

## One-piece molding powerinductor size CCY1040AT125/DS

### 1.Features

- Qualified to AEC Q200
  - Small volume,large current,in high frequency and high temperature environment to maintain, excellent temperature current and saturation current characteristics.
  - Low loss alloy powder die casing,low resistance,Firm structrue
- Operating temperature : -55℃ ~ +150℃ (Including coil ' s temperature rise)

### 2. Applications

ADAS, Infotainment

LED lighting,Internet of vehicle.

Automotive series of electronic equipment

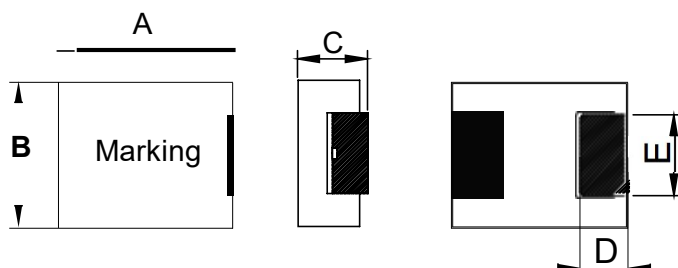
TCDRH 6D 38 T 125 NP - 6R8 N C

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

|                         |                                                                                                                 |
|-------------------------|-----------------------------------------------------------------------------------------------------------------|
| Type name               | 形名                                                                                                              |
| Dimensions              | 外形尺寸                                                                                                            |
| Height (H)              | 高度尺寸                                                                                                            |
| Characteristic          | 特性规格                                                                                                            |
| L(D)                    | Low DCR.Type低DCR类型                                                                                              |
| H(P)                    | High Sturation Current Type高饱和电流类型                                                                              |
| None or T               | Sundard Tye标准类型                                                                                                 |
| Operation Temperature   | 使用温度                                                                                                            |
| None                    | sandnrd Tpre 标准品                                                                                                |
| 125                     | The upper limit of operation temperature is +125 (Including coils self temperature rise)<br>使用温度上限+125C(包含线圈发热) |
| 150                     | The upper limit of operation temperature is +150 (Including coils self temperature rise)<br>使用温度上限+150C(包含线圈发热) |
| Feature                 | 分类                                                                                                              |
| Lead-free               | NP无铅                                                                                                            |
| Halogen-free            | 无卤素                                                                                                             |
| Inductance              | 电感值                                                                                                             |
|                         | 1R0 1.0uH 100 10uH 101 100uH                                                                                    |
| Tolerance of inductance | 电感值公差                                                                                                           |
|                         | K ± 10% M ± 20% N ± 30%                                                                                         |
| Packing                 | 据包规格                                                                                                            |
|                         | C 载带 Carrier tape B 箱子 Box                                                                                      |

Externaldimensions

Unit:(mm)



| SERIES          | A        | B        | C       | D       | E        |
|-----------------|----------|----------|---------|---------|----------|
| CCY0420AT125/DS | 4.4±0.4  | 4.2±0.2  | 1.8±0.2 | 0.8±0.2 | 2.0±0.3  |
| CCY0530AT125/DS | 5.6±0.4  | 5.2±0.2  | 2.8±0.2 | 1.3±0.3 | 2.3±0.3  |
| CCY0630AT125/DS | 7.0±0.3  | 6.6±0.2  | 2.8±0.2 | 1.6±0.3 | 3.0±0.3  |
| CCY0650AT125/DS | 7.0±0.3  | 6.6±0.2  | 4.8±0.2 | 1.6±0.3 | 3.0±0.3  |
| CCY1040AT125/DS | 11.0±0.5 | 10.0±0.3 | 3.8±0.2 | 2.5±0.5 | 3.0±0.5  |
| CCY1050AT125/DS | 11.0±0.5 | 10.0±0.3 | 5.2±0.2 | 2.2±0.5 | 4.5±0.3  |
| CCY1250AT125/DS | 13.5±0.5 | 12.6±0.3 | 4.8±0.2 | 2.0±0.5 | 5.0±0.5  |
| CCY1260AT125/DS | 13.5±0.5 | 12.6±0.3 | 6.2±0.2 | 2.0±0.5 | 5.0±0.5  |
| CCY1770AT125/DS | 17.2±0.5 | 17.0±0.3 | 6.8±0.2 | 2.5±0.5 | 12.0±0.3 |

