

EMC Components

HF Series

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

Closed Magnetic Circuit Core Type

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.

RATINGS

| Item | Standard value | Conditions |
|------------------------------------|--|---|
| Rated voltage(V) | 80 to 280* | |
| Dielectric withstanding voltage(V) | 2000 | Between each winding for 1 minute |
| Insulation resistance (MΩ) | 100min. | Between each winding for 1 minute, Edc 500V |
| Temperature rise(°C) | 45max.* | With line resistance |
| Operating temperature range(°C) | -20 to +120 | Including self-temperature rise |
| Safety standard | Japan Electric/Electronic Products Control Law, UL, CSA and IEC conformed(The safety standard is not acquired with the unit only.) | |

* Except particular items.

- Measuring equipment of inductance value:
LCR meter(HP4261A, HP4263B or equivalent)

FEATURES

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

SELECTION CHART

| Series | Configuration | Type | Inductance value (mH)min. | Rated current (A) | Handling power* $L \times I^2$ (mH×A ²) | Weight (g)typ. | Minimum package quantity (pieces/box) |
|--------|------------------------------------|---------|---------------------------|-------------------|--|----------------|---------------------------------------|
| HF | Closed magnetic circuit core types | HF2018R | 1 to 33 | 0.3 to 2 | 4.5 | 10 | 840 |
| | | HF2022R | 1 to 33 | 0.3 to 2 | 4.5 | 10 | 840 |
| | | HF2024 | 0.6 to 12 | 0.8 to 3 | 7.6 | 10 | 800 |
| | | HF2422 | 2.4 to 68 | 0.4 to 2.5 | 15 | 19.5 | 540 |
| | | HF2430 | 2.4 to 68 | 0.4 to 2.5 | 15 | 19.5 | 400 |
| | | HF2826 | 1.8 to 35 | 1 to 4 | 35 | 28 | 480 |
| | | HF2836 | 1.8 to 35 | 1 to 4 | 35 | 30 | 400 |
| | | HF3545 | 4.7 to 33 | 1.5 to 4 | 75 | 65 | 140 |

* 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.

PRODUCT IDENTIFICATION

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

(1)Core shape

UF: U-type core

TF: Toroidal core

HF: Square shaped closed magnetic circuit core type

Double-square shaped closed magnetic circuit core type

(2)Dimensional code(Length×Height)

(3)External shape code

(4)TDK's internal code

(5)Inductance value

Example) 602: 60μH×10²=6mH

(6)Rated current value

Example) 2R5: 2.5A

(7)Product management number

EMC Components

HF Series

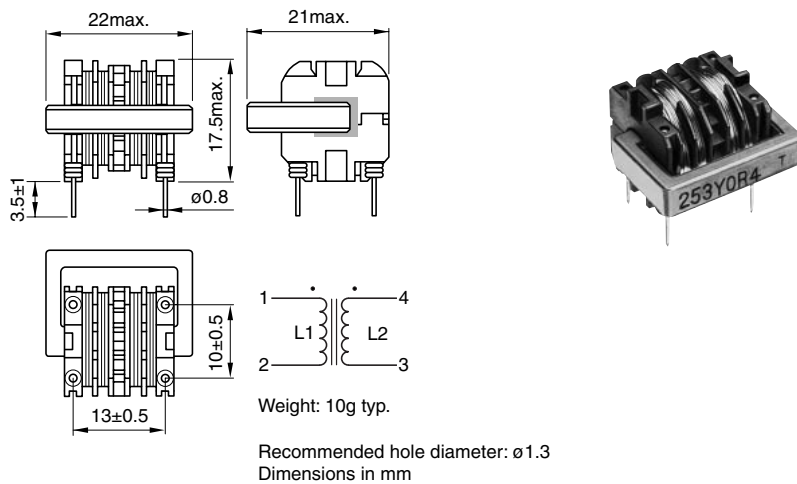
Common Mode Choke Coils(Line Filters) for AC Power Supply Closed Magnetic Circuit Core Type

