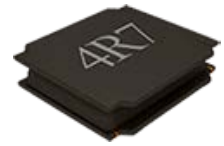


# Wire Wound SMD Power Inductors – WPN Series

Operating temperature range : -40°C~+125°C (Including self-heating)



## FEATURES

- Fe base metal material core provides large saturation current
- Metallization on ferrite core results in excellent shock resistance and damage-free durability
- Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference (EMI)
- Low DCR decreases power loss, small and slim take up less PCB real estate
- Automatic production ensures high quality and consistency

## APPLICATIONS

- Smart phone, set top box, VR, AR
- Notebooks, desktop computers, servers
- Portable gaming devices, personal navigation systems, personal multimedia devices

## PRODUCT IDENTIFICATION

**WPN**

①

**252012**

②

**H**

③

**2R2**

④

**M**

⑤

**T**

⑥

□□□

⑦

| ① Type |                               |
|--------|-------------------------------|
| WPN    | Wire Wound SMD Power Inductor |

| ② External Dimensions (LxWxH) [mm] |             |
|------------------------------------|-------------|
| 201610                             | 2.0x1.6x1.0 |
| 201612                             | 2.0x1.6x1.2 |
| 252010                             | 2.5x2.0x1.0 |
| 252012                             | 2.5x2.0x1.2 |
| 3010                               | 3.0x3.0x1.0 |
| 3012                               | 3.0x3.0x1.2 |
| 4010                               | 4.0x4.0x1.0 |
| 4012                               | 4.0x4.0x1.2 |
| 4020                               | 4.0x4.0x2.0 |

| ③ Feature Type |         |
|----------------|---------|
| H              | H Type  |
| M              | M Type  |
| U              | U Type  |
| UF             | UF Type |
| E              | E Type  |
| HS             | HS Type |
| F              | F Type  |

| ④ Nominal Inductance |               |
|----------------------|---------------|
| Example              | Nominal Value |
| R47                  | 0.47μH        |
| 2R2                  | 2.2μH         |

| ⑥ Packing |             |
|-----------|-------------|
| T         | Tape & Reel |

| ⑤ Inductance Tolerance |      |
|------------------------|------|
| N                      | ±30% |
| M                      | ±20% |

| ⑦ Design Code               |             |
|-----------------------------|-------------|
| □□□                         | Design Code |
| * Standard product is blank |             |

# SHAPE AND DIMENSIONS

Fig.1

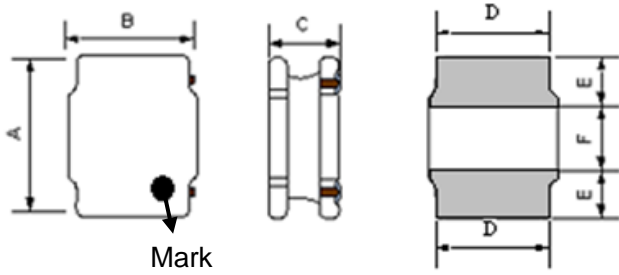


Fig.2

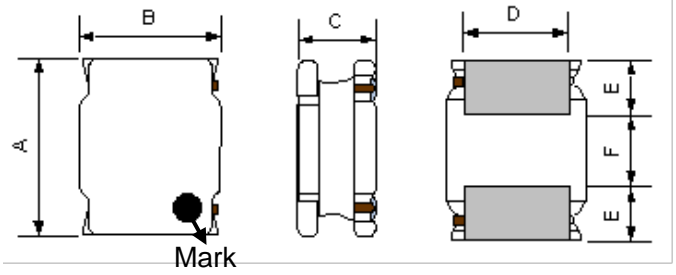


Fig.3

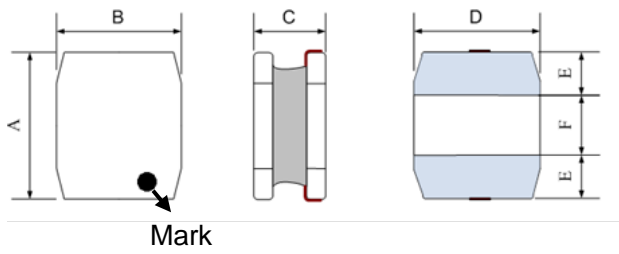


Fig.4

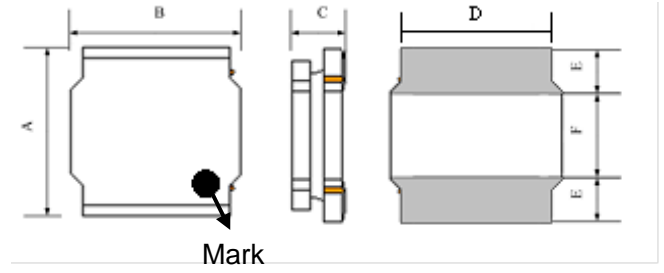
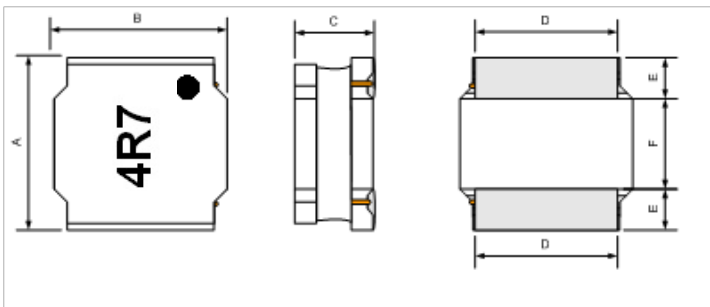
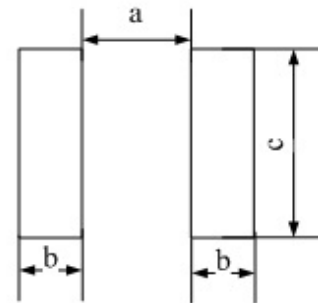