### Electrical Properties:

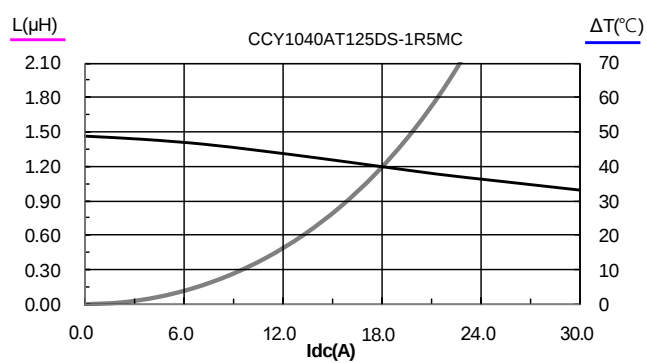
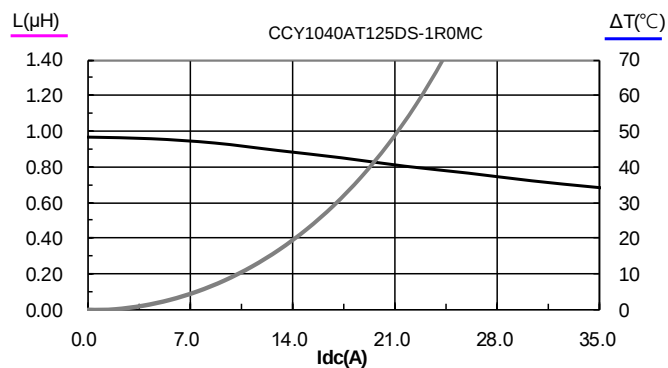
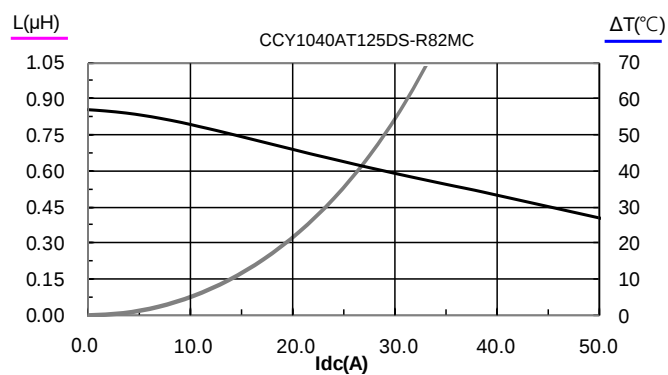
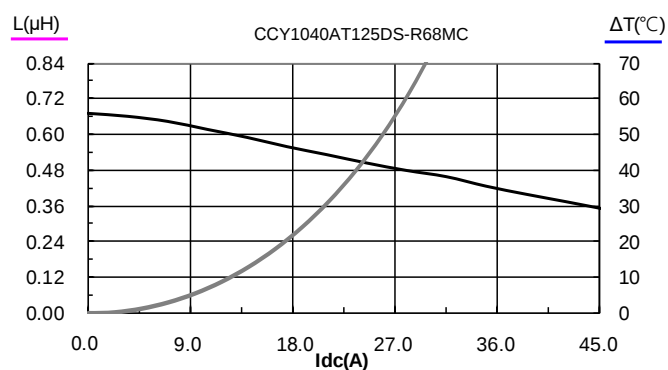
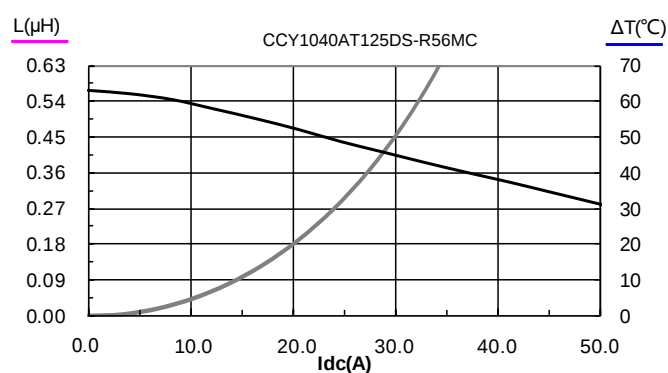
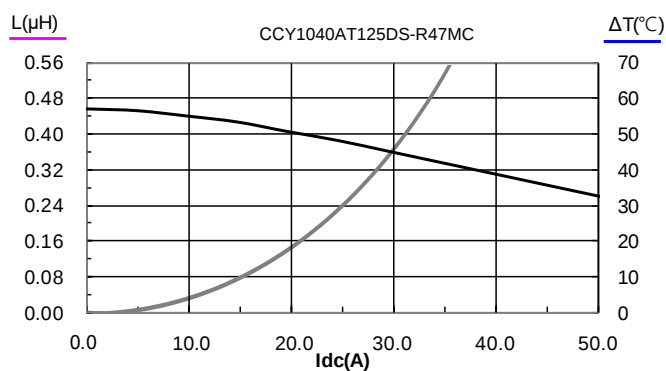
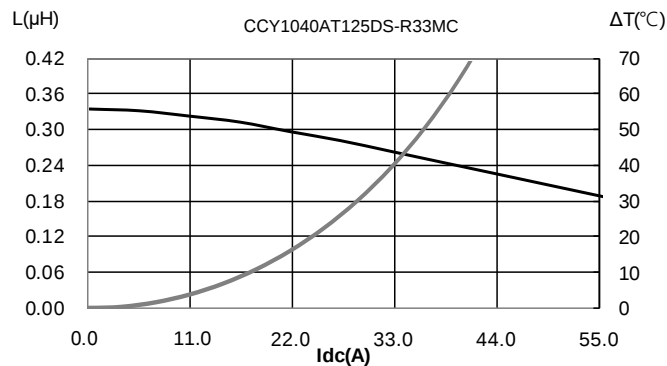
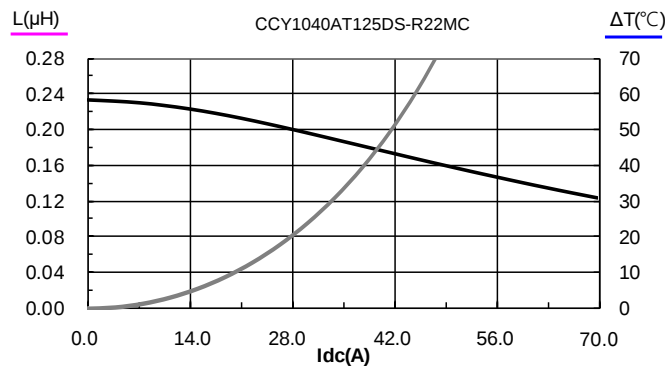
| Part No.             | Inductance<br>(uH) | DCR (mΩ) @25℃ |       | Saturation<br>Current DC<br>Amps. Isat(A) |      | HeatRating<br>Current DC<br>Amps.Irms(A) |      |
|----------------------|--------------------|---------------|-------|-------------------------------------------|------|------------------------------------------|------|
|                      |                    | Typ.          | Max.  | Max.                                      | Typ. | Max.                                     | Typ. |
| CCY1040AT125DS-R22MC | 0.22±20%           | 0.85          | 1.0   | 55.0                                      | 60.0 | 32.0                                     | 35.0 |
| CCY1040AT125DS-R33MC | 0.33±20%           | 0.94          | 1.1   | 40.0                                      | 45.0 | 30.0                                     | 33.0 |
| CCY1040AT125DS-R47MC | 0.47±20%           | 1.45          | 1.68  | 35.00                                     | 40.0 | 26.0                                     | 28.0 |
| CCY1040AT125DS-R56MC | 0.56±20%           | 1.53          | 1.8   | 30.0                                      | 33.0 | 25.0                                     | 27.0 |
| CCY1040AT125DS-R68MC | 0.68±20%           | 1.9           | 2.2   | 27.0                                      | 30.0 | 22.0                                     | 24.5 |
| CCY1040AT125DS-R82MC | 0.82±20%           | 2.3           | 2.7   | 25.0                                      | 29.0 | 20.0                                     | 22.0 |
| CCY1040AT125DS-1R0MC | 1.0±20%            | 2.3           | 3.0   | 24.0                                      | 28.0 | 18.0                                     | 20.0 |
