

# EMC Filters for AC Power Line

## For Single-phase, Small-size Box Cased ZCB-11, ZCB-M Series

Conformity to RoHS Directive

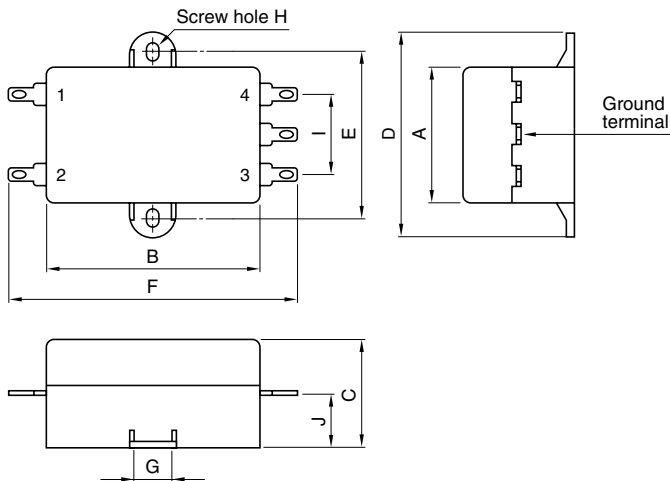
### FEATURES

- The ZCB-11 and ZCB-M series EMC filters exhibit outstanding attenuation characteristics with respect to both differential mode and common mode noise components in the MF and HF bands.
- Leakage current is maintained at less than 0.41mA for the ZCB-M series and less than 0.75mA for the ZCB-11 series.
- 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.

### APPLICATIONS

Digital applied devices (ECR, calculators, electronic scales, etc.), control devices, measurement devices, and other electronic equipment.

### SHAPES AND DIMENSIONS



### SAFETY STANDARDS

Part No.	Standard and standard No.		
	U.S.A.	Canada	Europe
	UL	CSA	NEMKO
	UL1283	CSA C22.2 No.8	EN60939
ZCB2203-11	E62388	LR76849C	P08209033/A1
ZCB2206-11	E62388	LR76849C	P08209033/A1
ZCB2201-M	E62388	LR76849C	P08209033/A1
ZCB2203-M	E62388	LR76849C	P08209033/A1



Dimensions in mm

Part No.	A	B	C	D	E	F	G	H	I	J
ZCB2203-11 2206-11	32	50	25	50	40	68	8	3.6	20	14
ZCB2201-M 2203-M	26	35	17.5	44	35	53	8	3.6	18	9.3

- 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.

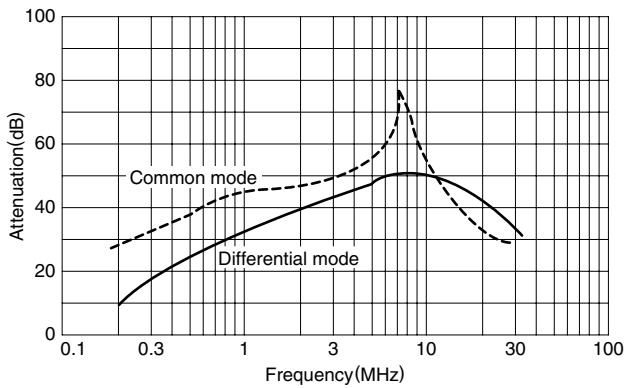
• All specifications are subject to change without notice.

### ELECTRICAL CHARACTERISTICS

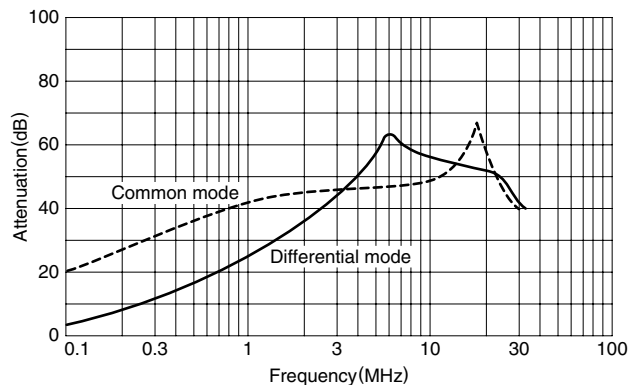
Part No.	ZCB2203-11	ZCB2206-11	ZCB2201-M	ZCB2203-M
Rated voltage Eac(V)	250	250	250	250
Rated current(A)	3	6	1	3
Test voltage Eac(V)[Between terminal and ground terminal]	1500	1500	1500	1500
Insulation resistance(MΩ)				
[DC. 500V, 1min/between terminal and ground terminal]	100min.	100min.	100min.	100min.
Leakage current(mA)	0.75max. [250V • 60Hz]	0.75max. [250V • 60Hz]	0.41max. [250V • 50Hz]	0.41max. [250V • 50Hz]
DC resistance(mΩ)	500max.	100max.	100max.	80max.
Operating temperature range(°C)[Including self-temperature rise]	-25 to +85	-25 to +85	-25 to +85	-25 to +85
With derating over(°C)	55	55	55	55
Temperature rise(°C)	30max.	30max.	30max.	30max.
Attenuation frequency range (MHz)[+5 to +35°C]	Differential mode at 30dB Common mode at 30dB	Differential mode at 30dB Common mode at 30dB	Differential mode at 30dB Common mode at 30dB	Differential mode at 30dB Common mode at 30dB
Weight(g)	45	45	22	22

