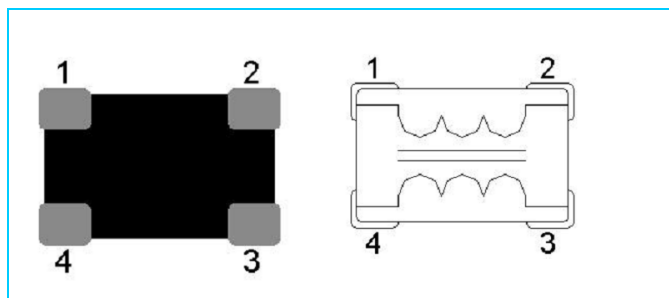


(Chip Common Mode Filter) Engineering Specification

MCM2012B Series

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



PRODUCT DETAIL

Part Number	Imp.Com. (Ω) $\pm 25\%$ @100MHz	DCR Max. (Ω)	Rated Current Max.(mA)	Rated Voltage (V)	Withstand Voltage (V)	Insulation Resistance Min.(M Ω)
MCM2012B670GBE	67	0.40	400	10	25	200
MCM2012B900GBE	90	0.40	400	10	25	200
MCM2012B121GBE	120	0.40	400	10	25	200
MCM2012B161GBE	160	0.50	400	10	25	200
MCM2012B181GBE	180	0.50	400	10	25	200
MCM2012B221FBP	220	0.50	300	10	25	200
Test Instruments	<ul style="list-style-type: none"> Agilent E4991A RF IMPEDANCE / MATERIAL ANALYZER HP4338 MILLIOHMMETER Agilent E5071C ENA SERIES NETWORK ANALYZER Keithley 2410 1100V SOURCE METER 					

PART NUMBER CODE

MCM 2012 B 90 0 G B E

1 2 3 4 5 6 7 8

1: Series name

2: Size Code:the first two digitals:length(mm),the last two digitals:width(mm)

3: Material code

4: Impedance(Ω) $\pm 25\%$

5: Fixed Decimal Point } (ex : 900=90 Ω ; 121=120 Ω)

6: Rated Current Code

A=50mA	B=80mA	C=100mA	D=150mA	E=200mA	F=300mA
G=400mA	H=500mA	I=600mA	J=700mA	K=800mA	

7: Soldering:Green Parts:A-Soldering Lead-Free B-Lead-Free for whole chip

8: Packaging style E – Embossed paper tape, 7" reel.

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MCM2012B Series

TYPICAL CHARACTERISTIC

MCM2012B670

Fig1. IMPEDANCE vs. FREQUENCY CHARACTERISTICS

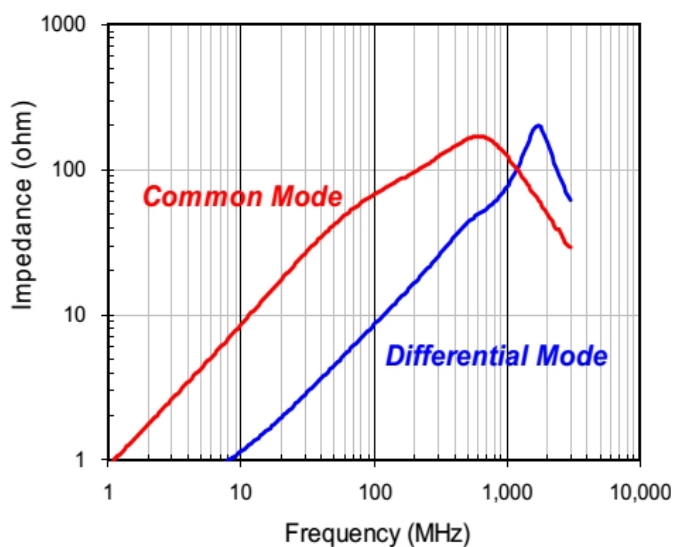
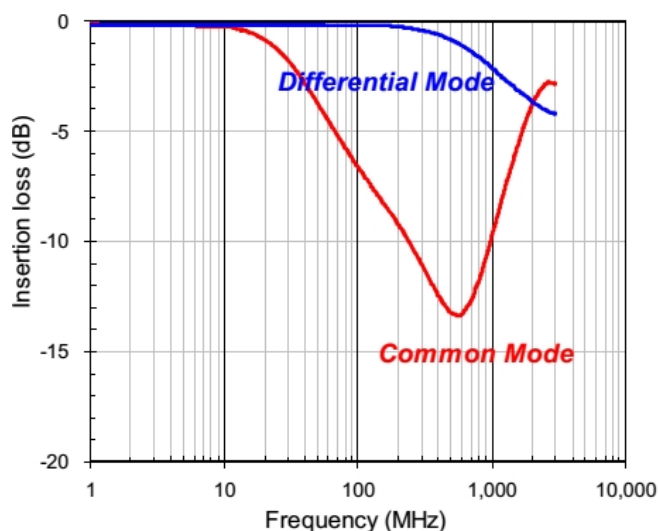