Fig.5



Recommended Land Pattern



Unit: mm

| Series          | Shape | A       | B       | C        | D        | E        | F       | a Typ. | b Typ. | c Typ. |
|-----------------|-------|---------|---------|----------|----------|----------|---------|--------|--------|--------|
| WPN201610H/HS/F | Fig.1 | 2.0±0.2 | 1.6±0.2 | 1.0 Max. | 1.5±0.2  | 0.6±0.2  | 0.8±0.2 | 0.7    | 0.7    | 1.7    |
| WPN201610M      | Fig.2 | 2.0±0.2 | 1.6±0.2 | 1.0 Max. | 1.2±0.2  | 0.6±0.2  | 0.8±0.2 | 0.7    | 0.7    | 1.7    |
| WPN201610U/UF   | Fig.3 | 2.0±0.2 | 1.6±0.2 | 1.0 Max. | 1.6±0.2  | 0.6±0.2  | 0.8±0.2 | 0.7    | 0.7    | 1.7    |
| WPN201612H      | Fig.1 | 2.0±0.2 | 1.6±0.2 | 1.2 Max. | 1.2±0.2  | 0.6±0.2  | 0.8±0.2 | 0.7    | 0.7    | 1.7    |
| WPN252010H/HS/F | Fig.1 | 2.5±0.2 | 2.0±0.2 | 1.0 Max. | 1.65±0.2 | 0.8±0.2  | 0.8±0.2 | 0.8    | 0.85   | 2.0    |
| WPN252010U/UF   | Fig.3 | 2.5±0.2 | 2.0±0.2 | 1.0 Max. | 2.0±0.2  | 0.6±0.2  | 1.3±0.2 | 1.20   | 0.80   | 2.0    |
| WPN252012H/HS   | Fig.1 | 2.5±0.2 | 2.0±0.2 | 1.2 Max. | 1.65±0.2 | 0.8±0.2  | 0.8±0.2 | 0.8    | 0.85   | 2.0    |
| WPN252012E      | Fig.1 | 2.5±0.2 | 2.0±0.2 | 1.2 Max. | 1.65±0.2 | 0.8±0.2  | 0.8±0.2 | 0.8    | 0.85   | 2.0    |
| WPN3010HS       | Fig.4 | 3.0±0.2 | 3.0±0.2 | 1.0 Max. | 2.6±0.2  | 0.75±0.2 | 1.5±0.2 | 1.5    | 0.8    | 3.2    |
| WPN3012H/HS     | Fig.4 | 3.0±0.2 | 3.0±0.2 | 1.2 Max. | 2.6±0.2  | 0.75±0.2 | 1.5±0.2 | 1.5    | 0.8    | 3.2    |
| WPN4010HS       | Fig.5 | 4.0±0.2 | 4.0±0.2 | 1.0 Max. | 3.1±0.2  | 0.95±0.2 | 2.1±0.2 | 1.9    | 1.1    | 3.7    |
| WPN4012H/HS     | Fig.5 | 4.0±0.2 | 4.0±0.2 | 1.2 Max. | 3.1±0.2  | 0.95±0.2 | 2.1±0.2 | 1.9    | 1.1    | 3.7    |
| WPN4020H        | Fig.5 | 4.0±0.2 | 4.0±0.2 | 2.0 Max. | 3.1±0.2  | 0.95±0.2 | 2.1±0.2 | 1.9    | 1.1    | 3.7    |

## SPECIFICATIONS

### WPN201210UF Series

| Part Number         | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|---------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                     | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units               | µH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol              | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201210UFR24MT    | 0.24±20%   | 0.026         | 0.021 | 100                     | 6.00               | 6.80 | 4.80                | 5.50 |
| WPN201210UF1R0MTY01 | 1.0±20%    | 0.070         | 0.060 | 45                      | 3.00               | 3.20 | 2.80                | 3.20 |

### WPN201608UF Series

| Part Number         | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|---------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                     | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units               | µH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol              | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201608UFR47MTB01 | 0.47±20%   | 0.030         | 0.025 | 85                      | 4.30               | 4.70 | 4.60                | 5.30 |
| WPN201608UF1R0MT    | 1.0±20%    | 0.080         | 0.070 | 46                      | 4.10               | 4.60 | 2.80                | 3.20 |

### WPN201610H Series

| Part Number        | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|--------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                    | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units              | µH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol             | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201610HR24MT    | 0.24±20%   | 0.040         | 0.033 | 145                     | 4.50               | 5.50 | 3.00                | 3.45 |
| WPN201610HR47MT    | 0.47±20%   | 0.049         | 0.041 | 102                     | 4.00               | 4.70 | 2.70                | 3.10 |
| WPN201610HR68MT    | 0.68±20%   | 0.065         | 0.057 | 77                      | 3.50               | 4.00 | 2.50                | 2.80 |
| WPN201610H1R0MT    | 1.0±20%    | 0.090         | 0.075 | 70                      | 3.35               | 3.85 | 2.05                | 2.35 |
| WPN201610H1R0MTY01 | 1.0±20%    | 0.070         | 0.060 | 65                      | 2.60               | 3.05 | 2.20                | 2.55 |
| WPN201610H1R5MT    | 1.5±20%    | 0.130         | 0.110 | 45                      | 1.95               | 2.30 | 1.70                | 2.00 |
| WPN201610H2R2MT    | 2.2±20%    | 0.170         | 0.142 | 39                      | 1.90               | 2.15 | 1.45                | 1.70 |
| WPN201610H4R7MT    | 4.7±20%    | 0.425         | 0.370 | 25                      | 1.20               | 1.50 | 0.90                | 1.00 |
| WPN201610H100MT    | 10±20%     | 0.826         | 0.688 | 15                      | 0.80               | 0.95 | 0.65                | 0.75 |

### WPN201610HS Series

| Part Number      | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                  | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units            | µH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol           | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201610HS4R7MT | 4.7±20%    | 0.425         | 0.370 | 25                      | 1.50               | 1.70 | 0.90                | 1.00 |
| WPN201610HS100MT | 10±20%     | 0.826         | 0.688 | 15                      | 0.95               | 1.10 | 0.65                | 0.75 |

### WPN201610M Series

| Part Number     | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | µH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201610MR24MT | 0.24±20%   | 0.026         | 0.022 | 160                     | 5.90               | 6.80 | 4.35                | 4.80 |
| WPN201610MR33MT | 0.33±20%   | 0.038         | 0.032 | 120                     | 5.50               | 6.00 | 3.40                | 3.80 |
| WPN201610MR47MT | 0.47±20%   | 0.044         | 0.037 | 107                     | 4.30               | 5.20 | 3.00                | 3.30 |
| WPN201610MR68MT | 0.68±20%   | 0.060         | 0.050 | 92                      | 3.60               | 4.20 | 2.60                | 3.00 |

## SPECIFICATIONS

| Part Number     | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | µH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201610M1R0MT | 1.0±20%    | 0.090         | 0.075 | 52                      | 3.35               | 3.85 | 2.05                | 2.35 |
| WPN201610M2R2MT | 2.2±20%    | 0.160         | 0.135 | 41                      | 1.80               | 2.00 | 1.60                | 1.75 |

### WPN201610F Series

| Part Number        | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|--------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                    | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units              | µH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol             | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201610F2R2MTY01 | 2.20±20%   | 0.152         | 0.142 | 39                      | 2.40               | 2.60 | 1.80                | 2.00 |

