

Assembled SMD Power Inductors – WPZ Series

Operating Temp. : -40°C~+125°C (Including self-heating)



FEATURES

- High saturation characteristic core for large saturation current and low loss
- Closed magnetic circuit design reduces leakage flux
- High precision DCR
- Halogen free, RoSH compliant

APPLICATIONS

- Server, desktop computer, notebook
- Graphics, memory
- Industrial equipment, telecom base station

PRODUCT IDENTIFICATION

WPZ

①

100807

②

S

③

R12

④

K

⑤

T

⑥

□□□

⑦

| ① | Type |
|-----|--------------------|
| WPZ | SMD Power Inductor |

| ③ | Feature Type |
|---|---------------|
| S | Standard Type |

| ② | External Dimensions(LxWxH) [mm] |
|--------|---------------------------------|
| 040404 | 4.0x4.1x4.0 |
| 050506 | 5.0x5.2x6.6 |
| 070703 | 7.0x7.0x3.55 |
| 070704 | 6.8x7.3x4.2 |
| 080805 | 7.3x7.5x5.5 |
| 090608 | 6.4x9.6x8.0 |
| 090704 | 7.5x9.5x4.0 |
| 090709 | 7.5x9.5x9.0 |
| 100705 | 7.0x10.2x5.0 |
| 100710 | 7.0x10.0x10 |
| 100807 | 8.0x10.3x7.0 |
| 100808 | 8.1x10.1x7.5 |
| 110707 | 7.4x11.0x7.7 |
| 111109 | 11.0x11.3x9.1 |
| 120808 | 8.0x12.0x8.1 |
| 130803 | 8.5x13.5x2.9 |
| 131308 | 12.8x13.7x8.1 |
| 150705 | 7.0x15.0x5.0 |
| 151506 | 15x15.65x5.6 |
| 161203 | 15.3x11.3x3.0 |
| 181103 | 11.4x18x3.0 |
| 220806 | 8.2x22.2x6.5 |

| ④ | Nominal Inductance |
|---------|--------------------|
| Example | Nominal Value |
| 23N | 23nH |
| R12 | 120nH |

| ⑤ | Inductance Tolerance |
|---|----------------------|
| K | ±10% |
| L | ±15% |
| M | ±20% |

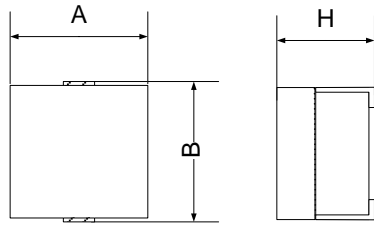
| ⑥ | Packing |
|---|-------------|
| T | Tape & Reel |

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

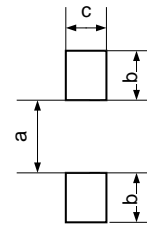
WPZ Series (2 pins)

SHAPE AND DIMENSIONS

Fig.1



Recommended Land Pattern (Typ.)



