

Amorphous Cores

Material Characteristics of Amorphous Series

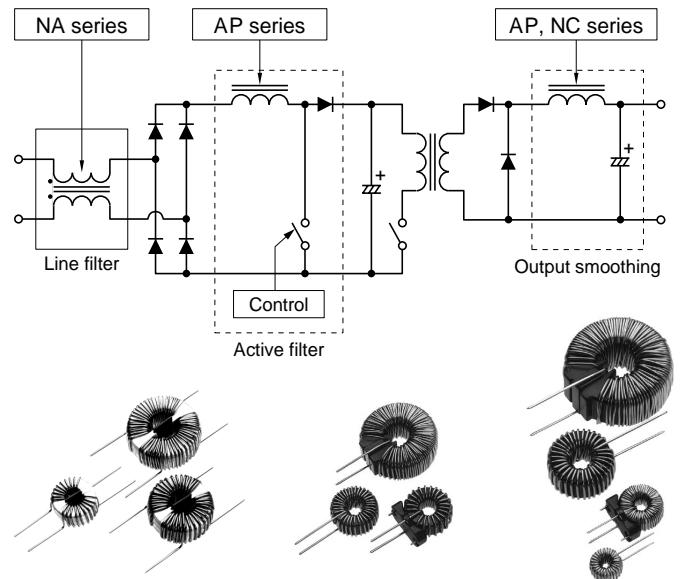
LIST OF STANDARD PRODUCT SERIES

| Series | Material | Shape | Features | Recommended applications |
|--------|-----------|----------------------|---|---|
| AP | Amorphous | Toroidal with gap | High power applications | Choke coil for smoothing output of switching power supply, choke coil for active filter |
| NC | Amorphous | Toroidal without gap | Lows leakage flux and high initial permeability | Choke coil for smoothing output of switching power supply, differential mode choke coil |
| NA | Amorphous | Toroidal without gap | Deals with high electromagnetic pulse | Common-mode choke coil |

MATERIAL CHARACTERISTICS

| Material | AP10 | NC20 |
|---|---------------------|---------------------|
| Initial permeability μ_i | 100±20% | 250 |
| Curie temperature T_c (°C) | 410 | 400 |
| Saturation magnetic flux density B_s [H=8000A/m] (mT) | at 25°C | 990 |
| | at 60°C | 990 |
| | at 80°C | 980 |
| | at 100°C | 980 |
| | at 120°C | 970 |
| Remanent flux density B_r (mT) | at 25°C | 9 |
| | at 60°C | 8 |
| | at 80°C | 7 |
| | at 100°C | 7 |
| | at 120°C | 7 |
| Coercive force H_c (A/m) | at 25°C | 70 |
| | at 60°C | 60 |
| | at 80°C | 50 |
| | at 100°C | 50 |
| | at 120°C | 50 |
| Density d_b (kg/m ³) | 7.2×10 ³ | 7.2×10 ³ |

EXAMPLES OF SWITCHING POWER SOURCE APPLICATIONS



CHOKE COIL FOR SMOOTHING OUTPUT OF SWITCHING POWER SUPPLY(Applicable materials: AP10, NC20)

PRODUCT IDENTIFICATIONS

| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|---|---|
| NC | T | 10 | - | 151 | L | 1 | - | 1 | 0 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | | |
| AP | T | 22 | - | 471 | M | 4 | - | 1 | 0 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | | |

- (1) Series name
- (2) Shape
T: Toroidal
- (3) Core outer diameter dimension
- (4) Inductance value code
- (5) Inductance tolerance code
L: ≥ -25%/M: ±20%
- (6) Rated current code
- (7) TDK internal code
- (8) Base indication code
0: without base/B: with base

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CHOKE COIL FOR SMOOTHING OUTPUT OF SWITCHING POWER SUPPLY

LIST OF STANDARD PRODUCTS(Top:product name, bottom:winding diameter/winding type)

| Inductance L | Rated current I _{dc} | | | | | |
|--------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|------------------------------|--------------------------------|
| | 1A | 2A | 3A | 4A | 5A | 6A |
| 22μH | | | | | NCT15-220L5-10 ø1mm/1UEW | |
| 33μH | | | NCT12-330L3-10 ø0.8mm/1UEW | NCT15-330L4-10 ø0.9mm/1UEW | | |
| 47μH | | NCT10-470L2-10 ø0.6mm/1UEW | | | | NCT20-470L6-10 ø1.1mm/1UEW |
| 68μH | | | NCT15-680L3-10 ø0.8mm/1UEW | | NCT20-680L5-10 ø1mm/1UEW | |
| 100μH | | NCT12-101L2-10 ø0.6mm/1UEW | | NCT20-101L4-10 ø0.9mm/1UEW | | NCT25-101L6-10 ø1.1mm/1UEW |
| 150μH | NCT10-151L1-10 ø0.5mm/1UEW | NCT15-151L2-10 ø0.6mm/1UEW | | | NCT25-151L5-10 ø1mm/1UEW | |
| 220μH | NCT12-221L1-10 ø0.5mm/1UEW | | NCT20-221L3-10 ø0.9mm/1UEW | NCT25-221L4-10 ø0.9mm/1UEW | | APT22-221M6-10* ø1.1mm/1PEW |
| 330μH | NCT15-331L1-10 ø0.5mm/1UEW | | NCT25-331L3-10 ø0.9mm/1UEW | | APT22-331M5-10* ø1mm/1UEW | |
| 470μH | | NCT20-471L2-10 ø0.8mm/1UEW | | APT22-471M4-10* ø0.8mm/1UEW | | |
| 680μH | NCT20-681L1-10 ø0.5mm/1UEW | | | | | APT31-681M6-10* ø1.2mm/1PEW |
| 1000μH | | | | | | |