### WPN201610U Series

| Part Number        | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |       | Heat Rating Current |      |
|--------------------|------------|---------------|-------|-------------------------|--------------------|-------|---------------------|------|
|                    | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ.  | Max.                | Typ. |
| Units              | µH         | Ω             |       | MHz                     | A                  |       | A                   |      |
| Symbol             | L          | DCR           |       | S.R.F                   | Isat               |       | Irms                |      |
| WPN201610UR12MT    | 0.12±20%   | 0.015         | 0.012 | 250                     | 9.50               | 11.00 | 5.60                | 6.50 |
| WPN201610UR33MT    | 0.33±20%   | 0.025         | 0.022 | 121                     | 5.50               | 6.00  | 4.10                | 4.70 |
| WPN201610UR47MT    | 0.47±20%   | 0.033         | 0.028 | 110                     | 4.50               | 5.00  | 3.60                | 4.10 |
| WPN201610UR47MTY03 | 0.47±20%   | 0.033         | 0.028 | 110                     | 4.70               | 5.00  | 4.10                | 4.70 |
| WPN201610UR68MT    | 0.68±20%   | 0.045         | 0.037 | 78                      | 3.20               | 3.70  | 3.10                | 3.60 |
| WPN201610U1R0MT    | 1.0±20%    | 0.060         | 0.050 | 63                      | 3.00               | 3.50  | 2.60                | 3.00 |
| WPN201610U1R0MTY01 | 1.0±20%    | 0.060         | 0.050 | 63                      | 3.60               | 3.80  | 3.10                | 3.40 |
| WPN201610U1R5MT    | 1.5±20%    | 0.110         | 0.095 | 50                      | 2.80               | 3.20  | 2.00                | 2.30 |
| WPN201610U2R2MT    | 2.2±20%    | 0.120         | 0.100 | 44                      | 1.80               | 2.10  | 1.90                | 2.20 |
| WPN201610U2R2MTY01 | 2.2±20%    | 0.138         | 0.115 | 44                      | 2.40               | 2.60  | 2.00                | 2.20 |

### WPN201610UF Series

| Part Number      | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                  | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units            | µH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol           | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201610UFR47MT | 0.47±20%   | 0.025         | 0.022 | 110                     | 5.50               | 6.00 | 4.80                | 5.50 |
| WPN201610UF1R0MT | 1.0±20%    | 0.055         | 0.047 | 63                      | 4.00               | 4.50 | 3.65                | 4.20 |
| WPN201610UF1R5MT | 1.5±20%    | 0.083         | 0.073 | 34                      | 3.00               | 3.40 | 2.75                | 3.15 |
| WPN201610UF2R2MT | 2.2±20%    | 0.100         | 0.093 | 28                      | 2.70               | 3.00 | 2.45                | 2.80 |

### WPN201612H Series

| Part Number     | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | µH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201612HR24MT | 0.24±20%   | 0.023         | 0.019 | 116                     | 5.85               | 6.75 | 4.50                | 5.20 |
| WPN201612HR33MT | 0.33±20%   | 0.031         | 0.026 | 95                      | 5.15               | 6.00 | 3.85                | 4.45 |
| WPN201612HR47MT | 0.47±20%   | 0.041         | 0.034 | 84                      | 3.95               | 4.60 | 3.40                | 3.90 |
| WPN201612H1R5MT | 1.5±20%    | 0.109         | 0.091 | 42                      | 1.90               | 2.35 | 2.10                | 2.45 |
| WPN201612H2R2MT | 2.2±20%    | 0.146         | 0.122 | 32                      | 1.70               | 2.00 | 1.80                | 2.05 |

## SPECIFICATIONS

### WPN252010H Series

| Part Number     | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252010HR33MT | 0.33±20%   | 0.039         | 0.033 | 117                     | 4.80               | 5.50 | 3.50                | 4.05 |
| WPN252010HR47MT | 0.47±20%   | 0.045         | 0.038 | 80                      | 4.40               | 5.20 | 3.20                | 3.70 |
| WPN252010HR68MT | 0.68±20%   | 0.059         | 0.049 | 65                      | 3.20               | 3.60 | 2.75                | 3.20 |
| WPN252010H1R0MT | 1.0±20%    | 0.076         | 0.063 | 46                      | 3.10               | 3.50 | 2.50                | 2.90 |
| WPN252010H1R5MT | 1.5±20%    | 0.106         | 0.088 | 40                      | 2.60               | 3.00 | 2.00                | 2.30 |
| WPN252010H2R2MT | 2.2±20%    | 0.155         | 0.129 | 26                      | 1.90               | 2.20 | 1.50                | 1.80 |
| WPN252010H3R3MT | 3.3±20%    | 0.235         | 0.196 | 24                      | 1.60               | 1.80 | 1.20                | 1.40 |
| WPN252010H4R7MT | 4.7±20%    | 0.276         | 0.230 | 19                      | 1.30               | 1.50 | 1.10                | 1.30 |
| WPN252010H100MT | 10±20%     | 0.500         | 0.435 | 12                      | 0.90               | 1.00 | 0.80                | 0.90 |

### WPN252010HS Series

| Part Number         | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|---------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                     | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units               | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol              | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252010HS4R7MT    | 4.7±20%    | 0.276         | 0.230 | 19                      | 1.30               | 1.50 | 1.10                | 1.30 |
| WPN252010HS4R7MTY01 | 4.7±20%    | 0.290         | 0.250 | 19                      | 1.55               | 1.80 | 1.05                | 1.20 |
| WPN252010HS100MT    | 10±20%     | 0.500         | 0.435 | 12                      | 1.10               | 1.30 | 0.80                | 0.90 |
| WPN252010HS100MTY01 | 10±20%     | 0.500         | 0.435 | 12                      | 1.30               | 1.50 | 0.90                | 1.05 |

### WPN252010U Series

| Part Number        | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|--------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                    | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units              | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol             | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252010UR16MT    | 0.16±20%   | 0.020         | 0.016 | 214                     | 10.0               | 12.0 | 5.00                | 5.80 |
| WPN252010UR24MT    | 0.24±20%   | 0.025         | 0.021 | 149                     | 8.50               | 10.0 | 4.40                | 5.10 |
| WPN252010UR33MT    | 0.33±20%   | 0.025         | 0.021 | 117                     | 6.00               | 6.70 | 4.40                | 5.10 |
| WPN252010UR33MTY01 | 0.33±20%   | 0.030         | 0.025 | 100                     | 6.80               | 7.60 | 4.00                | 4.60 |
| WPN252010UR33MTY02 | 0.33±20%   | 0.030         | 0.025 | 100                     | 8.50               | 9.50 | 4.00                | 4.60 |
| WPN252010UR47MT    | 0.47±20%   | 0.030         | 0.025 | 92                      | 5.30               | 5.80 | 4.00                | 4.60 |
| WPN252010UR68MT    | 0.68±20%   | 0.043         | 0.036 | 67                      | 5.20               | 5.70 | 3.30                | 3.80 |
| WPN252010U1R0MT    | 1.0±20%    | 0.050         | 0.042 | 54                      | 4.10               | 4.60 | 3.10                | 3.60 |
| WPN252010U1R0MTY01 | 1.0±20%    | 0.060         | 0.050 | 62                      | 4.90               | 5.60 | 3.00                | 3.50 |
| WPN252010U1R5MT    | 1.5±20%    | 0.076         | 0.063 | 41                      | 3.00               | 3.40 | 2.40                | 2.80 |
| WPN252010U2R2MT    | 2.2±20%    | 0.096         | 0.080 | 34                      | 2.60               | 2.90 | 2.05                | 2.40 |
| WPN252010U4R7MT    | 4.7±20%    | 0.240         | 0.200 | 22                      | 1.90               | 2.20 | 1.40                | 1.60 |

