

Data Sheet

Customer:

Product: Common Mode Filters

Sizes.: 0502

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Common Mode Filter

Features

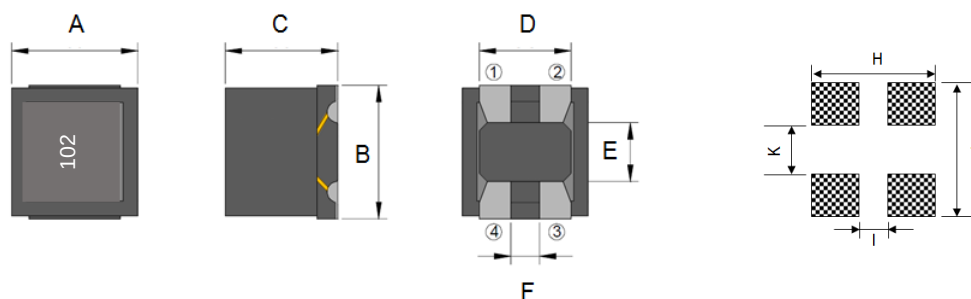
- Chip common mode filter for large current applications
- For each series, there is excellent common mode impedance and noise suppression in a compact case
- Low profile and small size makes it optimal for surface mounting



Applications

- Power Line Noise Countermeasure For Electronic Equipment (DVCs, DVD Cams, DSCs, etc.).

Dimensions



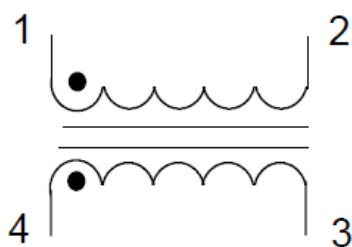
Unit: mm

Type	A	B	C	D	E	F	H	I	J	K
CMC0502	4.8±0.3	5.0±0.3	2.3±0.2	3.5±0.2	2.2±0.2	1.1±0.2	4.4 ref	0.9 ref	5.5 ref	2.0 ref

Part Numbering

CMC	0502	-	T	102
Product Type	Dimensions (AxBxC)	Impedance Tolerance	Packaging Code	Impedance
	0502: 4.8x5.0x2.3	-: No specified	T: Taping Reel	251: 250Ω 102: 1000Ω