| CCY1040AT125DS-1R5MC | 1.5±20%            | 3.57          | 4.2   | 22.0                                      | 24.0 | 16.0                                     | 18.0 |
| CCY1040AT125DS-2R2MC | 2.2±20%            | 6.0           | 7.0   | 15.0                                      | 16.5 | 13.0                                     | 14.0 |
| CCY1040AT125DS-3R3MC | 3.3±20%            | 10.0          | 11.8  | 14.0                                      | 16.0 | 10.0                                     | 11.0 |
| CCY1040AT125DS-4R7MC | 4.7±20%            | 14.0          | 16.5  | 11.0                                      | 13.0 | 9.0                                      | 10.0 |
| CCY1040AT125DS-6R8MC | 6.8±20%            | 21.0          | 25.0  | 10.0                                      | 12.0 | 7.5                                      | 8.5  |
| CCY1040AT125DS-8R2MC | 8.2±20%            | 25.0          | 27.5  | 6.5                                       | 7.4  | 7.0                                      | 7.7  |
| CCY1040AT125DS-100MC | 10±20%             | 25.5          | 30.0  | 7.5                                       | 8.5  | 7.0                                      | 7.5  |
| CCY1040AT125DS-150MC | 15±20%             | 38.3          | 45.0  | 6.0                                       | 7.0  | 5.5                                      | 6.3  |
| CCY1040AT125DS-220MC | 22±20%             | 56.1          | 66.0  | 4.5                                       | 5.5  | 4.5                                      | 5.0  |
| CCY1040AT125DS-330MC | 33±20%             | 85.0          | 92.0  | 4.2                                       | 4.8  | 3.6                                      | 4.0  |
| CCY1040AT125DS-470MC | 47±20%             | 123.0         | 145.0 | 3.5                                       | 4.0  | 2.7                                      | 3.1  |
| CCY1040AT125DS-560MC | 56±20%             | 170.0         | 200.0 | 2.4                                       | 2.6  | 2.4                                      | 2.7  |
| CCY1040AT125DS-680MC | 68±20%             | 215.0         | 250.0 | 2.0                                       | 2.4  | 2.0                                      | 2.4  |