### TYPICAL ELECTRICAL CHARACTERISTICS ATTENUATION vs. FREQUENCY CHARACTERISTICS

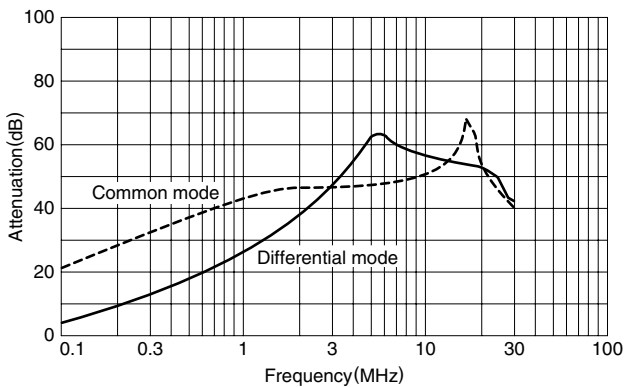
ZCB2203-11



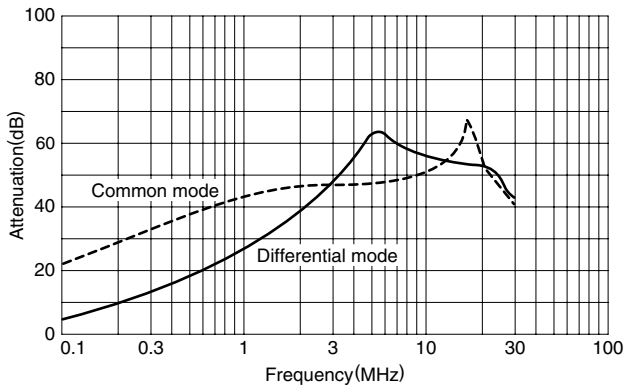
ZCB2206-11



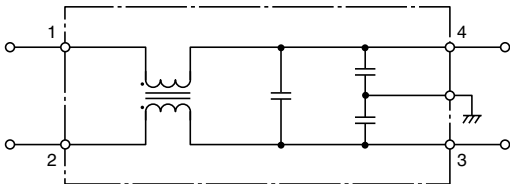
ZCB2201-M



ZCB2203-M

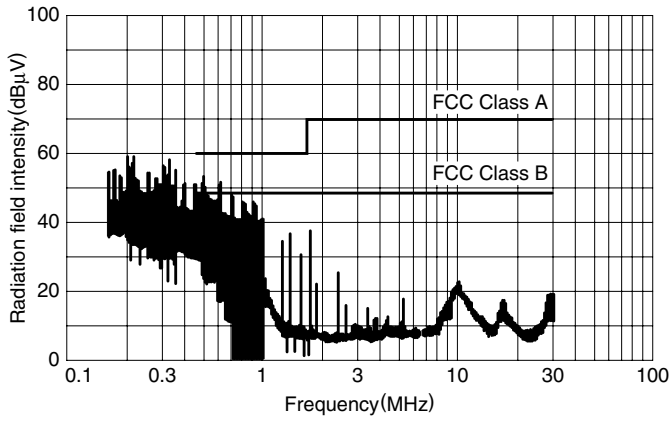


### CIRCUIT DIAGRAM

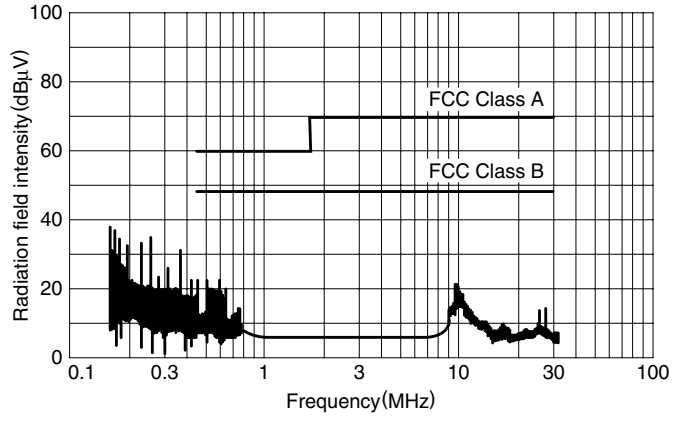


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**TYPICAL APPLICATION EFFECTS**  
**(Personal computer with CRT display)**  
**WITHOUT EMC FILTER**



**WITH EMC FILTER (ZCB2203-11)**



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