | Quantity (PCS / REEL) |       |
|----------|-----------------|------|------|----|----|----|----|-----------------|-----|----|------|-----------------------|-------|
|          | K0              | D    | E    | W  | P  | P0 | P2 | A               | B   | C  | D    | 178mm                 | 330mm |
| SDT 0402 | 3.2             | 1.55 | 1.75 | 12 | 8  | 4  | 2  | 330             | 100 | 13 | 13.4 | -                     | 2500  |
|          |                 |      |      |    |    |    |    | 178             | 60  |    | 13.2 | 750                   | -     |
| SDT 0804 | 5.4             | 1.55 | 1.75 | 24 | 16 | 4  | 2  | 330             | 100 | 13 | 24.4 | -                     | 750   |