Fig2. INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



MCM2012B900

Fig3. IMPEDANCE vs. FREQUENCY CHARACTERISTICS

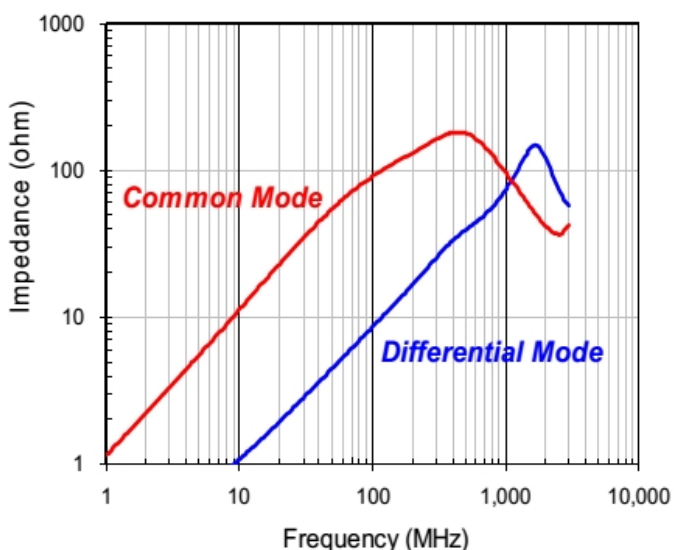
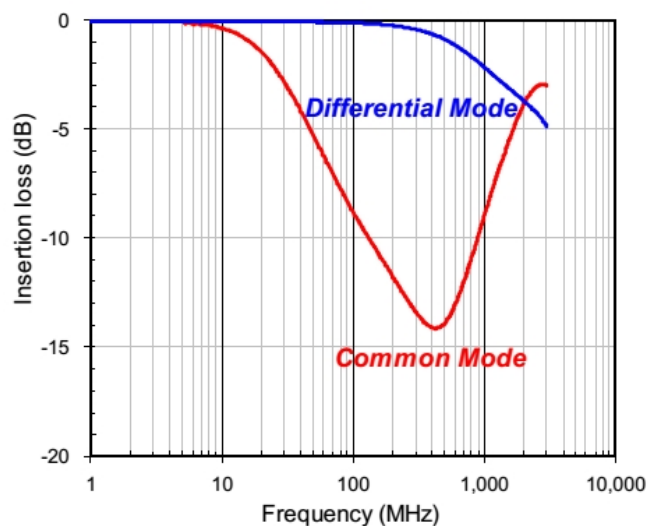


