



## Molding Power Inductor

GMPC0503HP-Series(G)-D02

### 1. Features

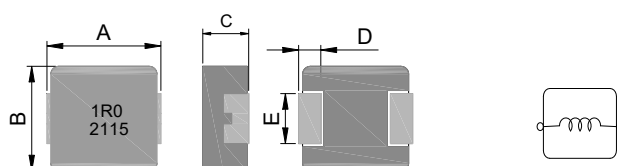
1. Carbonyl Powder.
2. Compact design.
3. High current , low DCR , high efficiency.
4. Very low acoustic noise and very low leakage flux noise.
5. High reliability.
6. 100% Lead(Pb)-Free and RoHS compliant.
7. Operating temperature -40~+125℃(Including self - temperature rise)



### 2. Applications

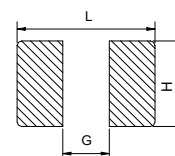
Note PC power system , incl. IMVP-6  
DC/DC converter .

### 3. Dimensions



| Series     | A(mm)   | B(mm)   | C(mm)   | D(mm)   | E(mm)   |
|------------|---------|---------|---------|---------|---------|
| GMPC0503HP | 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.PCB layout is referred to standard IPC-7351B

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

### 4. Part Numbering

|             |             |           |   |            |           |   |            |
|-------------|-------------|-----------|---|------------|-----------|---|------------|
| <b>GMPC</b> | <b>0503</b> | <b>HP</b> | - | <b>1R0</b> | <b>MG</b> | - | <b>D02</b> |
| A           | B           | C         |   | D          | E         |   | F          |

A: Series

B: Dimension

C: Type

D: Inductance

E: Inductance Tolerance

F: Control S/N

BxC

HP:H:Carbonyl Powder,P:PAD broaden.

1R0=1.0uH

M=±20%,Y=±30%.

Marking: Black.1R0 and 2115(21 YY, 15WW, follow production date).



## 5. Specification

| Part Number          | Inductance<br>L0 (uH)±20% | I rms ( A )<br>Typ | I sat ( A )<br>Typ | DCR<br>(mΩ) Typ.<br>@25℃ | DCR<br>(mΩ) Max.<br>@25℃ |
|----------------------|---------------------------|--------------------|--------------------|--------------------------|--------------------------|
| GMPC0503HP-R10YG-D02 | 0.10±30%                  | 24.0               | 40.0               | 2.20                     | 2.60                     |
| GMPC0503HP-R15YG-D02 | 0.15±30%                  | 22.0               | 37.0               | 2.50                     | 3.00                     |
| GMPC0503HP-R20YG-D02 | 0.20±30%                  | 20.0               | 34.0               | 2.70                     | 3.20                     |
| GMPC0503HP-R22MG-D02 | 0.22                      | 19.0               | 32.0               | 3.20                     | 3.80                     |
| GMPC0503HP-R33MG-D02 | 0.33                      | 15.0               | 20.0               | 4.30                     | 5.00                     |
| GMPC0503HP-R47MG-D02 | 0.47                      | 13.0               | 18.0               | 6.30                     | 7.10                     |
| GMPC0503HP-R56MG-D02 | 0.56                      | 12.0               | 17.0               | 7.80                     | 8.60                     |
| GMPC0503HP-R68MG-D02 | 0.68                      | 11.0               | 15.5               | 8.00                     | 9.00                     |
| GMPC0503HP-R82MG-D02 | 0.82                      | 10.0               | 14.0               | 8.80                     | 10.0                     |
| GMPC0503HP-1R0MG-D02 | 1.00                      | 9.0                | 13.0               | 11.0                     | 12.7                     |
| GMPC0503HP-1R2MG-D02 | 1.20                      | 8.5                | 12.0               | 13.0                     | 15.0                     |
| GMPC0503HP-1R5MG-D02 | 1.50                      | 8.0                | 11.5               | 14.4                     | 16.6                     |
| GMPC0503HP-2R2MG-D02 | 2.20                      | 7.0                | 11.0               | 26.0                     | 29.2                     |
| GMPC0503HP-3R3MG-D02 | 3.30                      | 6.0                | 9.0                | 33.0                     | 38.0                     |
| GMPC0503HP-4R7MG-D02 | 4.70                      | 5.5                | 8.0                | 48.0                     | 53.0                     |
| GMPC0503HP-5R6MG-D02 | 5.60                      | 4.7                | 7.3                | 54.0                     | 62.0                     |
| GMPC0503HP-6R8MG-D02 | 6.80                      | 4.2                | 6.0                | 68.0                     | 76.2                     |
| GMPC0503HP-8R2MG-D02 | 8.20                      | 3.8                | 5.0                | 85.0                     | 97.0                     |
| GMPC0503HP-100MG-D02 | 10.0                      | 3.5                | 4.0                | 104                      | 120                      |
| GMPC0503HP-150MG-D02 | 15.0                      | 2.7                | 3.2                | 165                      | 190                      |
| GMPC0503HP-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℃ ambient.
3. Testing Instrument(or equ) : Agilent 4284A,E4991A,4339B,KEYSIGHT E4980A/AL,chroma3302,3250,16502.
4. Heat Rated Current (Irms) will cause the coil temperature rise approximately Δ T of 40℃
5. Saturation Current (Isat) will cause L0 to drop approximately 30%.
6. The part temperature (ambient + temp rise) should not exceed 125℃ 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. Irms Testing : Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components.  
Therefore temperature rise should be verified in application conditions.
- 8.Rated DC Current : The less value whith is Irms or Isat