



FB3225 Series, FB4516 Series, FB4532 Series
SMD MULTILAYER FERRITE CHIP BEADS (HIGH IMPEDANCE)

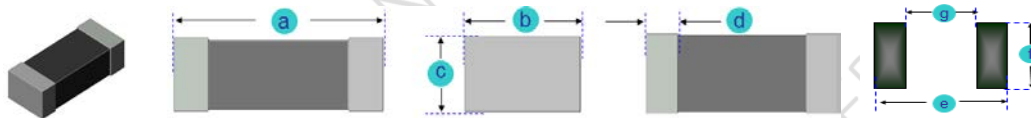
Rev. A

A. Electrical Specifications:

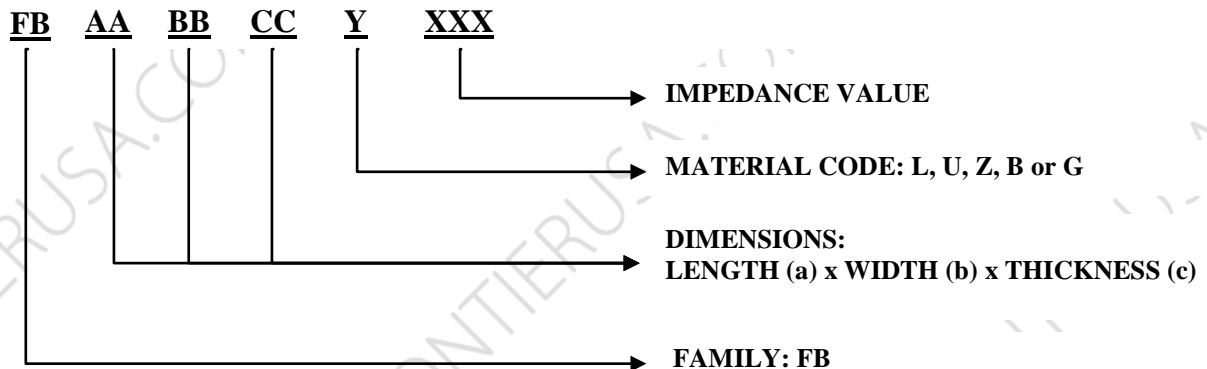
| P/N | Impedance (Ω) $\pm 25\%$ @100MHz | DCR Max. (Ω) | I rms. Max. (mA) |
|--------------|---|-----------------------|------------------|
| FB322513U310 | 31 | 0.20 | 400 |
| FB322513U330 | 33 | 0.20 | 400 |
| FB322513U520 | 52 | 0.20 | 400 |
| FB322513U600 | 60 | 0.20 | 800 |
| FB451616U600 | 60 | 0.10 | 800 |
| FB451616U800 | 80 | 0.10 | 600 |
| FB451616U121 | 120 | 0.20 | 500 |
| FB451616U181 | 180 | 0.25 | 500 |
| FB451616Z800 | 80 | 0.10 | 600 |
| FB451616Z121 | 120 | 0.10 | 600 |
| FB451616Z151 | 150 | 0.20 | 500 |
| FB451616Z171 | 170 | 0.25 | 500 |
| FB453215U700 | 70 | 0.10 | 600 |
| FB453215U800 | 80 | 0.10 | 600 |
| FB453215U121 | 120 | 0.15 | 500 |
| FB453215U131 | 130 | 0.15 | 500 |

B. Dimensions: mm (In)

| Series | a | b | c | d | e | f | g |
|-----------------|----------------------|----------------------|----------------------|----------------------|-----------------|-----------------|-----------------|
| FB322513 | 3.2 (0.126) | 2.5 (0.098) | 1.3 (0.051) | 0.5 (0.020) | 4.40 (0.173) | 2.70 (0.106) | 1.20 (0.047) |
| Tol. | ± 0.2 (0.008) | ± 0.2 (0.008) | ± 0.2 (0.008) | ± 0.3 (0.012) | Typ. | Typ. | Typ. |
| FB451616 | 4.5 (0.177) | 1.6 (0.063) | 1.6 (0.063) | 0.5 (0.020) | 5.80 (0.228) | 1.80 (0.071) | 2.00 (0.079) |
| Tol. | ± 0.2 (0.008) | ± 0.2 (0.008) | ± 0.2 (0.008) | ± 0.3 (0.012) | Typ. | Typ. | Typ. |
| FB453215 | 4.5 (0.177) | 3.2 (0.126) | 1.5 (0.059) | 0.5 (0.020) | 5.80 (0.228) | 3.40 (0.134) | 2.00 (0.079) |
| Tol. | ± 0.2 (0.008) | ± 0.2 (0.008) | ± 0.2 (0.008) | ± 0.3 (0.012) | Typ. | Typ. | Typ. |