Fig4. INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



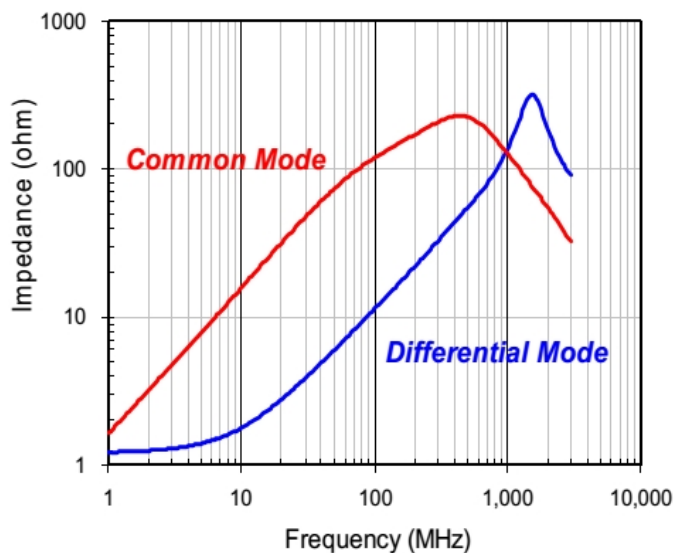
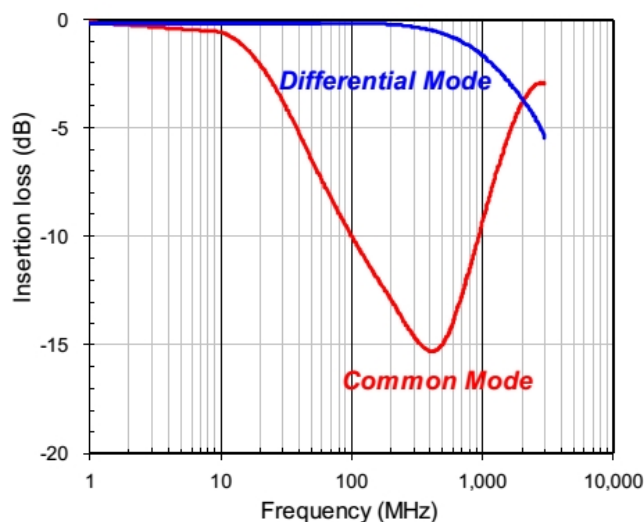
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MCM2012B Series

MCM2012B121

Fig5. IMPEDANCE vs. FREQUENCY CHARACTERISTICS

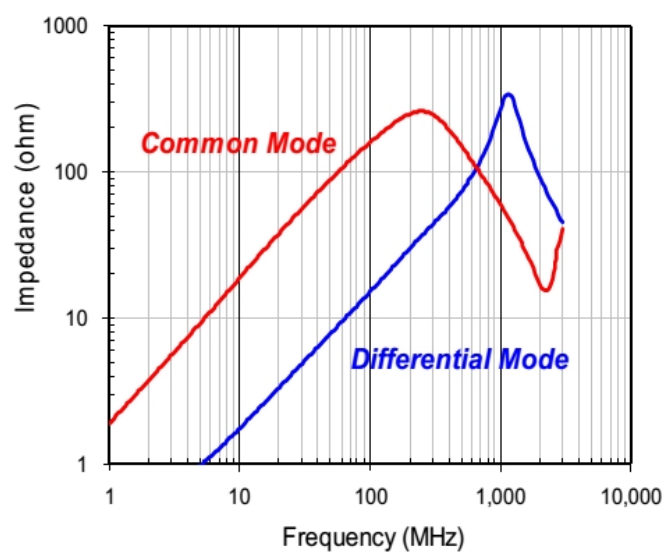
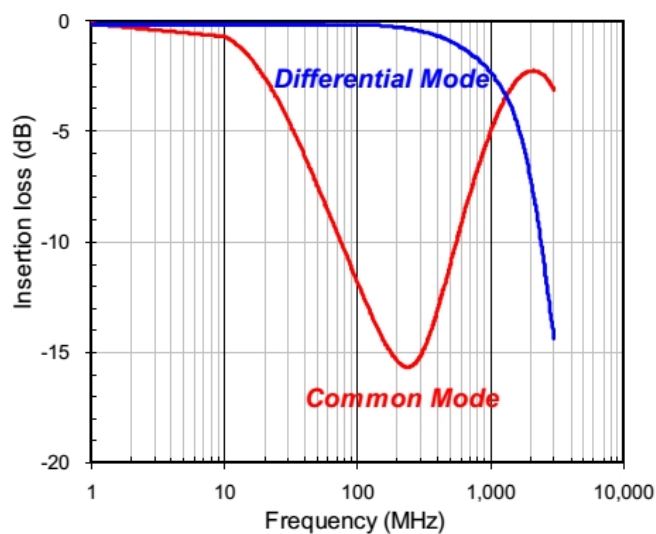
Fig6. INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