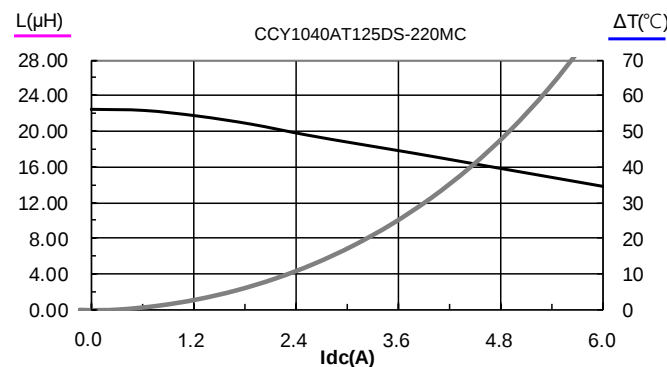
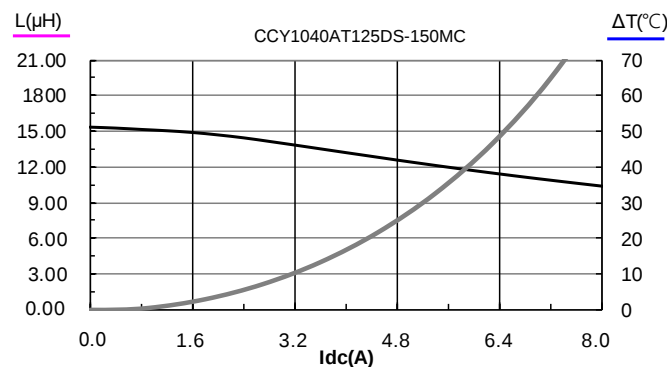
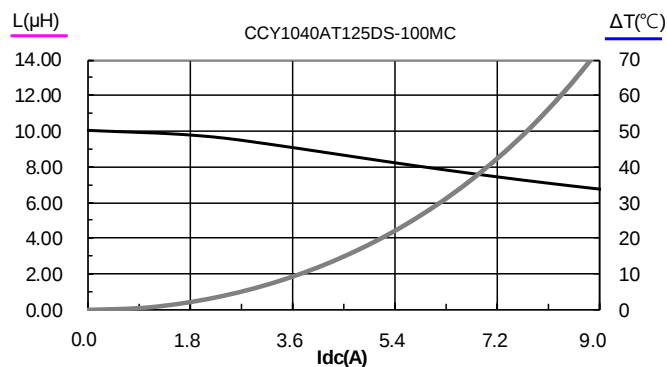
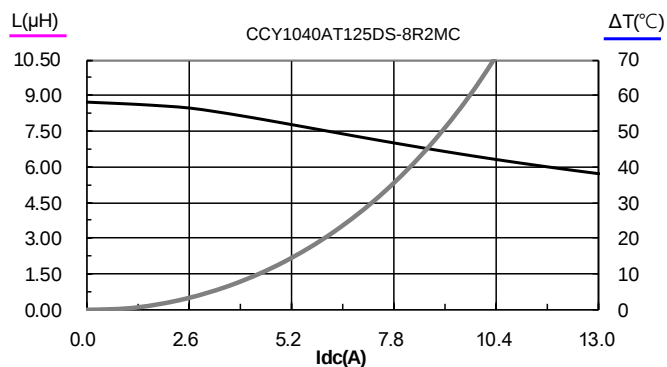
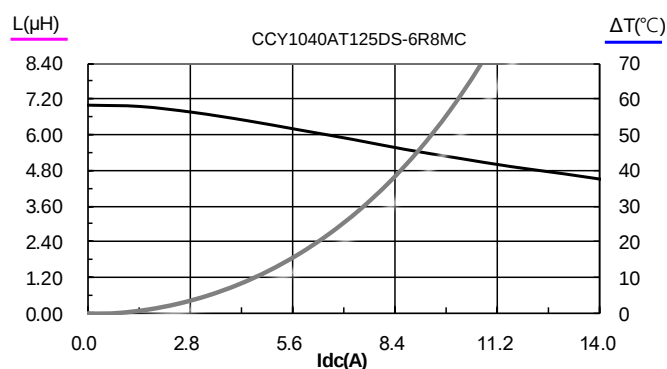
