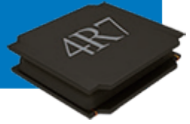


# Wire Wound SMD Power Inductors – WPN Series



**Operating Temp** ◆  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$  (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

| 1   | 2      | 3 | 4   | 5 | 6 | 7   |
|-----|--------|---|-----|---|---|-----|
| WPN | 252012 | H | 2R2 | M | T | □□□ |

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

| 2      | External Dimensions (L×W×H) [mm] |
|--------|----------------------------------|
| 201610 | 2.0×1.6×1.0                      |
| 201612 | 2.0×1.6×1.2                      |
| 252010 | 2.5×2.0×1.0                      |
| 252012 | 2.5×2.0×1.2                      |
| 3010   | 3.0×3.0×1.0                      |
| 3012   | 3.0×3.0×1.2                      |
| 4010   | 4.0×4.0×1.0                      |
| 4012   | 4.0×4.0×1.2                      |
| 4020   | 4.0×4.0×2.0                      |

| 3  | Feature Type |
|----|--------------|
| H  | H Type       |
| M  | M Type       |
| U  | U Type       |
| E  | E Type       |
| F  | F Type       |
| P  | P Type       |
| S  | S Type       |
| HS | HS Type      |

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

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

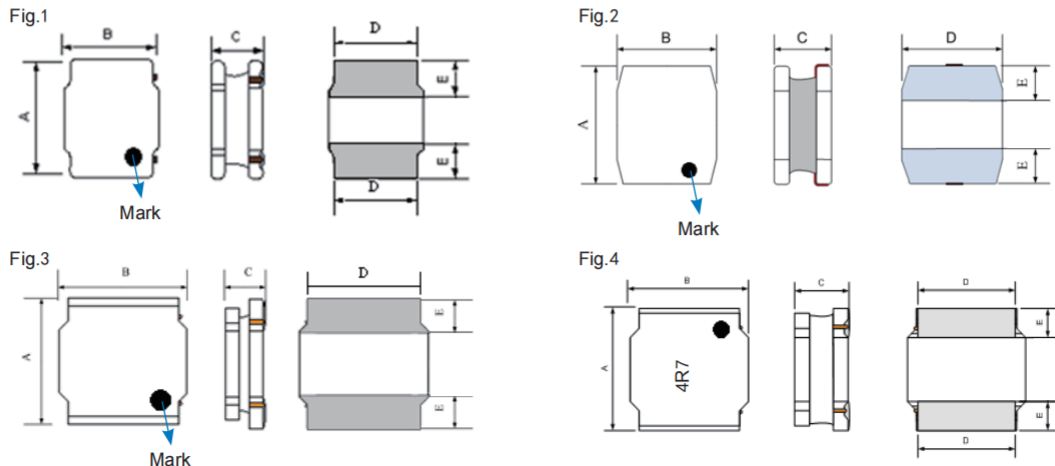
  

| 6 | Packing     |
|---|-------------|
| T | Tape & Reel |

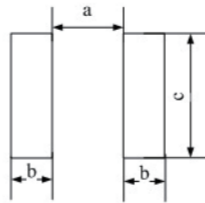
  

| 7                          | Design Code |
|----------------------------|-------------|
| □□□                        | Design Code |
| *Standard product is blank |             |

## Shape and Dimensions



## Shape and Dimensions



Recommended Land Pattern

Unit: mm

| Series        | Shape | A       | B       | C Max.   | D        | E        | a Typ. | b Typ. | c Typ. |
|---------------|-------|---------|---------|----------|----------|----------|--------|--------|--------|
| WPN201610H/HS | Fig.1 | 2.0±0.2 | 1.6±0.2 | 1.0      | 1.5±0.2  | 0.6±0.2  | 0.7    | 0.7    | 1.7    |
| WPN201610M    | Fig.1 | 2.0±0.2 | 1.6±0.2 | 1.0      | 1.2±0.2  | 0.6±0.2  | 0.7    | 0.7    | 1.7    |
| WPN201610U    | Fig.2 | 2.0±0.2 | 1.6±0.2 | 1.0      | 1.6±0.2  | 0.6±0.2  | 0.7    | 0.7    | 1.7    |
| WPN201610P    | Fig.1 | 2.0±0.2 | 1.6±0.2 | 1.0/1.05 | 1.5±0.2  | 0.6±0.2  | 0.7    | 0.7    | 1.6    |
| WPN201610S    | Fig.1 | 2.0±0.2 | 1.6±0.2 | 1.0      | 1.5±0.2  | 0.6±0.2  | 0.7    | 0.7    | 1.6    |
| WPN201612H    | Fig.1 | 2.0±0.2 | 1.6±0.2 | 1.2      | 1.2±0.2  | 0.6±0.2  | 0.7    | 0.7    | 1.7    |
| WPN252010H/HS | Fig.1 | 2.5±0.2 | 2.0±0.2 | 1.0      | 1.65±0.2 | 0.8±0.2  | 0.8    | 0.85   | 2.0    |
| WPN252010U    | Fig.2 | 2.5±0.2 | 2.0±0.2 | 1.0      | 2.0±0.2  | 0.6±0.2  | 1.2    | 0.8    | 2.0    |
| WPN252010F    | Fig.1 | 2.5±0.2 | 2.0±0.2 | 1.0      | 1.75±0.2 | 0.8±0.2  | 0.8    | 0.85   | 2.0    |
| WPN252010P    | Fig.1 | 2.5±0.2 | 2.0±0.2 | 1.0      | 1.75±0.2 | 0.8±0.2  | 0.8    | 0.85   | 2.0    |
| WPN252010S    | Fig.1 | 2.5±0.2 | 2.0±0.2 | 1.0      | 1.75±0.2 | 0.8±0.2  | 0.8    | 0.85   | 2.0    |
| WPN252012H/HS | Fig.1 | 2.5±0.2 | 2.0±0.2 | 1.2      | 1.65±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      | 1.65±0.2 | 0.8±0.2  | 0.8    | 0.85   | 2.0    |
| WPN252012S    | Fig.1 | 2.5±0.2 | 2.0±0.2 | 1.2      | 1.75±0.2 | 0.8±0.2  | 0.8    | 0.85   | 2.0    |
| WPN3010HS     | Fig.3 | 3.0±0.2 | 3.0±0.2 | 1.0      | 2.6±0.2  | 0.75±0.2 | 1.5    | 0.8    | 3.2    |
| WPN3012H/HS   | Fig.3 | 3.0±0.2 | 3.0±0.2 | 1.2      | 2.6±0.2  | 0.75±0.2 | 1.5    | 0.8    | 3.2    |
| WPN4010HS     | Fig.4 | 4.0±0.2 | 4.0±0.2 | 1.0      | 3.1±0.2  | 0.95±0.2 | 1.9    | 1.1    | 3.7    |
| WPN4012H/HS   | Fig.4 | 4.0±0.2 | 4.0±0.2 | 1.2      | 3.4±0.2  | 0.95±0.2 | 1.9    | 1.1    | 3.7    |
| WPN4020H      | Fig.4 | 4.0±0.2 | 4.0±0.2 | 2.0      | 3.4±0.2  | 0.95±0.2 | 1.9    | 1.1    | 3.7    |

