

Data Sheet

Customer:

Product: Automotive Grade Multilayer Common Mode Filter – CMX..A Series

Sizes.: 0504 / 0805

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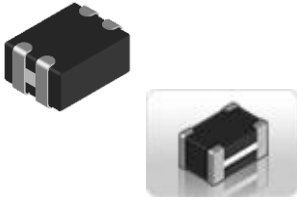
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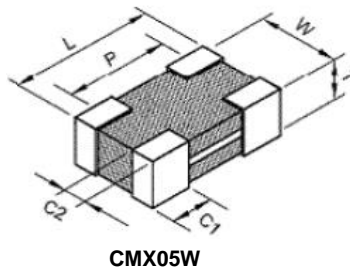
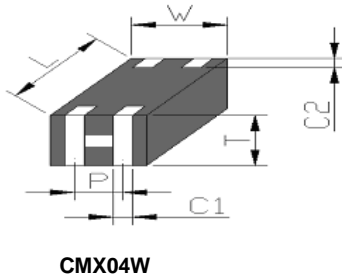
Multilayer Common Mode Filter



■ Features and Application

- Powerful components with composite co-fired material to solve EMI problem for high speed differential signal transmission line as USB, and LVDS, without distortion to high speed signal transmission.
- MIPI, MHL serial interface in mobile device
- AEC-Q200 Compliance

■ Dimensions



Type	Sizes (Inch)	L (mm)	W (mm)	T (mm)	P (mm)	C1 (mm)	C2 (mm)
CMX04W	0504	1.25±0.10	1.00±0.10	0.60±0.10	0.50±0.10	0.30±0.10	0.20±0.15
CMX05W	0805	2.00±0.20	1.25±0.20	1.00±0.10	1.60±0.20	0.40±0.20	0.30±0.20

■ Part Numbering

CMX	04W	Y	T	900	A
Product Type	Dimensions LxW 04W: 0504 05W: 0805	Impedance Tolerance Y: ±25%	Packaging Code T: Taping Reel	Impedance 900: 90Ω	Function Code A: Automotive Grade

