

MFBM1V2012

Multilayer chip ferrite bead



Product features

- 0805 (2012 metric) package
- High current handling
- Multilayer monolithic construction yields high reliability
- Impedance range from 0 Ω to 1000 Ω

Applications

- Industrial connectivity (IoT)
- Wireless communications
- Bluetooth
- WiFi
- Antenna
- Machine-to-machine (M2M)
- Mobile phones
- Wearable devices
- Wireless LAN
- Computing/gaming consoles
- Broadband components
- RF transceiver modules

Environmental compliance and general specifications

- Operating temperature range: -40 °C to +85 °C (ambient plus self-temperature rise)



Product specifications

| Part number ³ | Impedance tolerance | Impedance (Ω) | DCR (Ω) maximum @ +25 °C | Test frequency ¹ (MHz) | Test voltage ¹ (mV) | Rated I ² (mA) maximum |
|--------------------------|---------------------|---------------|--------------------------|-----------------------------------|--------------------------------|-----------------------------------|
| MFBM1V2012-000-R | 0~15 Ω | 0 | 0.01 | 100 | 50 | 6000 |
| MFBM1V2012-050-R | 0~15 Ω | 5 | 0.01 | 100 | 50 | 6000 |
| MFBM1V2012-070-R | 0~11 Ω | 7 | 0.01 | 100 | 50 | 6000 |
| MFBM1V2012-090-R | 5~13 Ω | 9 | 0.01 | 100 | 50 | 6000 |
| MFBM1V2012-110-R | 7~15 Ω | 11 | 0.01 | 100 | 50 | 6000 |
| MFBM1V2012-150-R | 9~21 Ω | 15 | 0.01 | 100 | 50 | 6000 |
| MFBM1V2012-190-R | 12~25 Ω | 19 | 0.01 | 100 | 50 | 6000 |
| MFBM1V2012-300-R | ±25% | 30 | 0.01 | 100 | 50 | 6000 |
| MFBM1V2012-310-R | ±25% | 31 | 0.01 | 100 | 50 | 6000 |
| MFBM1V2012-500-R | ±25% | 50 | 0.04 | 100 | 50 | 3500 |
| MFBM1V2012-600-R | ±25% | 60 | 0.04 | 100 | 50 | 3500 |
| MFBM1V2012-700-R | ±25% | 70 | 0.04 | 100 | 50 | 3000 |
| MFBM1V2012-800-R | ±25% | 80 | 0.04 | 100 | 50 | 3000 |
| MFBM1V2012-101-R | ±25% | 100 | 0.05 | 100 | 50 | 3000 |
| MFBM1V2012-121-R | ±25% | 120 | 0.05 | 100 | 50 | 3000 |
| MFBM1V2012-151-R | ±25% | 150 | 0.08 | 100 | 50 | 2500 |
| MFBM1V2012-181-R | ±25% | 180 | 0.08 | 100 | 50 | 2500 |
| MFBM1V2012-221-R | ±25% | 220 | 0.08 | 100 | 50 | 2500 |
| MFBM1V2012-301-R | ±25% | 300 | 0.08 | 100 | 50 | 2500 |
| MFBM1V2012-301-R | ±25% | 300 | 0.08 | 100 | 50 | 2500 |
| MFBM1V2012-501-R | ±25% | 500 | 0.10 | 100 | 50 | 2000 |
| MFBM1V2012-601-R | ±25% | 600 | 0.10 | 100 | 50 | 2000 |
| MFBM1V2012-102-R | ±25% | 1000 | 0.12 | 100 | 50 | 1500 |

1. Impedance test frequency and voltage.

2. Rated I: Current rating for an approximate self-temperature rise of 40 °C or less.

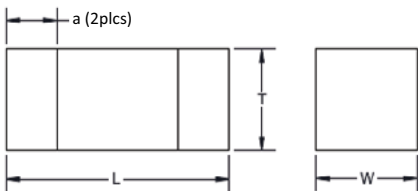
3. Part number definition: MFBM1V2012-xxx-R

MFBM1V2012 = Product code and size

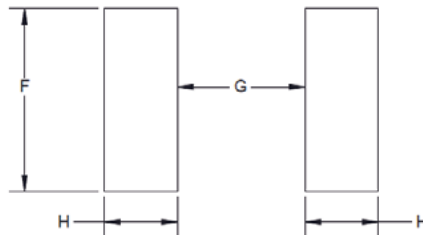
xxx = Impedance value in Ω, last character equals number of zeros