Unit: mm

| Series | A Max. | B Max. | H Max. | a Typ. | b Typ. | c Typ. |
|---------------|--------|--------|--------|--------|--------|--------|
| WPZ040404 | 4.0 | 4.1 | 4.0 | 0.7 | 1.8 | 1.4 |
| WPZ050506 | 5.0 | 5.2 | 6.6 | 1.2 | 2.1 | 2.4 |
| WPZ070704 | 6.8 | 7.3 | 4.2 | 1.7 | 2.7 | 1.6 |
| WPZ080805 | 7.3 | 7.5 | 5.5 | 2.0 | 2.8 | 3.0 |
| WPZ090608S002 | 6.4 | 9.6 | 8.0 | 4.0 | 2.54 | 3.2 |
| WPZ090704 | 7.5 | 9.5 | 4.0 | 5.8 | 1.8 | 4.5 |
| WPZ090709 | 7.5 | 9.5 | 9.0 | 5.8 | 1.8 | 4.5 |
| WPZ100705 | 7.0 | 10.2 | 5.0 | 6.4 | 2.0 | 3.0 |
| WPZ100710S002 | 7.0 | 10.0 | 10 | 4.4 | 3.2 | 2.8 |
| WPZ100807 | 8.0 | 10.3 | 7.0 | 4.7 | 3.3 | 2.5 |
| WPZ100807S002 | 8.0 | 10.4 | 7.5 | 4.7 | 3.0 | 2.5 |
| WPZ100808 | 8.1 | 10.1 | 7.5 | 4.9 | 3.0 | 2.5 |
| WPZ110707 | 7.4 | 11.0 | 7.7 | 3.5 | 3.7 | 2.1 |
| WPZ111109 | 11.0 | 11.3 | 9.1 | 5.5 | 3.0 | 2.5 |
| WPZ120808 | 8.0 | 12.0 | 8.1 | 6.2 | 3.0 | 2.0 |
| WPZ130803 | 8.5 | 13.5 | 2.9 | 11.95 | 0.9 | 8.9 |
| WPZ131308 | 12.8 | 13.7 | 8.1 | 7.2 | 3.2 | 7.6 |
| WPZ150705 | 7.0 | 15.0 | 5.0 | 10.0 | 2.5 | 4.5 |
| WPZ220806 | 8.2 | 22.2 | 6.5 | 15.6 | 3.4 | 3.0 |

SPECIFICATIONS

| Part Number | Inductance | L Test Condition | DC Resistance | Saturation Current | Heat Rating Current |
|-----------------|------------|------------------|---------------|--------------------|---------------------|
| Units | nH | / | mΩ | A | A |
| Symbol | L | | DCR | I _{sat} | I _{rms} |
| WPZ040404S50NKT | 50±10% | @100kHz, 1V | 0.30±10% | 35 | 48 |
| WPZ040404S65NKT | 65±10% | | | 30 | |
| WPZ040404SR10KT | 100±10% | | | 17 | |
| WPZ050506SR10KT | 100±10% | | 0.47±7% | 35 | 40 |
| WPZ050506SR15KT | 150±10% | | | 22 | |
| WPZ070704S72NMT | 72±20% | | 0.32±10% | 27 | 15 |
| WPZ070704SR10MT | 100±20% | | | 20 | |
| WPZ070704SR12MT | 120±20% | | | 16 | |
| WPZ070704SR15MT | 150±20% | | | 13 | |
| WPZ070704SR18MT | 180±20% | | | 11 | |
| WPZ070704SR23MT | 226±20% | | | 8.5 | |
| WPZ080805S32NKT | 32±10% | | 0.17±10% | 115 | 35 |

