



Chip Common Mode Filter (MCM2012B Series) Engineering Specification

■ PRODUCT DETAIL

Part No.	Imp. Com. (Ω) $\pm$ 25% @100MHz	DCR Max. (Ω)	Rated Current Max.(mA)	Rated Voltage (V)	Withstand Voltage (V)	Insulation Resistance Min.(M Ω)
MCM2012B670GB_	67	0.40	400	10	25	200
MCM2012B900GB_	90	0.40	400	10	25	200
MCM2012B121GB_	120	0.40	400	10	25	200
MCM2012B161GB_	160	0.50	400	10	25	200
MCM2012B181GB_	180	0.50	400	10	25	200
MCM2012B221FB_	220	0.50	300	10	25	200
Test Instruments	•HP4291B RF IMPEDANCE / MATERIAL ANALYZER •HP4338A/B MILLIOHMMETER •Agilent 8720ES S-PARAMETER NETWORK ANALYZER •HP6632B SYSTEM DC POWER SUPPLY •Keithley 2410 1100V SOURCE METER					

** For special part number which is not shown in the above table, please refer to appendix.

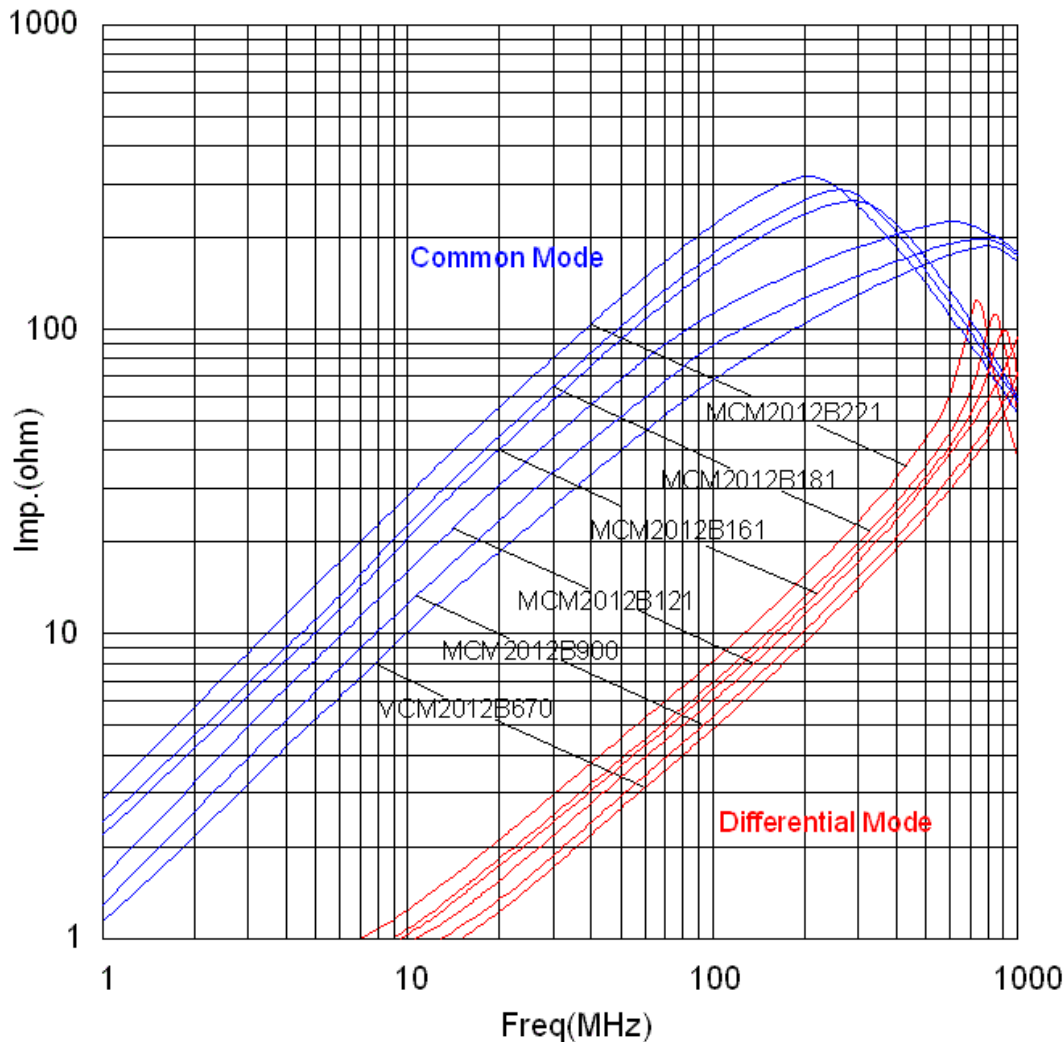
■ PART NUMBER CODE

MCM 2012 B 90 0 G B E
 1 2 3 4 5 6 7 8