## SPECIFICATIONS

### WPN252010UF Series

| Part Number         | Inductance     | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|---------------------|----------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                     | @1MHz          | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units               | $\mu\text{H}$  | $\Omega$      |       | MHz                     | A                  |      | A                   |      |
| Symbol              | L              | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252010UFR47MT    | 0.47 $\pm$ 20% | 0.019         | 0.017 | 90                      | 6.00               | 6.60 | 6.70                | 7.50 |
| WPN252010UFR68MT    | 0.68 $\pm$ 20% | 0.032         | 0.027 | 65                      | 5.40               | 6.20 | 4.80                | 5.50 |
| WPN252010UF1R0MT    | 1.0 $\pm$ 20%  | 0.038         | 0.032 | 46                      | 4.70               | 5.20 | 4.50                | 5.20 |
| WPN252010UF1R5MT    | 1.5 $\pm$ 20%  | 0.054         | 0.045 | 40                      | 2.80               | 3.20 | 3.60                | 4.20 |
| WPN252010UF2R2MT    | 2.2 $\pm$ 20%  | 0.070         | 0.064 | 30                      | 2.80               | 3.10 | 3.10                | 3.60 |
| WPN252010UF2R2MTY01 | 2.2 $\pm$ 20%  | 0.085         | 0.071 | 28                      | 3.20               | 3.50 | 2.90                | 3.30 |

### WPN252012H Series

| Part Number        | Inductance     | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|--------------------|----------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                    | @1MHz          | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units              | $\mu\text{H}$  | $\Omega$      |       | MHz                     | A                  |      | A                   |      |
| Symbol             | L              | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252012HR24MT    | 0.24 $\pm$ 20% | 0.023         | 0.019 | 117                     | 6.50               | 7.80 | 4.05                | 4.70 |
| WPN252012HR33MT    | 0.33 $\pm$ 20% | 0.028         | 0.023 | 104                     | 5.30               | 6.20 | 3.70                | 4.30 |
| WPN252012HR47MT    | 0.47 $\pm$ 20% | 0.035         | 0.029 | 89                      | 4.90               | 5.60 | 3.45                | 4.00 |
| WPN252012HR68MT    | 0.68 $\pm$ 20% | 0.043         | 0.036 | 67                      | 3.70               | 4.30 | 3.15                | 3.60 |
| WPN252012H1R0MT    | 1.0 $\pm$ 20%  | 0.054         | 0.048 | 52                      | 3.60               | 4.20 | 3.00                | 3.40 |
| WPN252012H1R5MT    | 1.5 $\pm$ 20%  | 0.072         | 0.060 | 38                      | 2.90               | 3.50 | 2.40                | 2.80 |
| WPN252012H2R2MT    | 2.2 $\pm$ 20%  | 0.120         | 0.100 | 32                      | 2.60               | 3.00 | 1.90                | 2.15 |
| WPN252012H2R2MTY01 | 2.2 $\pm$ 20%  | 0.102         | 0.085 | 36                      | 2.30               | 2.70 | 2.10                | 2.40 |
| WPN252012H3R3MT    | 3.3 $\pm$ 20%  | 0.163         | 0.136 | 25                      | 1.70               | 2.10 | 1.80                | 2.05 |
| WPN252012H4R7MT    | 4.7 $\pm$ 20%  | 0.260         | 0.225 | 23                      | 1.60               | 1.90 | 1.25                | 1.45 |
| WPN252012H6R8MT    | 6.8 $\pm$ 20%  | 0.366         | 0.305 | 16                      | 1.15               | 1.35 | 0.95                | 1.10 |
| WPN252012H100MT    | 10 $\pm$ 20%   | 0.480         | 0.435 | 14                      | 1.10               | 1.35 | 0.85                | 1.00 |

### WPN252012HS Series

| Part Number      | Inductance    | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|------------------|---------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                  | @1MHz         | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units            | $\mu\text{H}$ | $\Omega$      |       | MHz                     | A                  |      | A                   |      |
| Symbol           | L             | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252012HS4R7MT | 4.7 $\pm$ 20% | 0.260         | 0.225 | 23                      | 1.70               | 1.90 | 1.25                | 1.45 |
| WPN252012HS100MT | 10 $\pm$ 20%  | 0.480         | 0.435 | 14                      | 1.10               | 1.35 | 0.85                | 1.00 |

### WPN252012E Series

| Part Number     | Inductance     | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|----------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz          | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | $\mu\text{H}$  | $\Omega$      |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L              | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252012ER33MT | 0.33 $\pm$ 20% | 0.026         | 0.020 | 107                     | 8.00               | 9.00 | 4.50                | 5.10 |
| WPN252012ER47MT | 0.47 $\pm$ 20% | 0.032         | 0.026 | 92                      | 7.00               | 8.00 | 4.10                | 4.70 |
| WPN252012E1R0MT | 1.0 $\pm$ 20%  | 0.044         | 0.037 | 52                      | 4.50               | 5.00 | 3.50                | 3.90 |

## SPECIFICATIONS

### WPN3010HS Series

| Part Number    | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units          | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol         | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN3010HS100MT | 10±20%     | 0.432         | 0.360 | 16                      | 1.00               | 1.20 | 1.20                | 1.40 |

