



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 | <ul style="list-style-type: none"> •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.

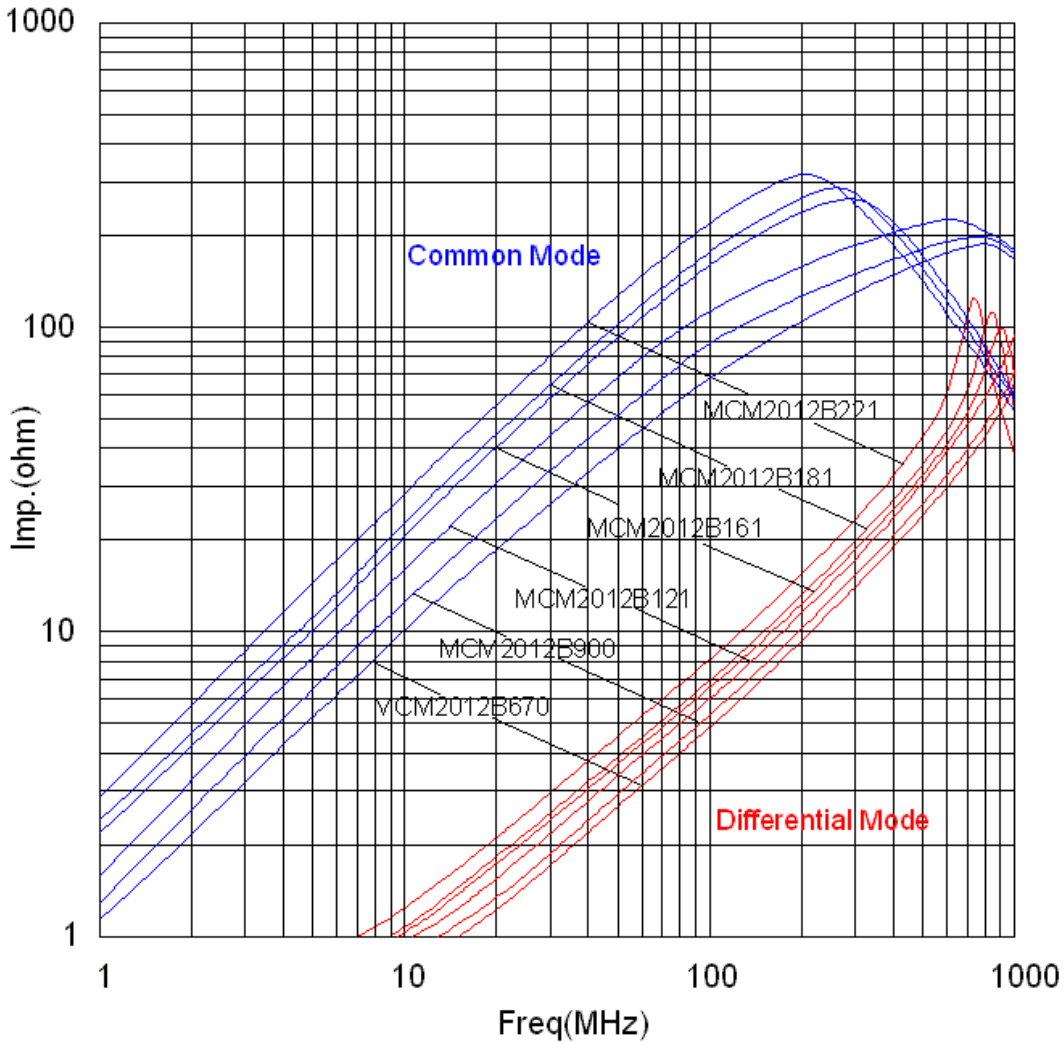
■ PART NUMBER CODE

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

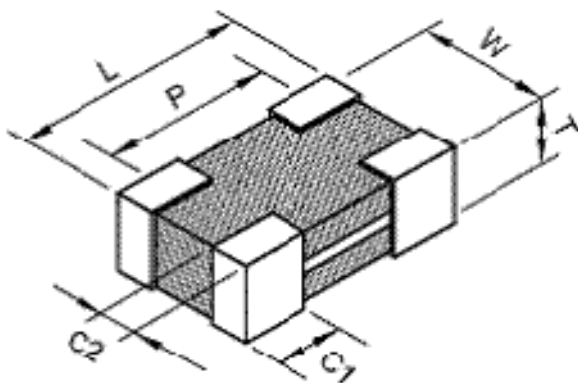
- 1 Series Name
- 2 Size Code: the first two digitals : length(mm), the last two digitals : width(mm)
- 3 Material Code
- 4 Impedance(Ω) \pm 25% (ex : 900=90 Ω ; 121=120 Ω)
- 5 Fixed Decimal Point
- 6 Rated Current Code

| | | | | | |
|---------|---------|---------|---------|---------|---------|