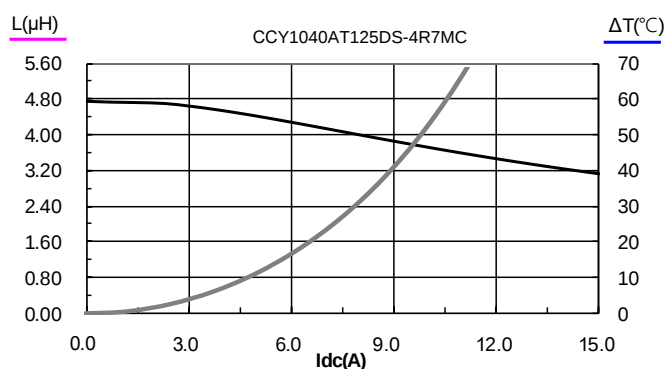
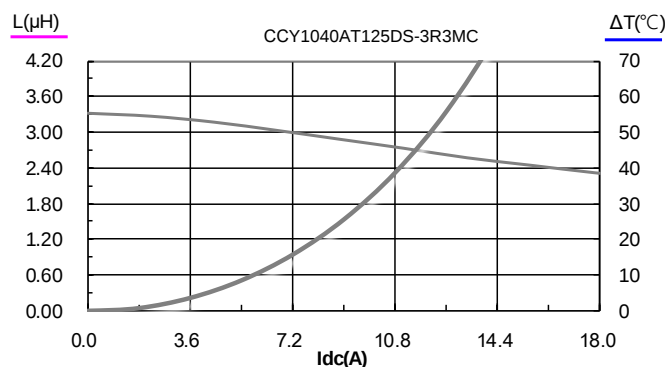
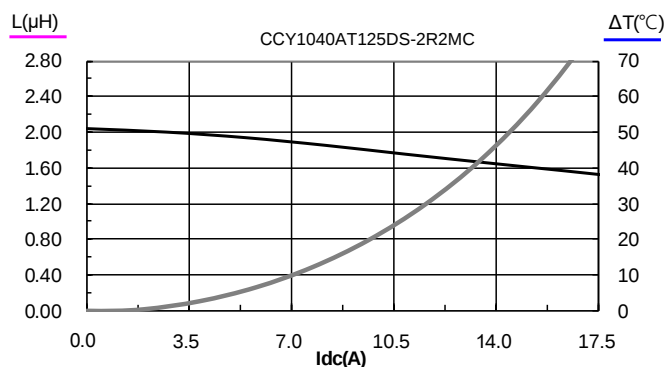
■ All data is tested based on 25℃ ambient temperature.