-R suffix = RoHS compliant

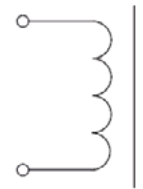
Mechanical parameters, schematic, pad layout (mm)



Recommended pad layout



Schematic



| Part number | L | W | T | a | F | G | H |
|------------------|-----------|-----------|-----------|----------|----------|----------|----------|
| MFBM1V2012-xxx-R | 2.0 ±0.20 | 1.2 ±0.20 | 0.9 ±0.20 | 0.5 ±0.3 | 1.60 ref | 0.20 ref | 1.20 ref |

Part marking: No marking

All soldering surfaces to be coplanar within 0.1 millimeters

Tolerances are ±0.1 millimeters unless stated otherwise

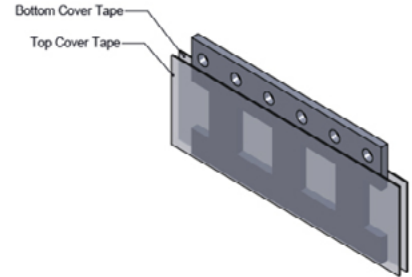
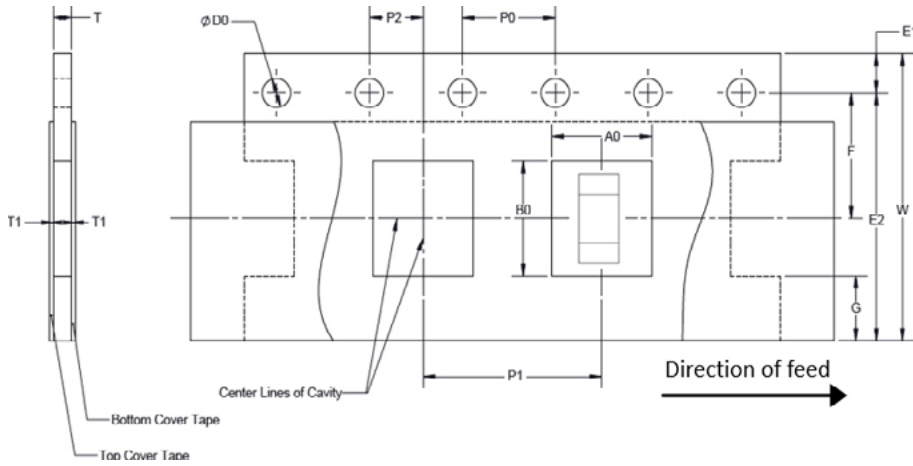
Pad layout dimensions are reference only

Traces or vias underneath the inductor is not recommended

Packaging information (mm)

Drawing not to scale

Supplied in tape and reel packaging, 4000 parts per 7" diameter reel



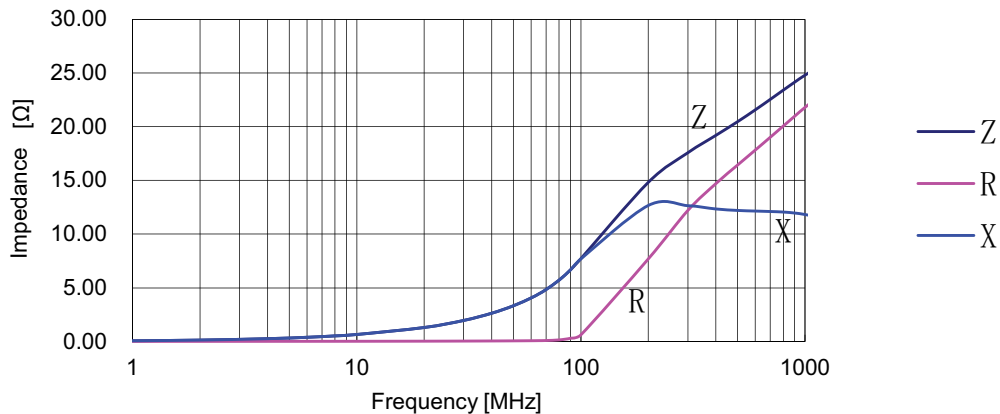
| | |
|--------|----------|
| W±0.2 | 8.00 |
| F±0.1 | 3.50 |
| E1±0.2 | 1.75 |
| E2 Min | na |
| P0±0.2 | 4.00 |
| P1±0.2 | 4.00 |
| P2±0.1 | 2.00 |
| D0±0.1 | 1.55 |
| A0 | 1.5±0.2 |
| B0 | 2.3±0.2 |
| T | 0.95±0.1 |
| T1 Max | na |