| 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: E - Embossed plastic tape, 7" reel.

■ IMPEDANCE vs. FREQUENCY CHARACTERISTICS



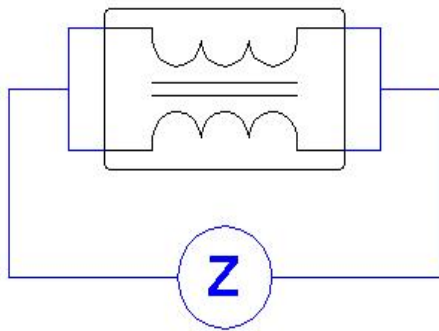
■ SHAPES AND DIMENSIONS



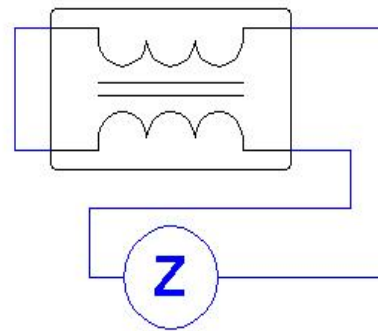
| TYPE | 2012 |
|----------|-----------|
| L | 2.00±0.20 |
| W | 1.25±0.20 |
| T | 1.00±0.10 |
| P | 1.60±0.20 |
| C1 | 0.40±0.20 |
| C2 | 0.30±0.20 |
| Unit: mm | |

■ MEASURING CIRCUITS

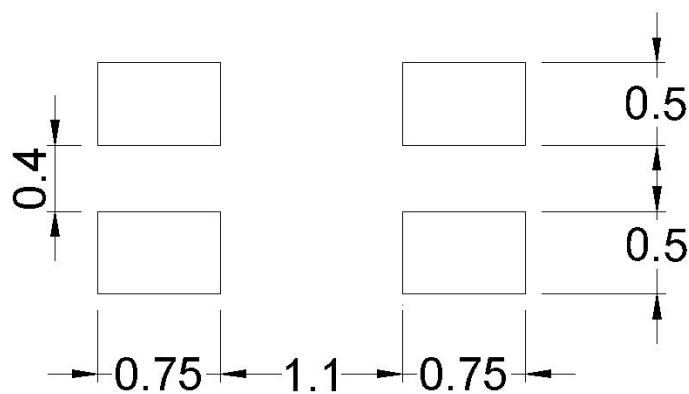
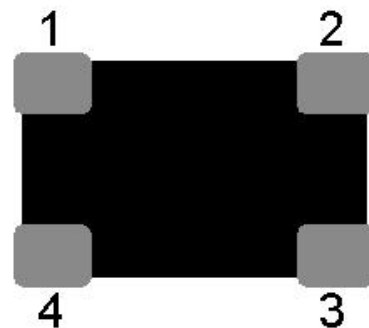
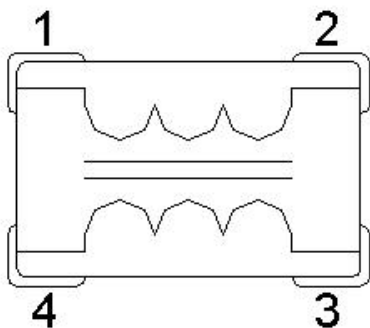
(A):Common mode