SPECIFICATIONS

| Part Number | Inductance | L Test Condition | DC Resistance | Saturation Current | Heat Rating Current |
|--------------------|------------|------------------|---------------|--------------------|---------------------|
| Units | nH | / | mΩ | A | A |
| Symbol | L | | DCR | Isat | Irms |
| WPZ080805S60NKT | 60±10% | @100kHz,1V | 0.17±10% | 70 | 35 |
| WPZ080805S70NKT | 70±10% | | | 60 | |
| WPZ080805SR10KT | 100±10% | | | 38 | |
| WPZ080805SR15KT | 150±10% | | | 25 | |
| WPZ080805SR20KT | 200±10% | | | 18 | |
| WPZ090608SR10KT002 | 100±10% | @1MHz,0.1V | 0.29±5% | 94 | 51 |
| WPZ090608SR12KT002 | 120±10% | | | 79 | |
| WPZ090608SR15KT002 | 150±10% | | | 65 | |
| WPZ090608SR18KT002 | 180±10% | | | 55 | |
| WPZ090608SR22KT002 | 220±10% | | | 44 | |
| WPZ090608SR28KT002 | 280±10% | | | 34 | |
| WPZ090608SR30KT002 | 300±10% | | 32.5 | | |
| WPZ090704S70NLT | 70±15% | @0.8MHz,1V | 0.32±10% | 78 | 39 |
| WPZ090704SR10LT | 100±15% | | | 55 | |
| WPZ090704SR14LT | 140±15% | | | 39 | |
| WPZ090704SR18LT | 175±15% | | | 31 | |
| WPZ090709SR10LT | 100±15% | | 0.17±20% | 80 | 50 |
| WPZ090709SR12LT | 120±15% | | | 66 | |
| WPZ090709SR15LT | 150±15% | | | 53 | |
| WPZ090709SR18LT | 180±15% | | | 44 | |
| WPZ090709SR22LT | 220±15% | | | 36 | |
| WPZ090709SR28LT | 280±15% | | | 28 | |
| WPZ090709SR30LT | 300±15% | | 26 | | |
| WPZ100705SR12KT | 120±10% | @100kHz,1V | 0.35±10% | 63 | 31 |
| WPZ100705SR15KT | 150±10% | | | 52 | |
| WPZ100705SR20KT | 200±10% | | | 37 | |
| WPZ100705SR30KT | 300±10% | | | 21 | |
| WPZ100710S70NKT002 | 70±10% | | 0.17±10% | >150 | 68 |
| WPZ100710SR10KT002 | 100±10% | | | 136 | |
| WPZ100710SR12KT002 | 120±10% | | | 110 | |
| WPZ100710SR15KT002 | 150±10% | | | 92 | |
| WPZ100710SR18KT002 | 180±10% | | | 75 | |
| WPZ100710SR22KT002 | 220±10% | | | 62 | |
| WPZ100710SR28KT002 | 280±10% | 48 | | | |
| WPZ100710SR33KT002 | 330±10% | 41 | | | |
| WPZ100807SR12KT | 120±10% | 0.29±10% | 80 | 60 | |
| WPZ100807SR15KT | 150±10% | | 72 | | |
| WPZ100807SR17KT | 170±10% | | 58 | | |
| WPZ100807SR22KT | 220±10% | | 46 | | |
| WPZ100807SR30KT | 300±10% | | 32 | | |
| WPZ100807SR33KT | 330±10% | | 28 | | |
| WPZ100807SR12KT002 | 115±10% | 0.29±5% | 94 | 61 | |
| WPZ100807SR15KT002 | 150±10% | | 76 | | |
| WPZ100807SR17KT002 | 175±10% | | 66 | | |
| WPZ100807SR22KT002 | 215±10% | | 50 | | |
| WPZ100807SR23KT002 | 230±10% | | 48 | | |
| WPZ100807SR27KT002 | 270±10% | | 40 | | |
| WPZ100807SR30KT002 | 300±10% | | 35 | | |
| WPZ100808SR15KT | 150±10% | 0.29±10% | 70 | 56 | |
| WPZ100808SR20KT | 200±10% | | 50 | | |

