

Common Mode Choke Coils(Line Filters) for AC Power Supply

Compact and Separable Bobbin Type UF Series

Conformity to RoHS Directive

TDK common mode choke coils(line filters) are used in a wide range of prevention of electromagnetic interference(EMI) and radio frequency interference(RFI) from power supply lines and for prevention of multifunctioning of products such as measuring equipment and system equipment.

FEATURES

- Wide range of selection.
- High impedance at applicable frequency.
- High self-resonant frequency.

PRODUCT IDENTIFICATION

UF □□□□ V - A □□□Y □R□ - 01
 (1) (2) (3) (4) (5) (6) (7)

- (1) Core shape
UF: U-type core
- (2) Dimensional code
Length×Height
- (3) External shape code
V: Vertical type H: Horizontal type
- (4) High μ material
- (5) Inductance value
Example) 133:13mH
- (6) Rated current value
Example) 3R0:3.0A
- (7) Product management number

SELECTION CHART

| Series | Configuration | Type | Inductance value min. | Rated current (A) | Handling power* $L \times I^2(\text{mH} \times \text{A}^2)$ | Weight (g)typ. | Minimum package quantity (pieces/box) |
|--------|--|----------|-----------------------|-------------------|--|----------------|---------------------------------------|
| UF | Two sections bobbin types | UF1717V | 0.2 to 10mH | 0.25 to 1.6 | 0.6 | 3.5 | 640 |
| | | UF1717H | 0.2 to 10mH | 0.25 to 1.6 | 0.6 | 3.5 | 480 |
| | Two sections bobbin types (For high frequency) | UF1717V | 10 to 60 μ H | 1 to 3 | 0.08 | 3 | 640 |
| | | UF1815SG | 50 to 350 μ H | 1 to 5 | 1.2 | 4.6 | 1280 |

* Handling power=(Inductance value)×(Current)². It is possible to design within the range below this value.
 [Example] The coil for 2A can make even the inductance of 2.5mH or less a product for handling power 10.

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

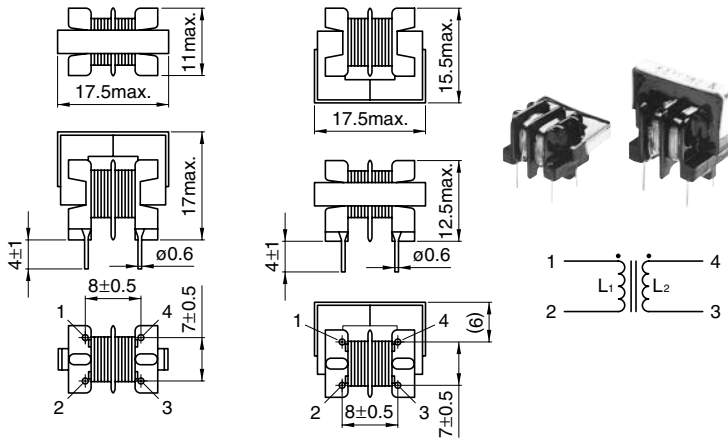
• All specifications are subject to change without notice.

Two Sections Bobbin Type UF Series

FEATURES

- This series is compact in size due to its use of high permeability ferrite core.

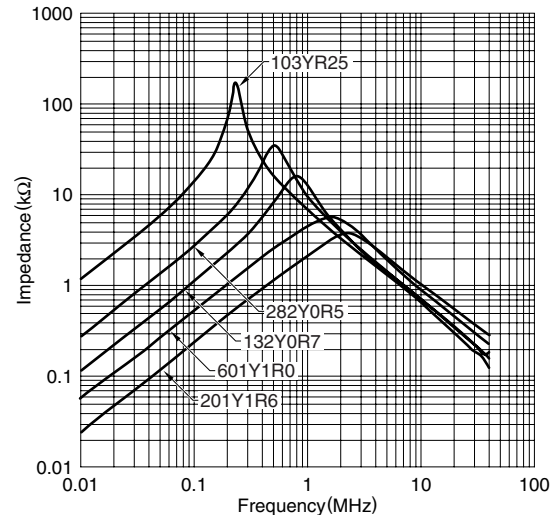
UF1717V/UF1717H(2 SEPARABLE BOBBIN) TYPES SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



Weight: 3.5g typ.

