

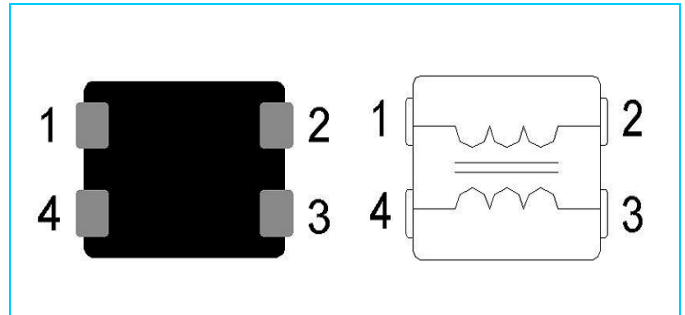
## LOW PROFILE TYPE (Chip Common Mode Filter) Engineering Specification

### MCM1012B 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

MIPI, MHL serial interface in mobile device.



#### PRODUCT DETAIL

| Part Number      | Imp.Com.<br>( $\Omega$ ) $\pm 25\%$<br>@100MHz  | DCR<br>Max.<br>( $\Omega$ ) | Rated<br>Current<br>Max.(mA) | Rated<br>Voltage<br>(V) | Withstand<br>Voltage<br>(V) | Insulation<br>Resistance<br>Min.(M $\Omega$ ) |
|------------------|---|-----------------------------|------------------------------|-------------------------|-----------------------------|---|
| MCM1012B360F06BP | 36  | 0.50                        | 300                          | 10                      | 25                          | 200   |
| MCM1012B670F06BP | 67  | 0.50                        | 300                          | 10                      | 25                          | 200   |
| MCM1012B900F06BP | 90  | 0.60                        | 300                          | 10                      | 25                          | 200   |
| Test Instruments | <ul style="list-style-type: none"> <li>Agilent E4991A RF IMPEDANCE / MATERIAL ANALYZER</li> <li>HP4338 MILLIOHMMETER</li> <li>Agilent E5071C ENA SERIES NETWORK ANALYZER</li> <li>Keithley 2410 1100V SOURCE METER</li> </ul> |                             |                              |                         |                             |   |

#### PART NUMBER CODE

**MCM   1012   B   90   0   F   06   B   P**  
                   1           2           3           4    5    6           7    8    9

1: Series name

2: Dimensions L\*W

3: Material code

4: Impedance( $\Omega$ )  $\pm 25\%$     } (ex : 900=90 $\Omega$ )

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: Dimension T (ex : 06=0.60mm)

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

9: Packaging style   P – Embossed paper tape, 7" reel.

# LOW PROFILE TYPE (Chip Common Mode Filter) Engineering Specification

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### TYPICAL CHARACTERISTIC

#### MCM1012B360F06BP

Fig1. IMPEDANCE vs. FREQUENCY CHARACTERISTICS

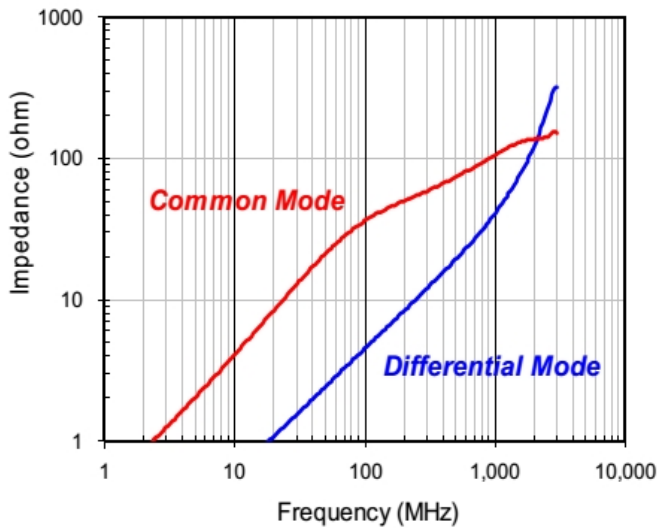
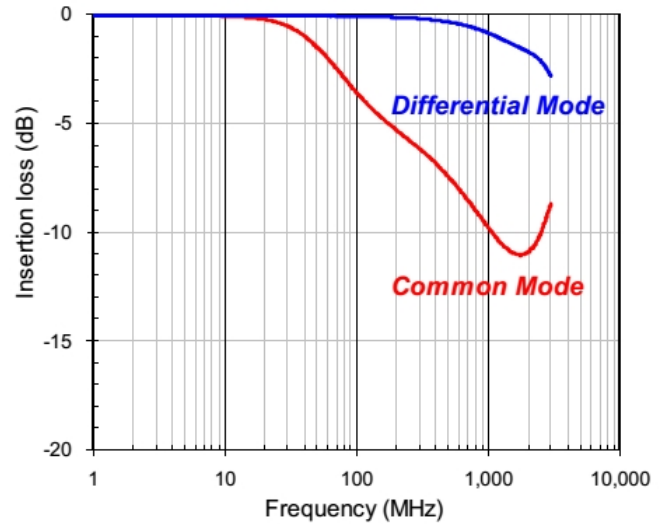