Equivalent Circuit



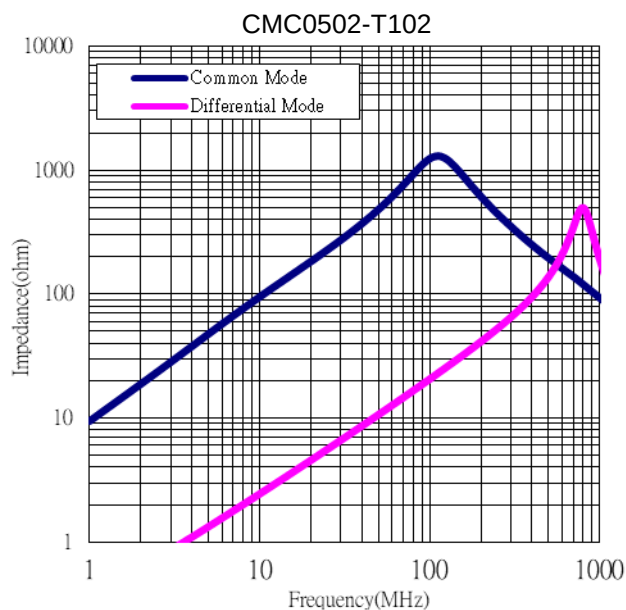
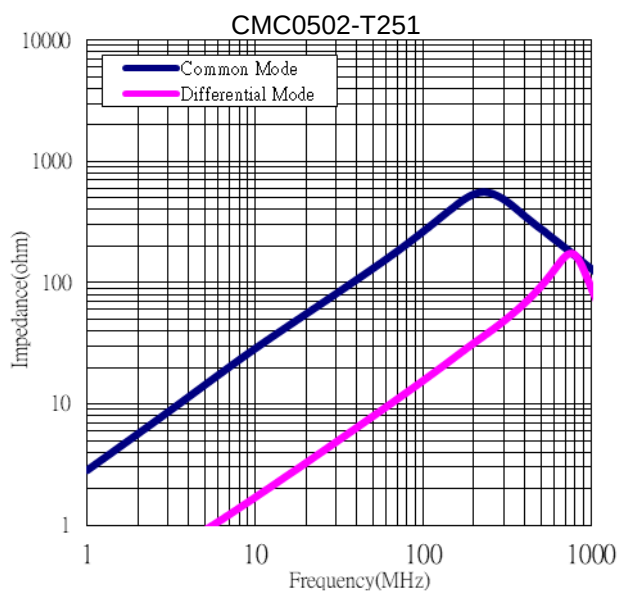
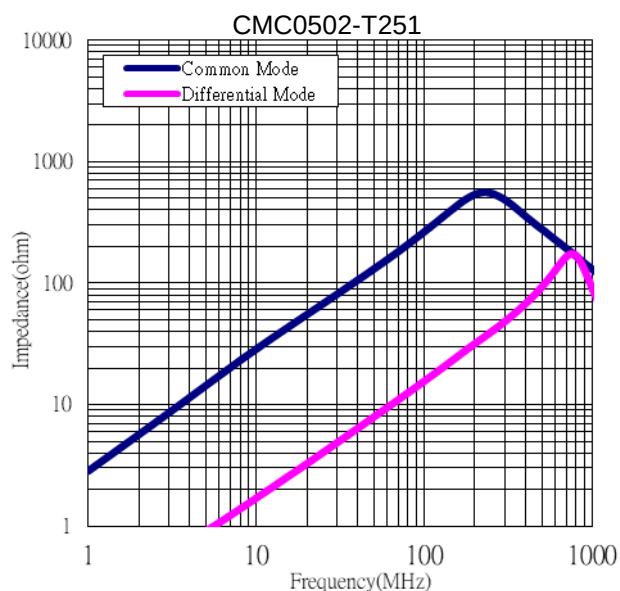
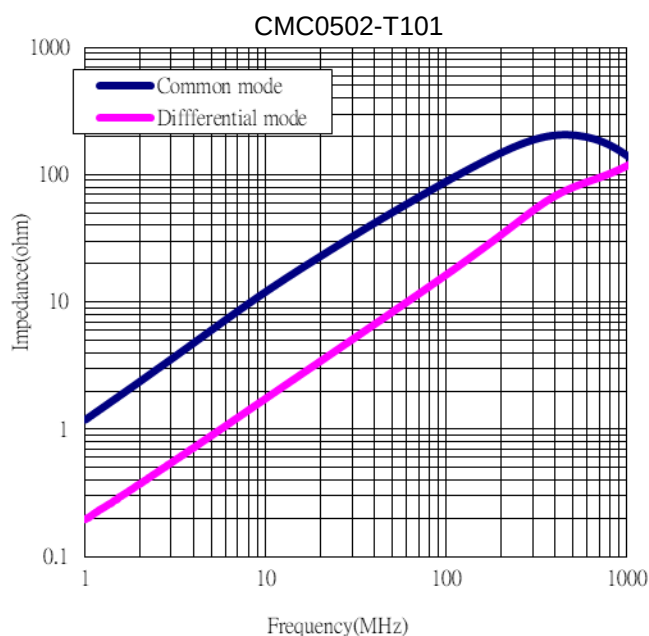
Common Mode Filter

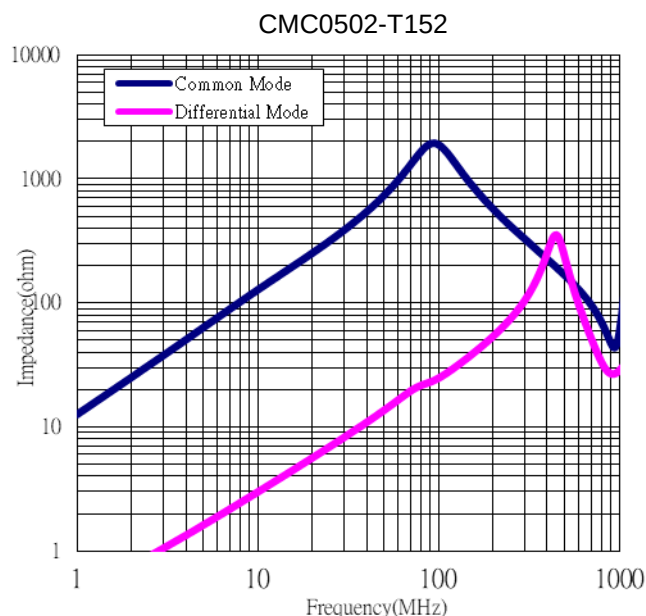
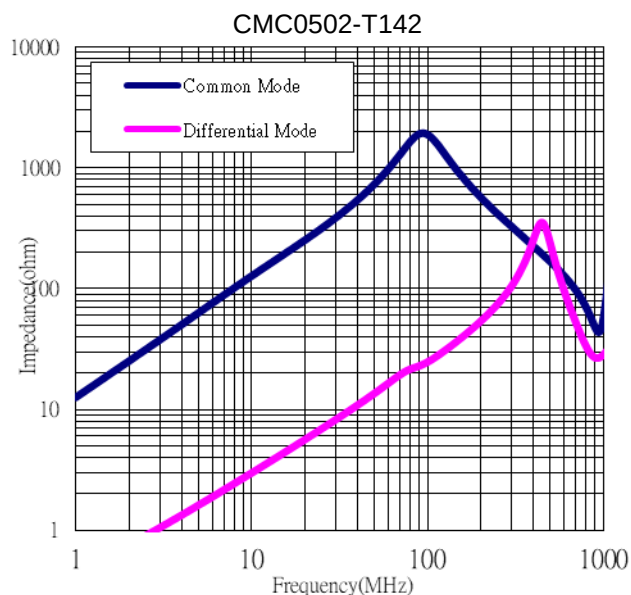
Standard Electrical Specifications