### WPN3012H Series

| Part Number   | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|---------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|               | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units         | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol        | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN3012HR33MT | 0.33±20%   | 0.027         | 0.023 | 107                     | 7.20               | 8.90 | 4.20                | 4.85 |
| WPN3012HR47MT | 0.47±20%   | 0.033         | 0.028 | 86                      | 6.80               | 8.00 | 3.90                | 4.50 |
| WPN3012HR68MT | 0.68±20%   | 0.042         | 0.035 | 63                      | 5.80               | 6.80 | 3.40                | 3.90 |
| WPN3012H1R0MT | 1.0±20%    | 0.054         | 0.045 | 51                      | 4.20               | 5.40 | 2.70                | 3.10 |
| WPN3012H1R5MT | 1.5±20%    | 0.074         | 0.064 | 37                      | 3.40               | 4.10 | 2.50                | 2.90 |
| WPN3012H2R2MT | 2.2±20%    | 0.108         | 0.090 | 28                      | 2.80               | 3.35 | 2.05                | 2.35 |
| WPN3012H3R3MT | 3.3±20%    | 0.155         | 0.129 | 25                      | 2.20               | 2.60 | 1.70                | 2.00 |
| WPN3012H4R7MT | 4.7±20%    | 0.235         | 0.196 | 20                      | 2.00               | 2.50 | 1.30                | 1.50 |
| WPN3012H6R8MT | 6.8±20%    | 0.340         | 0.290 | 16                      | 1.60               | 1.90 | 1.10                | 1.25 |
| WPN3012H100MT | 10±20%     | 0.474         | 0.395 | 12                      | 1.20               | 1.45 | 1.00                | 1.15 |

### WPN3012HS Series

| Part Number       | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                   | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units             | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol            | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN3012HS4R7MT    | 4.7±20%    | 0.235         | 0.196 | 20                      | 2.00               | 2.50 | 1.30                | 1.50 |
| WPN3012HS6R8MT    | 6.8±20%    | 0.312         | 0.260 | 21                      | 2.40               | 2.70 | 1.10                | 1.25 |
| WPN3012HS100MT    | 10±20%     | 0.474         | 0.395 | 12                      | 1.35               | 1.65 | 1.00                | 1.15 |
| WPN3012HS100MTY01 | 10±20%     | 0.415         | 0.360 | 17                      | 1.90               | 2.15 | 1.35                | 1.55 |
| WPN3012HS150MT    | 15±20%     | 0.635         | 0.550 | 13                      | 1.55               | 1.75 | 1.10                | 1.25 |

### WPN4010HS Series

| Part Number    | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units          | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol         | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN4010HS100MT | 10±20%     | 0.335         | 0.280 | 10                      | 1.40               | 1.65 | 1.40                | 1.65 |

### WPN4012H Series

| Part Number   | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |       | Heat Rating Current |      |
|---------------|------------|---------------|-------|-------------------------|--------------------|-------|---------------------|------|
|               | @1MHz      | Max.          | Typ.  | Min.                    | Max.               | Typ.  | Max.                | Typ. |
| Units         | μH         | Ω             |       | MHz                     | A                  |       | A                   |      |
| Symbol        | L          | DCR           |       | S.R.F                   | Isat               |       | Irms                |      |
| WPN4012HR33MT | 0.33±20%   | 0.032         | 0.027 | 113                     | 10.30              | 11.50 | 4.30                | 4.90 |
| WPN4012HR47MT | 0.47±20%   | 0.041         | 0.034 | 96                      | 9.10               | 9.90  | 3.80                | 4.40 |
| WPN4012HR68MT | 0.68±20%   | 0.041         | 0.034 | 70                      | 5.50               | 6.35  | 3.80                | 4.40 |
| WPN4012H1R0MT | 1.0±20%    | 0.059         | 0.049 | 55                      | 5.70               | 6.60  | 3.20                | 3.70 |



## SPECIFICATIONS

### WPN4012H/HS Series

| Part Number      | Inductance    | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|------------------|---------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                  | @1MHz         | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units            | $\mu\text{H}$ | $\Omega$      |       | MHz                     | A                  |      | A                   |      |
| Symbol           | L             | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN4012H1R0MTY01 | 1.0±20%       | 0.049         | 0.041 | 56                      | 4.50               | 5.30 | 3.60                | 4.20 |
| WPN4012H1R2MT    | 1.2±20%       | 0.059         | 0.049 | 48                      | 4.00               | 4.80 | 3.20                | 3.70 |
| WPN4012H1R5MT    | 1.5±20%       | 0.070         | 0.058 | 38                      | 3.90               | 4.60 | 2.90                | 3.30 |
| WPN4012H2R2MT    | 2.2±20%       | 0.079         | 0.066 | 28                      | 2.80               | 3.30 | 2.70                | 3.10 |
| WPN4012H3R3MT    | 3.3±20%       | 0.125         | 0.104 | 23                      | 2.80               | 3.30 | 2.10                | 2.50 |
| WPN4012H4R7MT    | 4.7±20%       | 0.166         | 0.138 | 19                      | 2.30               | 2.60 | 1.90                | 2.20 |
| WPN4012H6R8MT    | 6.8±20%       | 0.226         | 0.188 | 17                      | 1.60               | 2.20 | 1.60                | 1.85 |
| WPN4012H100MT    | 10±20%        | 0.335         | 0.279 | 12                      | 1.55               | 1.85 | 1.30                | 1.50 |
| WPN4012H220MT    | 22±20%        | 0.679         | 0.566 | 7                       | 1.05               | 1.30 | 0.90                | 1.05 |
| WPN4012HS4R7MT   | 4.7±20%       | 0.162         | 0.135 | 28                      | 2.60               | 3.00 | 2.05                | 2.35 |
| WPN4012HS100MT   | 10±20%        | 0.276         | 0.230 | 12                      | 1.80               | 2.10 | 1.55                | 1.75 |

### WPN4020H Series

| Part Number   | Inductance    | DC Resistance |       | Self-resonant Frequency | Saturation Current |       | Heat Rating Current |      |
|---------------|---------------|---------------|-------|-------------------------|--------------------|-------|---------------------|------|
|               | @1MHz         | Max.          | Typ.  | Min.                    | Max.               | Typ.  | Max.                | Typ. |
| Units         | $\mu\text{H}$ | $\Omega$      |       | MHz                     | A                  |       | A                   |      |
| Symbol        | L             | DCR           |       | S.R.F                   | Isat               |       | Irms                |      |
| WPN4020HR22MT | 0.22±20%      | 0.013         | 0.011 | 108                     | 18.70              | 22.00 | 8.20                | 9.50 |
| WPN4020HR47MT | 0.47±20%      | 0.022         | 0.018 | 72                      | 13.40              | 15.50 | 6.40                | 7.40 |
| WPN4020HR68MT | 0.68±20%      | 0.022         | 0.018 | 57                      | 8.70               | 11.10 | 6.40                | 7.40 |
| WPN4020H1R0MT | 1.0±20%       | 0.026         | 0.022 | 37                      | 8.70               | 11.10 | 5.80                | 6.70 |
| WPN4020H1R5MT | 1.5±20%       | 0.036         | 0.030 | 30                      | 7.70               | 9.60  | 5.20                | 6.00 |
| WPN4020H2R2MT | 2.2±20%       | 0.048         | 0.040 | 25                      | 6.10               | 7.60  | 4.30                | 5.00 |
| WPN4020H3R3MT | 3.3±20%       | 0.072         | 0.060 | 19                      | 4.70               | 5.90  | 3.45                | 4.00 |
| WPN4020H4R7MT | 4.7±20%       | 0.108         | 0.090 | 17                      | 4.00               | 4.90  | 2.85                | 3.30 |
| WPN4020H6R8MT | 6.8±20%       | 0.156         | 0.130 | 13                      | 3.00               | 4.20  | 2.40                | 2.80 |
| WPN4020H100MT | 10±20%        | 0.216         | 0.180 | 11                      | 2.80               | 3.50  | 2.00                | 2.35 |