## Specifications

## WPN201610H Series

| Part Number        | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|--------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                    | @1MHz, 1V  | 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, 1V  | 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 |

## Specifications

### WPN201610M Series

| Part Number     | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz, 1V  | 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 |
| 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 |

### WPN201610U Series

| Part Number     | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |       | Heat Rating Current |      |
|-----------------|------------|---------------|-------|-------------------------|--------------------|-------|---------------------|------|
|                 | @1MHz, 1V  | 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 |
| WPN201610UR22MT | 0.22±20%   | 0.022         | 0.017 | 159                     | 6.00               | 6.70  | 4.50                | 5.20 |
| WPN201610UR24MT | 0.24±20%   | 0.022         | 0.017 | 143                     | 5.60               | 6.70  | 4.50                | 5.20 |
| 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 |
| 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 |
| 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 |
| WPN201610U4R7MT | 4.7±20%    | 0.288         | 0.240 | 21                      | 1.30               | 1.50  | 1.25                | 1.45 |

### WPN201610P Series

| Part Number     | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201610PR33MT | 0.33±20%   | 0.029         | 0.024 | 98                      | 4.50               | 5.00 | 3.69                | 4.10 |
| WPN201610PR47MT | 0.47±20%   | 0.040         | 0.033 | 89                      | 4.00               | 4.40 | 3.15                | 3.50 |
| WPN201610P1R0MT | 1.0±20%    | 0.069         | 0.060 | 56                      | 2.61               | 2.91 | 2.26                | 2.60 |
| WPN201610P2R2MT | 2.2±20%    | 0.150         | 0.135 | 36                      | 1.71               | 1.90 | 1.50                | 1.70 |

### WPN201610S Series

| Part Number        | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|--------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                    | @1MHz, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units              | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol             | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201610SR24MTY01 | 0.24±20%   | 0.026         | 0.020 | 157                     | 6.20               | 7.00 | 5.15                | 5.75 |
| WPN201610SR33MT    | 0.33±20%   | 0.030         | 0.021 | 104                     | 6.10               | 6.70 | 3.60                | 4.40 |
| WPN201610SR47MT    | 0.47±20%   | 0.042         | 0.023 | 92                      | 5.30               | 6.10 | 3.75                | 4.00 |
| WPN201610SR68MT    | 0.68±20%   | 0.060         | 0.045 | 76                      | 3.60               | 4.20 | 3.05                | 3.50 |
| WPN201610S1R0MT    | 1.0±20%    | 0.070         | 0.048 | 54                      | 3.30               | 3.90 | 3.00                | 3.20 |
| WPN201610S1R5MT    | 1.5±20%    | 0.114         | 0.095 | 42                      | 2.50               | 2.70 | 2.30                | 2.60 |
| WPN201610S2R2MT    | 2.2±20%    | 0.155         | 0.117 | 38                      | 2.45               | 2.60 | 1.90                | 2.10 |

## Specifications

## WPN201612H Series

| Part Number     | Inductance      | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|-----------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz, 1V       | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | $\mu\text{H}$   | $\Omega$      |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L               | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN201612HR24MT | $0.24 \pm 20\%$ | 0.023         | 0.019 | 116                     | 5.85               | 6.75 | 4.50                | 5.20 |
| WPN201612HR33MT | $0.33 \pm 20\%$ | 0.031         | 0.026 | 95                      | 5.15               | 6.00 | 3.85                | 4.45 |
| WPN201612HR47MT | $0.47 \pm 20\%$ | 0.041         | 0.034 | 84                      | 3.95               | 4.60 | 3.40                | 3.90 |
| WPN201612H1R0MT | $1.0 \pm 20\%$  | 0.059         | 0.049 | 60                      | 2.70               | 3.10 | 2.70                | 3.00 |
| WPN201612H1R5MT | $1.5 \pm 20\%$  | 0.109         | 0.091 | 42                      | 1.90               | 2.35 | 2.10                | 2.45 |
| WPN201612H2R2MT | $2.2 \pm 20\%$  | 0.146         | 0.122 | 32                      | 1.70               | 2.00 | 1.80                | 2.05 |

## WPN252010H Series

| Part Number     | Inductance      | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|-----------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz, 1V       | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | $\mu\text{H}$   | $\Omega$      |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L               | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252010HR33MT | $0.33 \pm 20\%$ | 0.039         | 0.033 | 117                     | 4.80               | 5.50 | 3.50                | 4.05 |
| WPN252010HR47MT | $0.47 \pm 20\%$ | 0.045         | 0.038 | 80                      | 4.40               | 5.20 | 3.20                | 3.70 |
| WPN252010HR68MT | $0.68 \pm 20\%$ | 0.059         | 0.049 | 65                      | 3.20               | 3.60 | 2.75                | 3.20 |
| WPN252010H1R0MT | $1.0 \pm 20\%$  | 0.076         | 0.063 | 46                      | 3.10               | 3.50 | 2.50                | 2.90 |
| WPN252010H1R5MT | $1.5 \pm 20\%$  | 0.106         | 0.088 | 40                      | 2.60               | 3.00 | 2.00                | 2.30 |
| WPN252010H2R2MT | $2.2 \pm 20\%$  | 0.155         | 0.129 | 26                      | 1.90               | 2.20 | 1.50                | 1.80 |
| WPN252010H3R3MT | $3.3 \pm 20\%$  | 0.235         | 0.196 | 24                      | 1.60               | 1.80 | 1.20                | 1.40 |
| WPN252010H4R7MT | $4.7 \pm 20\%$  | 0.276         | 0.230 | 19                      | 1.30               | 1.50 | 1.10                | 1.30 |
| WPN252010H100MT | $10 \pm 20\%$   | 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, 1V      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units               | $\mu\text{H}$  | $\Omega$      |       | MHz                     | A                  |      | A                   |      |
| Symbol              | L              | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252010HS4R7MT    | $4.7 \pm 20\%$ | 0.276         | 0.230 | 19                      | 1.30               | 1.50 | 1.10                | 1.30 |
| WPN252010HS4R7MTY01 | $4.7 \pm 20\%$ | 0.290         | 0.250 | 19                      | 1.55               | 1.80 | 1.05                | 1.20 |
| WPN252010HS100MT    | $10 \pm 20\%$  | 0.500         | 0.435 | 12                      | 1.10               | 1.30 | 0.80                | 0.90 |