■ Standard Electrical Specifications

CMX04W Type

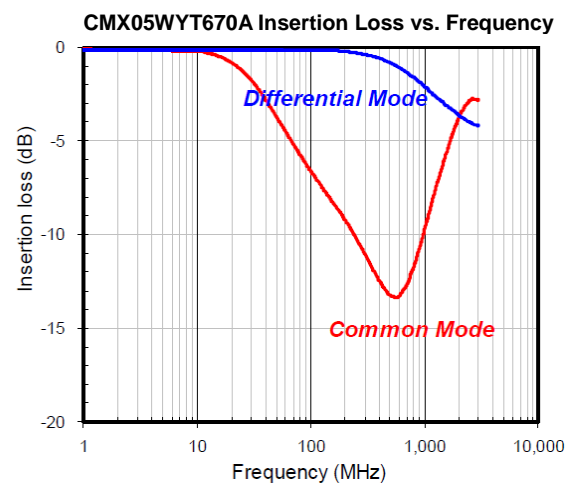
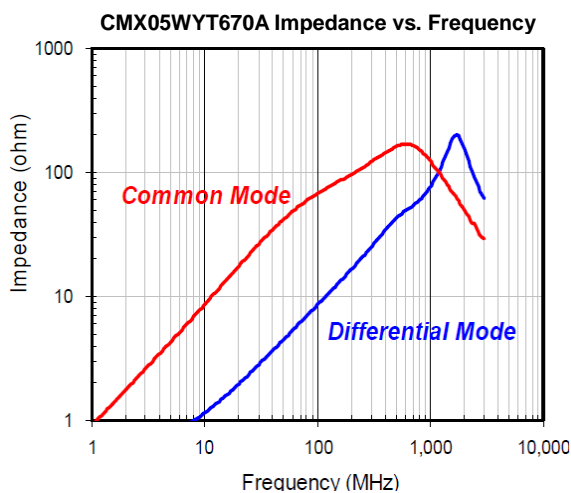
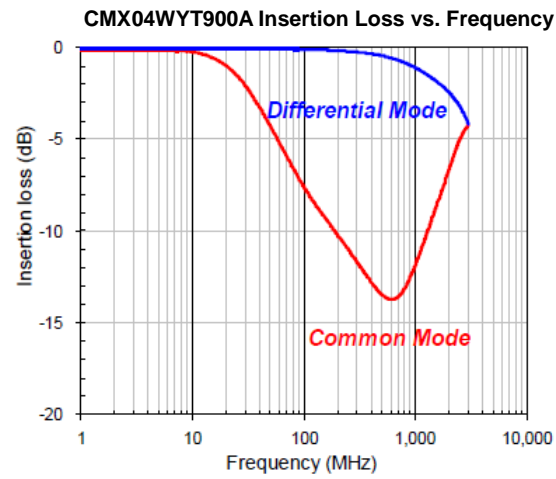
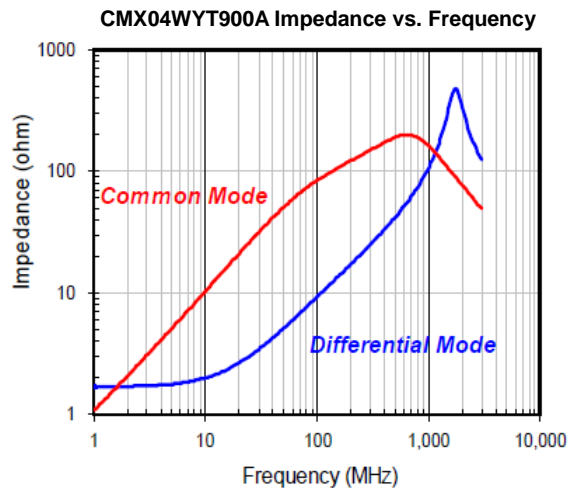
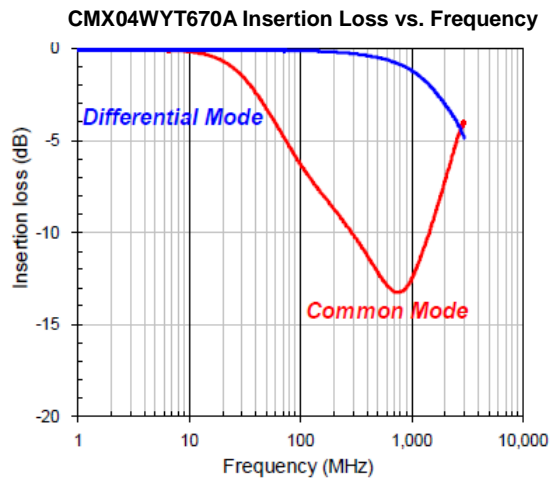
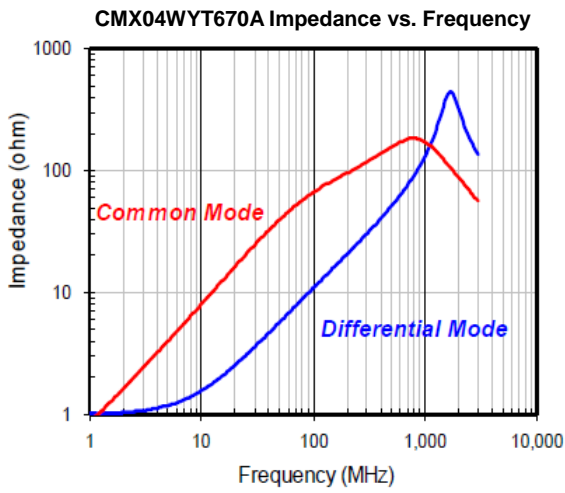
Impedance (Ω)	Tolerance	Test Condition (MHz)	DCR (Ω) max.	Rated Current (mA) max.	Rated Voltage Vdc (V)	Withstanding Voltage (V)	Insulation Resistance (MΩ) min.
67	±25%	100	0.50	300	10	25	200
90	±25%	100	0.60	300	10	25	200

CMX05W Type

Impedance (Ω)	Tolerance	Test Condition (MHz)	DCR (Ω) max.	Rated Current (mA) max.	Rated Voltage Vdc (V)	Withstanding Voltage (V)	Insulation Resistance (MΩ) min.
67	±25%	100	0.40	400	10	25	200
90	±25%	100	0.40	400	10	25	200
120	±25%	100	0.40	400	10	25	200
160	±25%	100	0.50	400	10	25	200
180	±25%	100	0.50	400	10	25	200
220	±25%	100	0.50	300	10	25	200

