

# SMD Power Inductor

TMPA1003S-Series(N)-D

## 1. Features

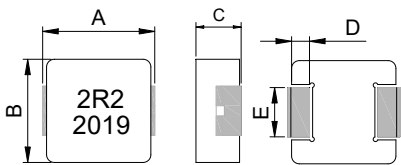
1. Shielded construction.
2. Capable of corresponding high frequency.
3. Low loss realized with low DCR.
4. High performance (Isat) realized by metal dust core.
5. Ultra low buzz noise, due to composite construction.
6. 100% Lead(Pb)-Free and RoHS compliant.
7. Operating temperature -40~+125°C(Including self - temperature rise)



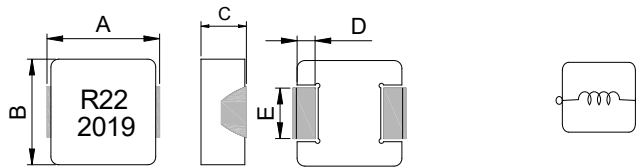
## 2. Applications

1. DC/DC converters in distributed power systems.
2. DC/DC converter for Field Programmable Gate Array(FPGA).
3. Battery powered devices.
4. Thin type on-board power supply module for exchanger.
5. VRM for server.
6. High current, low profile POL converters.
7. PDA/notebook/desktop/server and battery powered devices.

## 3. Dimensions

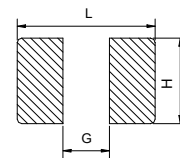


leadframe



non-leadframe

### Recommend PC Board Pattern



| Series    | A        | B        | C       | D       | E              |
|-----------|----------|----------|---------|---------|----------------|
| TMPA1003S | 11.0±0.5 | 10.0±0.3 | 2.8±0.2 | 2.0±0.3 | See Spec table |

Unit:mm

| L(mm) | G(mm) | H(mm) |
|-------|-------|-------|
| 13.6  | 5.4   | 3.5   |

Note: 1. The above PCB layout reference only.  
2. Recommend solder paste thickness at 0.15mm and above.

## 4. Part Numbering



- A: Series
- B: Dimension
- C: Type
- D: Inductance
- E: Inductance Tolerance
- F: Code
- BxC.
- Standard
- R22=0.22uH.
- K=±10%, L=±15%, M=±20%, N=±25%, Y=±30%
- Marking: Black.R22 and 2019(20 YY, 19WW, follow production date).

## 5. Specification

| Part Number       | Inductance<br>L0 A(uH)<br>±20% | Heat Rating<br>Current DC<br>I <sub>rms</sub> ( A ) | Saturation<br>Current DC<br>I <sub>sat</sub> ( A ) | DCR<br>(mΩ)Typ | DCR<br>(mΩ)Max | E(mm)    | Type          |
|-------------------|--------------------------------|---|--|----------------|----------------|----------|---------------|
| TMPA1003S-R22MN-D | 0.22                           | 33  | 50   | 0.9            | 1.0            | 2.7±0.35 | non-leadframe |
| TMPA1003S-R36MN-D | 0.36                           | 28  | 40   | 1.25           | 1.4            | 2.7±0.35 | non-leadframe |
| TMPA1003S-R47MN-D | 0.47                           | 26  | 36   | 1.8            | 2.2            | 2.5±0.35 | non-leadframe |
| TMPA1003S-R82MN-D | 0.82                           | 20  | 28   | 3.1            | 3.7            | 3.0±0.3  | leadframe     |
| TMPA1003S-2R2MN-D | 2.20                           | 14  | 18   | 7.8            | 8.8            | 3.0±0.3  | leadframe     |
| TMPA1003S-8R2MN-D | 8.20                           | 7.2   | 7.2  | 32             | 38             | 3.0±0.3  | leadframe     |

Note:

1. Test frequency : Ls : 100KHz /1.0V.
2. All test data referenced to 25°C ambient.
3. Testing Instrument(or equ) : L: HP4284A,CH11025,CH3302,CH1320,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER.
4. Heat Rated Current (I<sub>rms</sub>) will cause the coil temperature rise approximately Δ T of 40°C
5. Saturation Current (I<sub>sat</sub>) will cause L0 to drop approximately 30%.
6. The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions. Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
7. Special inquiries besides the above common used types can be met on your requirement.

## 6. Typical Performance Curves