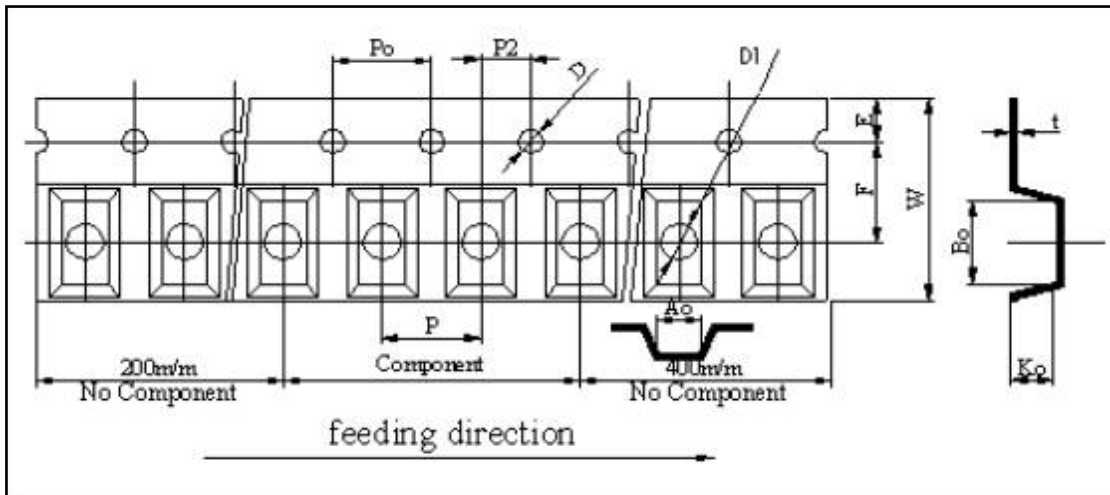
(B):Differential mode



■ CIRCUIT CONFIGURATION & LAYOUT PAD



■ TAPE AND REEL SPECIFICATIONS
PLASTIC CARRIER



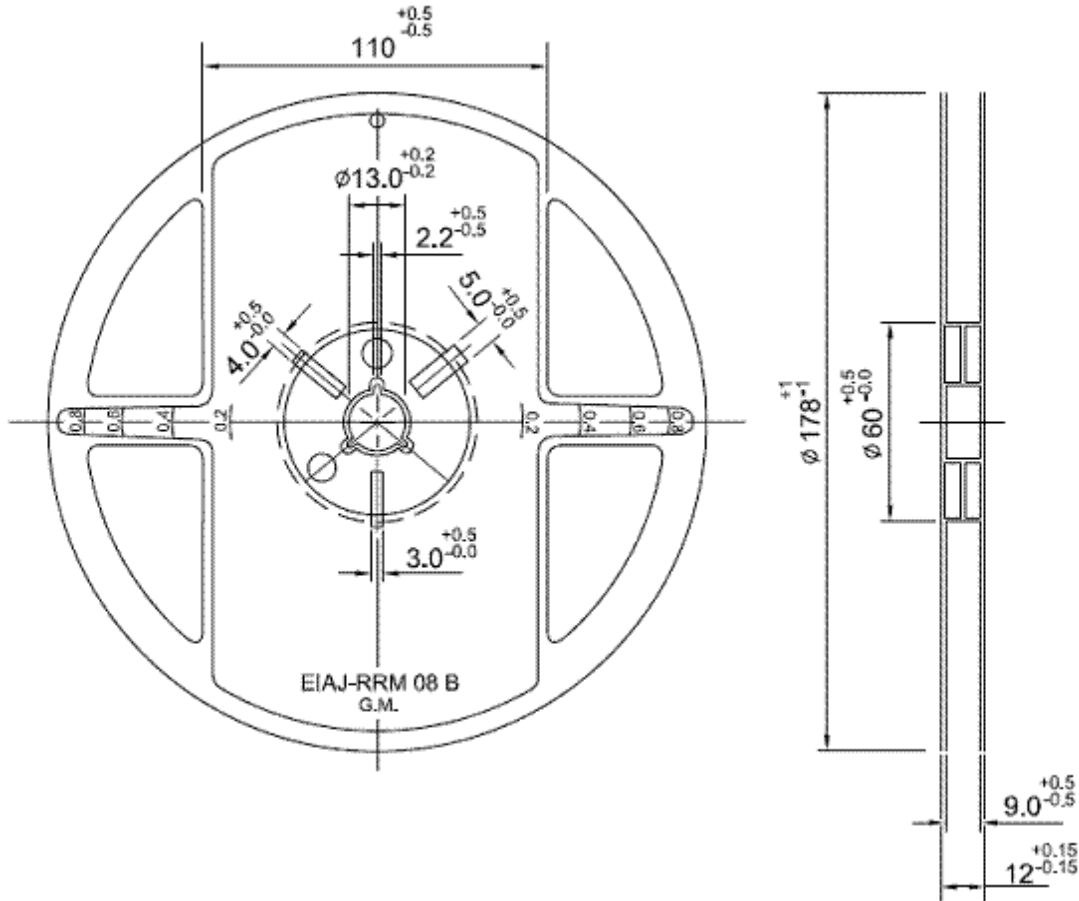
■ TAPING DIMENSIONS

Unit: mm

| Symbol | Size | Symbol | Size |
|--------|-----------------|-----------|-----------------|
| W | 7.90~8.30 | P_o | 4.00 ± 0.10 |
| P | 4.00 ± 0.10 | P_2 | 2.00 ± 0.05 |
| E | 1.75 ± 0.10 | A_o | 1.42 ± 0.10 |
| F | 3.50 ± 0.05 | B_o | 2.26 ± 0.10 |
| D | 1.50 ± 0.05 | $K_o (T)$ | 1.30 ± 0.10 |
| D_1 | 0.95~1.20 | t | 0.23 ± 0.10 |

■ REEL DIMENSIONS

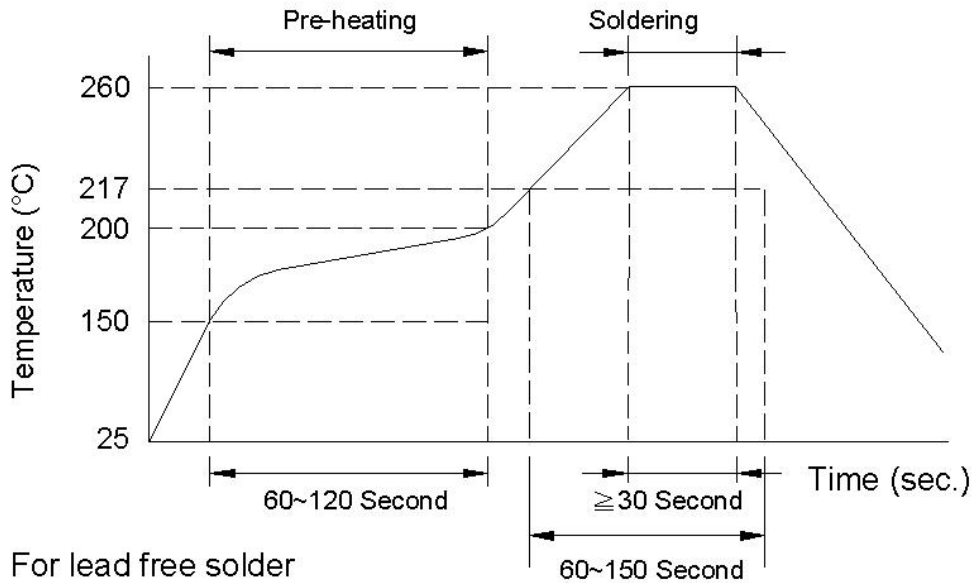
Unit: mm



■ STANDARD QUANTITY FOR PACKAGING

| PART SIZE (EIA SIZE) | Reel backagging 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 ~ +85°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 ± 20 % of the initial value |
| Operational Life | A. Temperature : 85°C ± 5°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 ± 20 % of the initial value |
| Biased Humidity | A. Temperature : 40 ± 2°C B. Humidity : 90 ~ 95 % RH C. Test time : 1000 hrs D. Apply current : full rated current | A. No mechanical damage B. Impedance value should be within ± 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