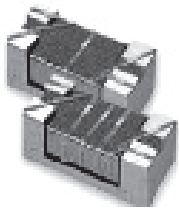
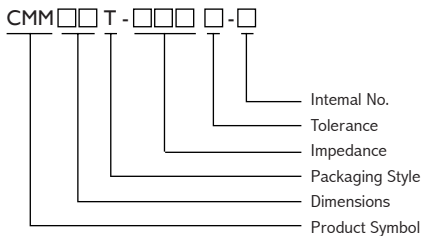


EMC common  
Mode chokp

# CMM Series



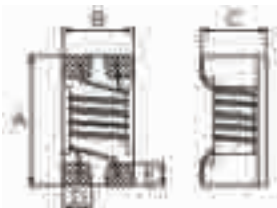
## PRODUCT IDENTIFICATION



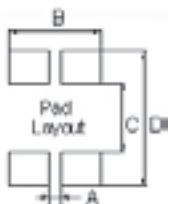
## SHAPE AND DIMENSIONS

Dimensions : mm

CMM21/CMM31



Recommended Pattern



## APPLICATIONS

USB line for personal computers and peripheral,

IEEE 1394 line for personal computers, DVC, STB.

LVDS, panel line for liquid display panels, graph card etc.

■ Packaging: T: Tape and Reel

■ Note: YAGEO will start to release lead-free common mode chokes of CMM Series which meet SONY SS-00259's criteria for lead-free product in Q2 of 2004, and the original P/N will be added "-N" as identification. Ex. CMM21T-300M-N

## FEATURES

Miniature SMD type common mode filter for fully automated assembly.

Wide Impedance range (30Ω~2200Ω) for noise suppression.

Excellent Solderability.

Operating temperature from -25°C to 85°C.

Based on YAGEO technical expertise, we have introduced a full series of common mode choke. They are designed for excellent noise attenuation with a compact size for wide applications such as USB line for personal computers and peripheral, IEEE 1394 line for personal computers, DVC, STB and LVDS, panel line for liquid display panels, etc. We welcome you to contact us for requirement of our standard series or custom design service.

TAPE	A	B	C	D	E
CMM21	2.05±0.2	1.25±0.2	1.20±0.2	0.49	0.45
CMM31	3.20±0.2	1.60±0.2	1.90±0.2	0.60	0.60

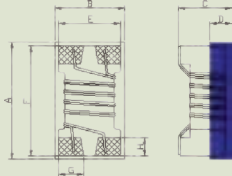
TAPE	A	B	C	D
CMM21	0.50	1.20	0.8	2.6
CMM31	0.40	1.60	1.6	3.7



## SHAPE AND DIMENSIONS

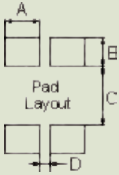
Dimensions : mm

CMM41T-122K-S/422K-S



A	B	C	D	E	F	G	H
4.95 <sup>+0</sup>	3.50 <sup>+0</sup>	2.20 <sup>+0</sup>	1.00	2.45	4.40	1.02	0.75

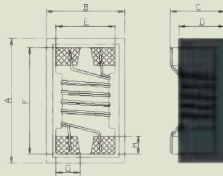
Recommended Pattern



A	B	C	D
1.45	1.22	2.59	0.46

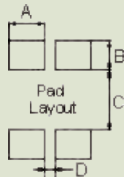
Dimensions : mm

CMM41T-203K-S



A	B	C	D	E	F	G	H
5.87 <sup>+0</sup>	4.98 <sup>+0</sup>	3.50 <sup>+0</sup>	2.50	2.45	4.40	1.02	0.75

Recommended Pattern



A	B	C	D
1.45	1.22	2.59	0.46

## ELECTRICAL CHARACTERISTICS

Part Number	IMPEDANCE (Ω)	Test Frequency (MHz)	Tolerance (±%)	IDC MAX (mA)	Rated Voltage (Vdc)	Rated Max (Ω)	Insulation Resistance (M Ohm)min.
CMM21T-300M-S	30	100	20	450	50	0.20	10
CMM21T-670M-S	67	100	20	400	50	0.25	10
CMM21T-900M-S	90	100	20	330	50	0.35	10
CMM21T-121M-S	120	100	20	370	50	0.30	10
CMM21T-161M-S	160	100	20	350	50	0.35	10
CMM21T-181M-S	180	100	20	330	50	0.35	10
CMM21T-261M-S	260	100	20	300	50	0.40	10
CMM21T-371M-S	370	100	20	280	50	0.45	10