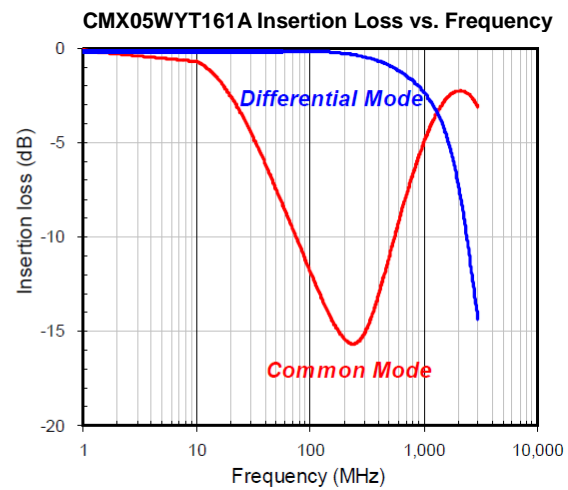
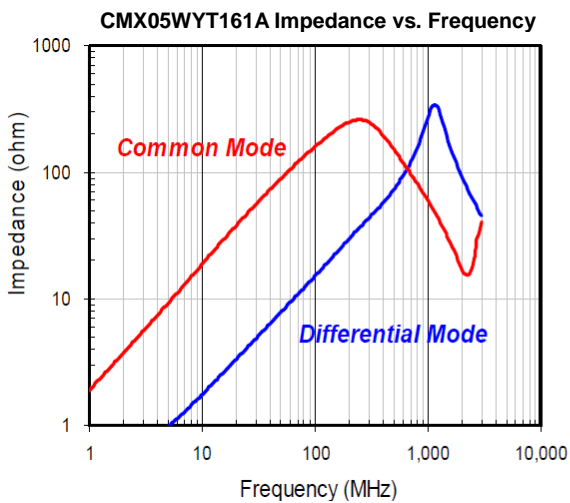
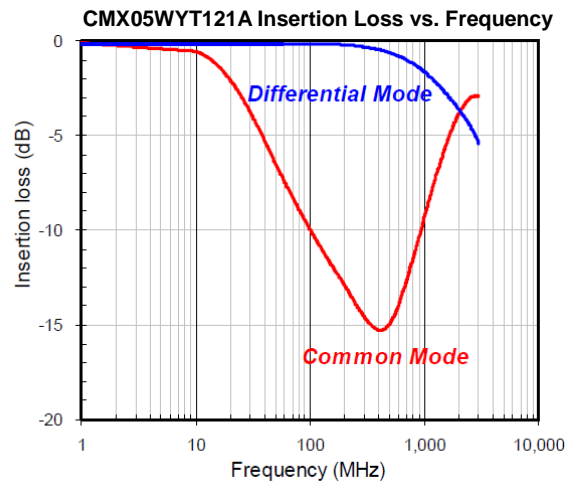
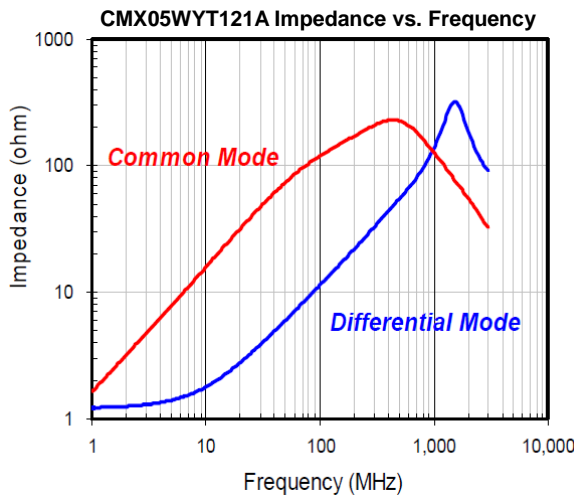
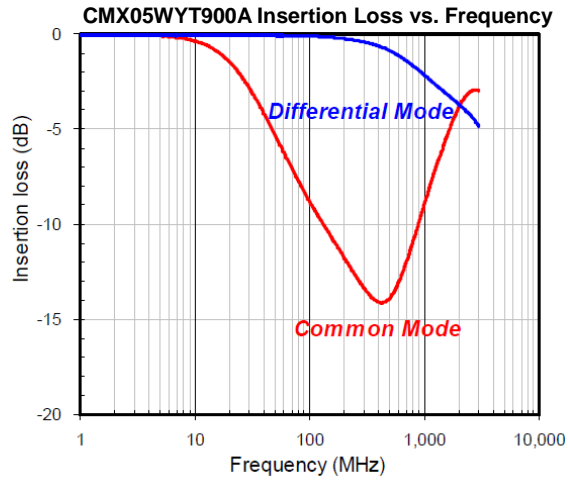
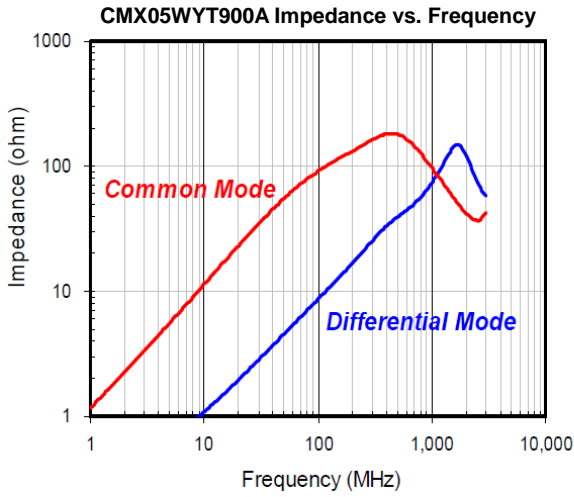
Chip Common Mode Filter