※1: All test data is referenced to 20°C ambient;

※2: Rated current: Isat or Irms, whichever is smaller;

※3: For WPN2016 & WPN2520 size inductors, absolute maximum voltage: DC 25V; For WPN30 & WPN40 size inductors, absolute maximum voltage: DC 40V;

※Isat: DC current at which the inductance drops approximate 30% from its value without current;

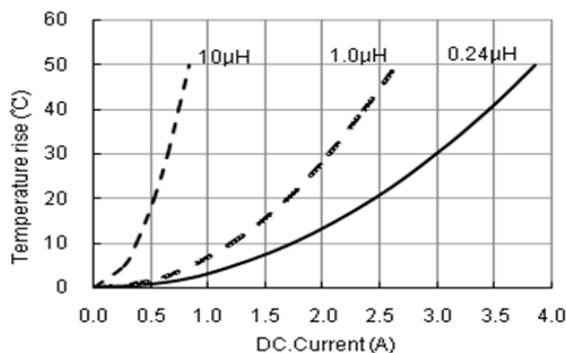
※Irms: DC current that causes the temperature rise ( $\Delta T = 40^\circ\text{C}$ ) from 20°C ambient.

※WPN-HS series is processed with surface coating technology, coated by the resin of high voltage insulation level coating on the core surface evenly by automatic equipment, to improve the voltage insulation and corrosion resistance of the core.