MCM2012B161

Fig7. IMPEDANCE vs. FREQUENCY CHARACTERISTICS

Fig8. INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



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MCM2012B Series

MCM2012B181

Fig9. IMPEDANCE vs. FREQUENCY CHARACTERISTICS

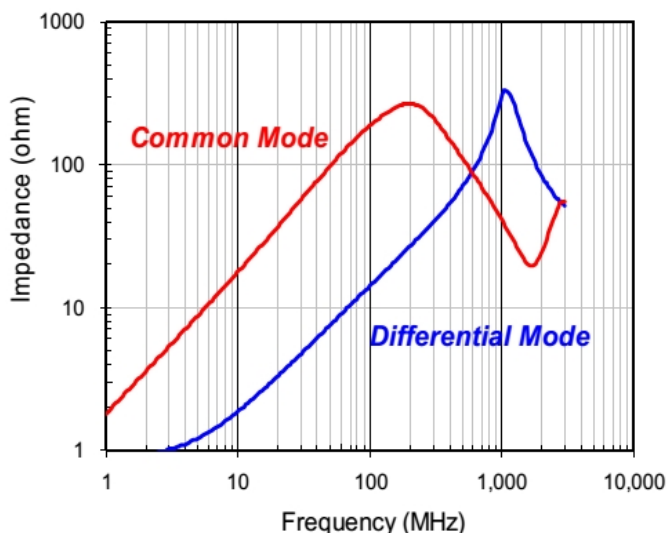
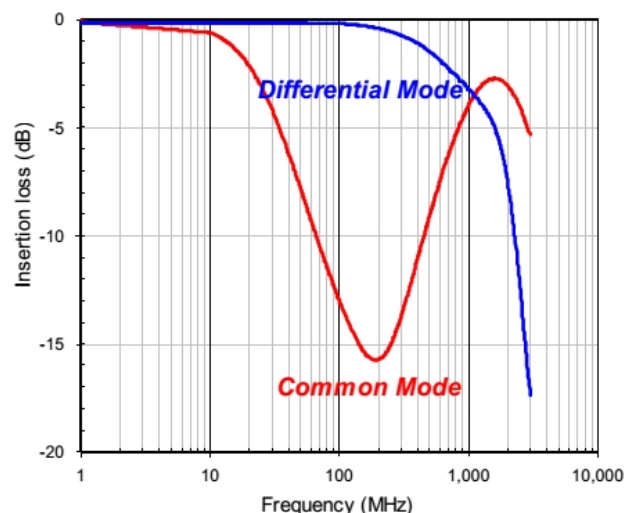


Fig10. INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



MCM2012B221

Fig11. IMPEDANCE vs. FREQUENCY CHARACTERISTICS

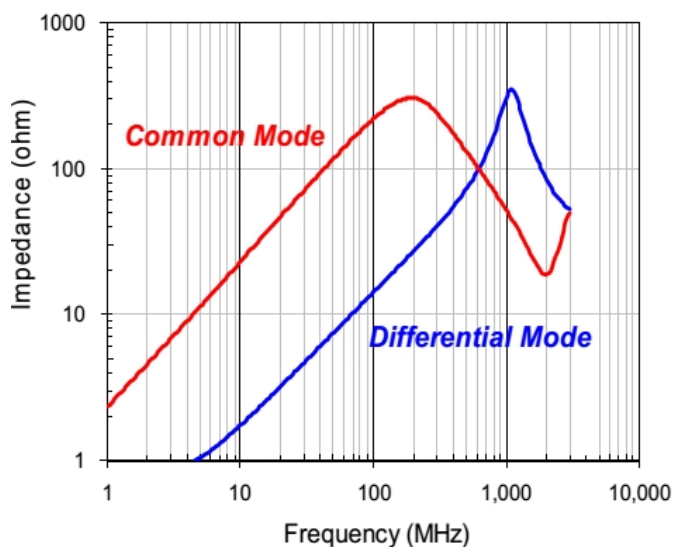
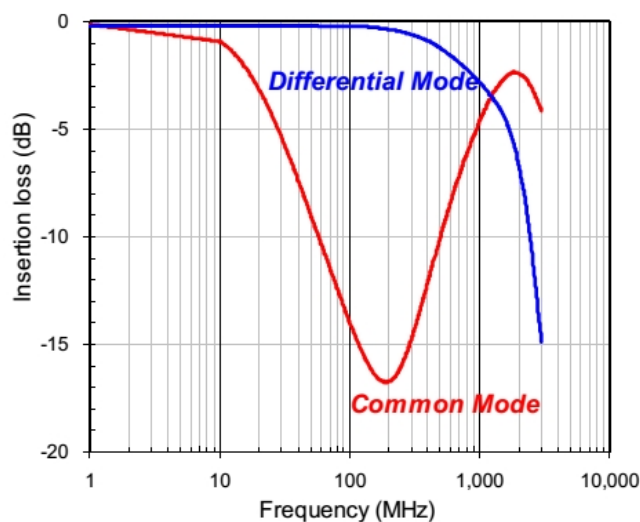