Part No.	Impedance (Ω) typ. @10MHz	Impedance (Ω) typ. @100MHz	DCR (mΩ) ±40%	IDC (A) max.	Rated Voltage Vdc (V)	Insulation Resistance (MΩ) min.	Withstanding Voltage Vdc(V)
CMC0502-T101	13	100	10	6	50	10	125
CMC0502-T251	20	250	14	5	50	10	125
CMC0502-T501	30	500	19	4	50	10	125
CMC0502-T102	60	1000	24	3	50	10	125
CMC0502-T142	100	1400	40	2	50	10	125
CMC0502-T152	100	1500	40	2	50	10	125

Operating temperature range: -25~125°C

Characteristics (Impedance vs. Frequency)

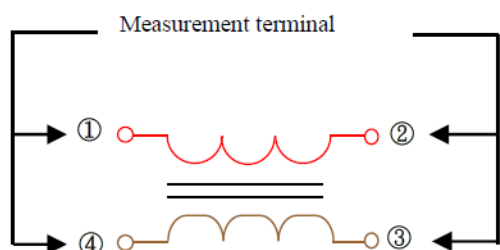




Test Equipment

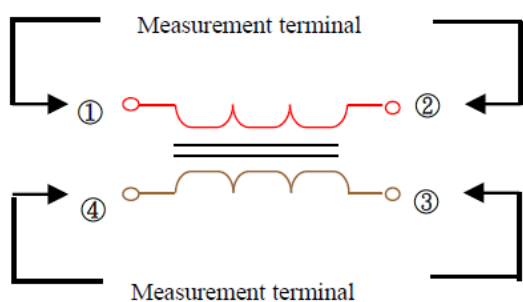
Impedance / Inductance

Measured by using Agilent E4991A RF Impedance Analyzer.
Measured by using Microtest 6377 RF LCR Meter



DC Resistance

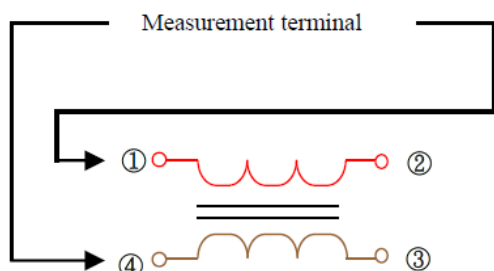
Measured by using Chroma 16502 mill ohm meter.



Insulation Resistance

Measured by using Chroma 19073

Measurement voltage : 50v ,Measurement time : 60 sec



Common Mode Filter

Environmental Characteristics

Items	Requirement	Test Conditions / Test Methods
Impedance	Refer to standard electrical characteristic spec. Component should not be damaged	Agilent-E4991B+ Agilent -16197A
DC Resistance DCR		Micro-Ohm meter (chroma 16502)
Insulation Resistance (I.R)		Charge Current: 1minute 10M ohm min
Component Adhesion (Push Test)	Base: 5050 ≥ 4 Lbs	The component should be soldered ($232^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 10 sec.) to tinned copper substrate. Applied force gauge to the side of component It must withstand force of 2 or 4 pounds without failure of the component.
Drop	Component should not be damaged	Dropping chip by each side and corner. Drop 10 times in total Drop height: 100 cm Drop weight: 125 g
Solderability	The terminal should at least be 90% covered with solder	The component shall be dipped in a melted solder bath at 245 ± 5 for 3 seconds
Low Temperature Storage	Inductance change: Within $\pm 10\%$ of initial value Q : Shall not exceed the specification value. RDC : within $\pm 15\%$ of initial value and shall not exceed the specification value	Temperature: $-40 \pm 2^{\circ}\text{C}$ Time: 1000 ± 48 hours Component should be tested after 1hour at room temperature
High Temperature Storage		Temperature: $85 \pm 2^{\circ}\text{C}$ Time: 1000 ± 48 hours Component should be tested after 1hour at room temperature
Thermal Shock		 Diagram showing two thermal shock cycles. Cycle 1: ROOM TEMP (15MINS) to $-25 \pm 2^{\circ}\text{C}$ (30MINS). Cycle 2: ROOM TEMP (15MINS) to $85 \pm 2^{\circ}\text{C}$ (30MINS). Total: 5 Cycles.
Humidity		Temperature: $40 \pm 2^{\circ}\text{C}$ Humidity: 90 ~ 95% Time: 48 ± 2 hours