Fig2. INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



#### MCM2012B670F06BP

Fig3. IMPEDANCE vs. FREQUENCY CHARACTERISTICS

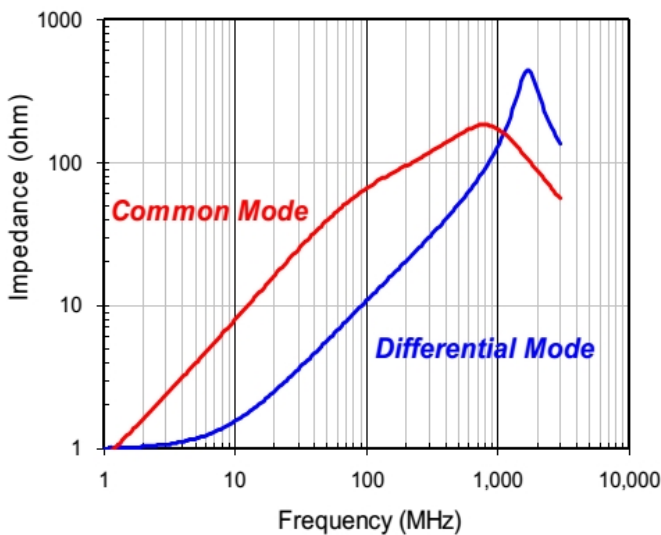
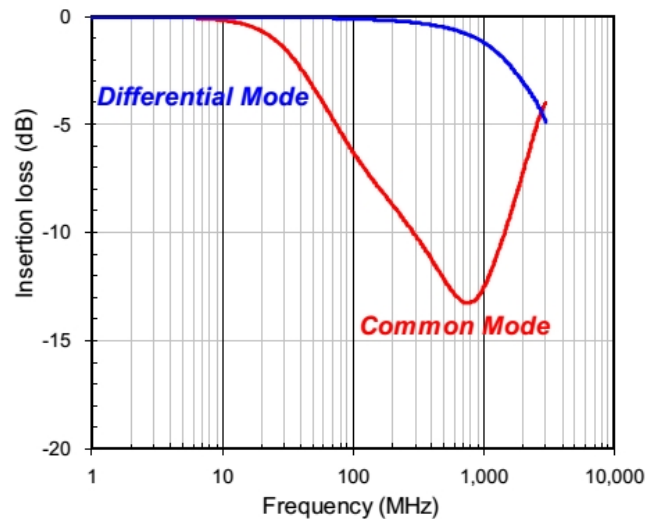