\* Tolerance: M=±20%

\* Packaging: Clear tape and reel {standard}

\* Z: Agilent/HP4291A

\* RDC(single line): CH502BC, HP4338B

\* Insulation Resistance: Agilent/HP4339B

\* Operating temperature range from -25°C to +85°C



Part No.	Z (Ω)	RDC (Ω)Max.	IDC (mA)MAX	Rated Voltage (Vdc)	Insulation Resistance (MΩ)(min)	Tolerance (±%)	Test Freq (MHz)
CMM21T-300□-N	30	0.2	450	50	10	20	100
CMM21T-670□-N	67	0.25	400	50	10	20	100
CMM21T-900□-N	90	0.35	330	50	10	20	100
CMM21T-121□-N	120	0.3	370	50	10	20	100
CMM21T-161□-N	160	0.4	300	50	10	20	100
CMM21T-181□-N	180	0.35	330	50	10	20	100
CMM21T-201□-N	200	0.35	330	50	10	20	100
CMM21T-221□-N	220	0.35	310	50	10	20 <td 100	
CMM21T-261□-N	260	0.4	300	50	10	20	100
CMM21T-301□-N	300	0.4	290	50	10	20	100
CMM21T-361□-N	360	0.45	280	50	10	20	100
CMM21T-371□-N	370	0.45	280	50	10	20	100
CMM21T-901□-N	900	0.65	70	50	10	20	100

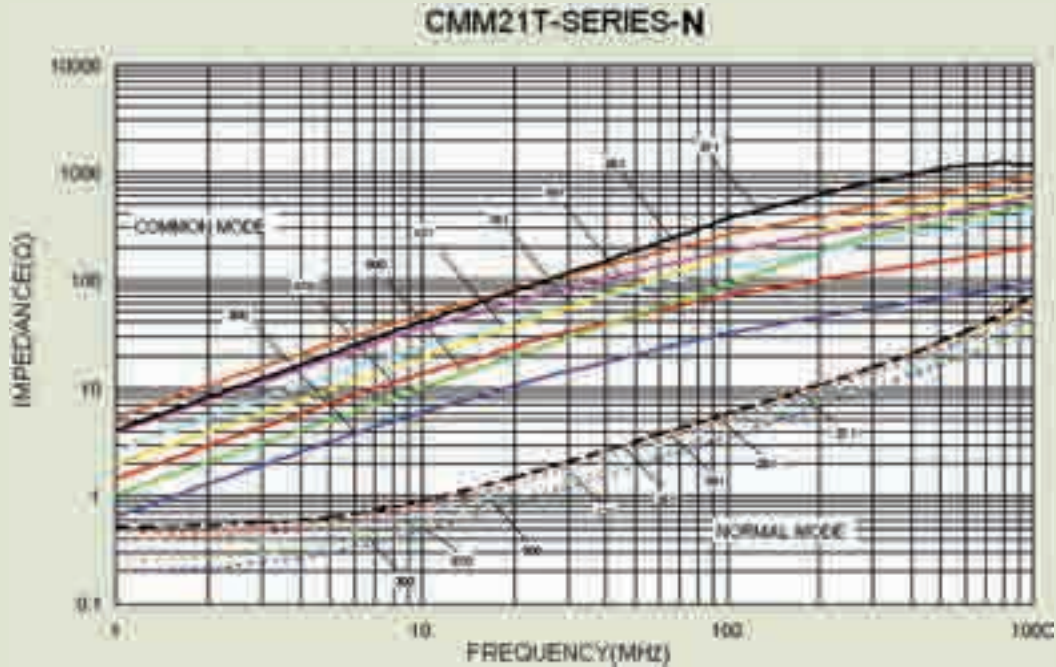
NOTE : □-tolerance M=±20%

1.Operating temperature range -25°C~85°C

2.RDC: SINGLE WIRE TEST VALUE

"-N" FOR COMPLETELY LEAD FREE TYPE(INCLUDING FERRITE BODY & SOLDER)

### TYPICAL IMPEDANCE VS. FREQUENCY





## ELECTRICAL CHARACTERISTICS

Part Number	IMPEDANCE ( $\Omega$ )	Test Frequency (MHz)	Tolerance ( $\pm\%$ )	IDC MAX (mA)	Rated Voltage (Vdc)	Rated Max ( $\Omega$ )	Insulation Resistance (M Ohm)min.
CMM31T-900M-S	90	100	20	370	50	0.3	10
CMM31T-161M-S	160	100	20	340	50	0.4	10
CMM31T-261M-S	260	100	20	310	50	0.5	10
CMM31T-601M-S	600	100	20	260	50	0.8	10
CMM31T-102M-S	1000	100	20	230	50	1.0	10
CMM31T-222M-S	2200	100	200	50	1.2	10	

