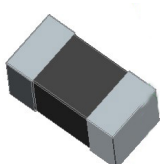


MFBA2V1608

Automotive multilayer chip ferrite bead



Product features

- AEC-Q200 qualified
- Multilayer monolithic construction yields high reliability
- 0603 (1608 metric) surface mount package
- Ultra-low direct current resistance (DCR)
- Impedance range: 30 ohms to 600 ohms
- Moisture sensitivity level (MSL): 1

Applications

- Body electronics (keyless entry, ECU, antennas)
- Advanced driver assistance systems (ADAS)
- Infotainment and cluster electronics
- Safety electronics systems
- WLAN, WiFi, Bluetooth
- Portable medical devices
- Inventory management equipment
- Displays/monitors
- IoT, remote monitoring
- Testing equipment
- Automation equipment
- Sensors

Environmental compliance and general specifications

- Operating temperature range: -55 °C to +150 °C (ambient plus self-temperature rise)
- Storage temperature (component): -55 °C to +150 °C
- Solder reflow temperature: J-STD-020 (latest revision) compliant



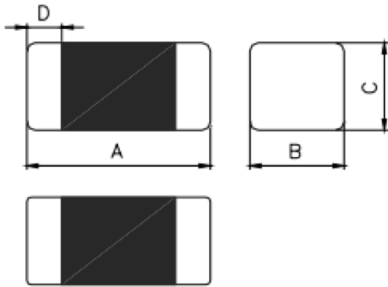
Product specifications

Part number ²	Impedance (Ω) 100 MHz, $\pm 25\%$, @ +25 °C	DCR (Ω) maximum @ +25 °C	Rated current ¹ (mA) maximum
MFBA2V1608-300-R	30	0.04	3000
MFBA2V1608-800-R	80	0.04	3000
MFBA2V1608-121-R	120	0.10	2000
MFBA2V1608-151-R	150	0.10	2000
MFBA2V1608-221-R	220	0.10	2000
MFBA2V1608-301-R	300	0.20	1000
MFBA2V1608-471-R	470	0.20	1000
MFBA2V1608-601-R	600	0.20	1000

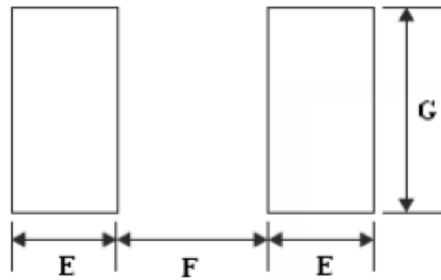
1. Rated current: Current rating for an approximate self-temperature rise of 40 °C or less.

2. Part number definition: MFBA2V1608-xxx-R
MFBA2V1608 = Product code and size
xxx = Impedance value in Ω , last character equals number of zeros
-R suffix = RoHS compliant

Mechanical parameters (mm)



Recommended pad layout



Schematic



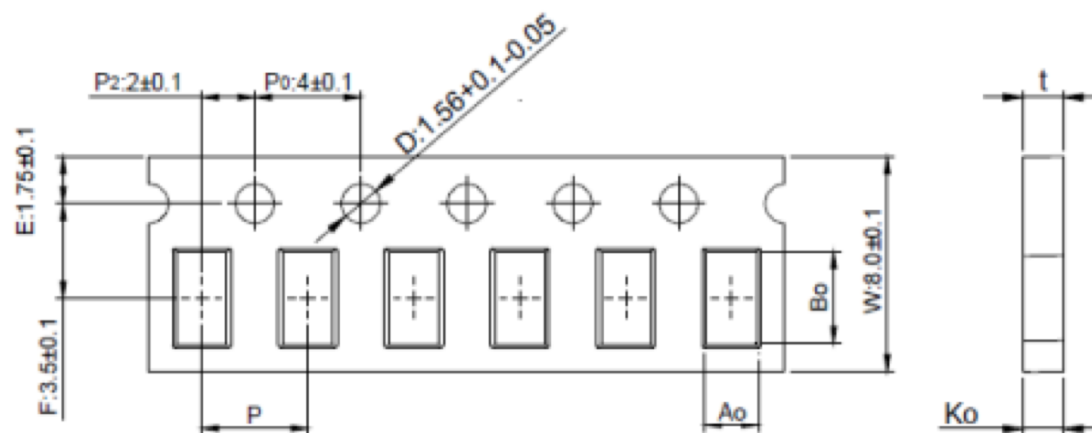
Part number	A	B	C	D	E (ref.)	F (ref.)	G (ref.)
MFBA2V1608-***-R	1.6 $\pm$ 0.15	0.80 $\pm$ 0.15	0.80 $\pm$ 0.15	0.30 $\pm$ 0.20	0.80	0.85	0.95