Characteristics



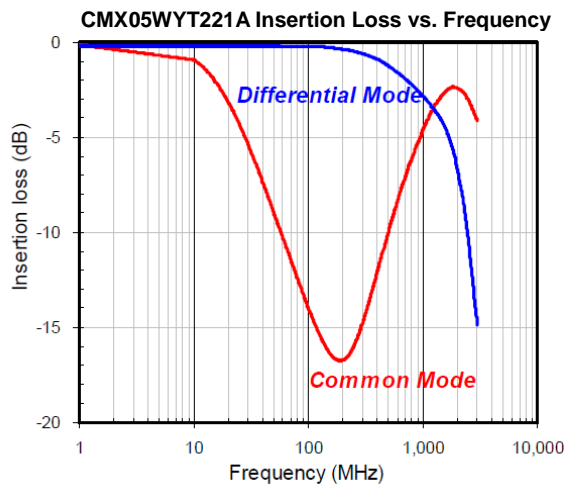
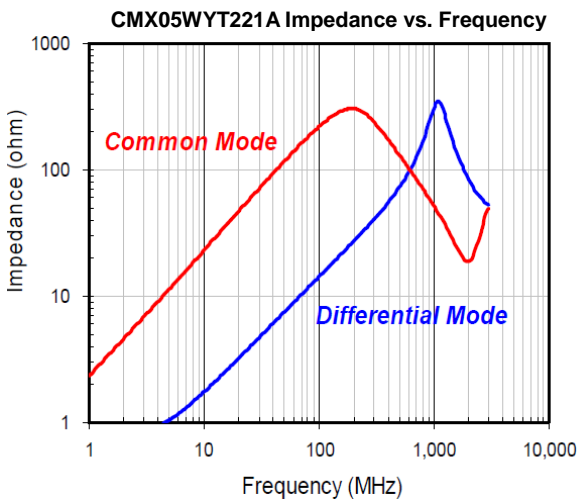
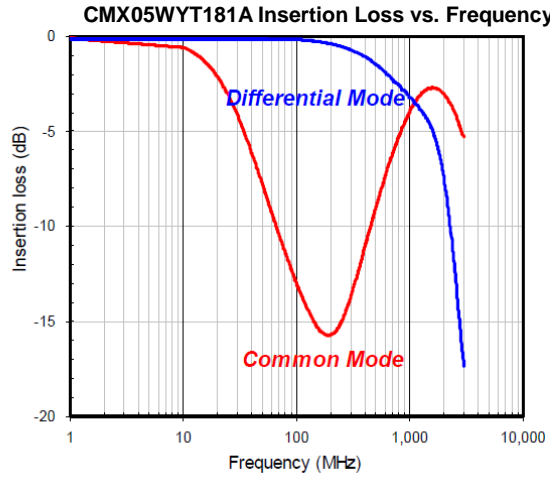
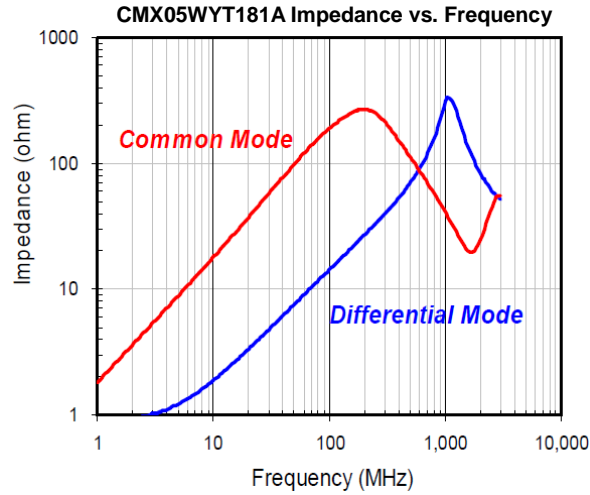
Chip Common Mode Filter