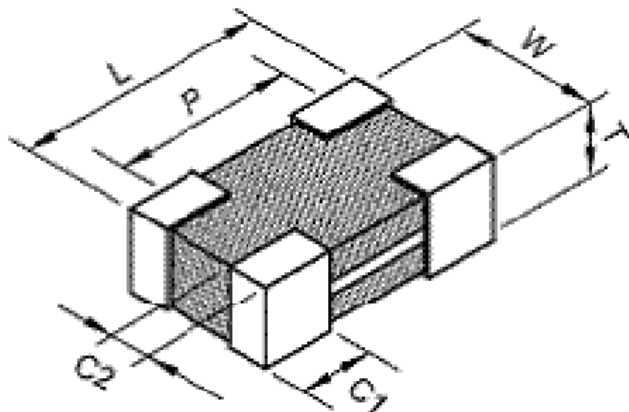
Fig12. INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



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MCM2012B Series

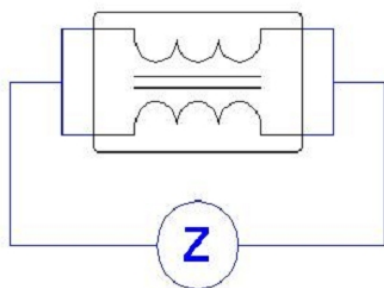
SHARES AND DIMENSIONS



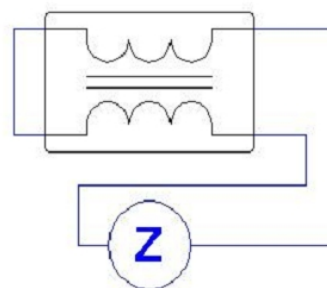
TYPE	Dimension
L	2.00 ± 0.20
W	1.25 ± 0.20
T	1.00 ± 0.10
P	1.60 ± 0.20
C1	0.40 ± 0.20
C2	0.30 ± 0.20
Unit : mm	