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

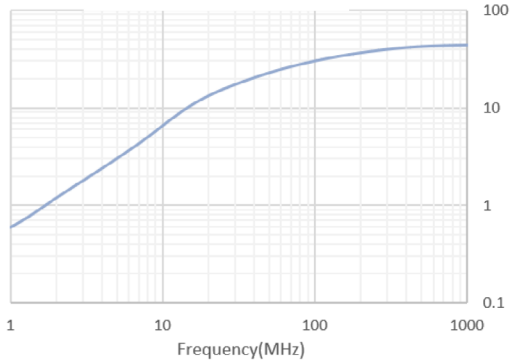
Supplied in tape and reel packaging, 4000 parts per 7" diameter reel (EIA-481 compliant)



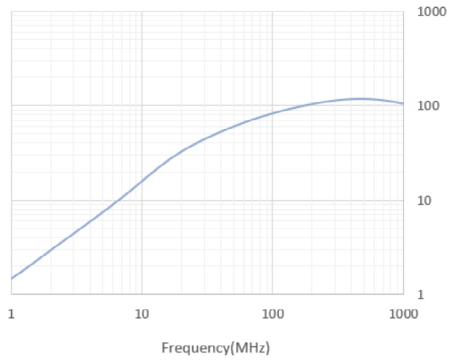
Bo	1.80 ± 0.05
Ao	0.96 + 0.05/-0.03
Ko	0.95 ± 0.05
P	4.0 ± 0.10
t	0.95 ± 0.05

