2 mode Noise Filters

Type: **EXC24CB/CP**
EXC24CN

Features

- Burst/radiation noise filtering for audio circuits
- The optimally magnetic-coupled ferrite beads allow for the filtering of both common and normal mode noises
- The strong multi-layer structure provides high resistance to reflow soldering heat and a high mounting reliability
- Magnetic shield type
- High Impedance : 220 to 1 kΩ (EXC24CB type)
- Low Resistance Value : 0.4 Ω max. (EXC24CP type)
- High Impedance : 600 Ω, Low Resistance Value : 0.9 Ω max. (EXC24CN type)
- RoHS compliant

Recommended Applications

- Smart phones, Tablet PCs, DSC and Portable Music Player
- Noise suppression of burst noise of Receiver/Microphone and D-class power amplifier

Explanation of Part Numbers

- EXC24CB/CP Type

1	2	3	4	5	6	7	8	9	10	11	12
E	X	C	2	4	C	B	1	0	2	U	

Product Code / Size / Number of Terminals / Type / Characteristics / Nominal Impedance / Form / Suffix

Noise Filter

Code	Dimensions(mm)
2	1.25 × 1.00 × 0.50 (L) × (W) × (H)

4 Terminals

C	Coupled type

B	High Impedance Type
P	Low DCR Type

The first two digits are significant figure of impedance value, and the third one denotes the number of zeros following

Code	Packing
U	Embossed Carrier Taping 2 mm pitch, 5,000 pcs.

- EXC24CN Type

1	2	3	4	5	6	7	8	9	10	11	12
E	X	C	2	4	C	N	6	0	1	X	

Product Code / Size / Number of Terminals / Type / Characteristics / Nominal Impedance / Form / Suffix

Noise Filter

Code	Dimensions(mm)
2	1.25 × 1.00 × 0.50 (L) × (W) × (H)

4 Terminals

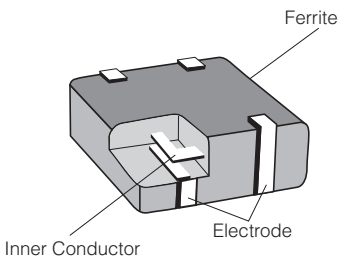
C	Coupled type

N	High Impedance Type and Low DCR Type

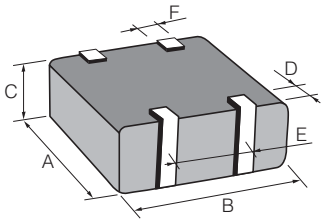
The first two digits are significant figure of impedance value, and the third one denotes the number of zeros following

Code	Packing
X	Pressed Carrier Taping 2 mm pitch, 10,000 pcs.

Construction

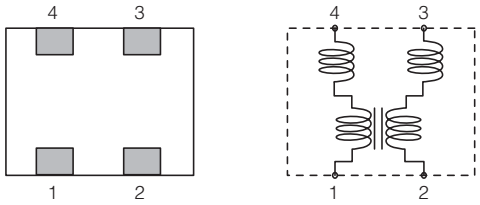


Dimensions in mm (not to scale)



Part No. (inch size)	Dimensions (mm)						Mass (Weight) [mg/pc.]
	A	B	C	D	E	F	
EXC24C (0504)	1.00±0.15	1.25±0.15	0.50±0.10	0.20±0.15	0.65±0.10	0.35±0.10	3

Circuit Configuration (No Polarity)



- The pin numbers shown here are for reference purposes only. Confirm the actual pin number arrangement with the exchanged specification documents.