## WPN252010U Series

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

## Specifications

### WPN252010F Series

| Part Number     | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252010FR24MT | 0.24±20%   | 0.025         | 0.021 | /                       | 10.4               | 11.6 | 4.40                | 5.10 |
| WPN252010FR33MT | 0.33±20%   | 0.025         | 0.021 | /                       | 6.00               | 6.70 | 4.40                | 5.10 |
| WPN252010FR47MT | 0.47±20%   | 0.030         | 0.025 | /                       | 5.30               | 6.00 | 4.00                | 4.60 |
| WPN252010FR68MT | 0.68±20%   | 0.043         | 0.036 | /                       | 5.20               | 5.70 | 3.30                | 3.80 |
| WPN252010F1R0MT | 1.0±20%    | 0.060         | 0.050 | /                       | 4.20               | 4.80 | 2.85                | 3.30 |
| WPN252010F2R2MT | 2.2±20%    | 0.156         | 0.130 | /                       | 3.10               | 3.50 | 1.60                | 1.90 |

### WPN252010P Series

| Part Number     | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252010PR33MT | 0.33±20%   | 0.026         | 0.021 | 97                      | 6.00               | 6.60 | 4.00                | 4.40 |
| WPN252010PR47MT | 0.47±20%   | 0.032         | 0.027 | 79                      | 4.50               | 5.00 | 3.51                | 3.90 |
| WPN252010P1R0MT | 1.0±20%    | 0.065         | 0.045 | 54                      | 3.15               | 3.50 | 2.70                | 3.00 |
| WPN252010P2R2MT | 2.2±20%    | 0.125         | 0.099 | 31                      | 2.16               | 2.40 | 2.07                | 2.30 |

### WPN252010S Series

| Part Number     | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252010SR33MT | 0.33±20%   | 0.026         | 0.017 | 97                      | 7.00               | 7.80 | 4.70                | 5.20 |
| WPN252010SR47MT | 0.47±20%   | 0.032         | 0.023 | 79                      | 6.00               | 6.60 | 4.20                | 4.80 |
| WPN252010SR68MT | 0.68±20%   | 0.050         | 0.040 | 62                      | 5.00               | 5.60 | 3.80                | 4.40 |
| WPN252010S1R0MT | 1.0±20%    | 0.065         | 0.041 | 54                      | 4.00               | 4.40 | 3.00                | 3.20 |
| WPN252010S1R5MT | 1.5±20%    | 0.105         | 0.085 | 45                      | 2.60               | 3.00 | 2.70                | 3.05 |
| WPN252010S2R2MT | 2.2±20%    | 0.130         | 0.088 | 31                      | 3.00               | 3.30 | 2.05                | 2.30 |

### WPN252012H Series

| Part Number        | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|--------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                    | @1MHz, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units              | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol             | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252012HR24MT    | 0.24±20%   | 0.023         | 0.019 | 117                     | 6.50               | 7.80 | 4.05                | 4.70 |
| WPN252012HR33MT    | 0.33±20%   | 0.028         | 0.023 | 104                     | 5.30               | 6.20 | 3.70                | 4.30 |
| WPN252012HR47MT    | 0.47±20%   | 0.035         | 0.029 | 89                      | 4.90               | 5.60 | 3.45                | 4.00 |
| WPN252012HR68MT    | 0.68±20%   | 0.043         | 0.036 | 67                      | 3.70               | 4.30 | 3.15                | 3.60 |
| WPN252012H1R0MT    | 1.0±20%    | 0.054         | 0.048 | 52                      | 3.60               | 4.20 | 3.00                | 3.40 |
| WPN252012H1R5MT    | 1.5±20%    | 0.072         | 0.060 | 38                      | 2.90               | 3.50 | 2.40                | 2.80 |
| WPN252012H2R2MT    | 2.2±20%    | 0.120         | 0.100 | 32                      | 2.60               | 3.00 | 1.90                | 2.15 |
| WPN252012H2R2MTY01 | 2.2±20%    | 0.102         | 0.085 | 36                      | 2.90               | 3.30 | 2.10                | 2.40 |
| WPN252012H3R3MT    | 3.3±20%    | 0.163         | 0.136 | 25                      | 1.70               | 2.10 | 1.80                | 2.05 |
| WPN252012H4R7MT    | 4.7±20%    | 0.260         | 0.225 | 23                      | 1.60               | 1.90 | 1.25                | 1.45 |
| WPN252012H6R8MT    | 6.8±20%    | 0.366         | 0.305 | 16                      | 1.15               | 1.35 | 0.95                | 1.10 |
| WPN252012H100MT    | 10±20%     | 0.480         | 0.435 | 14                      | 1.10               | 1.35 | 0.85                | 1.00 |

## Specifications

## WPN252012HS Series

| Part Number      | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                  | @1MHz, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units            | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol           | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252012HS4R7MT | 4.7±20%    | 0.260         | 0.225 | 23                      | 1.70               | 1.90 | 1.25                | 1.45 |
| WPN252012HS100MT | 10±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, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252012ER33MT | 0.33±20%   | 0.026         | 0.020 | 107                     | 8.00               | 9.00 | 4.50                | 5.10 |
| WPN252012ER47MT | 0.47±20%   | 0.032         | 0.026 | 92                      | 7.00               | 8.00 | 4.10                | 4.70 |
| WPN252012E1R0MT | 1.0±20%    | 0.044         | 0.037 | 52                      | 4.50               | 5.00 | 3.50                | 3.90 |

## WPN252012S Series

| Part Number     | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                 | @1MHz, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units           | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol          | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN252012SR47MT | 0.47±20%   | 0.034         | 0.028 | 82                      | 6.20               | 6.80 | 4.20                | 4.80 |
| WPN252012SR68MT | 0.68±20%   | 0.043         | 0.036 | 69                      | 4.60               | 5.10 | 3.65                | 4.15 |
| WPN252012S1R0MT | 1.00±20%   | 0.054         | 0.045 | 61                      | 4.30               | 4.80 | 3.30                | 3.75 |
| WPN252012S1R5MT | 1.50±20%   | 0.072         | 0.060 | 42                      | 2.90               | 3.50 | 2.70                | 3.10 |
| WPN252012S2R2MT | 2.20±20%   | 0.100         | 0.080 | 32                      | 2.90               | 3.30 | 2.35                | 2.70 |

## WPN3010HS Series

| Part Number    | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                | @1MHz, 1V  | 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, 1V  | 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 |

## Specifications

### WPN3012HS Series

| Part Number       | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|-------------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                   | @1MHz, 1V  | 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 | 21                      | 2.00               | 2.50 | 1.30                | 1.50 |
| 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, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units          | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol         | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN4010HS4R7MT | 4.7±20%    | 0.197         | 0.164 | 28                      | 1.95               | 2.30 | 1.85                | 2.10 |
| WPN4010HS6R8MT | 6.8±20%    | 0.260         | 0.217 | 20                      | 1.50               | 1.75 | 1.55                | 1.75 |
| WPN4010HS100MT | 10±20%     | 0.335         | 0.280 | 10                      | 1.40               | 1.65 | 1.40                | 1.60 |

### WPN4012H Series

| Part Number      | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |       | Heat Rating Current |      |
|------------------|------------|---------------|-------|-------------------------|--------------------|-------|---------------------|------|
|                  | @1MHz, 1V  | 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 |
| 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 |