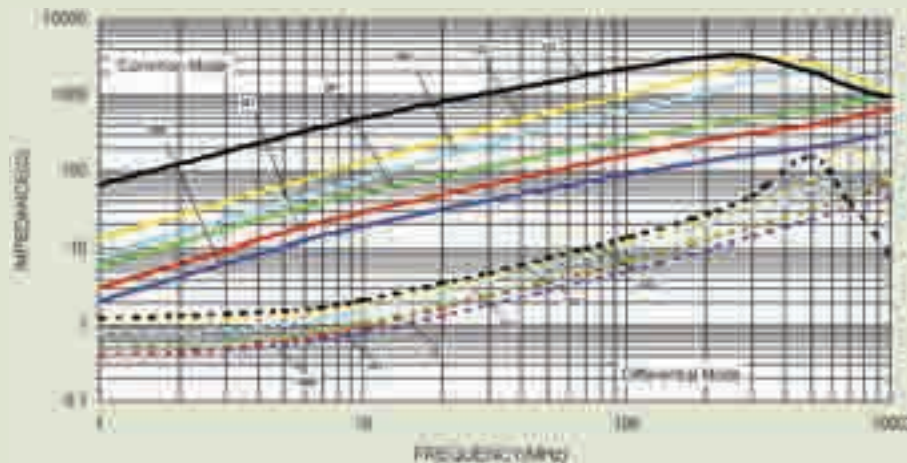
- \* Tolerance: M= $\pm 20\%$
- \* Packaging: Clear tape and reel {standard}
- \* Z: Agilent/HP4291A
- \* RDC(single line): CH502BC, HP4338B
- \* Insulation Resistance: Agilent/HP4339B
- \* Operating temperature range from  $-25^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

## ELECTRICAL CHARACTERISTICS LEAD FREE & ROHS COMPLIANCE

Part No.	Z ( $\Omega$ )	RDC ( $\Omega$ )Max.	IDC (mA)MAX	Rated Voltage (Vdc)	Insulation Resistance (M $\Omega$ )(min)	Tolerance ( $\pm\%$ )	Test Freq (MHz)
CMM31T-900□-N	90	0.3	370	50	10	20	100
CMM31T-161□-N	160	0.4	340	50	10	20	100
CMM31T-261□-N	260	0.5	310	50	10	20	100
CMM31T-601□-N	600	0.8	260	50	10	20	100
CMM31T-102□-N	1000	1	230	50	10	20	100
CMM31T-222□-N	2200	1.2	200	50	10	20	100

- NOTE : □ -tolerance M= $\pm 20\%$   
 1. Operating temperature range  $-25^{\circ}\text{C}$ ~ $85^{\circ}\text{C}$   
 2. RDC: SINGLE WIRE TEST VALUE  
 "-N" FOR COMPLETELY LEAD FREE TYPE(INCLUDING FERRITE BODY & SOLDER)

## TYPICAL IMPEDANCE VS. FREQUENCY





## ELECTRICAL CHARACTERISTICS

Part Number	IMPEDANCE ( $\Omega$ )	Test Frequency (MHz)	Tolerance ( $\pm\%$ )	IDC MAX (mA)	Rated Voltage (Vdc)	Rated Max ( $\Omega$ )	Insulation Resistance (M Ohm)min.
CMM41T-122M-S	1.25	50	10	800	50	0.5	10
CMM41T-422M-S	4.2	10	10	800	50	0.8	10
CMM41T-113M-S	11.5	10	10	500	85	0.8	10
CMM41T-203M-S	20.0	10	10	400	85	0.8	10

\* When ordering, please specify tolerance and packaging codes. Ex: CMM41T-422K-S

Tolerance : K= $\pm 10\%$

Packaging : Clear tape and reel(standard).