CLOSED MAGNETIC CIRCUIT CORE TYPE HF SERIES

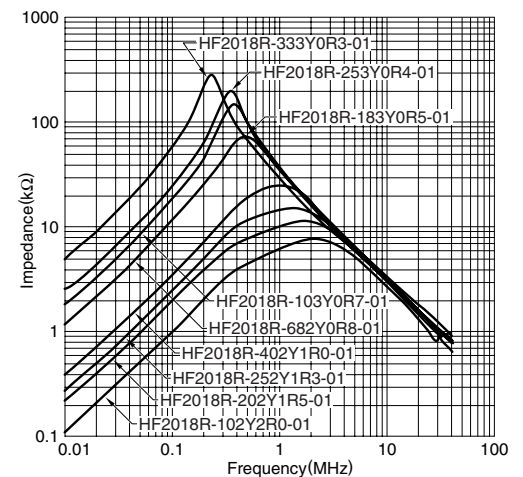
FEATURES

- As closed magnetic circuit core as same as a toroidal core, even at its compact size, it offers large inductance and keeps the high impedance levels required in high frequency ranges.
- Since it uses a closed magnetic circuit core, the leakage flux is relatively small, allowing designers to improve the mounting density of their circuits.

HF2018R(SQUARE SHAPED CLOSED MAGNETIC CIRCUIT CORE) TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS



ELECTRICAL CHARACTERISTICS

| Part No. | Inductance (mH)min. | DC resistance (Ω)max. | Rated current (A)max. |
|--------------------|---------------------|--------------------------------|-----------------------|
| HF2018R-333Y0R3-01 | 33 | 4.2 | 0.3 |
| HF2018R-253Y0R4-01 | 25 | 2.9 | 0.4 |
| HF2018R-183Y0R5-01 | 18 | 2 | 0.5 |
| HF2018R-103Y0R7-01 | 10 | 1.1 | 0.7 |
| HF2018R-682Y0R8-01 | 6.8 | 0.9 | 0.8 |
| HF2018R-402Y1R0-01 | 4 | 0.5 | 1 |
| HF2018R-252Y1R3-01 | 2.5 | 0.3 | 1.3 |
| HF2018R-202Y1R5-01 | 2 | 0.2 | 1.5 |
| HF2018R-102Y2R0-01 | 1 | 0.2 | 2 |

APPLICABLE SAFETY STANDARD

Electrical Appliance and Material Safety Law ("DENAN"), IEC60065, UL6500, CSA C22.2

- However, this product is not recognized by each regulations.

PACKAGING QUANTITIES

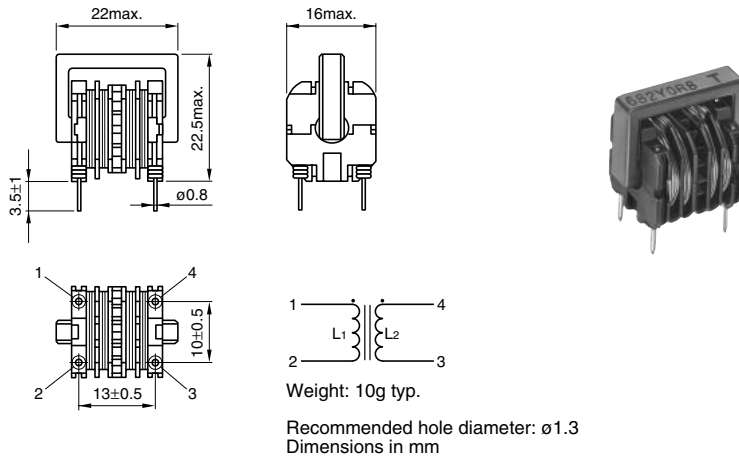
| | |
|---------|---------------|
| HF2018R | 840pieces/box |
|---------|---------------|