Qualification testing

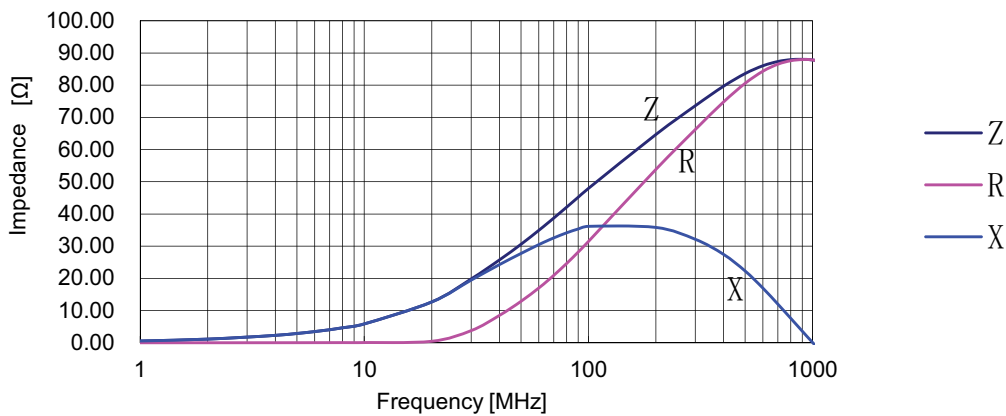
| No. | Test item | Sample size (pcs) | Test condition | Acceptable value/range |
|------------|------------------------------|--------------------------|--|--|
| 1 | External visual | 72 | Specification | No physical damage |
| 2 | Physical dimension | 72 | Specification | Specification |
| 3 | Initial electrical test | 72 | Specification | User specification |
| 4 | Solderability | 6 | +245 °C ±5 °C, dipping 5 ±1s | >95% solder coverage |
| 5 | Resistance to soldering heat | 6 | +260 °C ±5 °C for 10 ±1 s | 1. $\Delta Z/Z < \pm 30\%$ 2. No physical damage |
| 6 | Terminal strength (SMD) | 6 | Force of 10 N for 10 ±1 s | No physical damage No electrical performance test |
| 7 | Low temperature exposure | 6 | -40 °C for 1000 hours | 1. $\Delta Z/Z < \pm 30\%$ 2. No physical damage |
| 8 | Bending strength | 6 | Appendix 2 note: 2 mm, hold time 30 s (minimum) | No physical damage No electrical performance test |
| 9 | Drop | 6 | Drop 10 times to a concrete floor from a height of 1 m | 1. $\Delta Z/Z < \pm 30\%$ 2. No physical damage |
| 10 | Vibration | 6 | Amplitude modulation:1.5 mm Test time: A period of 2 hours in each of 3 mutually perpendicular directions Test from 10 Hz to 55 Hz to 10 Hz for 1 minute | 1. $\Delta Z/Z < \pm 30\%$ 2. No physical damage |
| 11 | High temperature exposure | 6 | +85 °C for 1000 hours | 1. $\Delta Z/Z < \pm 30\%$ 2. No physical damage |
| 12 | Biased humidity | 6 | 1000 hours +60 °C/90% to 95% RH unpowered | 1. $\Delta Z/Z < \pm 30\%$ 2. No physical damage |
| 13 | Operational life | 12 | +85 °C at rated current for 1000 hours | 1. $\Delta Z/Z < \pm 30\%$ 2. No physical damage |
| 14 | Temperature cycling | 6 | 32 cycles (-40 °C to +85 °C), dwell time 30 minutes | 1. $\Delta Z/Z < \pm 30\%$ 2. No physical damage |