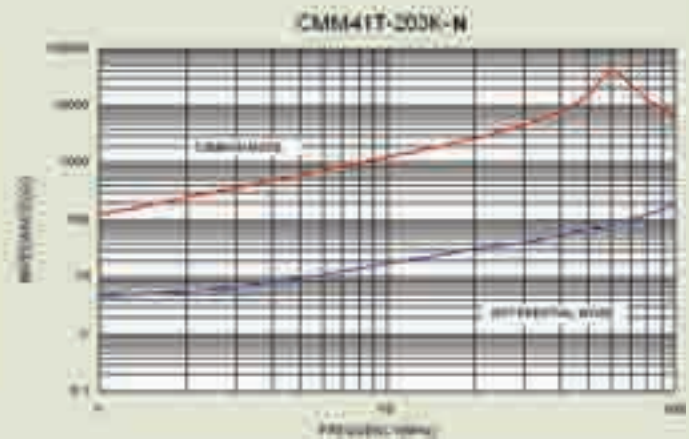
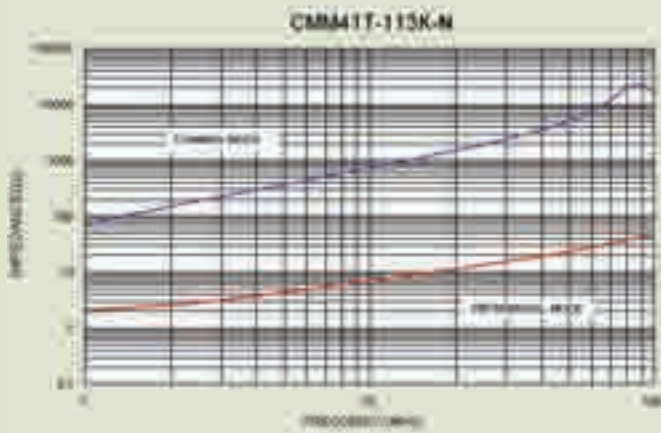
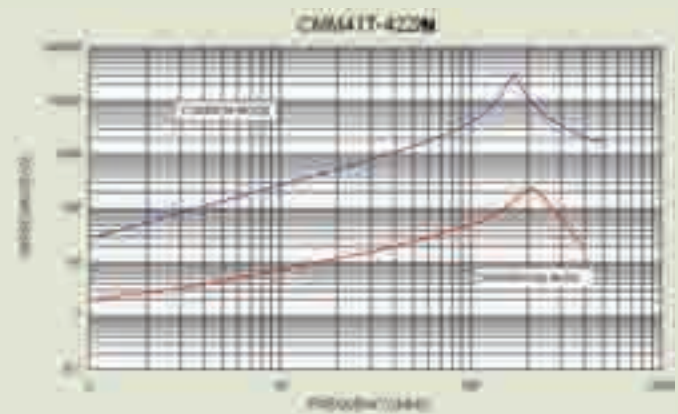
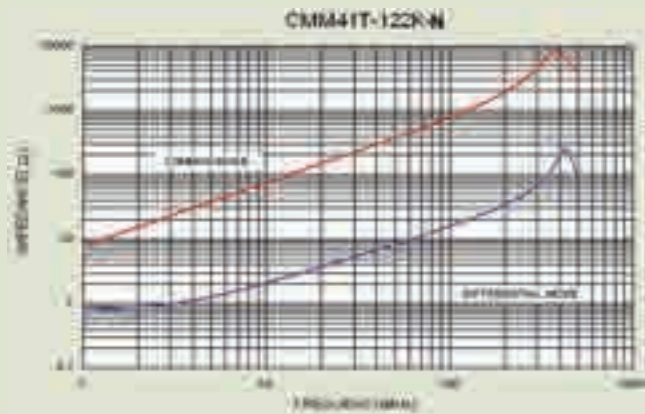
\* Z : Agilent/HP4291A

\* Rdc(single line) : DIGITAL MULTIMETER SC-7401

\* Insulation Resistance : Agilent/HP4339B

\* Operating temperature range from  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$

### TYPICAL IMPEDANCE VS. FREQUENCY





## ELECTRICAL CHARACTERISTICS



SERIES	TAPE DIMENSIONS								REEL DIMENSIONS				Qty/REEL
	A	B	C	D	E	F	G	H	A	B	C	D	
CMM21	1.50	2.25	0.23	8	4	3.5	1.70		178	60	12	1.5	2000
CMM31	1.76	3.40	0.23	8	4	3.5	2.20		178	60	12	1.5	2000
CMM41(122 & 422)	2.85	4.85	0.23	12	4	5.5	2.40		178	60	16	1.5	2000
CMM41(113 & 203)	4.45	6.10	0.25	12	8	5.5	3.00		178	60	16	1.5	500

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