EMC Components

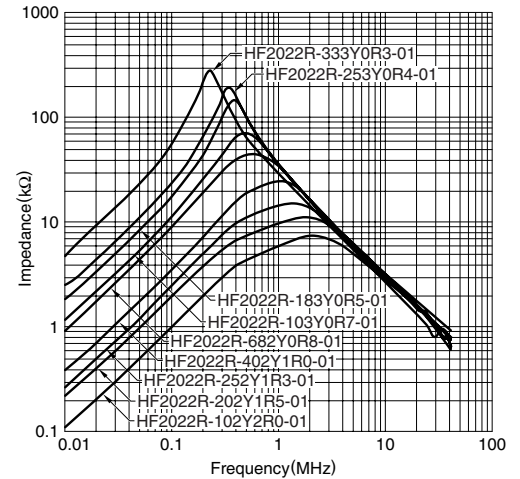
HF Series

Common Mode Choke Coils(Line Filters) for AC Power Supply
Closed Magnetic Circuit Core Type

HF2022R(SQUARE SHAPED CLOSED MAGNETIC CIRCUIT CORE) TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS



ELECTRICAL CHARACTERISTICS

| Part No. | Inductance (mH)min. | DC resistance (Ω)max. | Rated current (A)max. |
|--------------------|---------------------|--------------------------------|-----------------------|
| HF2022R-333Y0R3-01 | 33 | 4.2 | 0.3 |
| HF2022R-253Y0R4-01 | 25 | 2.9 | 0.4 |
| HF2022R-183Y0R5-01 | 18 | 2 | 0.5 |
| HF2022R-103Y0R7-01 | 10 | 1.1 | 0.7 |
| HF2022R-682Y0R8-01 | 6.8 | 0.9 | 0.8 |
| HF2022R-402Y1R0-01 | 4 | 0.5 | 1 |
| HF2022R-252Y1R3-01 | 2.5 | 0.3 | 1.3 |
| HF2022R-202Y1R5-01 | 2 | 0.2 | 1.5 |
| HF2022R-102Y2R0-01 | 1 | 0.2 | 2 |

APPLICABLE SAFETY STANDARD

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PACKAGING QUANTITIES

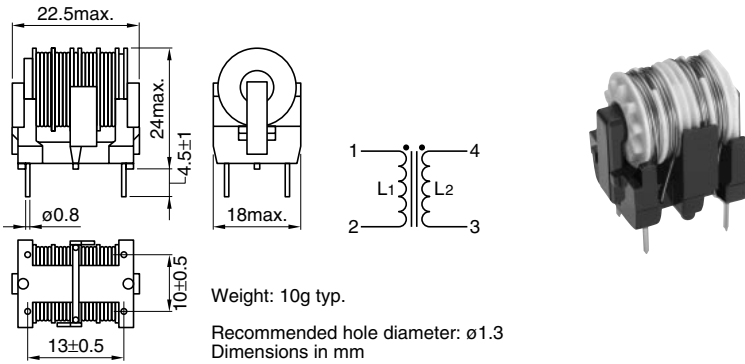
| | |
|---------|---------------|
| HF2022R | 840pieces/box |
|---------|---------------|

EMC Components

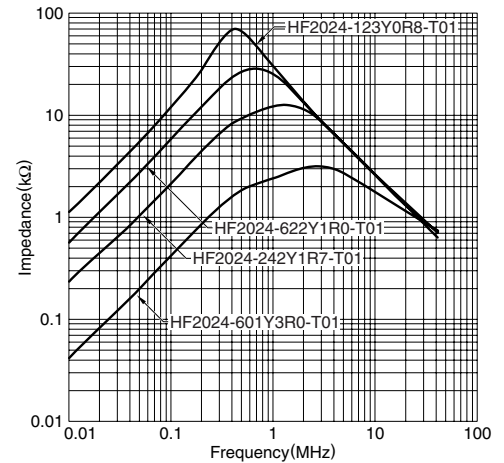
HF Series

Common Mode Choke Coils (Line Filters) for AC Power Supply
Closed Magnetic Circuit Core Type