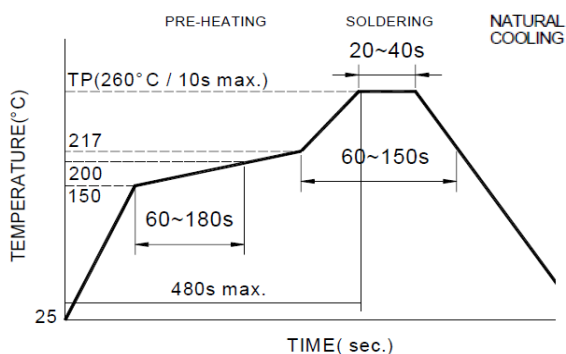
■ Operating Temperature Range: $-25 \sim 125^{\circ}\text{C}$

■ Storage Temperature: $-40 \sim 125^{\circ}\text{C}$

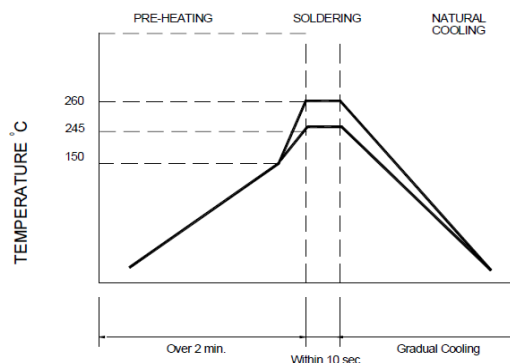
■ Shelf life: 1 years Max

Reflow

Re-flow Soldering(Lead Free)

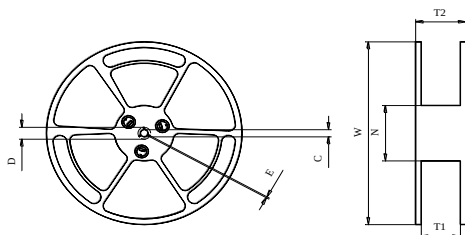


Wave Soldering



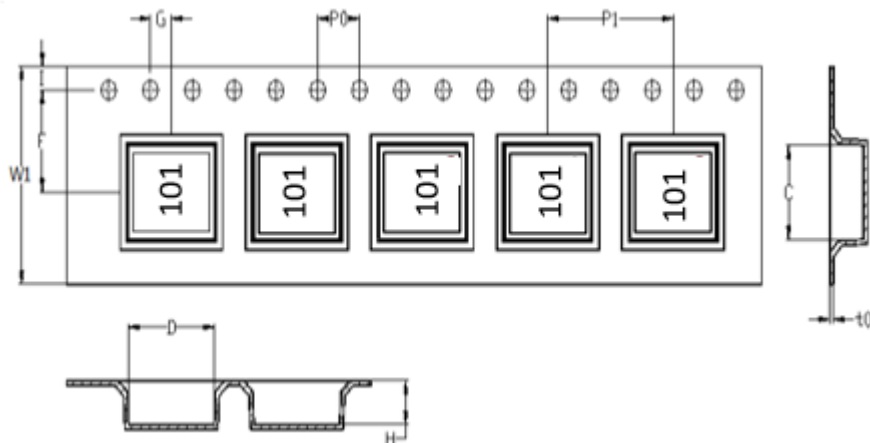
■Packaging

Packaging Quantity & Reel Specifications



Type	W (mm)	D (mm)	C (mm)	T1 (mm)	N (mm)	T2 (mm)	E (mm)	Quantity (EA)
CMC0502	330±1.5	21.5+0.5/-0	13+0.5/-0.2	12.5+0.5/-0	100±1.5	16.9±0.4	2.0±0.5	2500

Embossed Plastic Tape Specifications



Type	W1 (mm)	I (mm)	F (mm)	P0 (mm)	G (mm)	P1 (mm)	C (mm)	t0 (mm)	D (mm)	H (mm)
CMC0502	12.00±0.3	1.75±0.1	5.5±0.1	4.00±0.1	2.00±0.1	8.00±0.1	5.30±0.1	0.35±0.05	5.30±0.1	2.50±0.1

REVISION HISTORY

<u>REVISION</u>	<u>DATE</u>	<u>CHANGE NOTIFICATION</u>	<u>DESCRIPTION</u>
Version A3	Apr 14,2025		-Add Shelf life.