■ Characteristics



Chip Common Mode Filter

Characteristics

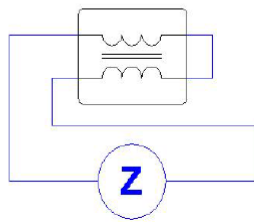
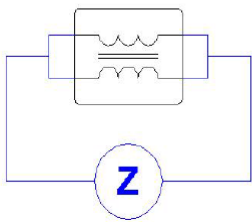


Measuring Circuits

CMX04W

(A): Common mode

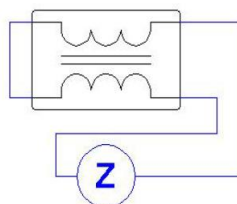
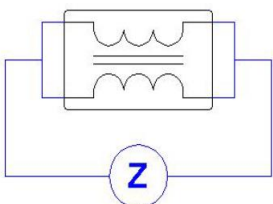
(B): Differential mode



CMX05W

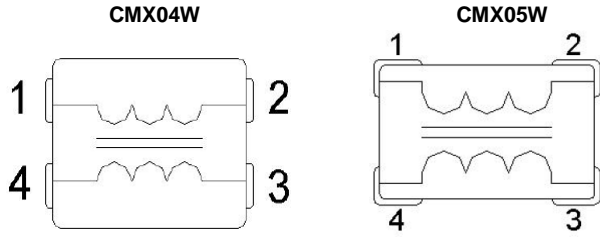
(A): Common mode

(B): Differential mode

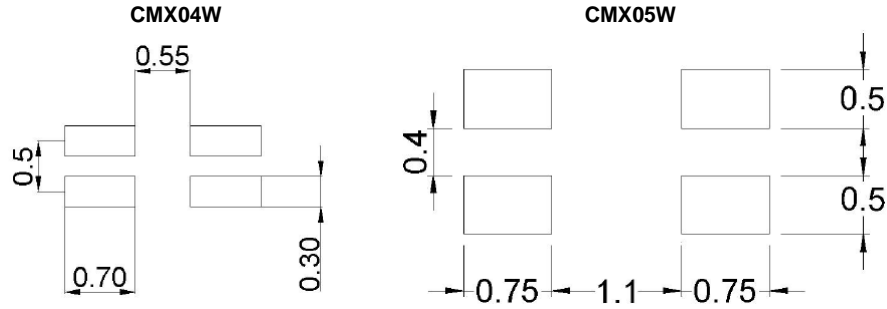


Chip Common Mode Filter

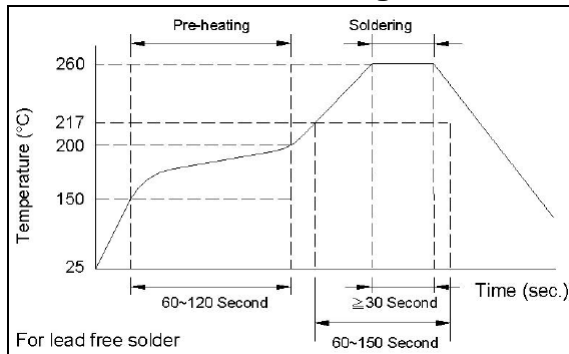
■ Circuit Configuration



■ Recommended Land Pattern



■ Recommended Soldering Conditions



Chip Common Mode Filter

■Environmental Characteristics

Items	Requirement	Test Conditions / Test Methods
Temperature Cycle	No mechanical damage Impedance should be within $\pm 20\%$ of the initial value	Temperature: $-55 \sim +125^{\circ}\text{C}$ Cycle : 1000cycles Dwell time: 30minutes Measurement : at ambient temperature 24 hrs after test completion
Operational Life		Temperature: $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Test time: 1000hrs Apply current : full rated current Measurement : at ambient temperature 24 hrs after test completion
Biased Humidity		Temperature: $85 \pm 2^{\circ}\text{C}$ Humidity : 85 % RH Test time: 1000hrs Apply current : full rated current Measurement : at ambient temperature 24 hrs after test completion
High Temperature Exposure		Temperature: $125 \pm 5^{\circ}\text{C}$ Test time: 1000hrs Measurement : at ambient temperature 24 hrs after test completion