HF2024 (SQUARE SHAPED CLOSED MAGNETIC CIRCUIT CORE) TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS



ELECTRICAL CHARACTERISTICS

| Part No. | Inductance (mH) min. | DC resistance (Ω) max. | Rated current (A) max. |
|--------------------|----------------------|---------------------------------|------------------------|
| HF2024-123Y0R8-T01 | 12 | 0.92 | 0.8 |
| HF2024-622Y1R0-T01 | 6.2 | 0.5 | 1 |
| HF2024-242Y1R7-T01 | 2.4 | 0.18 | 1.7 |
| HF2024-601Y3R0-T01 | 0.6 | 0.06 | 3 |

APPLICABLE SAFETY STANDARD

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PACKAGING QUANTITIES

| | |
|--------|---------------|
| HF2024 | 800pieces/box |
|--------|---------------|

EMC Components

HF Series

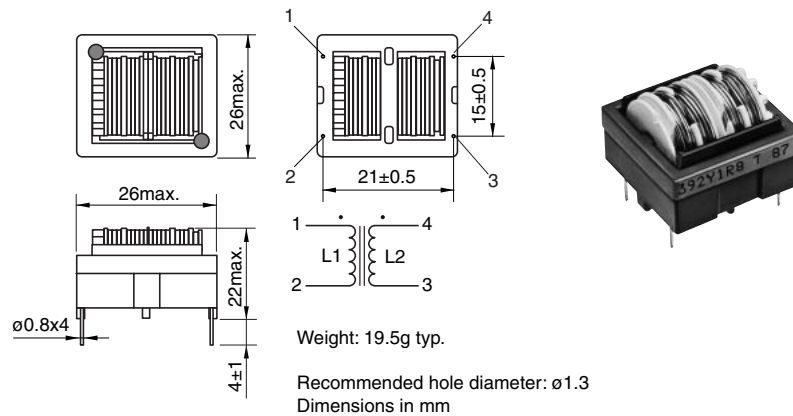
Common Mode Choke Coils(Line Filters) for AC Power Supply Closed Magnetic Circuit Core Type

CLOSED MAGNETIC CIRCUIT CORE TYPE HF SERIES

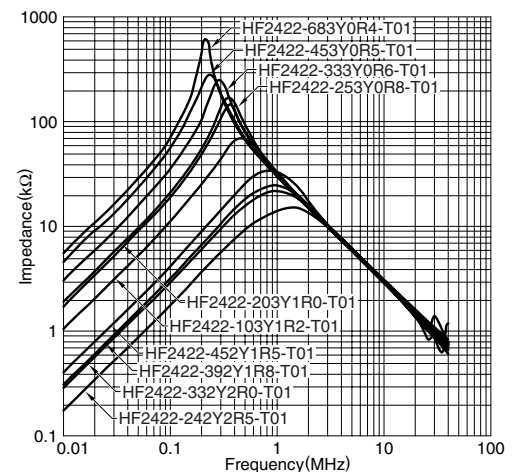
FEATURES

- This series employs two outer magnetic path limbs design with windings on the center magnetic path limb of double-square shaped closed magnetic circuit ferrite core to reduce leakage flux.
- This filter uses the same closed magnetic circuit core as a toroidal core and therefore, even at its compact size, it offers large inductance and suppresses noise up to in high frequency ranges.

HF2422(DOUBLE-SQUARE SHAPED CLOSED MAGNETIC CIRCUIT CORE) TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS



ELECTRICAL CHARACTERISTICS

| Part No. | Inductance (mH)min. | DC resistance (Ω)max. | Rated current (A)max. |
|--------------------|---------------------|--------------------------------|-----------------------|
| HF2422-683Y0R4-T01 | 68 | 2.3 | 0.4 |
| HF2422-453Y0R5-T01 | 45 | 1.65 | 0.5 |
| HF2422-333Y0R6-T01 | 33 | 1.2 | 0.6 |
| HF2422-253Y0R8-T01 | 25 | 0.88 | 0.8 |
| HF2422-203Y1R0-T01 | 20 | 0.64 | 1 |
| HF2422-103Y1R2-T01 | 10 | 0.38 | 1.2 |
| HF2422-452Y1R5-T01 | 4.5 | 0.19 | 1.5 |
| HF2422-392Y1R8-T01 | 3.9 | 0.15 | 1.8 |
| HF2422-332Y2R0-T01 | 3.3 | 0.11 | 2 |
| HF2422-242Y2R5-T01 | 2.4 | 0.09 | 2.5 |