Ratings

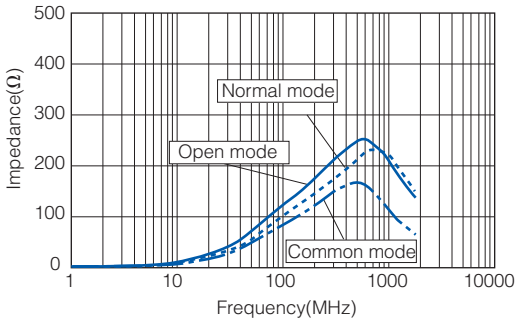
Part Number	Impedance (Open mode)		Rated Voltage (V DC)	Rated Current (mA DC)	DC Resistance (Ω) max.
	(Ω) at 100 MHz	Tolerance(%)			
EXC24CP121U	120	±25	5	500	0.3
EXC24CP221U	220			350	0.4
EXC24CB221U	220			100	0.7
EXC24CB102U	1000			50	1.5

Part Number	Impedance (Common mode)		Rated Voltage (V DC)	Rated Current (mA DC)	DC Resistance (Ω) max.
	(Ω) at 100 MHz	Tolerance(%)			
EXC24CN601X	600	±25	5	200	0.9

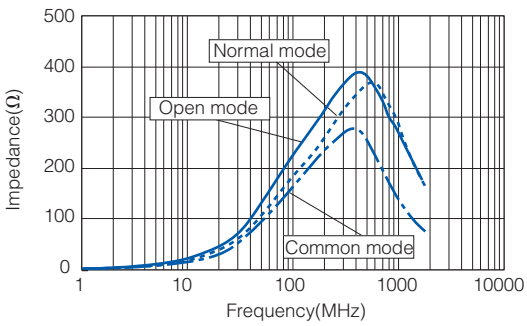
- Category Temperature Range –40 °C to +85 °C

Impedance Characteristics (Typical)