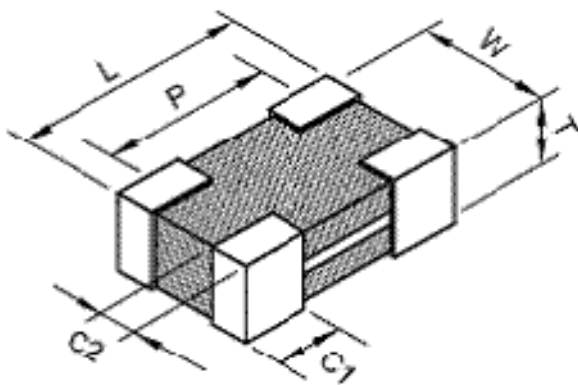
- Series Name
- Size Code: the first two digitals : length(mm), the last two digitals : width(mm)
- Material Code
- Impedance(Ω) $\pm$ 25% (ex : 900=90 Ω ; 121=120 Ω)
- Fixed Decimal Point
- Rated Current Code

A=50mA	B=80mA	C=100mA	D=150mA	E=200mA	F=300mA
G=400mA	H=500mA	I=600mA	J=700mA	K=800mA	
- Soldering: Green Parts: A— Soldering Lead-Free B— Lead-Free for whole chip
- Packaging: E - Embossed plastic tape, 7" reel.

■ IMPEDANCE vs. FREQUENCY CHARACTERISTICS



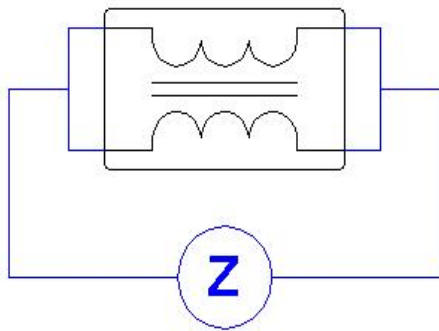
■ SHAPES AND DIMENSIONS



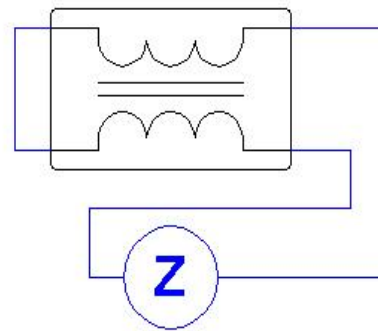
TYPE	2012
L	2.00±0.20
W	1.25±0.20
T	1.00±0.10
P	1.60±0.20
C1	0.40±0.20
C2	0.30±0.20
Unit: mm	

■ MEASURING CIRCUITS

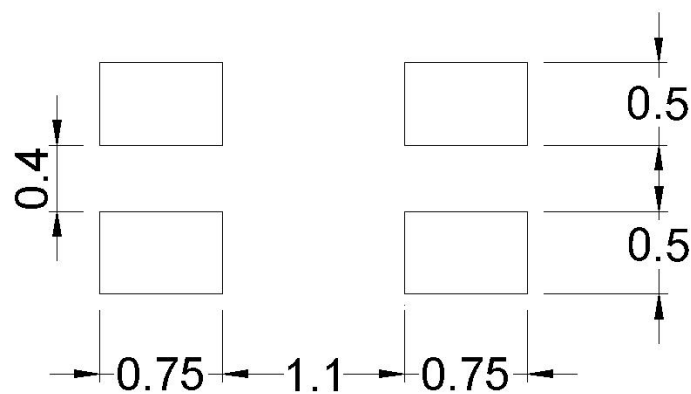
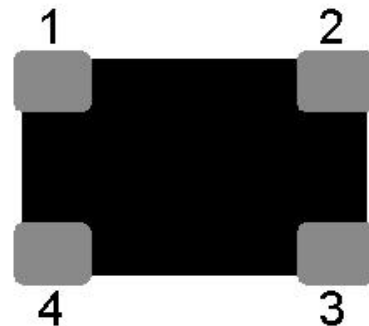
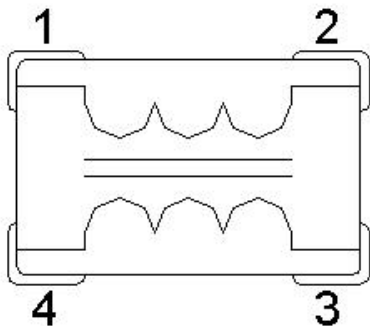
(A):Common mode