APPLICABLE SAFETY STANDARD

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PACKAGING QUANTITIES

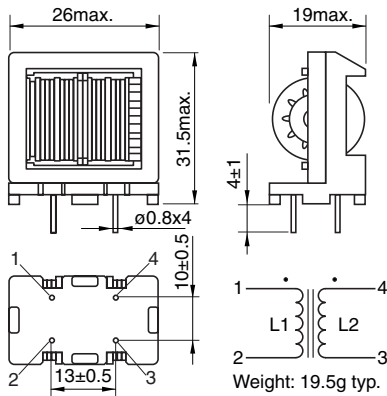
HF2422 540pieces/box

EMC Components

HF Series

Common Mode Choke Coils (Line Filters) for AC Power Supply
Closed Magnetic Circuit Core Type

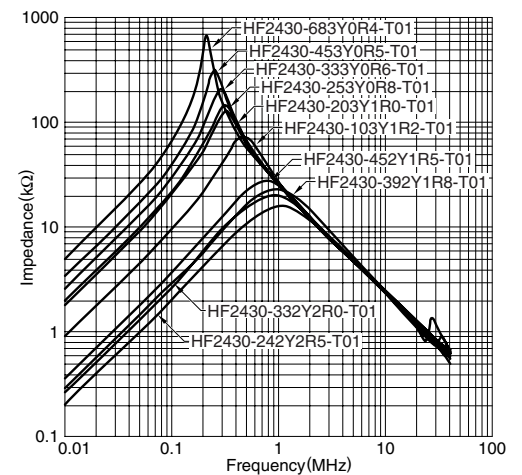
HF2430 (DOUBLE-SQUARE SHAPED CLOSED MAGNETIC CIRCUIT CORE) TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



Recommended hole diameter: $\phi 1.3$
Dimensions in mm



TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS



ELECTRICAL CHARACTERISTICS

| Part No. | Inductance (mH)min. | DC resistance (Ω)max. | Rated current (A)max. |
|--------------------|---------------------|--------------------------------|-----------------------|
| HF2430-683Y0R4-T01 | 68 | 2.3 | 0.4 |
| HF2430-453Y0R5-T01 | 45 | 1.65 | 0.5 |
| HF2430-333Y0R6-T01 | 33 | 1.2 | 0.6 |
| HF2430-253Y0R8-T01 | 25 | 0.88 | 0.8 |
| HF2430-203Y1R0-T01 | 20 | 0.64 | 1 |
| HF2430-103Y1R2-T01 | 10 | 0.38 | 1.2 |
| HF2430-452Y1R5-T01 | 4.5 | 0.19 | 1.5 |
| HF2430-392Y1R8-T01 | 3.9 | 0.15 | 1.8 |
| HF2430-332Y2R0-T01 | 3.3 | 0.11 | 2 |
| HF2430-242Y2R5-T01 | 2.4 | 0.09 | 2.5 |

APPLICABLE SAFETY STANDARD

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PACKAGING QUANTITIES

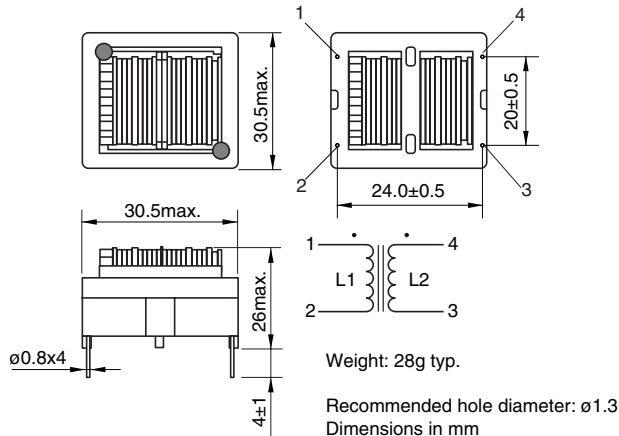
| | |
|--------|---------------|
| HF2430 | 400pieces/box |
|--------|---------------|