MEASURING CIRCUITS

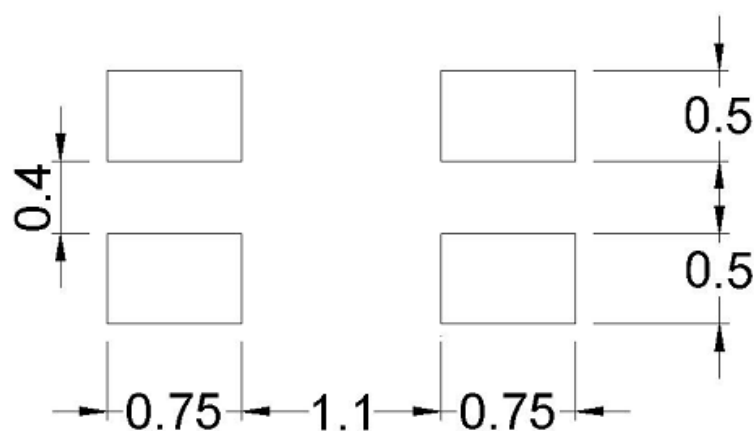
(A):Common mode



(B):Differential mode



CIRCUIT CONFIGURATION & LAYOUT PAD

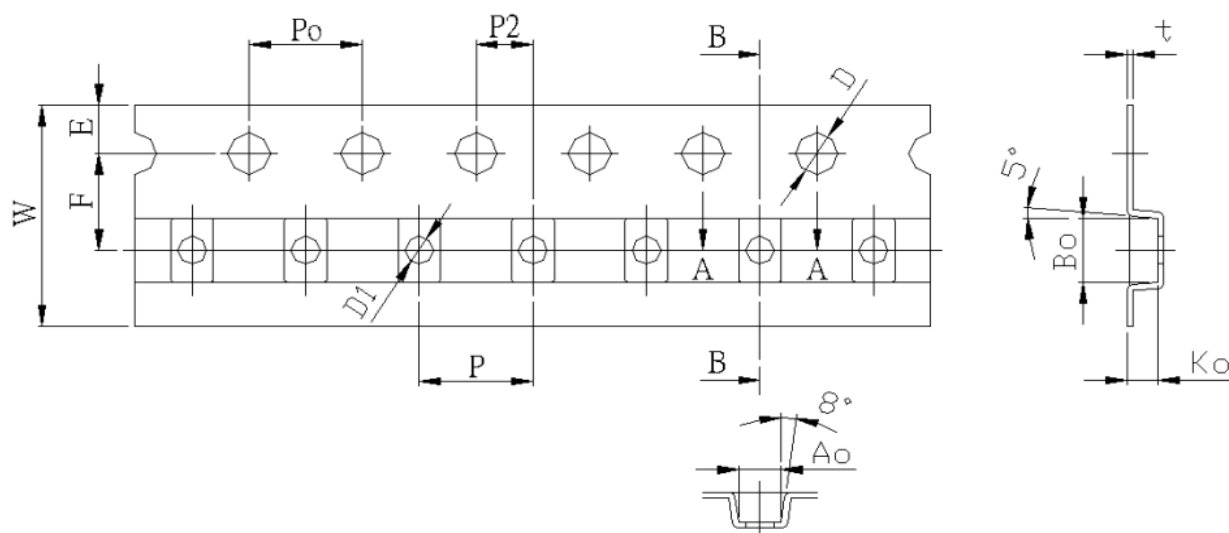


(Chip Common Mode Filter) Engineering Specification

MCM2012B Series

TAPE AND REEL SPECIFICATIONS / TAPING DIMENSIONS

Type : Paper Carrier



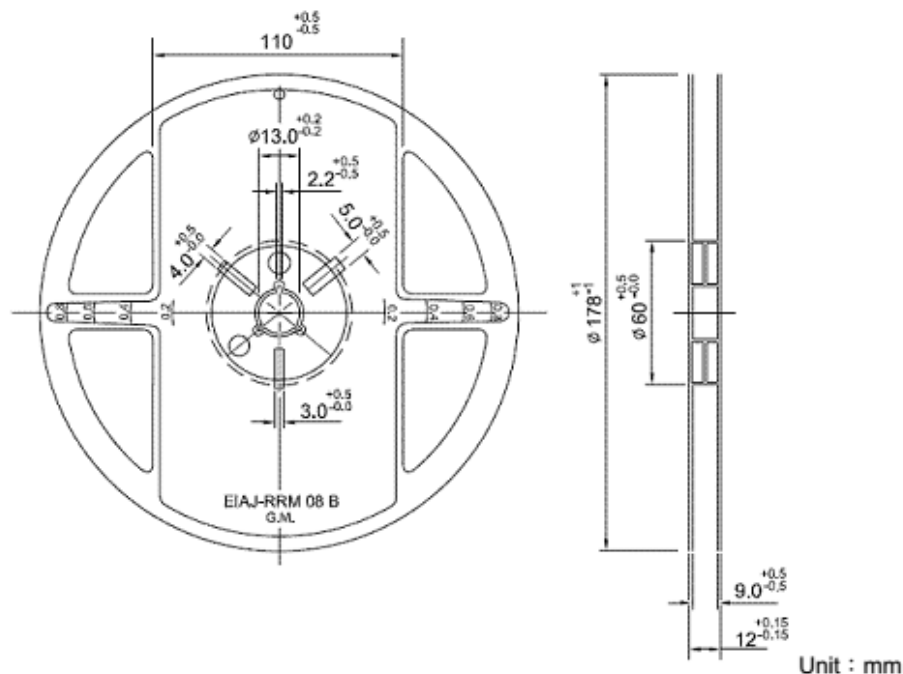
Unit : mm

Symbol	size	symbol	size
W	8.00 ± 0.10	D1	1.00 ± 0.10
P	4.00 ± 0.10	Po	4.00 ± 0.10
E	1.75 ± 0.10	Ao	1.40 ± 0.10
F	3.50 ± 0.05	Bo	2.30 ± 0.10
P2	2.00 ± 0.05	Ko	1.13 ± 0.10
D	$1.50 + 0.1/-0$	t	0.22 ± 0.05