SPECIFICATIONS

| Part Number | Inductance | L Test Condition | DC Resistance | Saturation Current | Heat Rating Current |
|-----------------|------------|------------------|---------------|--------------------|---------------------|
| Units | nH | / | mΩ | A | A |
| Symbol | L | | DCR | Isat | Irms |
| WPZ110707S70NKT | 70±10% | @100kHz,1V | 0.29±10% | >150 | 56 |
| WPZ110707SR12KT | 120±10% | | | 95 | |
| WPZ110707SR15KT | 150±10% | | | 80 | |
| WPZ110707SR17KT | 170±10% | | | 70 | |
| WPZ110707SR23KT | 230±10% | | | 50 | |
| WPZ110707SR30KT | 300±10% | | | 37 | |
| WPZ110707SR40KT | 400±10% | | | 25 | |
| WPZ110707SR50KT | 500±10% | | | 18 | |
| WPZ110707SR51KT | 510±10% | | | 18 | |
| WPZ111109SR20KT | 200±10% | | 90 | 35 | |
| WPZ111109SR25KT | 250±10% | | 70 | | |
| WPZ111109SR27KT | 270±10% | | 60 | | |
| WPZ111109SR30KT | 300±10% | | 55 | | |
| WPZ111109SR47KT | 470±10% | | 30 | | |
| WPZ111109SR56KT | 560±10% | | 25 | | |
| WPZ111109S1R0KT | 1000±10% | | 12 | 50 | |
| WPZ120808SR15KT | 150±10% | | 85 | | |
| WPZ120808SR18KT | 180±10% | | 72 | | |
| WPZ120808SR21KT | 210±10% | 65 | | | |
| WPZ120808SR23KT | 230±10% | 60 | | | |
| WPZ120808SR25KT | 250±10% | 52 | 30 | | |
| WPZ130803SR11KT | 110±10% | 65 | | | |
| WPZ130803SR15KT | 145±10% | 50 | | | |
| WPZ130803SR21KT | 210±10% | 34 | | | |
| WPZ130803SR26KT | 260±10% | 27 | | | |
| WPZ130803SR32KT | 320±10% | 22 | | | |
| WPZ130803SR44KT | 440±10% | 16 | 68 | | |
| WPZ131308SR11KT | 110±10% | 140 | | | |
| WPZ131308SR21KT | 210±10% | 80 | | | |
| WPZ131308SR26KT | 260±10% | 60 | | | |
| WPZ131308SR32KT | 320±10% | 45 | | | |
| WPZ131308SR44KT | 440±10% | 35 | 53 | | |
| WPZ150705SR10KT | 100±10% | 105 | | | |
| WPZ150705SR12KT | 120±10% | 87 | | | |
| WPZ150705SR15KT | 150±10% | 72 | | | |
| WPZ150705SR25KT | 250±10% | 42 | | | |
| WPZ150705SR30KT | 300±10% | 35 | | | |
| WPZ150705SR40KT | 400±10% | 24 | 60 | | |
| WPZ220806SR23KT | 230±10% | @1MHz,0.1V | | 0.16 Max. | 75 |

Note:

※1: Isat: DC current at which the inductance drops approximate 20% from its value without current;

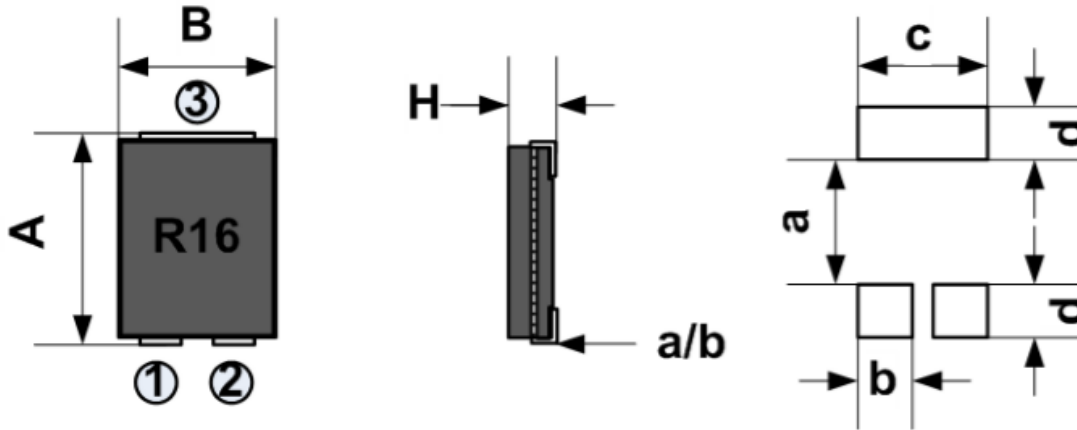
※2: Irms: DC current that causes the temperature rise (ΔT) from 25°C ambient when two coils connected in series, ΔT is approximate 40°C.

WPZ Series (3 pins)

SHAPE AND DIMENSIONS

Fig.2

Recommended Land Pattern (Typ.)