### WPN4012HS Series

| Part Number    | Inductance | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|----------------|------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|                | @1MHz, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units          | μH         | Ω             |       | MHz                     | A                  |      | A                   |      |
| Symbol         | L          | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| 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, 1V  | Max.          | Typ.  | Min.                    | Max.               | Typ.  | Max.                | Typ. |
| Units         | μH         | Ω             |       | 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 |

## Specifications

## WPN4020H Series

| Part Number   | Inductance     | DC Resistance |       | Self-resonant Frequency | Saturation Current |      | Heat Rating Current |      |
|---------------|----------------|---------------|-------|-------------------------|--------------------|------|---------------------|------|
|               | @1MHz, 1V      | Max.          | Typ.  | Min.                    | Max.               | Typ. | Max.                | Typ. |
| Units         | $\mu\text{H}$  | $\Omega$      |       | MHz                     | A                  |      | A                   |      |
| Symbol        | L              | DCR           |       | S.R.F                   | Isat               |      | Irms                |      |
| WPN4020H1R5MT | $1.5 \pm 20\%$ | 0.036         | 0.030 | 30                      | 7.70               | 9.60 | 5.20                | 6.00 |
| WPN4020H2R2MT | $2.2 \pm 20\%$ | 0.048         | 0.040 | 25                      | 6.10               | 7.60 | 4.30                | 5.00 |
| WPN4020H3R3MT | $3.3 \pm 20\%$ | 0.072         | 0.060 | 19                      | 4.70               | 5.90 | 3.45                | 4.00 |
| WPN4020H4R7MT | $4.7 \pm 20\%$ | 0.108         | 0.090 | 17                      | 4.00               | 4.90 | 2.85                | 3.30 |
| WPN4020H6R8MT | $6.8 \pm 20\%$ | 0.156         | 0.130 | 13                      | 3.00               | 4.20 | 2.40                | 2.80 |
| WPN4020H100MT | $10 \pm 20\%$  | 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;

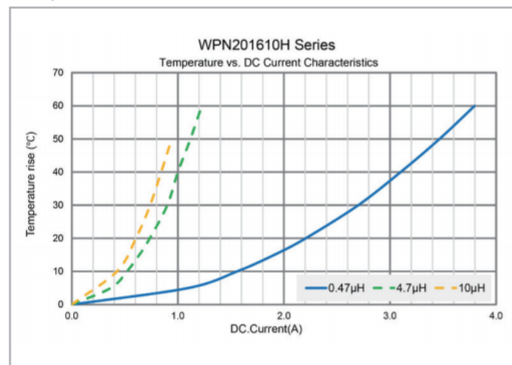
※Irms: DC current that causes the temperature rise ( $\Delta T=40^\circ\text{C}$ ) from 20°C ambient.

※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.

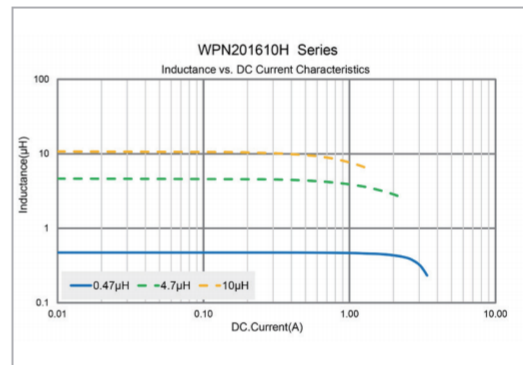
Typical  
Electrical  
Characteristics

## WPN201610H Series

## Temperature vs. DC Current Characteristics

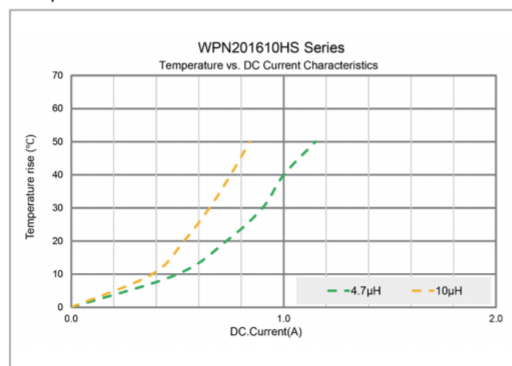


## Inductance vs. DC Current Characteristics

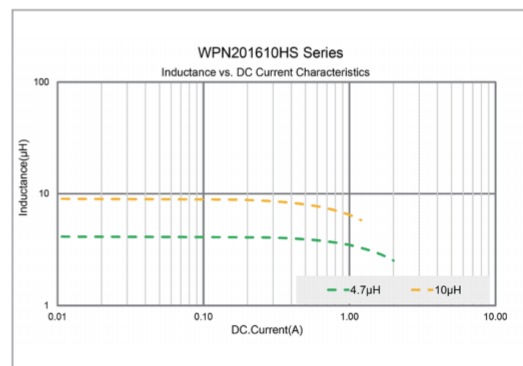


## WPN201610HS Series

## Temperature vs. DC Current Characteristics



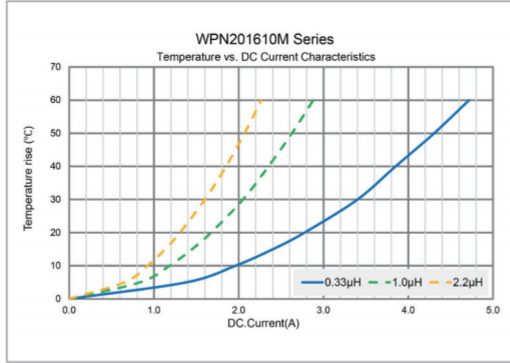
## Inductance vs. DC Current Characteristics



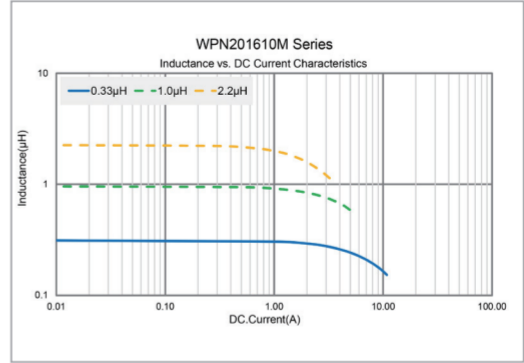
**Typical  
Electrical  
Characteristics**