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REEL DIMENSIONS



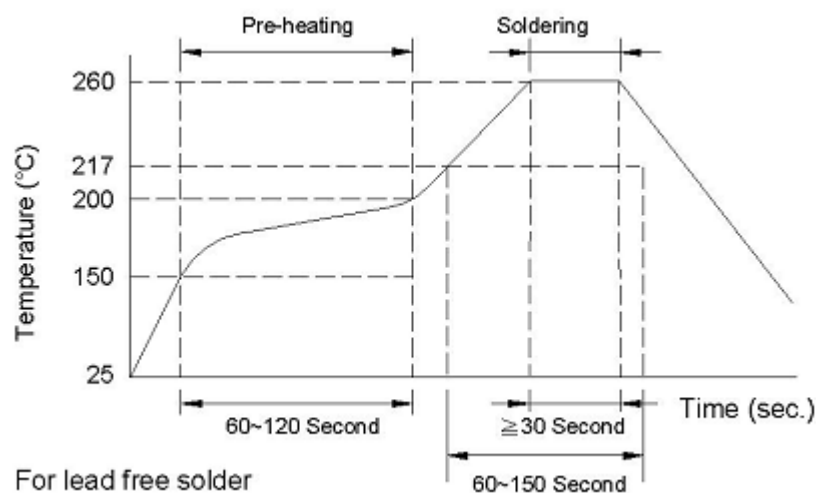
STANDARD QUANTITY FOR PACKAGING

Packaging style : Taping

Reel packaging quantity : 3000 pcs/reel

Inner box : 5 reel/inner box

RECOMMENDED SOLDERING CONDITIONS



GENERAL TECHNICAL DATA

Operation temperature range : -40°C ~ +85°C

Storage Condition : Less than 40°C and 70% RH

Storage Time: 6 months Max.

Soldering method: Reflow or Wave Soldering

(Chip Common Mode Filter) Engineering Specification

MCM2012B Series

RELIABILITY AND TEST CONDITION

Test item	Test condition	Criteria
Temperature Cycle	A. Temperature : $-40 \sim +85^{\circ}\text{C}$ B. Cycle : 100 cycles C. Dwell time : 30minutes Measurement : at ambient temperature 24 hrs after test completion	A. No mechanical damage B. Impedance value should be within $\pm 20\%$ of the initial value
Operational Life	A. Temperature : $85^{\circ}\text{C} \pm 5^{\circ}\text{C}$ B. Test time : 1000 hrs C. Apply current : full rated current Measurement : at ambient temperature 24 hrs after test completion	A. No mechanical damage B. Impedance value should be within $\pm 20\%$ of the initial value
Biased Humidity	A. Temperature : $40 \pm 2^{\circ}\text{C}$ B. Humidity : 90 ~ 95 % RH C. Test time : 1000 hrs D. Apply current : full rated current Measurement : at ambient temperature 24 hrs after test completion	A. No mechanical damage B. Impedance value should be within $\pm 20\%$ of the initial value
Resistance to Solder Heat	A. Solder temperature : $260 \pm 5^{\circ}\text{C}$ B. Flux : Rosin C. DIP time : 10 ± 1 sec	A. More than 95 % of terminal electrode should be covered with new solder B. No mechanical damage C. Impedance value should be within $\pm 20\%$ of the initial value
Steam Aging Test	A. Temperature : $93 \pm 2^{\circ}\text{C}$ B. Test time : 4 hrs(MCA) Others : 8 hrs C. Solder temperature : $235 \pm 5^{\circ}\text{C}$ D. Flux : Rosin E. DIP time : 5 ± 1 sec	More than 95 % of terminal electrode should be covered with new solder