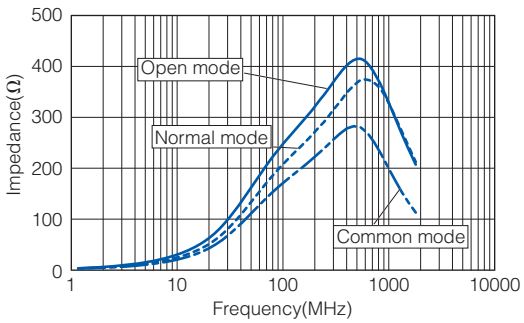
- EXC24CP121U



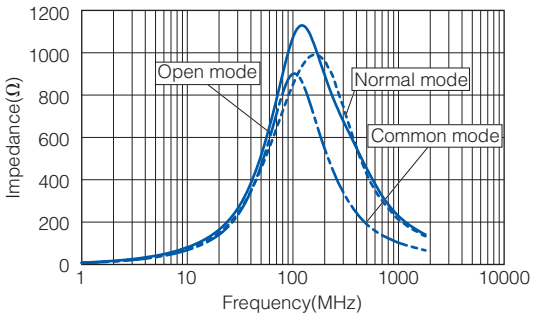
- EXC24CP221U



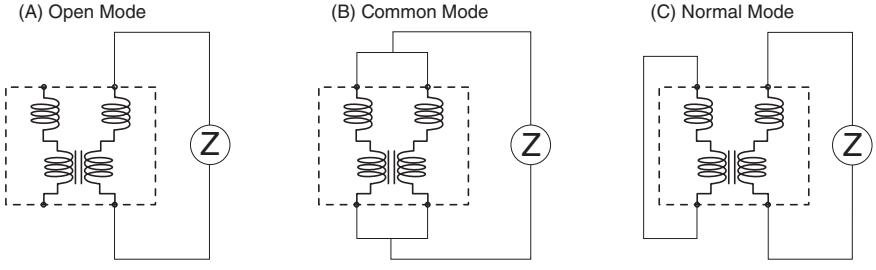
- EXC24CB221U



- EXC24CB102U

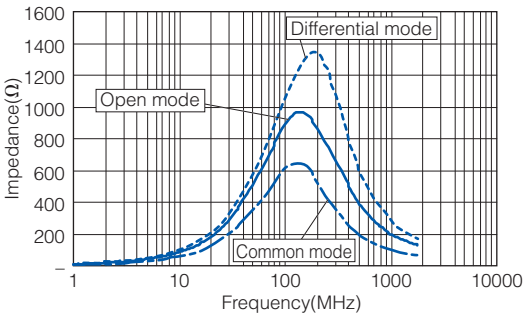


- Measurement Circuit

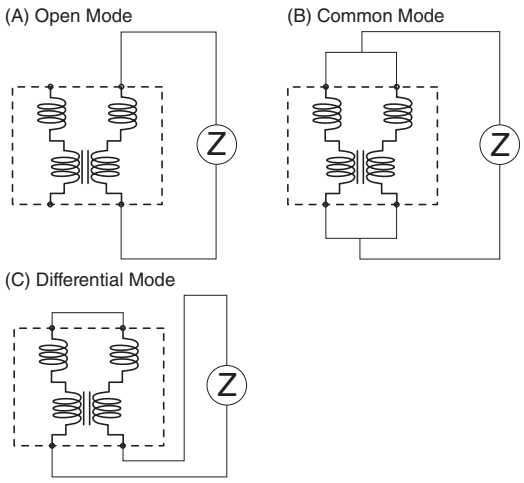


Attenuation Characteristics (Typical)

● EXC24CN601X



● Measurement Circuit

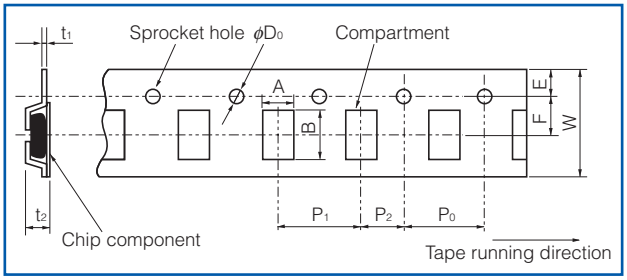


Packaging Methods (Taping)

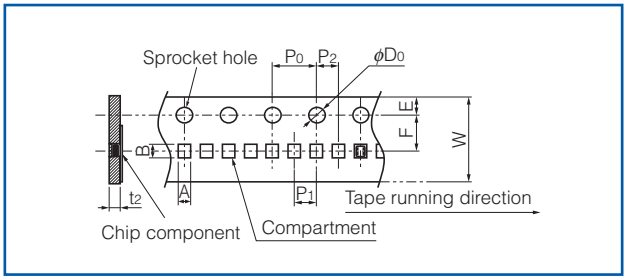
● Standard Quantity

Part Number	Size (inch)	Kind of Taping	Pitch (P_1)	Quantity
EXC14CP□□□U	0302	Embossed Carrier Taping	2 mm	10,000 pcs./reel
EXC24CP/CB□□□U	0504		4 mm	5,000 pcs./reel
EXC24CN□□□X	0504	Pressed Carrier Taping	2 mm	10,000 pcs./reel

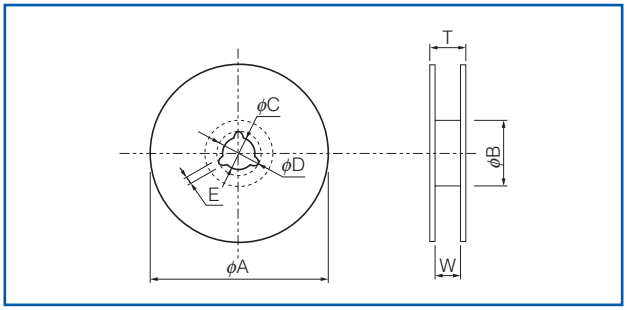
● Embossed Carrier Taping



● Pressed Carrier Taping



● Taping Reel



● Embossed Carrier Dimensions (mm)

Part Number	A	B	W	F	E	P_1	P_2	P_0	ϕD_0	t_1	t_2
EXC14CP	0.75±0.10	0.95±0.10	8.0±0.2	3.50±0.05	1.75±0.10	2.0±0.1	2.0±0.1	4.0±0.1	$1.5^{+0.1}_{0}$	0.25±0.05	0.85±0.15
EXC24CP/CB	1.20±0.15	1.45±0.15	8.0±0.2	3.5±0.1	1.75±0.10	4.0±0.1	2.0±0.1	4.0±0.1	$1.5^{+0.1}_{0}$	0.25±0.05	0.90±0.15