**WPN201610M Series**

**Temperature vs. DC Current Characteristics**

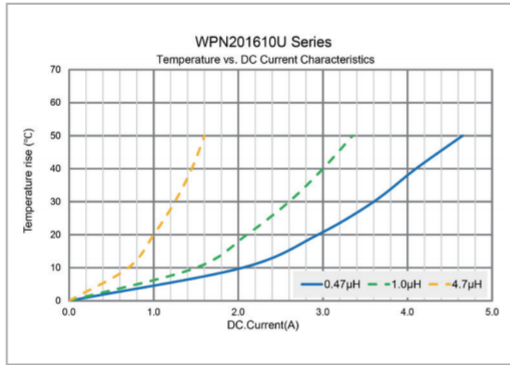


**Inductance vs. DC Current Characteristics**

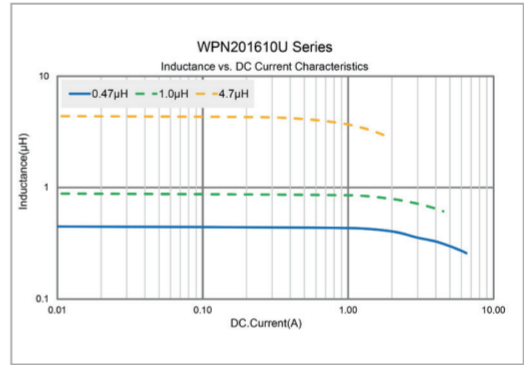


**WPN201610U Series**

**Temperature vs. DC Current Characteristics**

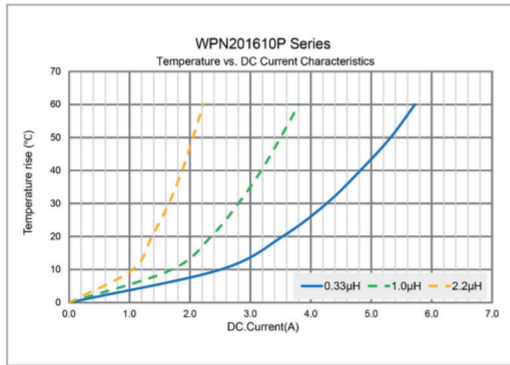


**Inductance vs. DC Current Characteristics**

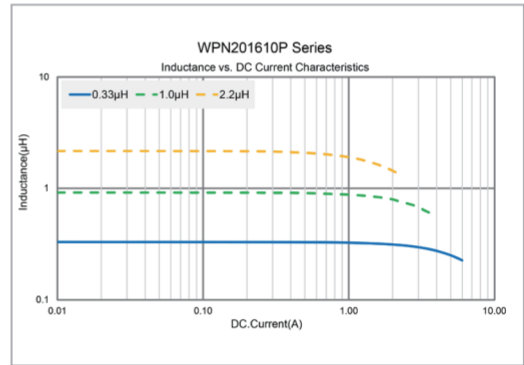


**WPN201610P Series**

**Temperature vs. DC Current Characteristics**

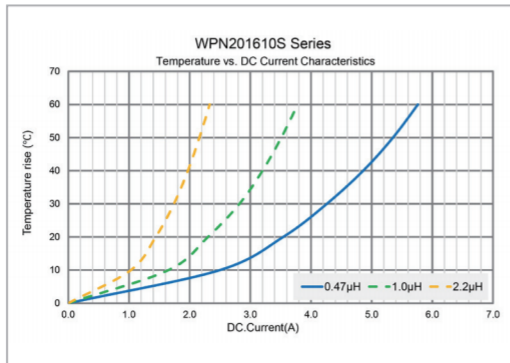


**Inductance vs. DC Current Characteristics**

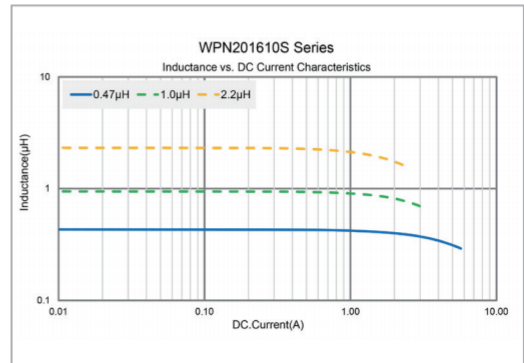


**WPN201612S Series**

**Temperature vs. DC Current Characteristics**



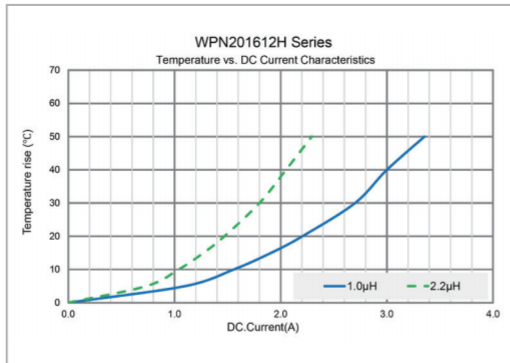
**Inductance vs. DC Current Characteristics**