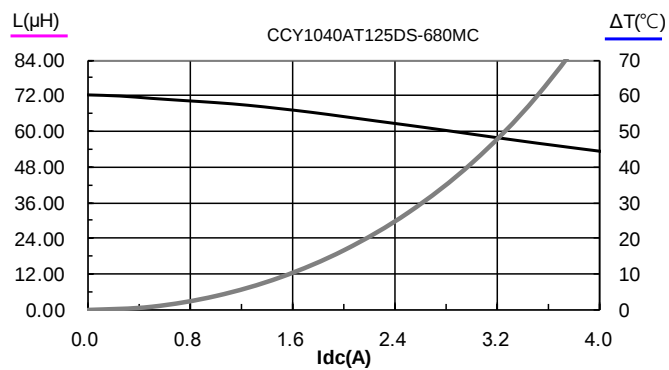
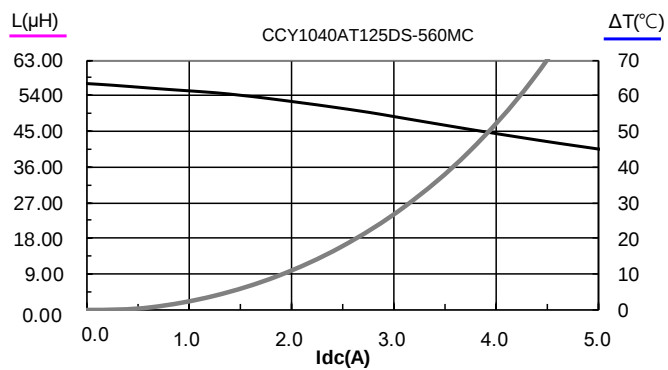
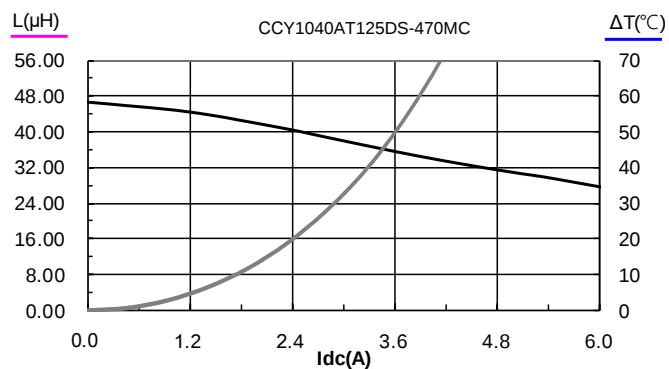
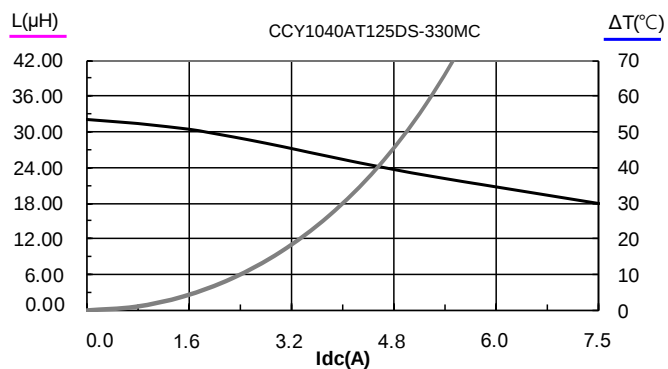
- 1 Saturation current: the actual value of DC current when the inductance decrease 20% of its initial value.
- 2 Temperature rise current :the actual value of DC current when the temperature rise is  $\Delta T 40^{\circ}\text{C}$  ( $T_a=25^{\circ}\text{C}$ ).
- 3 Inductance measure condition at 100kHz, 0.1V.