Impedance vs frequency

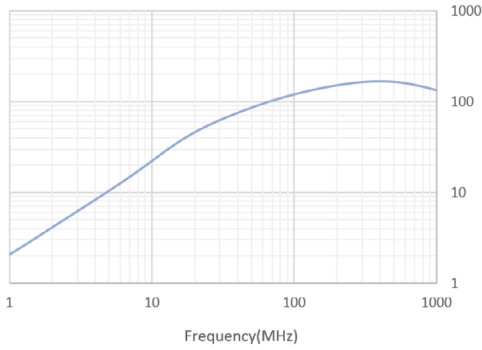
MFBA2V1608-300-R



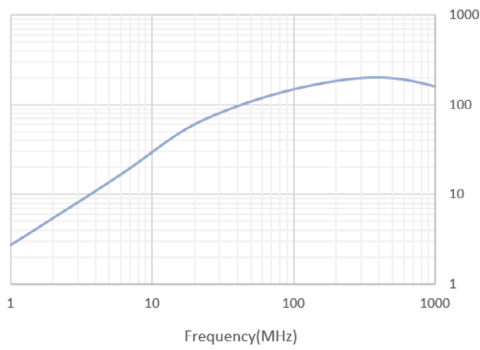
MFBA2V1608-800-R



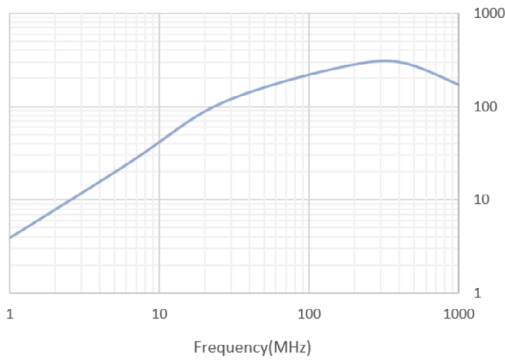
MFBA2V1608-121-R



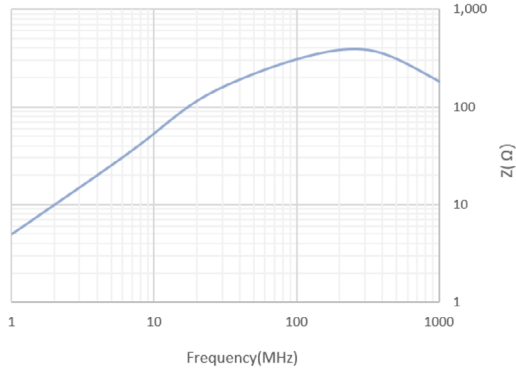
MFBA2V1608-151-R



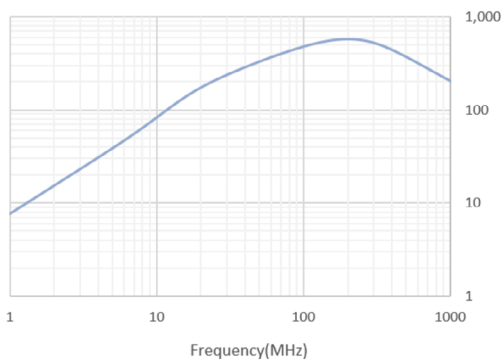
MFBA2V1608-221-R



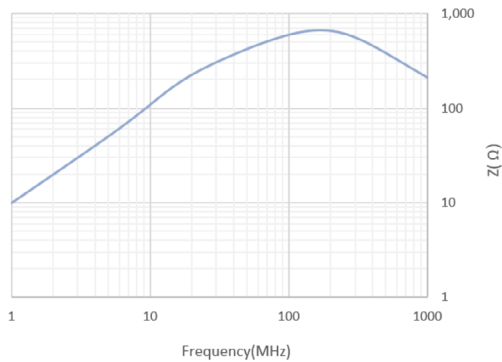
MFBA2V1608-301-R



MFBA2V1608-471-R



MFBA2V1608-601-R



Solder reflow profile

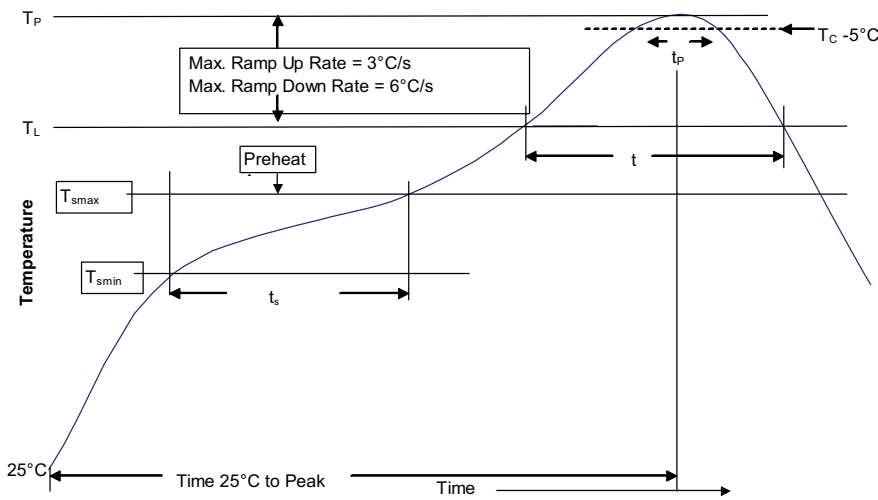


Table 1 - Standard SnPb solder (T_C)

Package thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2 - Lead (Pb) free solder (T_C)

Package thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Reference J-STD-020

Profile feature	Standard SnPb solder	Lead (Pb) free solder
Preheat and soak		
• Temperature min. (T_{smin})	100 °C	150 °C
• Temperature max. (T_{smax})	150 °C	200 °C
• Time (T_{smin} to T_{smax}) (t_s)	60-120 seconds	60-120 seconds
Ramp up rate T_L to T_p	3 °C/ second max.	3 °C/ second max.
Liquidous temperature (T_L)	183 °C	217 °C
Time (t_L) maintained above T_L	60-150 seconds	60-150 seconds
Peak package body temperature (T_p)*	Table 1	Table 2
Time (t_p)* within 5 °C of the specified classification temperature (T_C)	20 seconds*	30 seconds*
Ramp-down rate (T_p to T_L)	6 °C/ second max.	6 °C/ second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

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

© 2021 Eaton
All Rights Reserved
Printed in USA
Publication No. ELX1131 BU-ELX21139
December 2021

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.



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Eaton:](#)

<u>MFBA2V1005-221-R</u>	<u>MFBA2V1005-330-R</u>	<u>MFBA2V1608-121-R</u>	<u>MFBA2V1608-151-R</u>	<u>MFBA2V1608-221-R</u>
<u>MFBA2V1608-300-R</u>	<u>MFBA2V1005-121-R</u>	<u>MFBA2V2012-221-R</u>	<u>MFBA2V2012-300-R</u>	<u>MFBA2V2012-301-R</u>
<u>MFBA2V2012-601-R</u>	<u>MFBA2V2012-800-R</u>	<u>MFBA2V1005-101-R</u>	<u>MFBA2V1608-301-R</u>	<u>MFBA2V1608-471-R</u>
<u>MFBA2V1608-601-R</u>	<u>MFBA2V1608-800-R</u>	<u>MFBA2V2012-121-R</u>	<u>MFBA2V2012-151-R</u>	