TDK

# EMC Filters for AC Power Line
# For Single-phase, Small-size Box Cased ZCB-11S Series

**Conformity to RoHS Directive**

## FEATURES

- The ZCB-11S series are EMC filters designed to prevent malfunctions in microcomputers. They employ advanced amorphous magnetic materials in the common mode choke coil to achieve superior performance characteristics.
- They provide substantial attenuation of high-voltage pulses in power supply lines, exhibiting more than 20dB attenuation for a 1kV, 1µs pulse (ZCB2203-11S) or a 0.5kV, 1µs pulse (ZCB2206-11S).
- These filters are highly reliable and provide stable attenuation performance even in harsh environments, where the filters may be subjected to humidity, vibration, and shock.
- Efficient manufacturing makes these filters highly cost-effective.
- Connection terminals employing Faston® #110 facilitate implementation and maintenance.
- It is a product conforming to RoHS directive.

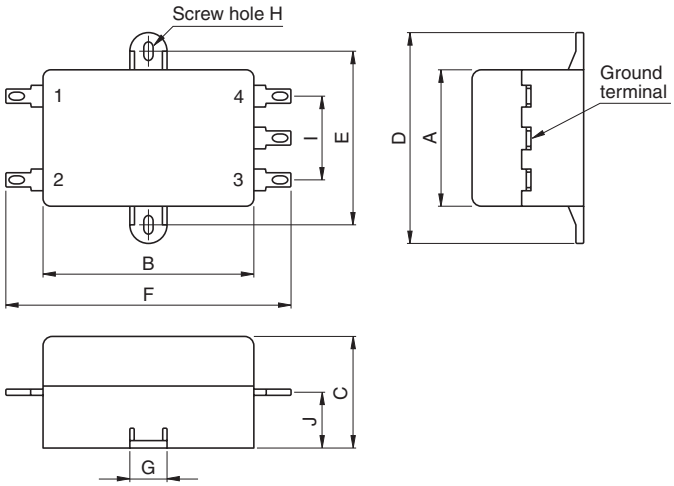
## SAFETY STANDARDS

| Part No. | Standard and standard No. | | |
|---|---|---|---|
| | U.S.A. | Canada | Europe |
| | UL | CSA | NEMKO |
| | UL1283 | CSA C22.2 No.8 | EN60939 |
| ZCB2203-11S | E62388 | LR76849C | P08209033/A1 |
| ZCB2206-11S | E62388 | LR76849C | P08209033/A1 |

## APPLICATIONS

Computers and peripheral terminals, general control devices, office automation equipment, and other industrial devices.

## SHAPES AND DIMENSIONS




Dimensions in mm

| Part No. | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| ZCB2203-11S, 2206-11S | 32 | 50 | 25 | 50 | 40 | 68 | 11 | 3.6 | 20 | 14 |

• Case: plastic, terminal: Faston® #110 (t: 0.5mm)

• Faston® is a registered trademark of Tyco Electronics AMP Corp. Incorporated.

• 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.

## ELECTRICAL CHARACTERISTICS

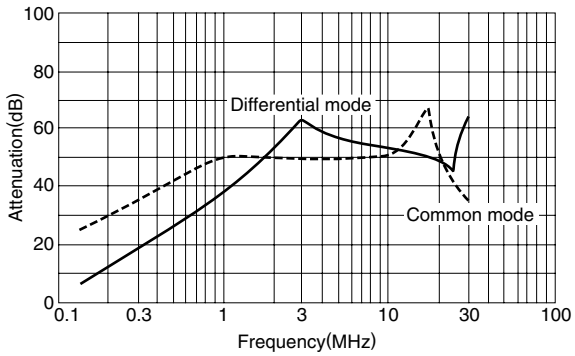
| Part No. | | ZCB2203-11S | ZCB2206-11S |
|---|---|---|---|
| Rated voltage Eac(V) | | 250 | 250 |
| Rated current(A) | | 3 | 6 |
| Test voltage Eac(V)[Between terminal and ground terminal] | | 1500 | 1500 |
| Insulation resistance(MΩ)<br>[DC. 500V, 1min/between terminal and ground terminal] | | 100min. | 100min. |
| Leakage current(mA)[250V • 60Hz] | | 0.75max. | 0.75max. |
| DC resistance(mΩ) | | 300max. | 100max. |
| Operating temperature range(°C)[Including self-temperature rise] | | –25 to +85 | –25 to +85 |
| With derating over(°C) | | 55 | 55 |
| Temperature rise(°C) | | 30max. | 30max. |
| Attenuation frequency range (MHz)[+5 to +35°C] | Differential mode at 30dB | 2 to 10 | 2 to 10 |
| | Common-mode at 30dB | 1 to 10 | 1 to 10 |
| Pulse attenuation characteristics Input pulse voltage(kV)* | Differential mode at 20dB | 1 | 0.5 |
| | Common mode at 20dB | 1 | 0.5 |
| Weight(g) | | 55 | 60 |

* Input pulse width: 1µs

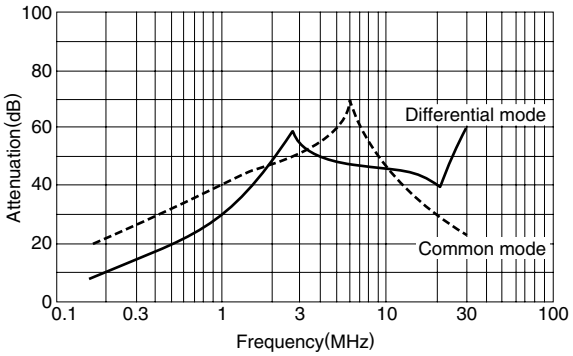
## TYPICAL ELECTRICAL CHARACTERISTICS

### ATTENUATION vs. FREQUENCY CHARACTERISTICS

**ZCB2203-11S**

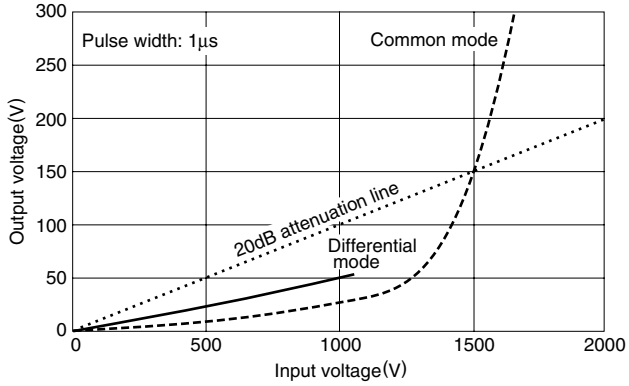



**ZCB2206-11S**

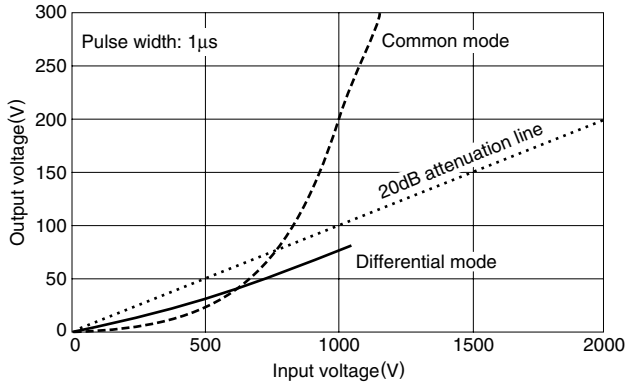



### PULSE ATTENUATION CHARACTERISTICS

**ZCB2203-11S**




**ZCB2206-11S**




### CIRCUIT DIAGRAM