Recommended hole diameter: $\phi 0.9$ to 1.0
Dimensions in mm

TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS



ELECTRICAL CHARACTERISTICS (STANDARD LINE UP)

| Part No. | Inductance (mH)min. | DC resistance (Ω)max. | Rated current Iac(A)max. |
|--------------------|---------------------|--------------------------------|--------------------------|
| UF1717V-103YR25-02 | 10 | 3.5 | 0.25 |
| UF1717V-702Y0R3-01 | 7 | 2.5 | 0.3 |
| UF1717V-342Y0R4-01 | 3.4 | 1.3 | 0.4 |
| UF1717V-282Y0R5-01 | 2.8 | 1 | 0.5 |
| UF1717V-152Y0R6-01 | 1.5 | 0.55 | 0.6 |
| UF1717V-132Y0R7-01 | 1.3 | 0.5 | 0.7 |
| UF1717V-601Y1R0-01 | 0.6 | 0.2 | 1 |
| UF1717V-201Y1R6-01 | 0.2 | 0.1 | 1.6 |
| UF1717H-103YR25-01 | 10 | 3.5 | 0.25 |
| UF1717H-702Y0R3-01 | 7 | 2.5 | 0.3 |
| UF1717H-342Y0R4-01 | 3.4 | 1.3 | 0.4 |
| UF1717H-282Y0R5-01 | 2.8 | 1 | 0.5 |
| UF1717H-152Y0R6-01 | 1.5 | 0.55 | 0.6 |
| UF1717H-132Y0R7-01 | 1.3 | 0.5 | 0.7 |
| UF1717H-601Y1R0-01 | 0.6 | 0.2 | 1 |
| UF1717H-201Y1R6-01 | 0.2 | 0.1 | 1.6 |

- Measuring equipment of inductance value:
LCR meter(HP4261A, HP4263B or equivalent)[f=1kHz]

PACKAGING QUANTITIES

| | |
|---------|---------------|
| UF1717V | 640pieces/box |
| UF1717H | 480pieces/box |

RATINGS

| Item | Standard value | Conditions |
|--|---|-----------------------------------|
| Rated voltage(V) | 80 to 280 | 50Hz/60Hz |
| Dielectric withstanding voltage(V) | 2000 | Between each winding for 1 minute |
| Insulation resistance (M Ω) | 100min. | Between each winding for DC.500V |
| Temperature rise($^{\circ}$ C) | 45max. | With line resistance |
| Operating temperature range($^{\circ}$ C) | -20 to +120 | Including self-temperature rise |
| Storage temperature range($^{\circ}$ C) | -20 to +85 | |
| Resistance to soldering temperature*1 | 260 \pm 5 $^{\circ}$ C, 10 \pm 1sec | Solder bath method |
| | 350 \pm 5 $^{\circ}$ C, 5sec max. | Soldering iron method |
| Applicable safety standard*2 | Electrical Appliance and Material Safety Law ("DENAN"), IEC60065, UL6500, CSA C22.2 | |

*1 Pb free solder(Sn-3Ag-0.5Cu)

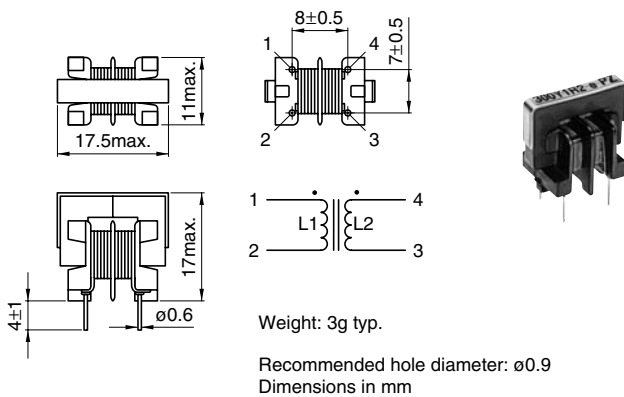
*2 However, this product is not recognized by each regulations.