Unit: mm

| Series | A Max. | B Max. | H Max. | a Typ. | b Typ. | c Typ. | d Typ. |
|-----------|--------|--------|--------|--------|--------|--------|--------|
| WPZ161203 | 15.3 | 11.3 | 3.0 | 8.6 | 3.9 | 9.5 | 3.9 |
| WPZ181103 | 11.4 | 18 | 3.0 | 11.6 | 3.7 | 9.0 | 3.2 |

SPECIFICATIONS

| Part Number | Inductance (pin1-3 or pin2-3) | DC Resistance (pin1-3 or pin2-3) | Saturation Current (pin1-3 or pin2-3) | Heat Rating Current (pin1-3 or pin2-3) |
|-----------------|----------------------------------|-------------------------------------|--|---|
| | Units | nH | mΩ | A |
| | Symbol | L | DCR | Isat |
| WPZ161203SR16KT | 160 ± 10% @ 1MHz, 1V | 0.66max | 55 | 28.5 |
| WPZ181103SR25KT | 250 ± 10% @ 300kHz, 1V | 0.66max | 30 | 25 |

Note:

※1: Isat: DC current at which the inductance drops approximate 20% from its value without current;

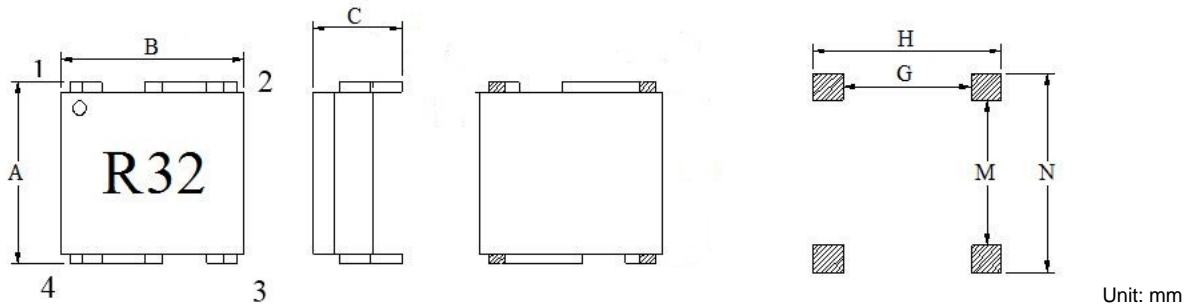
※2: Irms: DC current that causes the temperature rise (ΔT) from 25°C ambient when two coils connected in series, ΔT is approximate 40°C.

WPZ Series (4 pins)

SHAPE AND DIMENSIONS

Fig.3

Recommended Land Pattern (Typ.)

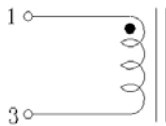


Unit: mm

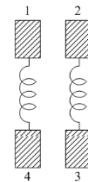
| Series | A Max. | B Max. | C Max. | G Typ. | H Typ. | M Typ. | N Typ. |
|-----------|--------|--------|--------|--------|--------|--------|--------|
| WPZ070703 | 7.0 | 7.0 | 3.55 | 4.7 | 6.9 | 5.5 | 7.5 |
| WPZ151506 | 15 | 15.65 | 5.6 | 7.3 | 11.9 | 14.9 | 15.4 |

EQUIVALENT CIRCUIT

WPZ070703



WPZ151506



SPECIFICATIONS

| Part Number | Inductance (Pin1-3) | DC Resistance (Pin1-3) | Saturation Current | Heat Rating Current |
|-----------------|------------------------|---------------------------|--------------------|---------------------|
| | @1MHz,0.1V | / | / | / |
| Units | nH | mΩ | A | A |
| Symbol | L | DCR | Isat | Irms |
| WPZ070703S72NMT | 72 ± 20% | 2.2 ± 15% | 62 | 15 |
| WPZ070703SR11MT | 105 ± 20% | | 42 | |
| WPZ070703SR12MT | 120 ± 20% | | 37 | |
| WPZ070703SR15MT | 150 ± 20% | | 29 | |
| WPZ070703SR18MT | 180 ± 20% | | 24 | |
| WPZ070703SR22MT | 220 ± 20% | | 20 | |
| WPZ070703SR32MT | 320 ± 20% | | 14 | |