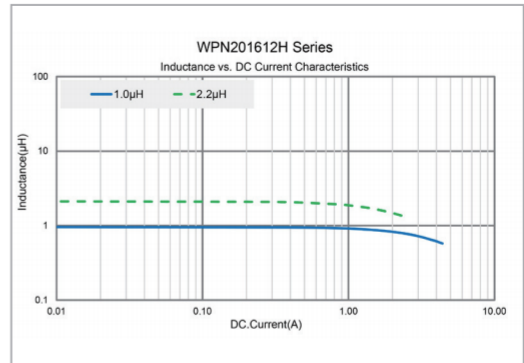
# Typical Electrical Characteristics

## WPN201612H Series

### Temperature vs. DC Current Characteristics

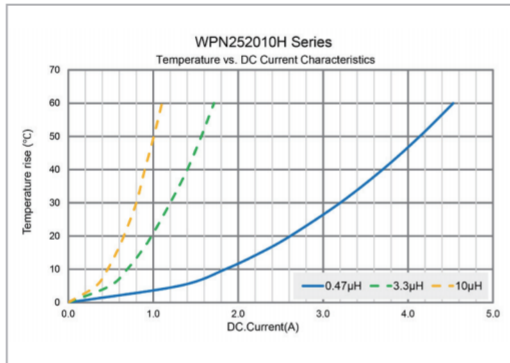


### Inductance vs. DC Current Characteristics

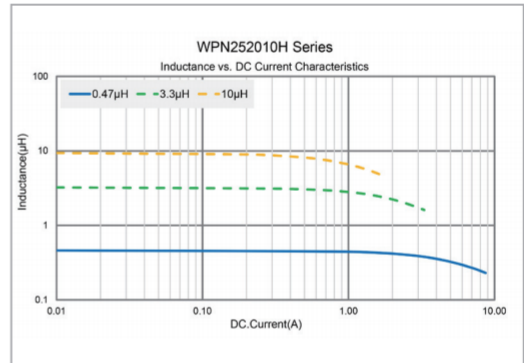


## WPN252010H Series

### Temperature vs. DC Current Characteristics

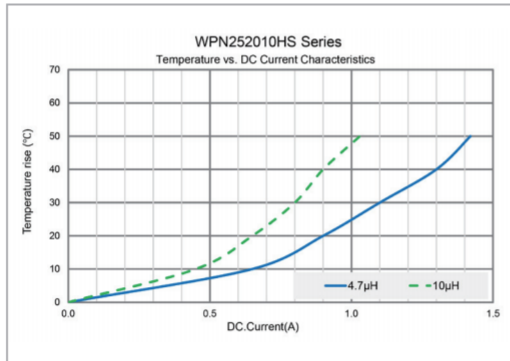


### Inductance vs. DC Current Characteristics

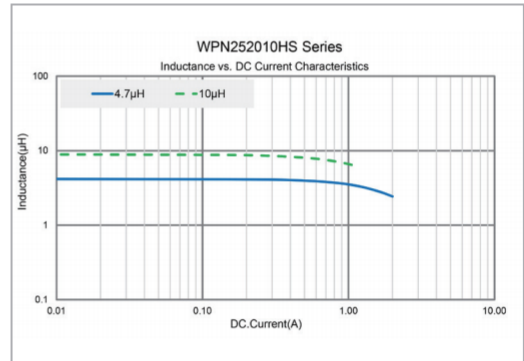


## WPN252010HS Series

### Temperature vs. DC Current Characteristics

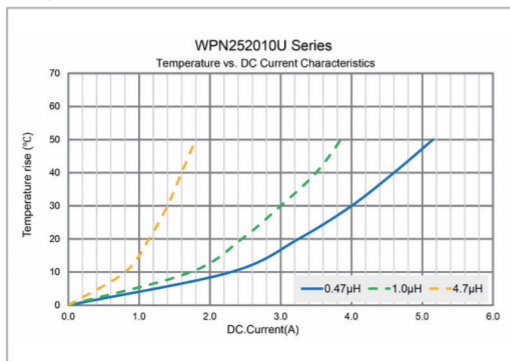


### Inductance vs. DC Current Characteristics

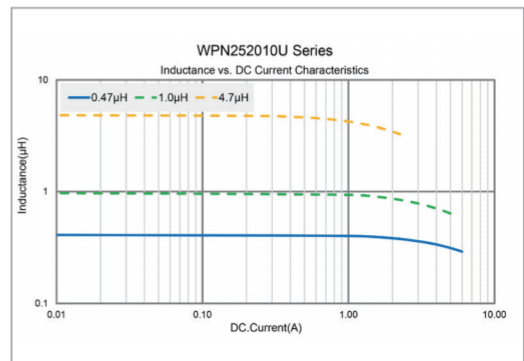


## WPN252010U Series

### Temperature vs. DC Current Characteristics



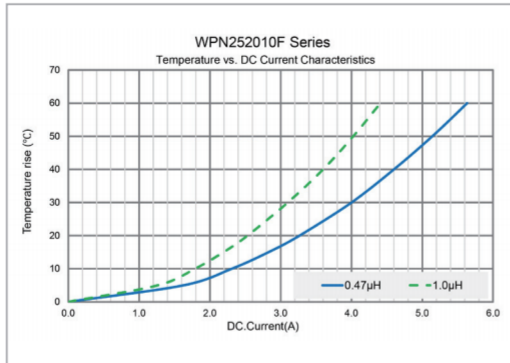
### Inductance vs. DC Current Characteristics



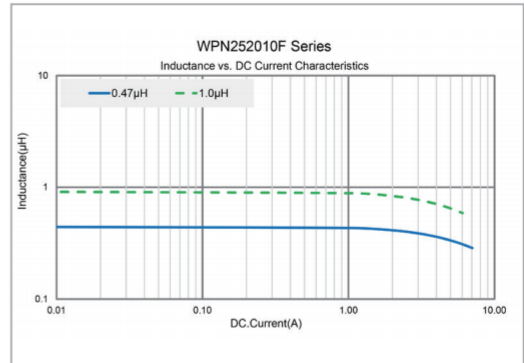
**Typical  
Electrical  
Characteristics**