Resistance to Solder Heat	Impedance should be within $\pm 20\%$ of the initial value	Solder temperature: $260 \pm 5^{\circ}\text{C}$ Flux: Rosin DIP time: 10 ± 1 sec
Terminal Strength	No mechanical damage	Apply force(F): 17.7N Test time: 60 sec
Board Flex		Epoxy-PCB(1.6mm) Deflection 2mm(min) 60s min holding time
Mechanical Shock	No mechanical damage	Condition F: 1500g's/0.5ms/half sine
Vibration	DCR value should be within $\pm 30\%$ of the initial value	5g's for 20min, 12cycles each of 3 orientations Test from 10-2000Hz., 12cycleseach of orientations

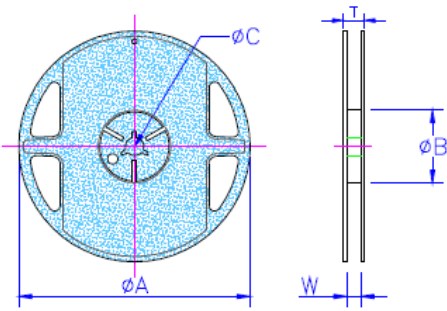
■Storage Temperature: $18 \sim 28^{\circ}\text{C}$; Humidity < 80%RH

■Operating Temperature: $-55 \sim +125^{\circ}\text{C}$

Chip Common Mode Filter

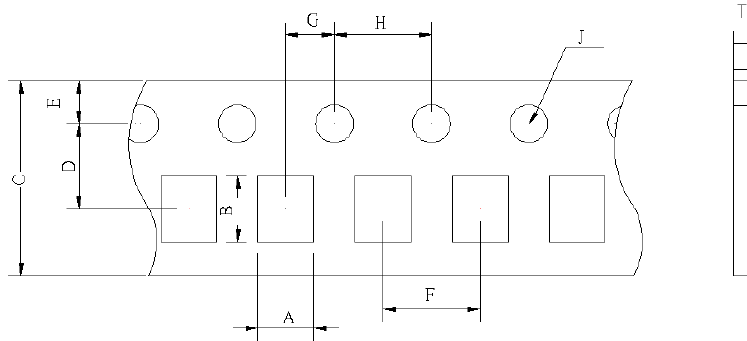
■Packaging

Packaging Quantity & Reel Specifications



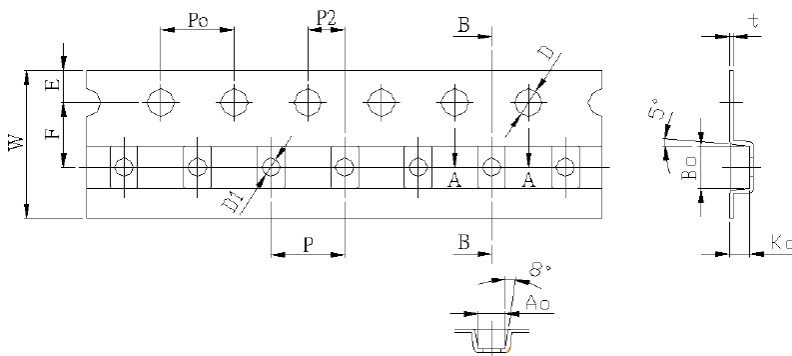
Type	ØA (mm)	ØB (mm)	ØC (mm)	W (mm)	T (mm)	Quantity (EA)
CMX04W	178±1	60+0.5/-0	13.0±0.2	9.0±0.5	12.0±0.15	4000
CMX05W	178±1	60+0.5/-0	13.0±0.2	9.0±0.5	12.0±0.15	3000

Paper Tape Specifications



Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)	T (mm)
CMX04W	1.20±0.05	1.45±0.05	8.0±0.10	3.5±0.05	1.75±0.05	4.00±0.10	2.00±0.05	4.00±0.10	1.55±0.05	0.75±0.03

Emboss Plastic Tape Specifications



Type	A0 (mm)	B0 (mm)	W (mm)	E (mm)	F (mm)	P (mm)	P0 (mm)	P2 (mm)	D (mm)	D1 (mm)	K0 (mm)	t (mm)
CMX05W	1.40±0.10	2.30±0.10	8.0±0.10	1.75±0.10	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.5+010	1.00±0.10	1.13±0.10	0.22±0.05