| Part Number | Inductance (Pin1-4 or Pin2-3) | DC Resistance (Pin1-4 or Pin2-3) | Saturation Current | Heat Rating Current |
|-----------------|-------------------------------------|--|--------------------|---------------------|
| | @100kHz,1V | / | / | / |
| Units | nH | mΩ | A | A |
| Symbol | L | DCR | Isat | Irms |
| WPZ151506SR18KT | 180 ± 10% | 0.18Max | 49.0 | / |

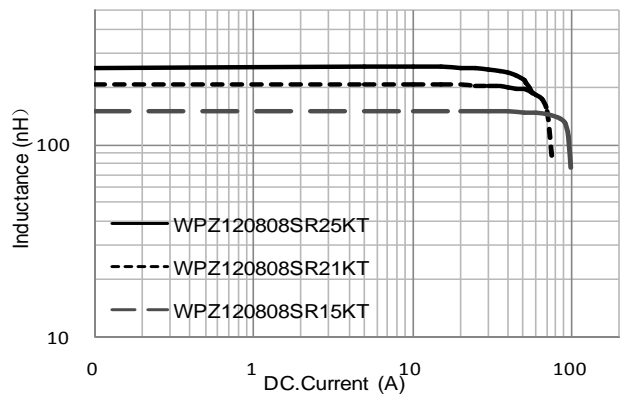
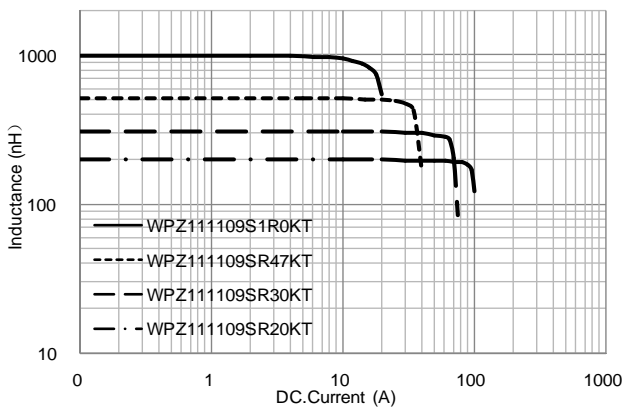
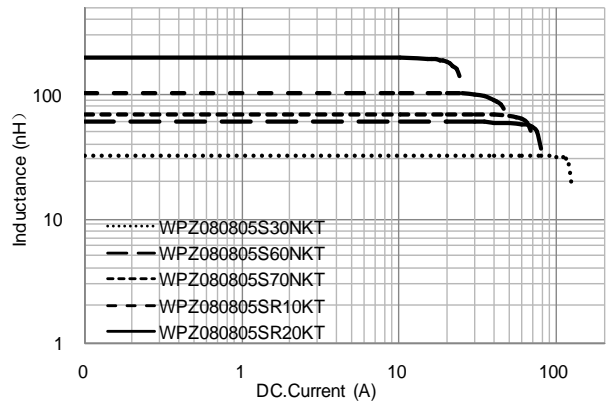
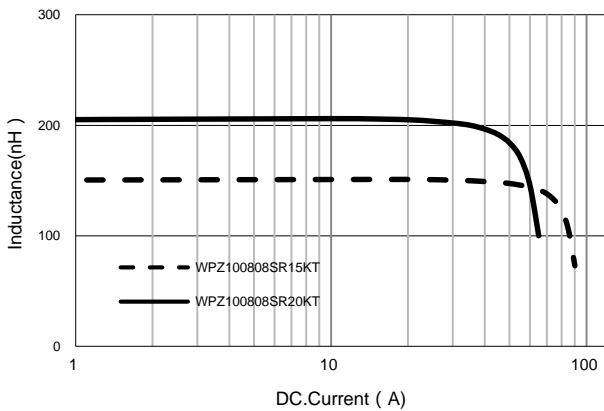