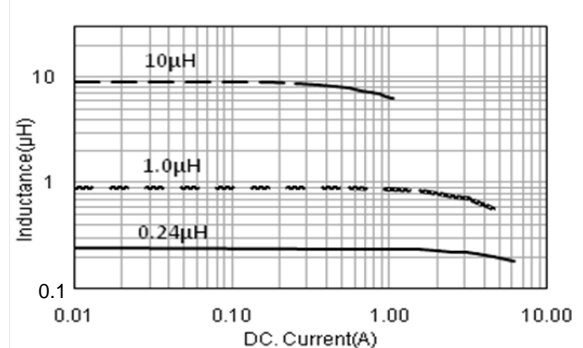
## TYPICAL ELECTRICAL CHARACTERISTICS

### WPN201610H Series

Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics

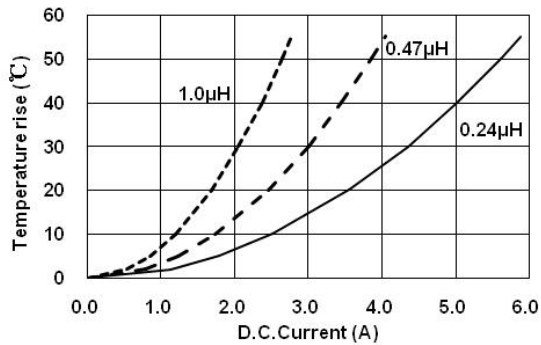




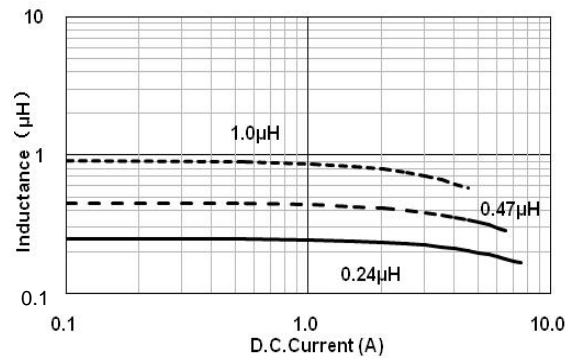
# TYPICAL ELECTRICAL CHARACTERISTICS

## WPN201610M Series

Temperature vs. DC Current Characteristics

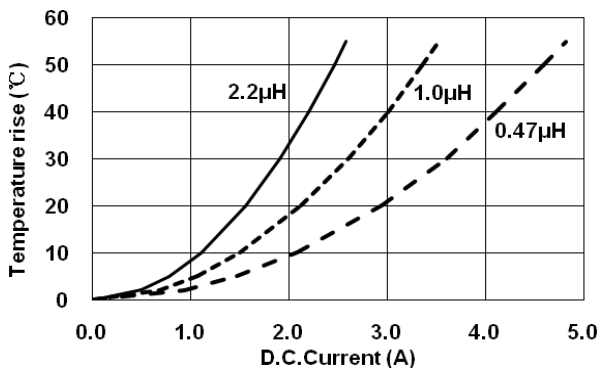


Inductance vs. DC Current Characteristics

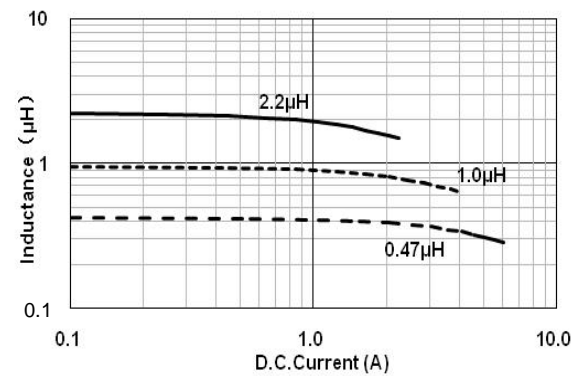


## WPN201610U Series

Temperature vs. DC Current Characteristics

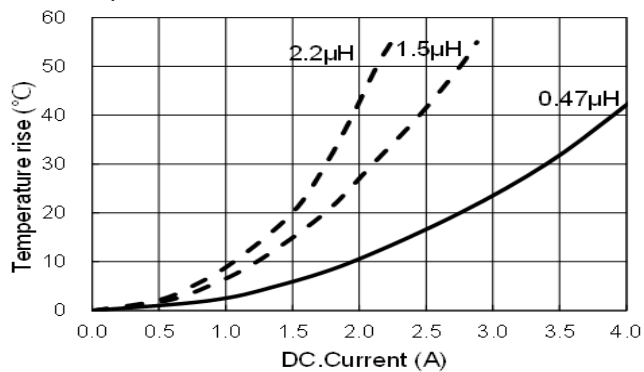


Inductance vs. DC Current Characteristics

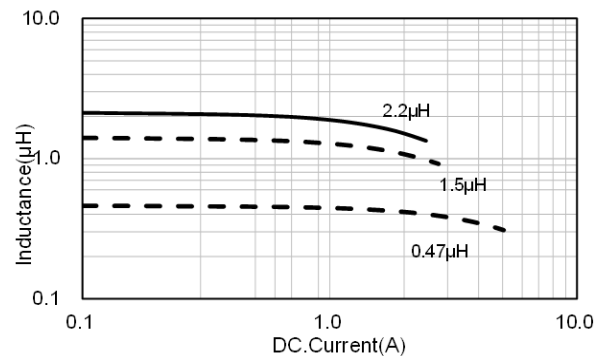


## WPN201612H Series

Temperature vs. DC Current Characteristics

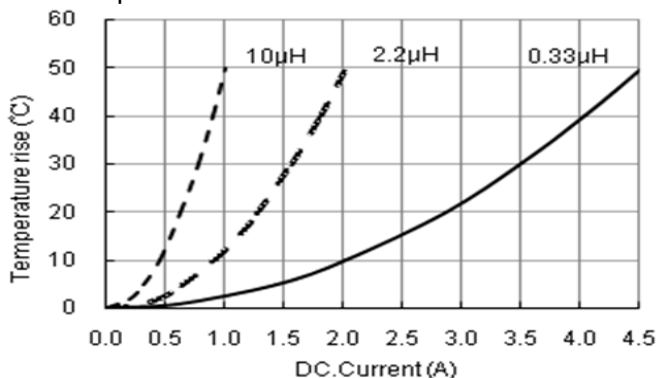


Inductance vs. DC Current Characteristics

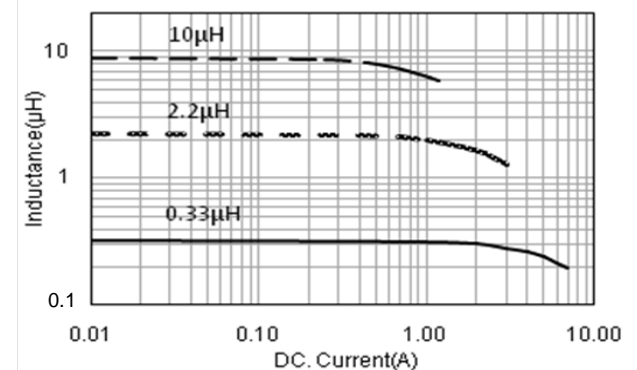


## WPN252010H Series

Temperature vs. DC Current Characteristics



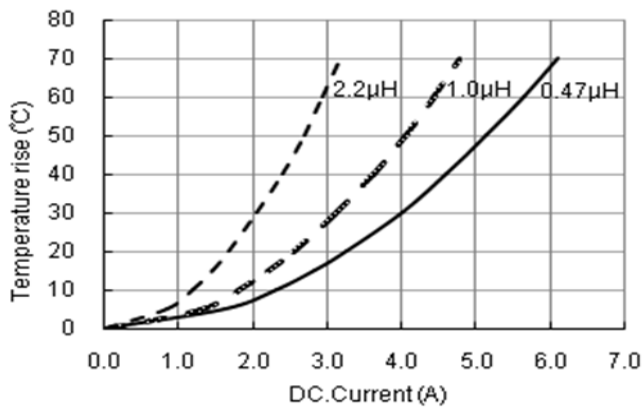
Inductance vs. DC Current Characteristics