Fig4. INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



**LOW PROFILE TYPE (Chip Common Mode Filter) Engineering Specification**

**MCM1012B Series**

**MCM1012B900F06BP**

Fig5. IMPEDANCE vs. FREQUENCY CHARACTERISTICS

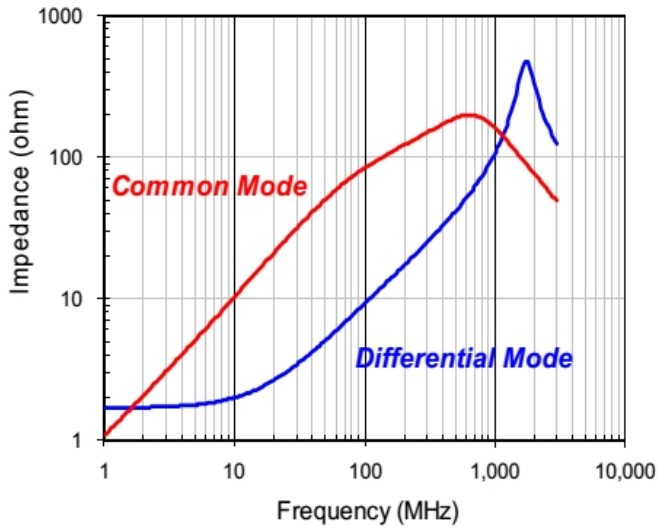
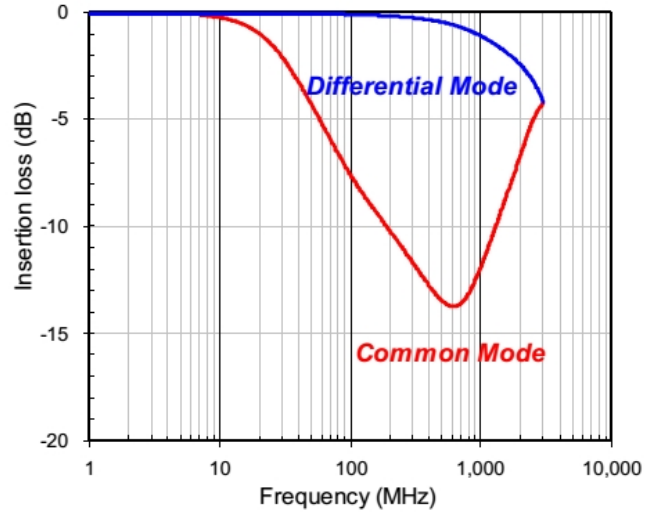
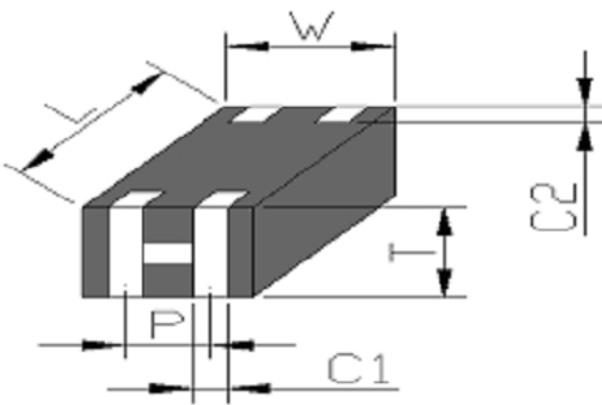


Fig6. INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



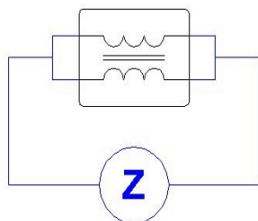
**SHARES AND DIMENSIONS**



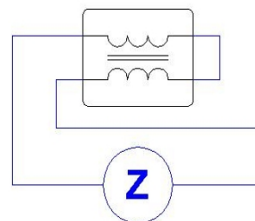
| TYPE      | Dimension |
|-----------|-----------|
| L         | 1.25±0.10 |
| W         | 1.00±0.10 |
| T         | 0.60±0.10 |
| P         | 0.50±0.10 |
| C1        | 0.30±0.10 |
| C2        | 0.20±0.15 |
| Unit : mm |           |

**MEASURING CIRCUITS**

(A):Common mode



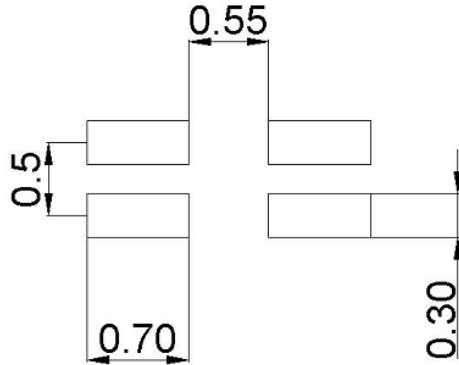
(B):Differential mode



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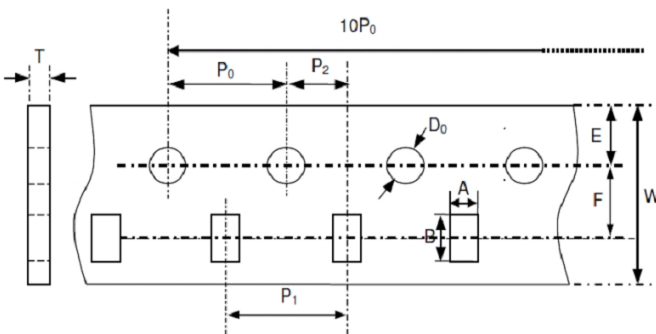
#### CIRCUIT CONFIGURATION & LAYOUT PAD