EMC Components

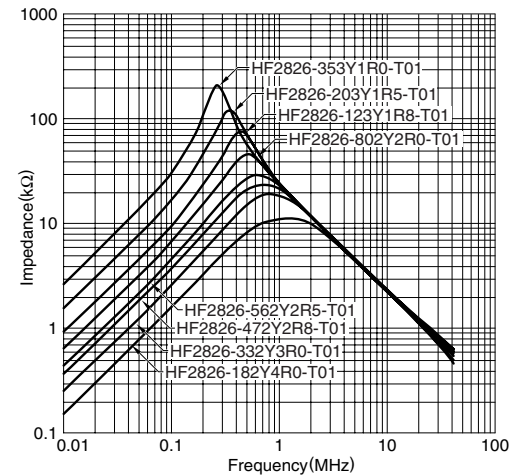
HF Series

Common Mode Choke Coils(Line Filters) for AC Power Supply
Closed Magnetic Circuit Core Type

HF2826(DOUBLE-SQUARE SHAPED CLOSED MAGNETIC CIRCUIT CORE) TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS



ELECTRICAL CHARACTERISTICS

| Part No. | Inductance (mH)min. | DC resistance (Ω)max. | Rated current (A)max. |
|--------------------|---------------------|--------------------------------|-----------------------|
| HF2826-353Y1R0-T01 | 35 | 0.78 | 1 |
| HF2826-253Y1R2-T01 | 25 | 0.56 | 1.2 |
| HF2826-203Y1R5-T01 | 20 | 0.41 | 1.5 |
| HF2826-123Y1R8-T01 | 12 | 0.27 | 1.8 |
| HF2826-802Y2R0-T01 | 8 | 0.18 | 2 |
| HF2826-562Y2R5-T01 | 5.6 | 0.13 | 2.5 |
| HF2826-472Y2R8-T01 | 4.7 | 0.1 | 2.8 |
| HF2826-332Y3R0-T01 | 3.3 | 0.088 | 3 |
| HF2826-182Y4R0-T01 | 1.8 | 0.05 | 4 |

APPLICABLE SAFETY STANDARD

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PACKAGING QUANTITIES

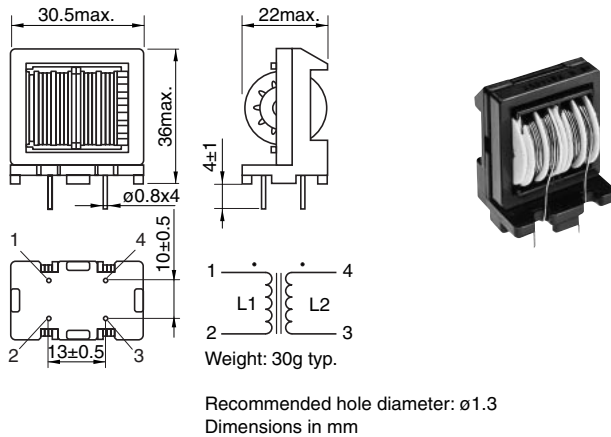
| | |
|--------|---------------|
| HF2826 | 480pieces/box |
|--------|---------------|

EMC Components

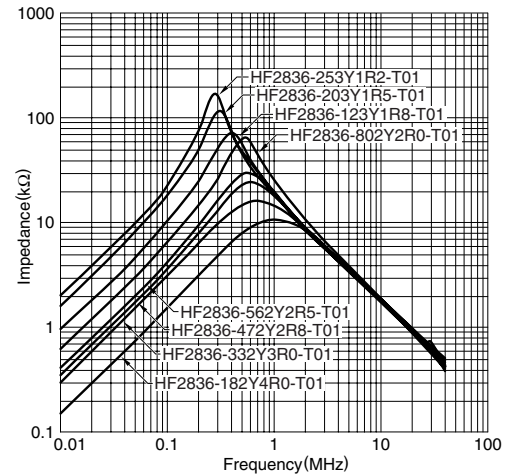
HF Series

Common Mode Choke Coils(Line Filters) for AC Power Supply
Closed Magnetic Circuit Core Type