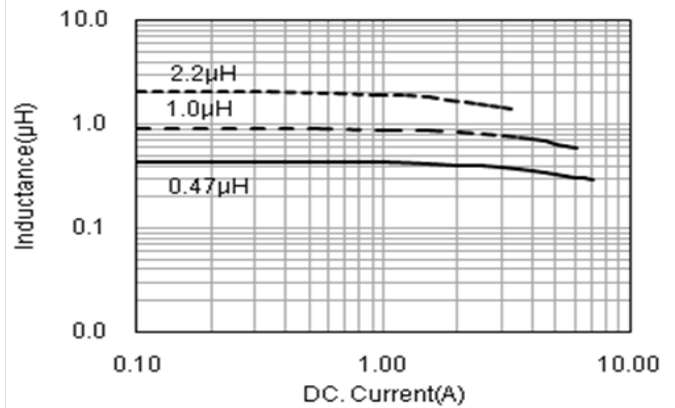
# TYPICAL ELECTRICAL CHARACTERISTICS

## WPN252010U Series

Temperature vs. DC Current Characteristics

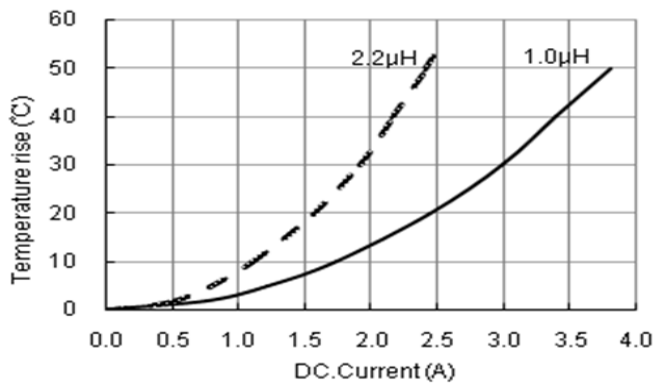


Inductance vs. DC Current Characteristics

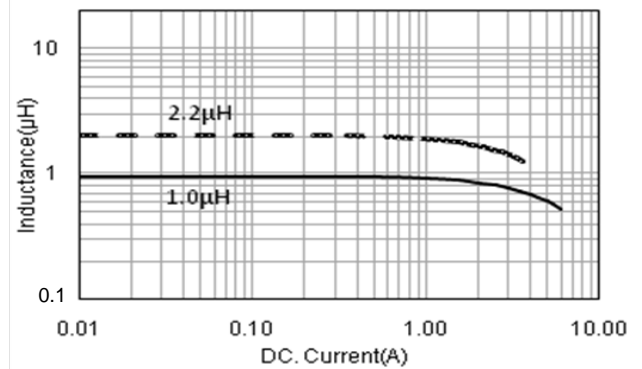


## WPN252012H Series

Temperature vs. DC Current Characteristics

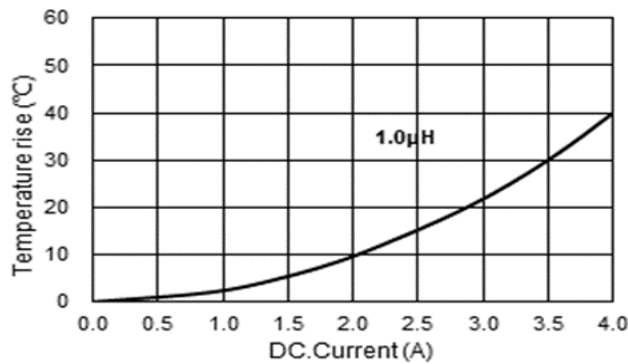


Inductance vs. DC Current Characteristics

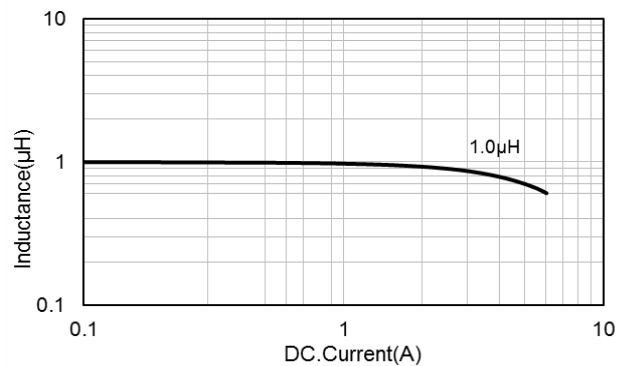


## WPN252012E Series

Temperature vs. DC Current Characteristics

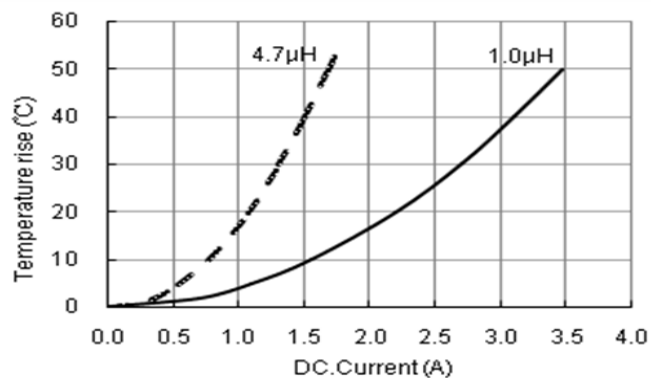


Inductance vs. DC Current Characteristics

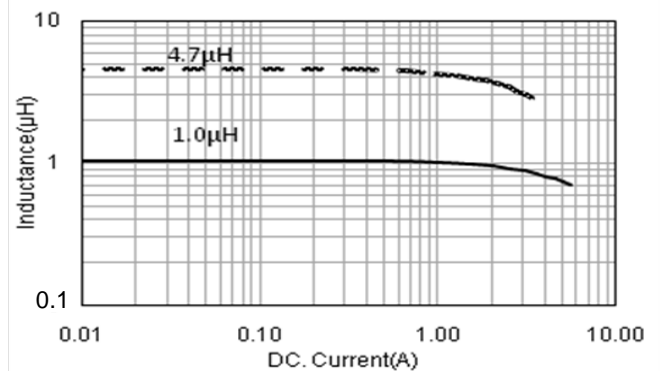


## WPN3012H Series

Temperature vs. DC Current Characteristics



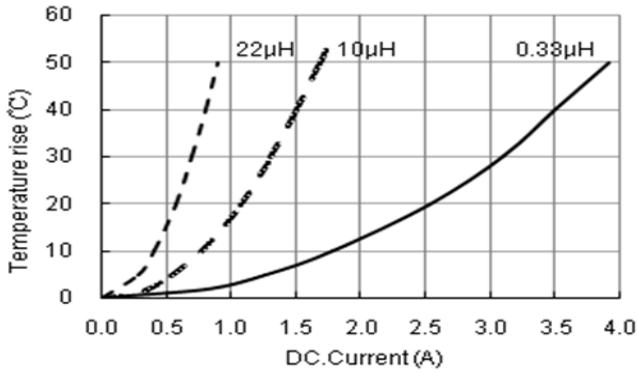
Inductance vs. DC Current Characteristics



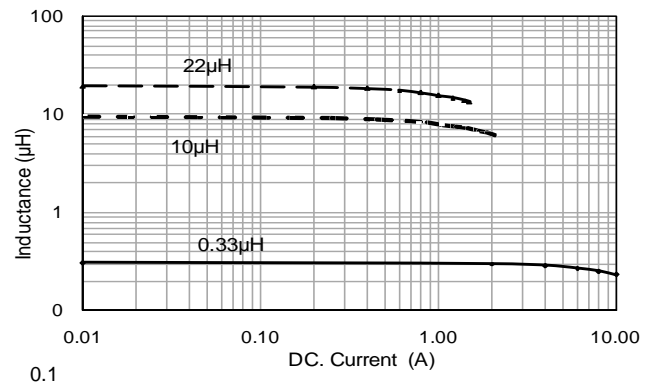
# TYPICAL ELECTRICAL CHARACTERISTICS

## WPN4012H Series

Temperature vs. DC Current Characteristics

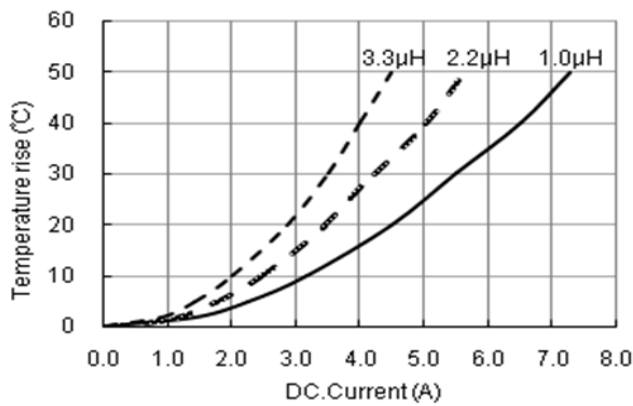


Inductance vs. DC Current Characteristics

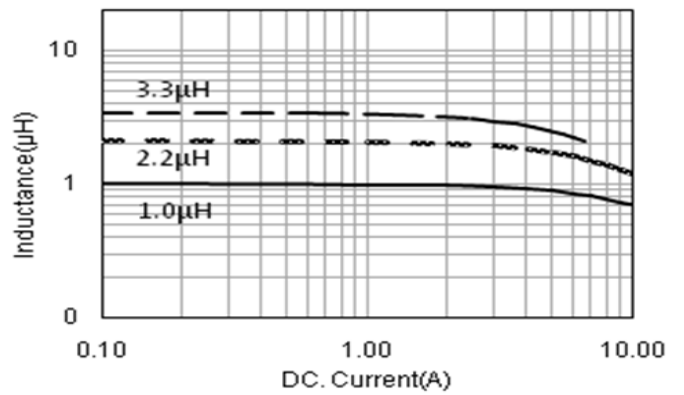


## WPN4020H Series

Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics



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