

# SMD Power Inductor

TMPC0503HPV-Series(G)-D02

## 1. Features

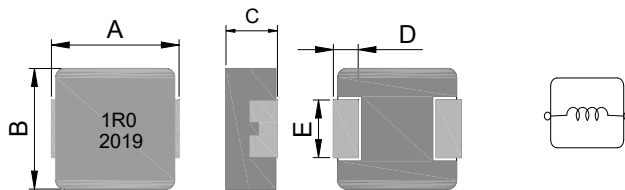
1. Carbonyl Powder.
2. Compact design.
3. High current · low DCR · high efficiency.
4. Very low acoustic noise and very low leakage flux noise.
5. High reliability.
6. 100% Lead(Pb)-Free and RoHS compliant.
7. High reliability -Reliability test complied to AEC-Q200.
8. Operating temperature -55~+125℃(Including self - temperature rise)



## 2. Applications

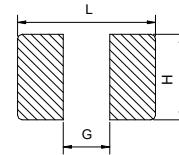
Note PC power system · incl. IMVP-6  
DC/DC converter .

## 3. Dimensions



| Series     | A(mm)   | B(mm)   | C(mm)   | D(mm)   | E(mm)   |
|------------|---------|---------|---------|---------|---------|
| TMPC0503HP | 5.7±0.3 | 5.2±0.2 | 2.8±0.2 | 1.1±0.3 | 2.5±0.3 |

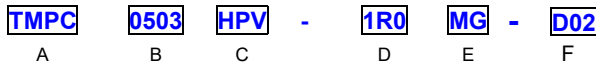
### Recommend PC Board Pattern



| L(mm) | G(mm) | H(mm) |
|-------|-------|-------|
| 6.5   | 2.5   | 2.8   |

Note: 1. The above PCB layout reference only.  
2. Recommend solder paste thickness at 0.12mm and above.

## 4. Part Numbering



A: Series  
 B: Dimension  
 C: Type  
 D: Inductance  
 E: Inductance Tolerance  
 F: Code

BxC  
 HP:H:Carbonyl Powder. P:PAD broaden.vehicle.  
 1R0=1.00uH  
 K=±10%, L=±15%, M=±20%, N=±25%, Y=±30%  
 Marking: Black.1R0 and 2019(20 YY, 19 WW, follow production date).

## 5. Specification

| Part Number           | Inductance<br>L0 (uH)±20% | I rms ( A ) | I sat ( A ) | DCR<br>(mΩ) Typ.<br>@25°C | DCR<br>(mΩ) Max.<br>@25°C |
|-----------------------|---------------------------|-------------|-------------|---------------------------|---------------------------|
| TMPC0503HPV-R10YG-D02 | 0.10±30%                  | 24.0        | 40.0        | 2.20                      | 2.60                      |
| TMPC0503HPV-R15YG-D02 | 0.15±30%                  | 22.0        | 37.0        | 2.50                      | 3.00                      |
| TMPC0503HPV-R22MG-D02 | 0.22                      | 19.0        | 32.0        | 3.20                      | 3.80                      |
| TMPC0503HPV-R33MG-D02 | 0.33                      | 15.0        | 20.0        | 4.30                      | 5.00                      |
| TMPC0503HPV-R47MG-D02 | 0.47                      | 13.0        | 18.0        | 6.30                      | 7.10                      |
| TMPC0503HPV-R56MG-D02 | 0.56                      | 12.0        | 17.0        | 7.80                      | 8.60                      |
| TMPC0503HPV-R68MG-D02 | 0.68                      | 11.0        | 15.5        | 8.00                      | 9.00                      |
| TMPC0503HPV-R82MG-D02 | 0.82                      | 10.0        | 14.0        | 8.80                      | 10.0                      |
| TMPC0503HPV-1R0MG-D02 | 1.00                      | 9.0         | 13.0        | 11.0                      | 12.7                      |
| TMPC0503HPV-1R5MG-D02 | 1.50                      | 8.0         | 11.5        | 14.4                      | 16.6                      |
| TMPC0503HPV-2R2MG-D02 | 2.20                      | 7.0         | 11.0        | 26.0                      | 29.2                      |
| TMPC0503HPV-3R3MG-D02 | 3.30                      | 6.0         | 9.0         | 33.0                      | 38.0                      |
| TMPC0503HPV-4R7MG-D02 | 4.70                      | 5.5         | 8.0         | 48.0                      | 53.0                      |
| TMPC0503HPV-5R6MG-D02 | 5.60                      | 4.7         | 7.3         | 54.0                      | 62.0                      |
| TMPC0503HPV-6R8MG-D02 | 6.80                      | 4.2         | 6.0         | 68.0                      | 76.2                      |
| TMPC0503HPV-100MG-D02 | 10.0                      | 3.5         | 4.0         | 104                       | 120                       |
| TMPC0503HPV-150MG-D02 | 15.0                      | 2.7         | 3.2         | 165                       | 190                       |
| TMPC0503HPV-220MG-D02 | 22.0                      | 2.2         | 2.7         | 217                       | 250                       |

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 rms) will cause the coil temperature rise approximately ΔT of 40°C
5. Saturation Current (Isat) 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