HF2836(DOUBLE-SQUARE SHAPED CLOSED MAGNETIC CIRCUIT CORE) TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS



ELECTRICAL CHARACTERISTICS

| Part No. | Inductance (mH)min. | DC resistance (Ω)max. | Rated current (A)max. |
|--------------------|---------------------|--------------------------------|-----------------------|
| HF2836-353Y1R0-T01 | 35 | 0.78 | 1 |
| HF2836-253Y1R2-T01 | 25 | 0.56 | 1.2 |
| HF2836-203Y1R5-T01 | 20 | 0.41 | 1.5 |
| HF2836-123Y1R8-T01 | 12 | 0.27 | 1.8 |
| HF2836-802Y2R0-T01 | 8 | 0.18 | 2 |
| HF2836-562Y2R5-T01 | 5.6 | 0.13 | 2.5 |
| HF2836-472Y2R8-T01 | 4.7 | 0.1 | 2.8 |
| HF2836-332Y3R0-T01 | 3.3 | 0.088 | 3 |
| HF2836-182Y4R0-T01 | 1.8 | 0.05 | 4 |

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PACKAGING QUANTITIES

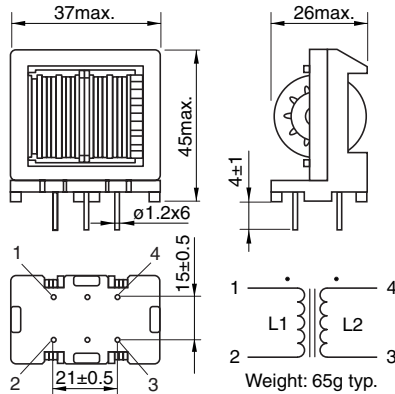
| | |
|--------|---------------|
| HF2836 | 400pieces/box |
|--------|---------------|

EMC Components

HF Series

Common Mode Choke Coils (Line Filters) for AC Power Supply
Closed Magnetic Circuit Core Type

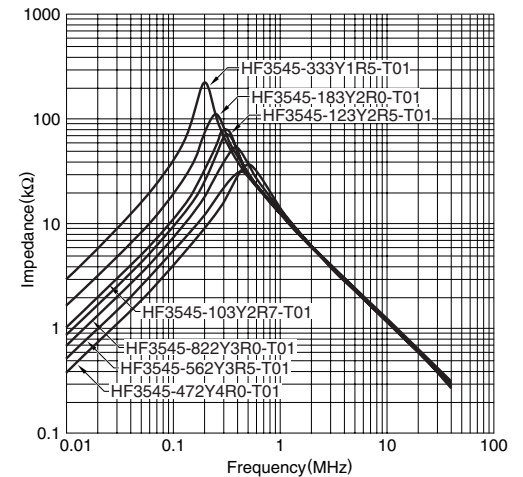
HF3545 (DOUBLE-SQUARE SHAPED CLOSED MAGNETIC CIRCUIT CORE) TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



Recommended hole diameter: $\phi 1.3$
Dimensions in mm



TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS



ELECTRICAL CHARACTERISTICS

| Part No. | Inductance (mH)min. | DC resistance (Ω)max. | Rated current (A)max. |
|--------------------|---------------------|--------------------------------|-----------------------|
| HF3545-333Y1R5-T01 | 33 | 0.42 | 1.5 |
| HF3545-183Y2R0-T01 | 18 | 0.23 | 2 |
| HF3545-123Y2R5-T01 | 12 | 0.17 | 2.5 |
| HF3545-103Y2R7-T01 | 10 | 0.13 | 2.7 |
| HF3545-822Y3R0-T01 | 8.2 | 0.105 | 3 |
| HF3545-562Y3R5-T01 | 5.6 | 0.077 | 3.5 |
| HF3545-472Y4R0-T01 | 4.7 | 0.062 | 4 |

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PACKAGING QUANTITIES

| | |
|--------|---------------|
| HF3545 | 140pieces/box |
|--------|---------------|