#### TAPE AND REEL SPECIFICATIONS / TAPING DIMENSIONS

Type : Paper Carrier

Unit : mm

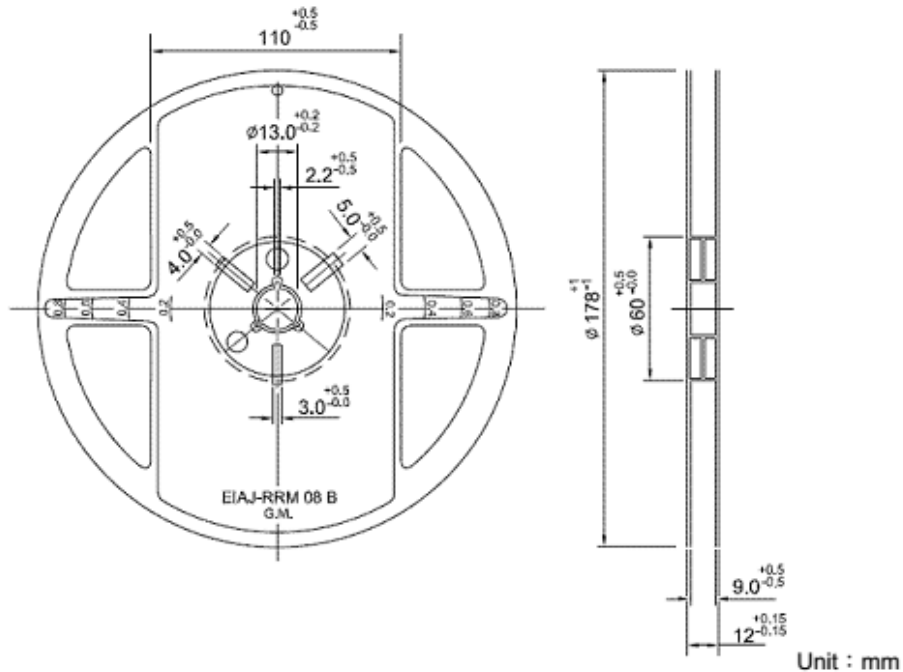


| Symbol | size            | symbol | size            |
|--------|-----------------|--------|-----------------|
| A      | $1.20 \pm 0.05$ | Po     | $4.00 \pm 0.10$ |
| B      | $1.45 \pm 0.05$ | P1     | $4.00 \pm 0.10$ |
| W      | $8.00 \pm 0.10$ | P2     | $2.00 \pm 0.05$ |
| E      | $1.75 \pm 0.05$ | Do     | $1.55 \pm 0.05$ |
| F      | $3.50 \pm 0.05$ | T      | $0.60 \pm 0.03$ |

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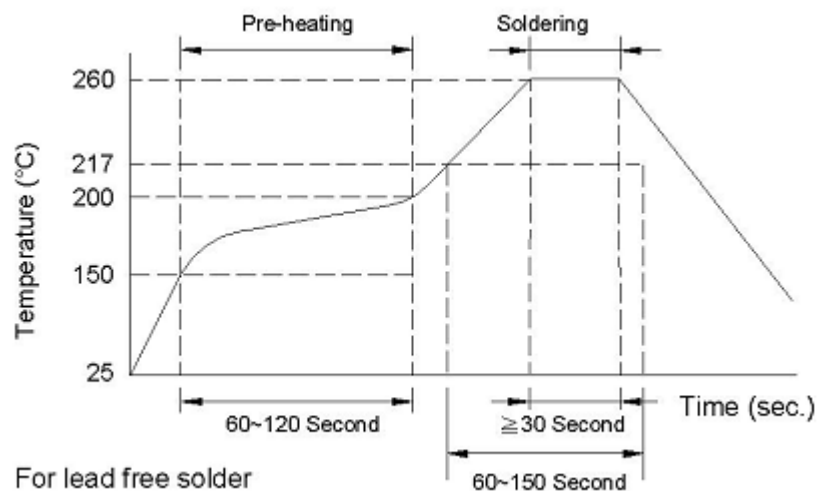
#### REEL DIMENSIONS



#### STANDARD QUANTITY FOR PACKAGING

Packaging style : Taping  
Reel packaging quantity : 4000 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

**LOW PROFILE TYPE (Chip Common Mode Filter) Engineering Specification**
**MCM1012B Series**
**RELIABILITY AND TEST CONDITION**

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