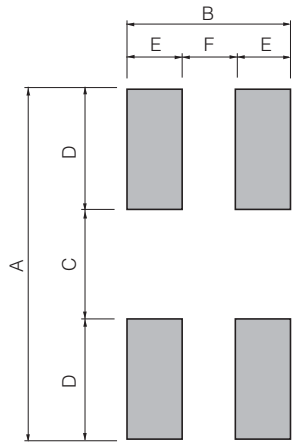
● Pressed Carrier Dimensions (mm)

Part Number	A	B	W	F	E	P_1	P_2	P_0	ϕD_0	t_2
EXC24CN	1.14±0.10	1.38±0.15	8.0±0.2	3.5±0.1	1.75±0.10	2.0±0.1	2.0±0.1	4.0±0.1	$1.5^{+0.1}_{0}$	0.68±0.10

● Standard Reel Dimensions (mm)

Part Number	ϕA	ϕB	ϕC	ϕD	E	W	T
EXC14C/EXC24C	180.0±3.0	60.0±1.0	13.0±0.5	21.0±0.8	2.0±0.5	9.0±0.3	11.4±1.5

Recommended Land Pattern Design

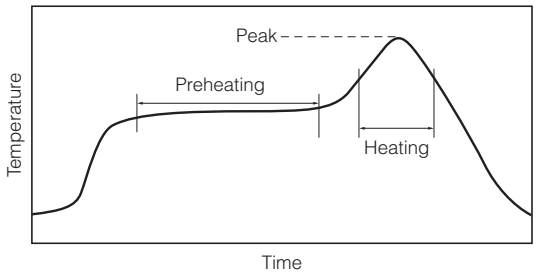


Part Number	Dimension (mm)					
	A	B	C	D	E	F
EXC14CP	0.80 to 1.00	0.80	0.30	0.25 to 0.35	0.30	0.20
EXC24CP EXC24CB EXC24CN	1.50 to 1.90	1.10	0.50	0.50 to 0.70	0.40	0.30

Recommended Soldering Conditions

Recommendations and precautions are described below.

- Recommended soldering conditions for reflow
  - Reflow soldering shall be performed a maximum of two times.
  - Please contact us for additional information when used in conditions other than those specified.
  - Please measure the temperature of the terminals and study every kind of solder and printed circuit board for solderability before actual use.



For soldering (Example : Sn-37Pb)

	Temperature	Time
Preheating	140 °C to 160 °C	60 s to 120 s
Main heating	Above 200 °C	30 s to 40 s
Peak	235 ± 10 °C	max. 10 s

For lead-free soldering (Example : Sn/3Ag/0.5Cu)

	Temperature	Time
Preheating	150 °C to 170 °C	60 s to 120 s
Main heating	Above 230 °C	30 s to 40 s
Peak	max. 260 °C	max. 10 s

- Flow soldering
  - We do not recommend flow soldering , because flow soldering may cause bridges between the electrodes.

<Repair with hand soldering>

- Preheat with a blast of hot air or similar method. Use a soldering iron with a tip temperature of 350 °C or less. Solder each electrode for 3 seconds or less.
- Never touch this product with the tip of a soldering iron.

⚠ Safety Precautions

The following are precautions for individual products. Please also refer to the common precautions for EMC Components in this catalog.

1. Use rosin-based flux or halogen-free flux.
2. For cleaning, use an alcohol-based cleaning agent. Before using any other type, consult with our sales person in advance.
3. Do not apply shock to 2 mode Noise Filters (hereafter called the filters) or pinch them with a hard tool (e.g. pliers and tweezers). Otherwise, their bodies may be chipped, affecting their performance. Excessive mechanical stress may damage the filters. Handle with care.
4. Store the filters in a location with a temperature ranging from –5 °C to +40 °C and a relative humidity of 40 % to 60 %, where there are no rapid changes in temperature or humidity.
5. Use the filters within a year after the date of the outgoing inspection indicated on the packages.

Mouser Electronics

Authorized Distributor

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Panasonic:

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