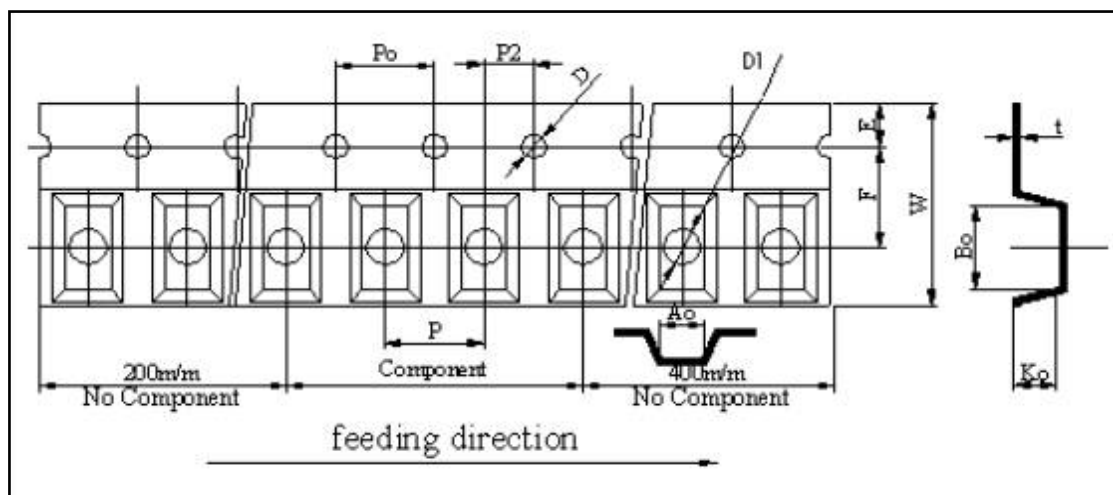


(B):Differential mode



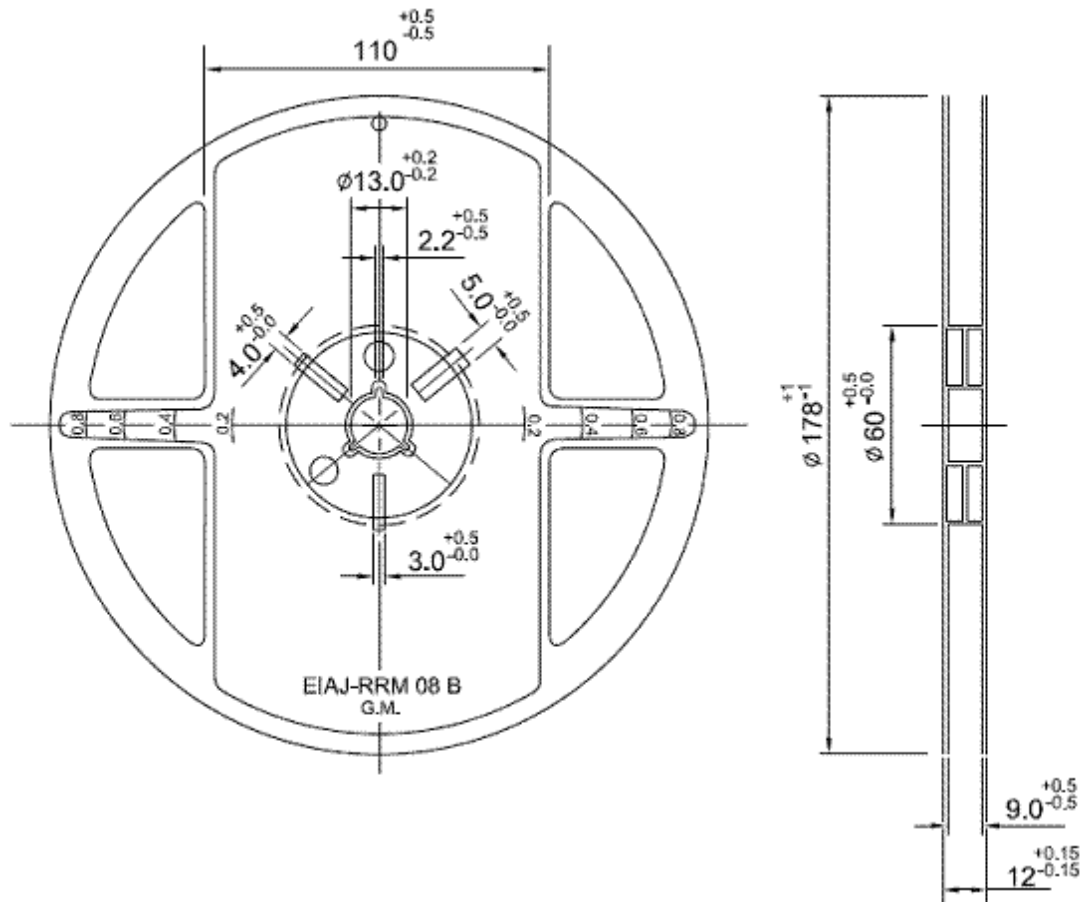
■ CIRCUIT CONFIGURATION & LAYOUT PAD





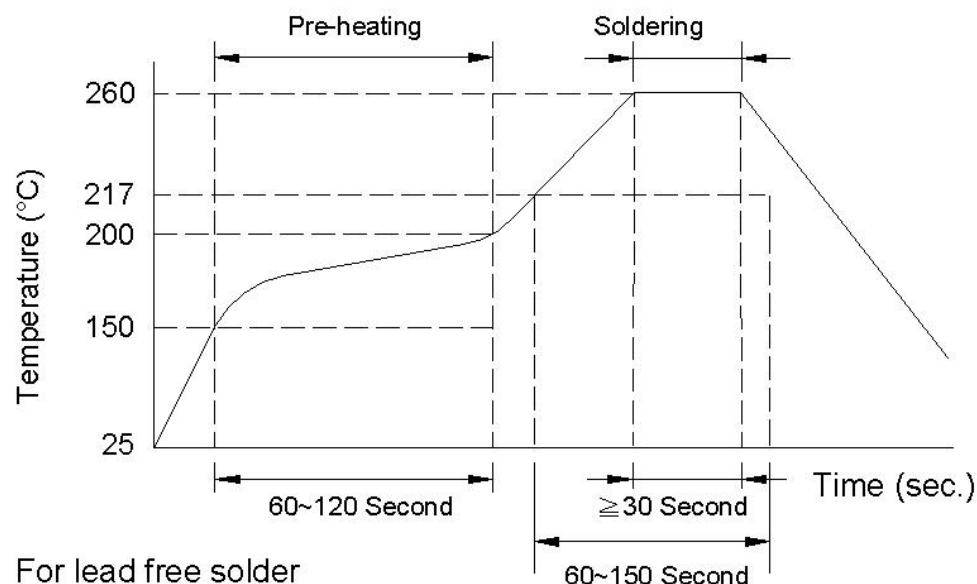
Unit: mm

Symbol	Size	Symbol	Size
W	7.90~8.30	Po	4.00 ±0.10
P	4.00 ±0.10	P2	2.00 ±0.05
E	1.75 ±0.10	Ao	1.42 ±0.10
F	3.50 ±0.05	Bo	2.26 ±0.10
D	1.50 ±0.05	Ko (T)	1.30 ±0.10
D1	0.95~1.20	t	0.23 ±0.10



PART SIZE (EIA SIZE)	Reel backaging quantity	Inner box
2012 (0805)	3000 pcs/reel	5 reel/inner box

■ RECOMMENDED SOLDERING CONDITIONS



■ 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 : $90 \sim 95\% \text{ RH}$ C. Test time : 1000 hrs D. Apply current : full rated current	A. No mechanical damage B. Impedance value should be within $\pm 20\%$ of the initial value

	Measurement : at ambient temperature 24 hrs after test completion	
Test item	Test condition	Criteria
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 ± 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

■ GENERAL TECHNICAL DATA

Operating temperature range : $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

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

Storage Time: 6 months Max.

Soldering method: Reflow or Wave Soldering