Impedance vs frequency

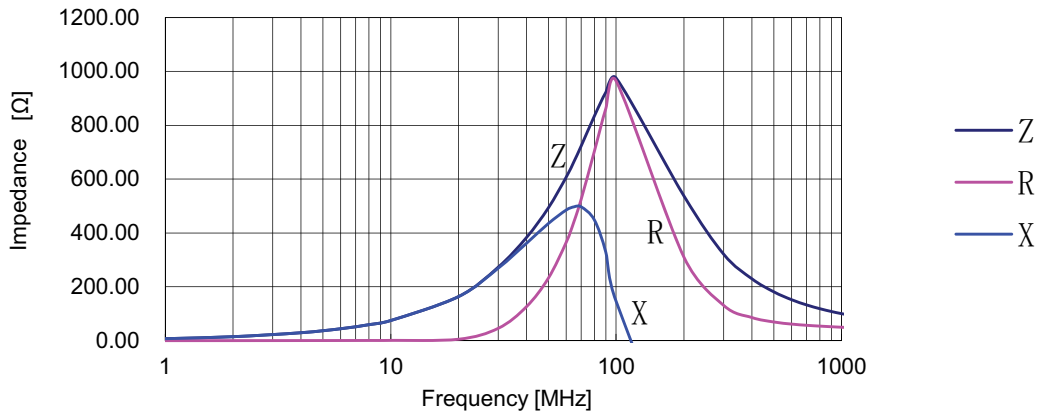
MFBM1V2012-000-R



MFBM1V2012-600-R

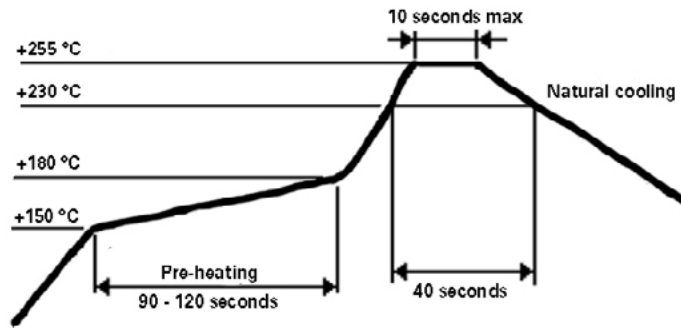


MFBM1V2012-102-R



Z= impedance, R= resistance, X= reactance

Solder reflow profile



Life Support Policy: Eaton does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

Eaton reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Eaton also reserves the right to change or update, without notice, any technical information contained in this bulletin.

Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com/electronics

© 2020 Eaton
All Rights Reserved
Printed in USA
Publication No. 11112 BU-MC20092
June 2020

Eaton is a registered trademark.
All other trademarks are property
of their respective owners.

Follow us on social media to get the
latest product and support information.



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Ferrite Beads](#) category:

Click to view products by [Eaton](#) manufacturer:

Other Similar products are found below :

[CZB1EGTTP700P](#) [CZB1JGTTD101P](#) [CZB1JGTTD151P](#) [CZB1JGTTD601P](#) [CZB2AFTTD800P](#) [CZB2AGTTD601P](#) [CZB2BFTTE600P](#)
[EMI0805R-11](#) [NCB0603R301TR050F](#) [NCB0805A320TR050F](#) [NCB-H1206B680TR300F](#) [SMB2.5-1TR](#) [SMB2.5R-2](#) [2943778301](#)
[CZB1EGTTP121P](#) [CZB1JGTTD102P](#) [CZB1JGTTD121P](#) [CZB1JGTTD221P](#) [CZB2AGTTD301P](#) [CZB2BFTTE601P](#) [4221R-1](#) [4221R-2](#)
[4221R-3](#) [EMI0805R-2000](#) [EMI0805R-600](#) [SBY100505T-100Y-N](#) [NCB-GH0402D121TR060F](#) [NCB-H1812D125TR150F](#)
[CZB2AGTTD102P](#) [NCB0402P301TR005F](#) [NCB0603R152TR030F](#) [NCB0805A121TR050F](#) [NCB3312K900TR500F](#) [NCB-](#)
[H0805A102TR150F](#) [NCB-H0805A221TR300F](#) [NCB-H1806E181TR300F](#) [NCB0402P300TR030F](#) [NCB0402P700TR050F](#)
[NCB0805A102TR040F](#) [NCB1806E151TR020F](#) [NCB-H0603R121TR300F](#) [NCB-H0805A220TR600F](#) [NCB-H0805A390TR400F](#)
[CIM21J252NE](#) [CZB2BFTTE121P](#) [EMI0805R-220](#) [74279250](#) [7427924](#) [CZB1JGTTD202P](#) [ABUPDE160808121Y00](#)