Special remind:Circuit design,component placement,PCB size and thickness,cooling system and etc.all will affect the product temperature.Please verify the product temperature in the final application.

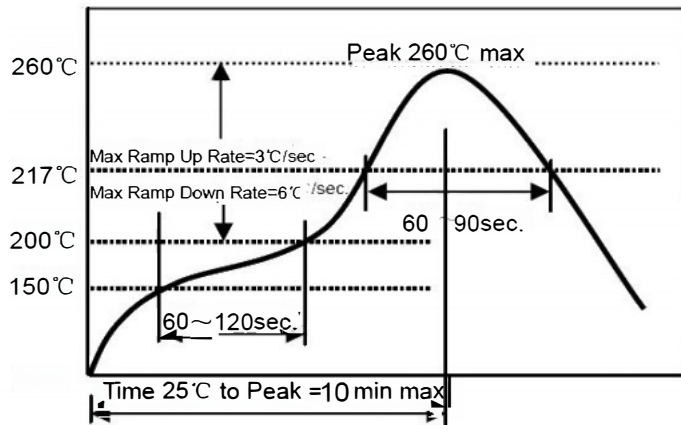
## Saturation current VS temperature rise current curve







## Reflow profile for SMT components



## Re-flowingProfile

Preheat condition: 150 ~200°C/60~120sec

Allowed time above 217°C: 80~90sec.

Max temp: 260°C

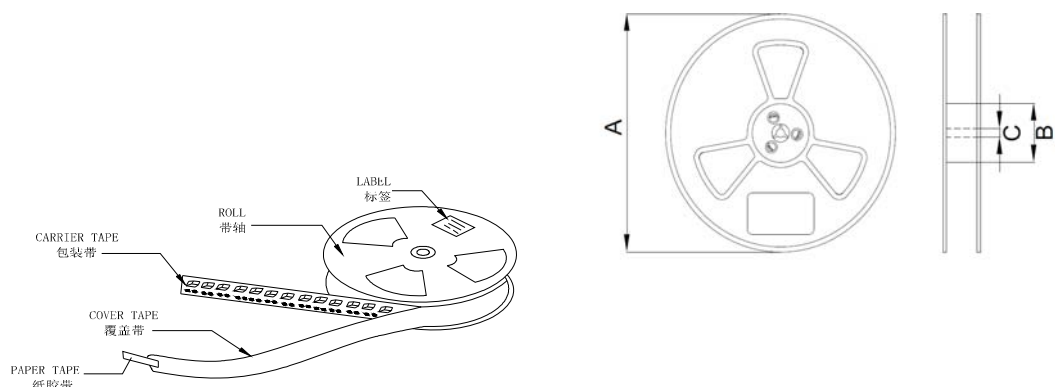
Max time at max temp: 5 sec.

Solder paste: Sn/3.0Ag/0.5Cu

Allowed Reflow time: 2x

Reflow is reiened tostandad  
IPCJJEDECJSTD02OD.

- Remark:
- All test data is reference to 25°C ambient.
  - Test Condition: 1MHz, 0.1Vrms
  - Isat:Max.Value,DC current at which the inductance drops less than 30%from its value without current;
  - Typ.Value,DC current at which the inductance drops 30%from its value without current.
  - Irms: For Max.Value,  $\Delta T < 40^\circ\text{C}$ : for Typ.Value,  $\Delta T$  is approximate  $40^\circ\text{C}$ .
  - Operat between temperature range-55°C to+150°C (Including self-temperature rise)
  - Absolute maximum voltage:DC 75V



| ProductSerie    | Quantity Reel | InnerCarton Quantity |
|-----------------|---------------|----------------------|
| CCY1040AT125/DS | 2000pcs       | (2000×2)=4000pcs     |

| Type            | Reel Dimension (mm) |     |    | Quantity (Pcs/Reel) |
|-----------------|---------------------|-----|----|---------------------|
|                 | A                   | B   | C  |                     |
| CCY0420AT125/DS | 330                 | 100 | 13 | 3000                |
| CCY0530AT125/DS | 330                 | 100 | 13 | 2000                |
| CCY0630AT125/DS | 330                 | 100 | 13 | 2000                |
| CCY0650AT125/DS | 330                 | 100 | 13 | 1500                |
| CCY1040AT125/DS | 330                 | 100 | 13 | 1000                |
| CCY1050AT125/DS | 330                 | 100 | 13 | 1000                |
| CCY1250AT125/DS | 330                 | 100 | 13 | 400                 |
| CCY1260AT125/DS | 330                 | 100 | 13 | 400                 |
| CCY1770AT125/DS | 330                 | 100 | 13 | 300                 |