**WPN252010F Series**

**Temperature vs. DC Current Characteristics**

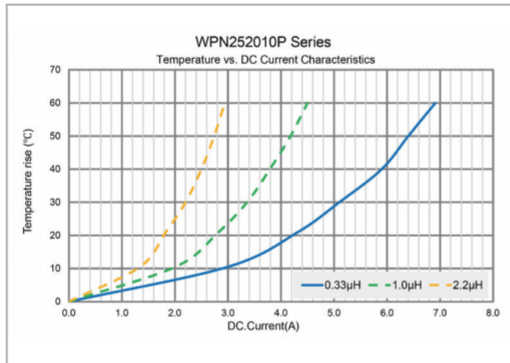


**Inductance vs. DC Current Characteristics**

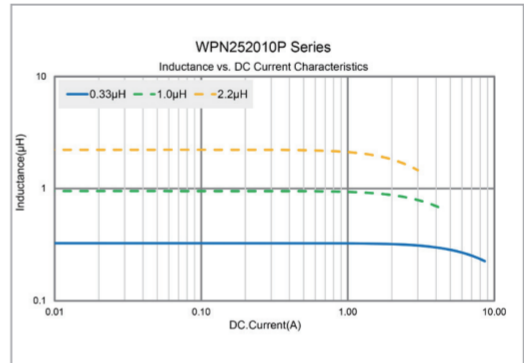


**WPN252010P Series**

**Temperature vs. DC Current Characteristics**

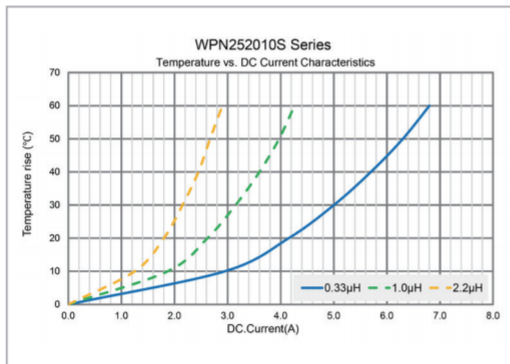


**Inductance vs. DC Current Characteristics**

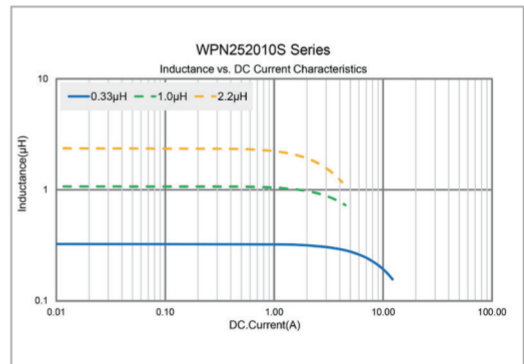


**WPN252010S Series**

**Temperature vs. DC Current Characteristics**

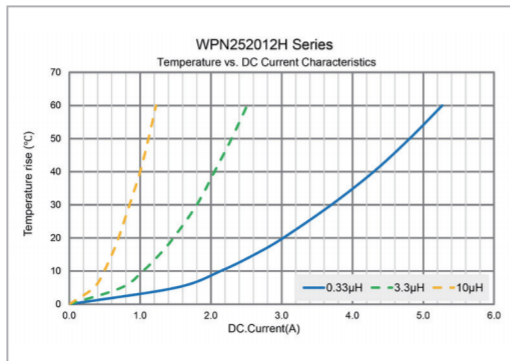


**Inductance vs. DC Current Characteristics**

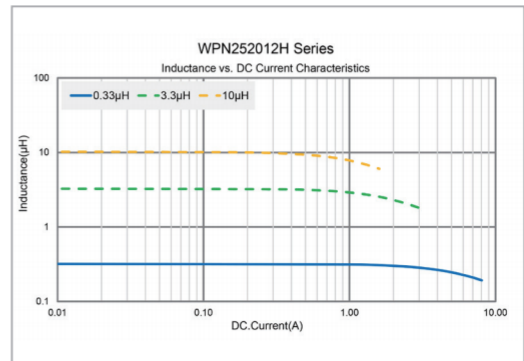


**WPN252012H Series**

**Temperature vs. DC Current Characteristics**



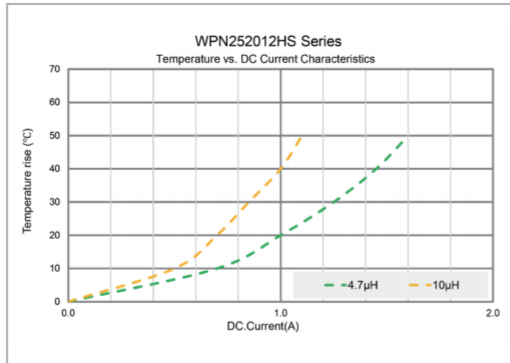
**Inductance vs. DC Current Characteristics**



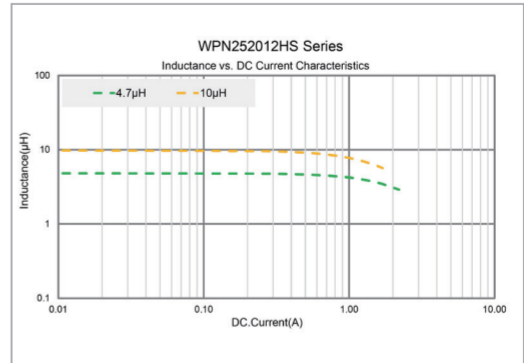
# Typical Electrical Characteristics

## WPN252012HS Series

### Temperature vs. DC Current Characteristics

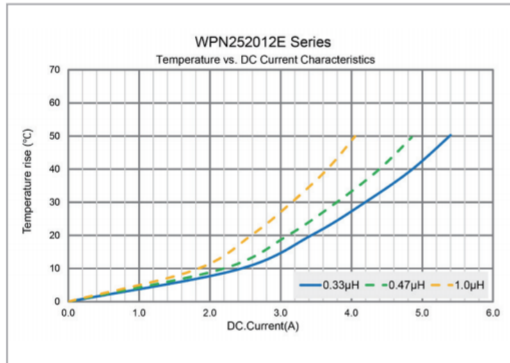


### Inductance vs. DC Current Characteristics

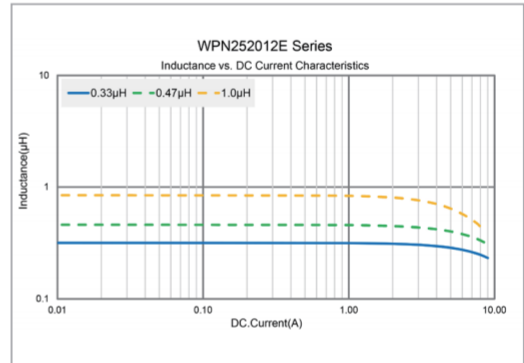


## WPN252012E Series

### Temperature vs. DC Current Characteristics

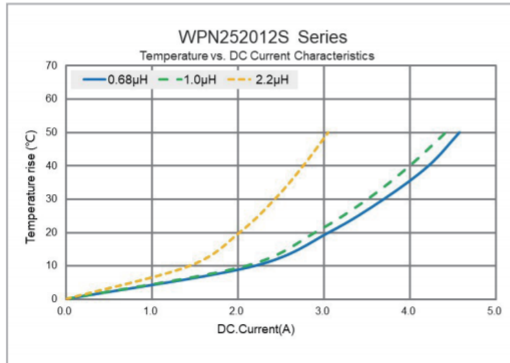


### Inductance vs. DC Current Characteristics

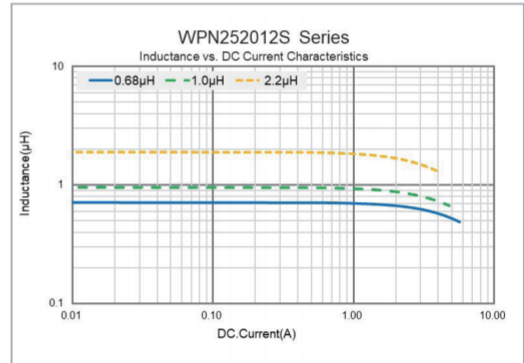


## WPN252012S Series

### Temperature vs. DC Current Characteristics

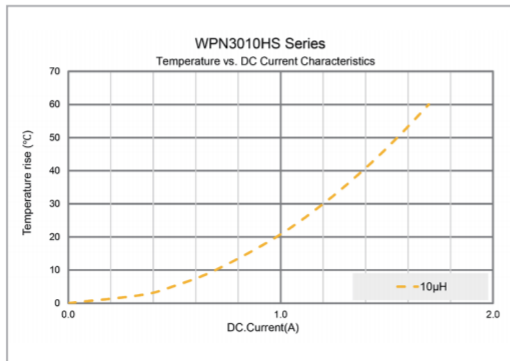


### Inductance vs. DC Current Characteristics

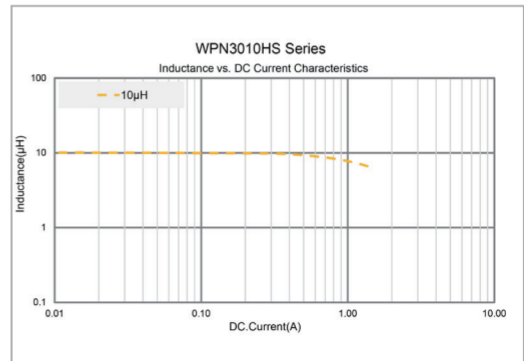


## WPN3010HS Series

### Temperature vs. DC Current Characteristics



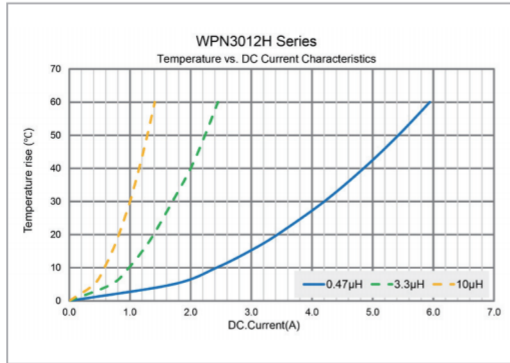
### Inductance vs. DC Current Characteristics