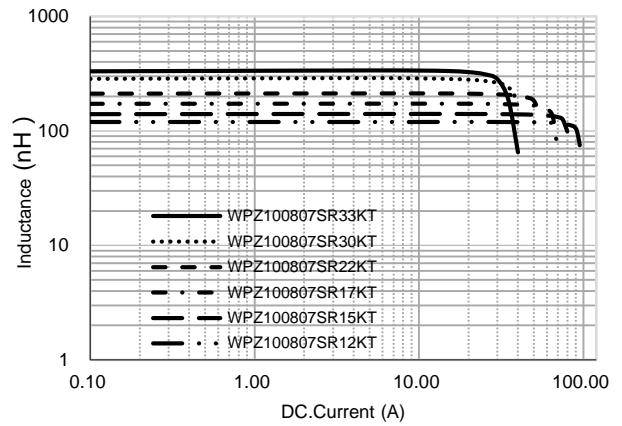
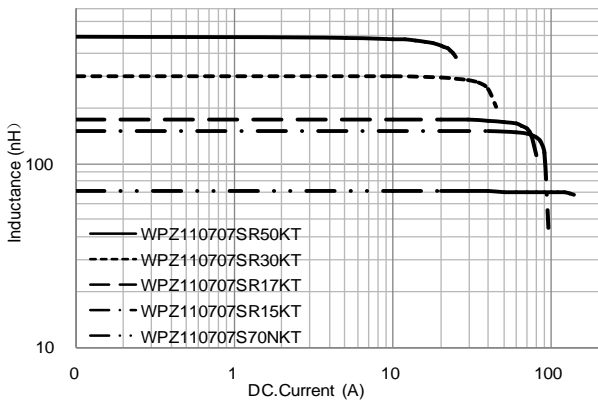
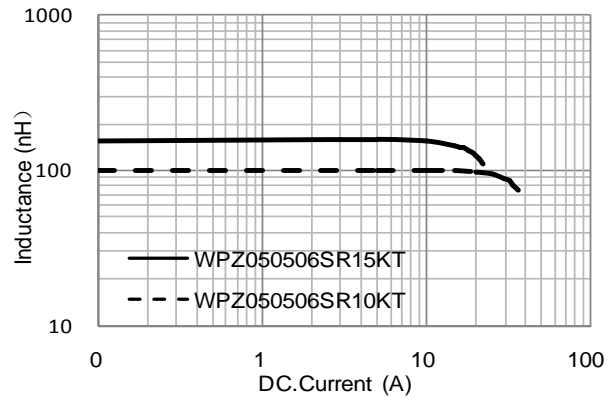
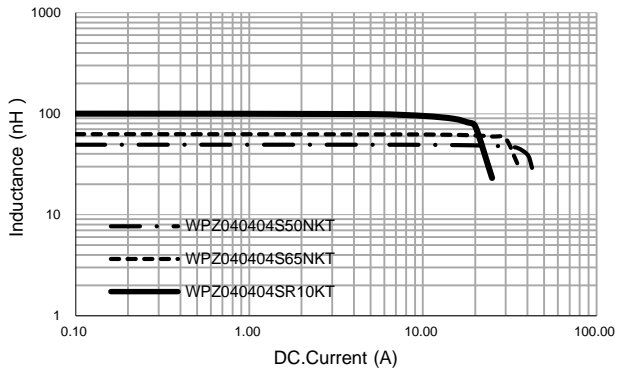
Note:

※1: Isat: DC current at which the inductance drops approximate 20% from its value without current;

※2: Irms: DC current that causes the temperature rise (ΔT) from 25°C ambient when two coils connected in series, ΔT is approximate 40°C.

TYPICAL ELECTRICAL CHARACTERISTICS

Inductance vs. DC Current Characteristics



TYPICAL ELECTRICAL CHARACTERISTICS

Inductance vs. DC Current Characteristics