| Inductance L | Rated current I _{dc} | | | | |
|--------------|--------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|
| | 8A | 10A | 15A | 20A | 25A |
| 22μH | | | | | |
| 33μH | NCT20-330L8-10 ø1.2mm/1UEW | NCT25-330L10-10 ø1.2mm/1UEW | | | APT31-330M25-10 ø1.3×3mm/1PEW |
| 47μH | NCT25-470L8-10 ø1.2mm/1UEW | | | APT31-470M20-10 ø1.3×3mm/1PEW | |
| 68μH | | APT22-680M10-10* ø1.2mm/1PEW | APT31-680M15-10* ø1.6mm/1PEW | APT38-680M20-10 ø1.3×3mm/1PEW | APT38-680M25-10 ø1.3×3mm/1PEW |
| 100μH | | | | | |
| 150μH | APT22-151M8-10* ø1.2mm/1PEW | APT31-151M10-10* ø1.4mm/1PEW | APT38-151M15-10 ø1.3×2mm/1PEW | | APT46-151M25-10 ø1.3×3mm/1PEW |
| 220μH | | APT31-221M-10* ø1.6mm/1PEW | | APT46-221M20-10 ø1.3×3mm/1PEW | |
| 330μH | | | APT46-331M15-10 ø1.3×2mm/1PEW | | |
| 470μH | APT31-471M8-10* ø1.4mm/1PEW | APT38-471M10-10 ø1.4mm/1PEW | | | |
| 680μH | APT38-681M8-10 ø1.4mm/1PEW | APT46-681M10-10 ø1.6mm/1PEW | | | |
| 1000μH | APT46-102M8-10 ø1.2mm/1PEW | | | | |

* Also available for attached base products.

• Versions with attached bases are available for all NC series products.

• Please contact TDK to discuss applications requiring an inductor with a rating that corresponds to a blank entry in the above table.

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CHOKO COIL FOR ACTIVE FILTER (Applicable material: AP10)

PRODUCT IDENTIFICATION

AP T 38 - 472 M 4 - 1 0
 (1) (2) (3) (4) (5) (6) (7) (8)

- (2) Shape
 T:Toroidal
- (5) Inductance tolerance code
 L: $\geq -25\%/M:\pm 20\%$
- (8) Base indication code
 0: without base/B: with base
- (3) Core Outer diameter dimension (6) Rated current code(A)

LIST OF STANDARD PRODUCTS(Top:product name, bottom:winding diameter/winding type)

| Inductance L | Rated current(Peak current) I _{dc} | | | | | |
|--------------|---|-------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|
| | 2A(2.8A) | 3A(4.2A) | 4A(5.7A) | 5A(7.1A) | 6A(8.5A) | 8A(11.3A) |
| 100μH | | | | | | |
| 150μH | | | | | | |
| 220μH | | | | | | |
| 330μH | | | | | | APT38-331M8-20 ø1.2mm/1PEW |
| 470μH | | | | | | |
| 680μH | | | | | APT38-681M6-20 ø1.1mm/1PEW | |
| 1000μH | | | | APT38-102M5-20 ø1mm/1UEW | | APT46-102M8-20 ø1.2mm/1PEW |
| 1500μH | | | APT38-152M4-20 ø0.8mm/1UEW | | APT46-152M6-20 ø1.1mm/1PEW | |
| 2200μH | | APT38-222M3-20 ø0.8mm/1UEW | | APT46-222M5-20 ø1mm/1UEW | | |
| 3300μH | | | APT46-332M4-20 ø0.8mm/1UEW | | | |
| 4700μH | APT38-472M2-20 ø0.7mm/1UEW | | | | | |

| Inductance L | Rated current(Peak current) I _{dc} | |
|--------------|---|----------------------------------|
| | 10A(14.1A) | 15A(21.2A) |
| 100μH | | |
| 150μH | | |
| 220μH | | |
| 330μH | | APT46-331M15-20 ø1.3x2mm/1PEW |
| 470μH | | |
| 680μH | APT46-681M10-20 ø1.6mm/1PEW | |
| 1000μH | | |
| 1500μH | | |
| 2200μH | | |
| 3300μH | | |
| 4700μH | | |

- Please contact TDK to discuss applications requiring an inductor with a rating that corresponds to a blank entry in the above table.

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