C. Part Number Key:





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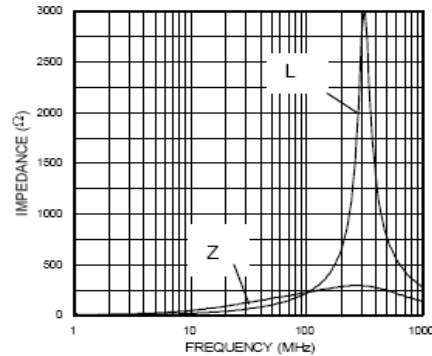
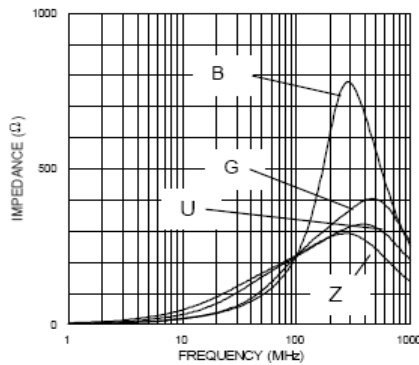
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D. Materials:

| ITEM | UNIT | Material Code | | | | |
|---------------------------------------|---------------------|---------------|--------|--------|--------|--------|
| | | L | B | G | U | Z |
| Initial Permeability (μ_{iac}): | ---- | 25 | 45 | 110 | 200 | 500 |
| Maximum Permeability (μ_m): | ---- | 125 | 125 | 250 | 450 | 900 |
| Saturation Flux Density at 10 Oe: | Gauss | 2000 | 2000 | 1700 | 1400 | 1500 |
| Curie Temperature(T_c): | $^{\circ}C$ | >200 | >200 | >130 | >100 | >130 |
| Volume Resistivity (ρ): | $\Omega\text{-m}$ | 100000 | 100000 | 100000 | 100000 | 100000 |
| Temperature Coefficient: | 1/10000 $^{\circ}C$ | 10 | 10 | 13 | 5 | 12 |
| Density: | g/cm 3 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |

E. Impedance Characteristics of Materials:

- Z Material is for applications whose blocking regions are near 100 MHz.
- L Material, an improvement of B Material has sharp impedance characteristic at high frequency.
- G Material is for application whose signal frequency is far from the cut off region. Suitable for application requires low insertion loss at high frequency.
- Different materials are available for different application range.
- With one material, higher impedance has sharper characteristics.
- Please confirm the signal wave form to choose suitable products.



F. General Information:

- FBAABBCC-yxxx, “FB” = Type, “AA” = Length, “BB” = Width, “CC” = Thickness, “y” = Material, “xxx” = Impedance.
- Tolerance: $\pm 25\%$
- Small and lightweight surface mounting type.
- Dimensions are suitable for automatic mounting
- High-density packaging with a pitch of 2.54 mm (0.1 inch) max. is possible. This series requires less space and have greater EMI suppression effects.
- Different types with the same shape are available.
- Excellent in physical properties, such as terminal strength, flexure strength, soldering resistance and solder-ability.
- Applicable to both flow and IR reflow soldering.
- High impedance covers wide frequency ranges.
- TI series can be used in high current circuits due to its low DC resistance.
- Operating temperature: $-40^{\circ}C$ to $+125^{\circ}C$
- Unspecified values available on request.
- MSL: Level 1.
- Impedance and Current range:
 - FB322513 (1206) Series: From 31 Ω (400 mA) to 60 Ω (800 mA)
 - FB451616 (1806) Series: From 60 Ω (800 mA) to 180 Ω (500 mA)
 - FB453215 (1812) Series: From 70 Ω (600 mA) to 130 Ω (500 mA)

G. Applications:

- Game Consoles
- Set Top Boxes
- Cables Modems
- Computers
- Mobile Communication Devices (Cell Phones, Radios, etc.)