# CHIP TYPE EMI FILTERS [ CNF31 · CNH31 · CNH30 · CNH32 Series ]

The CNF31 · CNH31 · CNH30 · CNH32 series is a 3-terminal EMI filter for SMT based on multilayer chip capacitor technology. The CNH series is suited for reducing EMI noise on DC power lines.
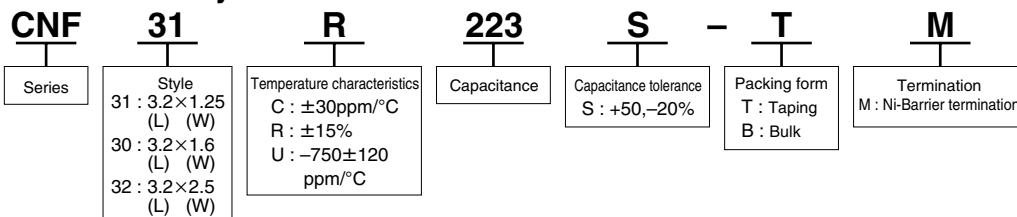
## ■Features

• Due to its small size and low residual inductance, noise reduction is possible at higher frequencies than conventional capacitors.
• High current rating (~2A), makes it well suited for reducing EMI noise on DC power lines.
• High capacitance (0.1μF max.) enables reduction of noise over a wide frequency range.
• Nickel and tin plated barrier terminations offer good solderability and resistance to soldering heat.
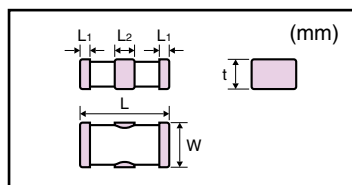• RoHS Compliant.

## ■Applications

Noise reduction for signal lines and DC lines in computers, computer peripheral equipment, digital TV, DVD recorder, cellular telephone, automotive electronics, printer, FAX, etc.
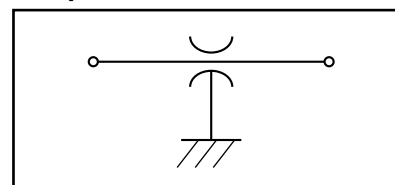
## ■Part Number System



CNF  31  R  223  S  –  T  M

| Series | Style | Temperature characteristics | Capacitance | Capacitance tolerance | Packing form | Termination |
|---|---|---|---|---|---|---|
| | 31 : 3.2×1.25 (L) (W) 30 : 3.2×1.6 (L) (W) 32 : 3.2×2.5 (L) (W) | C : ±30ppm/°C R : ±15% U : −750±120 ppm/°C | | S : +50,−20% | T : Taping B : Bulk | M : Ni-Barrier termination |

## ■Dimensions



(mm)

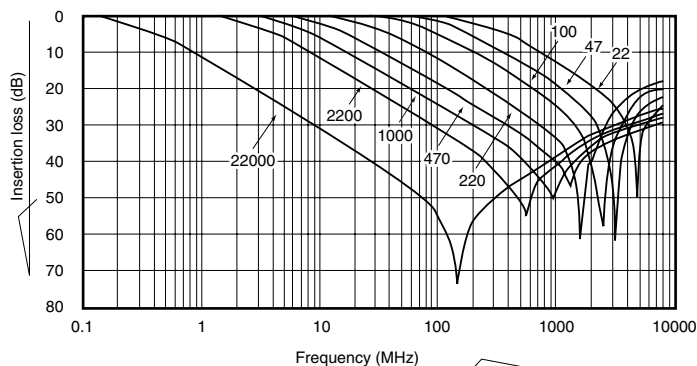| Type | L | W | t | L1 | L2 |
|---|---|---|---|---|---|
| CNF31 CNH31 | 3.2±0.2 | 1.25±0.2 | 0.7±0.2 | 0.4±0.3 | 1.1±0.3 |
| CNH30 | | 1.6±0.2 | 1.3±0.2 | 0.4±0.2 | 1.1±0.2 |
| CNH32 | | 2.5±0.2 | 1.6±0.2 | | |

## ■Equivalent circuit



## ■Part Number List • Specifications

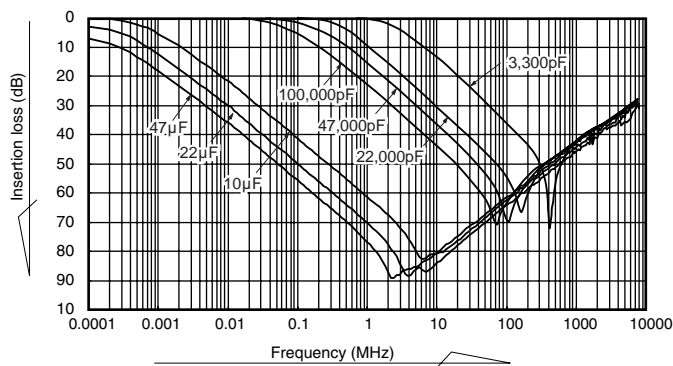| Part number | Capacitance | Capacitance tolerance | Rated voltage | Rated current | IR | DC resistance | Temp. range |
|---|---|---|---|---|---|---|---|
| CNF31C220S–☐M | 22pF | +50, −20% | 50V DC | 0.3A DC | 10,000MΩmin. | 0.3 Ωmax. | −55~+125°C |
| CNF31C470S–☐M | 47pF | | | | | | |
| CNF31C101S–☐M | 100pF | | | | | | |
| CNF31C221S–☐M | 220pF | | | | | | |
| CNF31R471S–☐M | 470pF | | | | | | |
| CNF31R102S–☐M | 1,000pF | | | | | | |
| CNF31R222S–☐M | 2,200pF | | | | | | |
| CNF31R223S–☐M | 22,000pF | | | | | | |
| CNH31U332S–☐M | 3,300pF | | 25V DC | 2 A DC | 1,000MΩmin. | 0.05Ωmax. | |
| CNH31R223S–☐M | 22,000pF | | 50V DC | | 10,000MΩmin. | 0.08Ωmax. | |
| CNH31R473S–☐M | 47,000pF | | | 1 A DC | 5,000MΩmin. | | |
| CNH30R104S–☐M | 100,000pF | | 25V DC | 2 A DC | 1,000MΩmin. | 0.07Ωmax. | |
| CNH30R106M–☐M | 10μ F | ±20% | 16V DC | 6 A DC | 50MΩmin. | 10mΩmax. | −55~+85°C |
| CNH32R106M–☐M | 10μ F | | 25V DC | | 50MΩmin. | | |
| CNH30R226M–☐M | 22μ F | | 6.3V DC | | 25MΩmin. | | |
| CNH32R476M–☐M | 47μ F | | 4.0V DC | | 10MΩmin. | 5mΩmax. | |

☐ : "T" stands for taping package and "B" stands for bulk package.

## ■Insertion loss (Reference)

CNF31 TYPE



CNH31 ,CNH30 ,CNH32 TYPE