Two Sections Bobbin Type(For High Frequency) UF Series

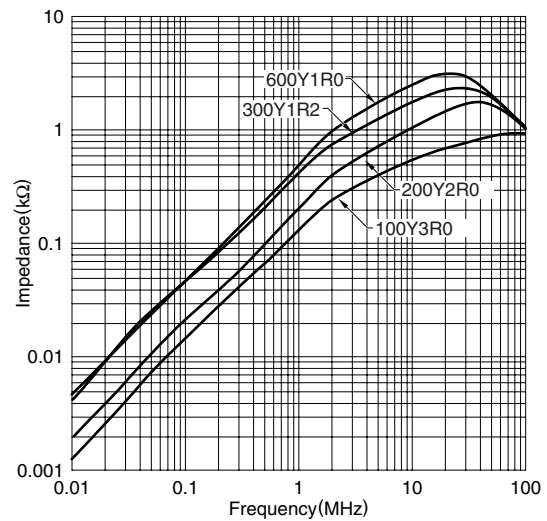
FEATURES

- This series is designed to reduce stray capacity between windings by using a single-layer coil construction on Ni-Zn ferrite cores, which offer excellent high frequency characteristics.
- This series provides excellent noise suppression for high frequency ranges including the FM band.
- Since the windings are divided into two sections, this filter can also be used as a signal line with excellent withstanding voltage.

UF1717V(2 SEPARABLE BOBBIN FOR HIGH FREQUENCY) TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS



ELECTRICAL CHARACTERISTICS (STANDARD LINE UP)

| Part No. | Inductance (μ H)min. | DC resistance ($m\Omega$)max. | Rated current Iac(A)max. |
|--------------------|---------------------------|---------------------------------|--------------------------|
| UF1717V-600Y1R0-03 | 60 | 300 | 1 |
| UF1717V-300Y1R2-03 | 30 | 150 | 1.2 |
| UF1717V-200Y2R0-03 | 20 | 100 | 2 |
| UF1717V-100Y3R0-03 | 10 | 50 | 3 |

- Measuring equipment of inductance value:
LCR meter(HP4261A, HP4263B or equivalent)[f=1kHz]

PACKAGING QUANTITIES

| | |
|---------|---------------|
| UF1717V | 640pieces/box |
|---------|---------------|

RATINGS

| Item | Standard value | Conditions |
|--|---|-----------------------------------|
| Rated voltage(V) | 80 to 280 | 50Hz/60Hz |
| Dielectric withstanding voltage(V) | 2000 | Between each winding for 1 minute |
| Insulation resistance ($M\Omega$) | 100min. | Between each winding for DC.500V |
| Temperature rise($^{\circ}$ C) | 45max. | With line resistance |
| Operating temperature range($^{\circ}$ C) | -20 to +120 | Including self-temperature rise |
| Storage temperature range($^{\circ}$ C) | -20 to +85 | |
| Resistance to soldering temperature*1 | 260 \pm 5 $^{\circ}$ C, 10 \pm 1sec | Solder bath method |
| | 350 \pm 5 $^{\circ}$ C, 5sec max. | Soldering iron method |
| Applicable safety standard*2 | Electrical Appliance and Material Safety Law ("DENAN"), IEC60065, UL6500, CSA C22.2 | |

*1 Pb free solder(Sn-3Ag-0.5Cu)