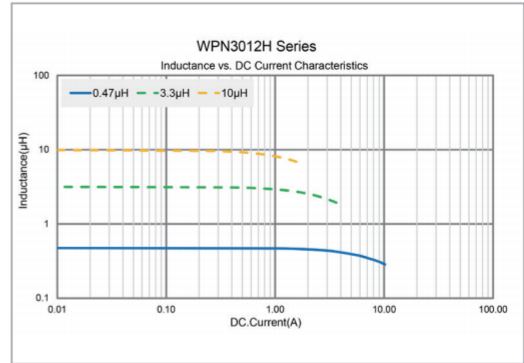
**Typical  
Electrical  
Characteristics**

**WPN3012H Series**

**Temperature vs. DC Current Characteristics**

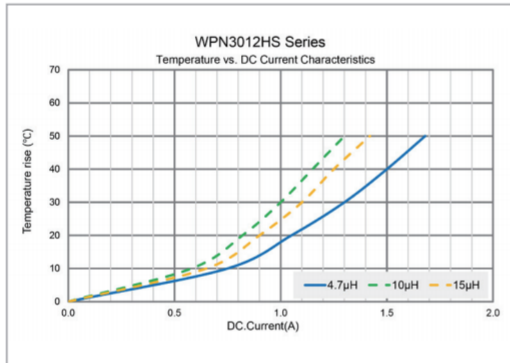


**Inductance vs. DC Current Characteristics**

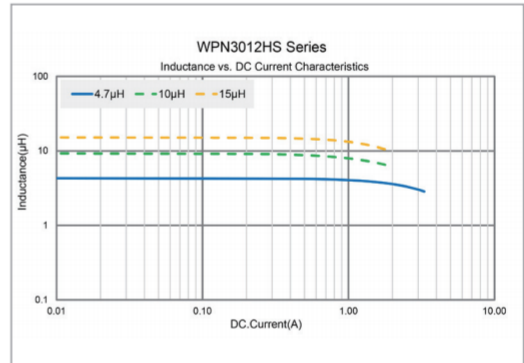


**WPN3012HS Series**

**Temperature vs. DC Current Characteristics**

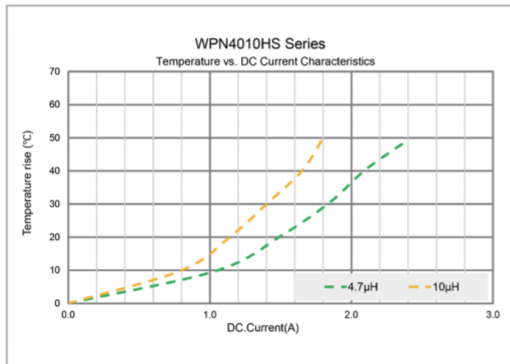


**Inductance vs. DC Current Characteristics**

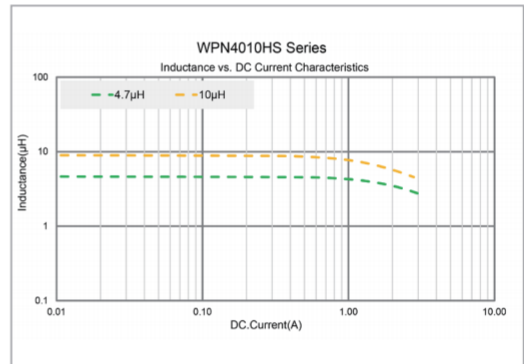


**WPN4010HS Series**

**Temperature vs. DC Current Characteristics**

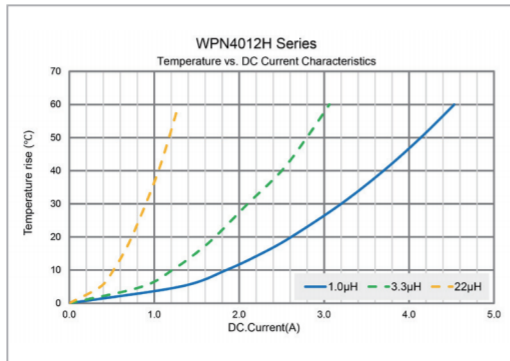


**Inductance vs. DC Current Characteristics**

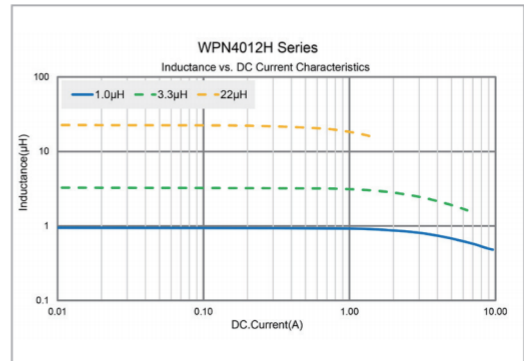


**WPN4012H Series**

**Temperature vs. DC Current Characteristics**



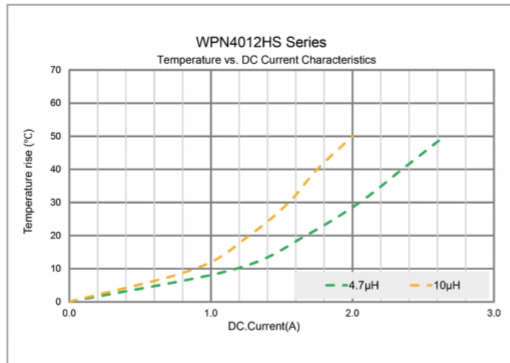
**Inductance vs. DC Current Characteristics**



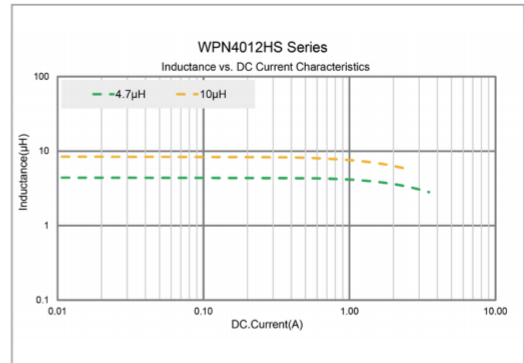
# Typical Electrical Characteristics

## WPN4012HS Series

### Temperature vs. DC Current Characteristics

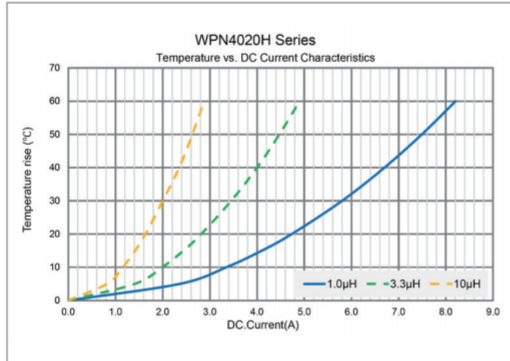


### Inductance vs. DC Current Characteristics



## WPN4020H Series

### Temperature vs. DC Current Characteristics



### Inductance vs. DC Current Characteristics