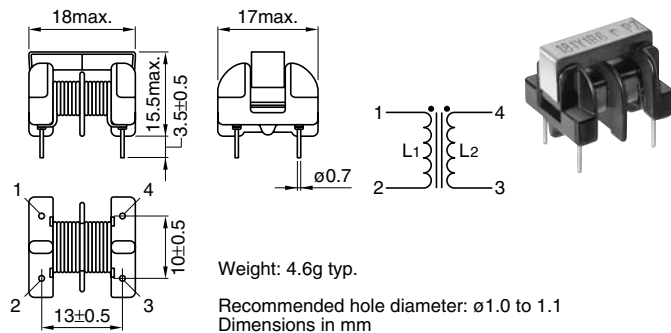
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Two Sections Bobbin Type(For High Frequency) UF Series

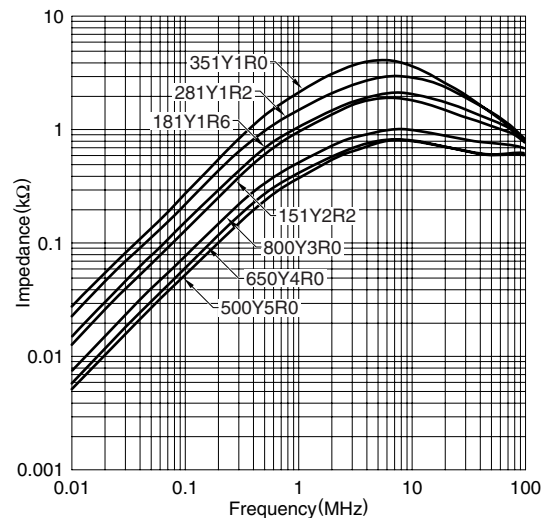
FEATURES

- This series uses a Mn-Zn ferrite core and yet it offers excellent noise suppression into the high frequencies due to its low distributed inductance construction based on a single layer winding.
- This compact filter's inductance has been improved by as much as 50% compared to existing products of comparable size while its high profile has been reduced by approximately 30%.

UF1815SG(2 SEPARABLE BOBBIN FOR HIGH FREQUENCY) TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS



ELECTRICAL CHARACTERISTICS (STANDARD LINE UP)

| Part No. | Inductance (μ H)min. | DC resistance ($m\Omega$)max. | Rated current Iac(A)max. |
|---------------------|---------------------------|---------------------------------|--------------------------|
| UF1815SG-351Y1R0-01 | 350 | 300 | 1 |
| UF1815SG-281Y1R2-01 | 280 | 250 | 1.2 |
| UF1815SG-181Y1R6-01 | 180 | 130 | 1.6 |
| UF1815SG-151Y2R2-01 | 150 | 100 | 2.2 |
| UF1815SG-800Y3R0-01 | 80 | 50 | 3 |
| UF1815SG-650Y4R0-01 | 65 | 30 | 4 |
| UF1815SG-500Y5R0-01 | 50 | 25 | 5 |

- Measuring equipment of inductance value:
LCR meter(HP4261A, HP4263B or equivalent)[f]=1kHz]

PACKAGING QUANTITIES

| | |
|----------|----------------|
| UF1815SG | 1280pieces/box |
|----------|----------------|

RATINGS

| Item | Standard value | Conditions |
|--|---|-----------------------------------|
| Rated voltage(V) | 80 to 280 | 50Hz/60Hz |
| Dielectric withstanding voltage(V) | 2000 | Between each winding for 1 minute |
| Insulation resistance ($M\Omega$) | 100min. | Between each winding for DC.500V |
| Temperature rise($^{\circ}$ C) | 45max. | With line resistance |
| Operating temperature range($^{\circ}$ C) | -20 to +120 | Including self-temperature rise |
| Storage temperature range($^{\circ}$ C) | -20 to +85 | |
| Resistance to soldering temperature*1 | 260 \pm 5 $^{\circ}$ C, 10 \pm 1sec | Solder bath method |
| Applicable safety standard*2 | 350 \pm 5 $^{\circ}$ C, 5sec max. | Soldering iron method |
| | Electrical Appliance and Material Safety Law ("DENAN"), IEC60065, UL6500, CSA C22.2 | |

*1 Pb free solder(Sn-3Ag-0.5Cu)

*2 However, this product is not recognized by each regulations.