AE015Z101051

Ver.1.00

SPECIFICATION

FERRITE BEAD INDUCTORS

FBA04HA600NA－00

TAIYO YUDEN

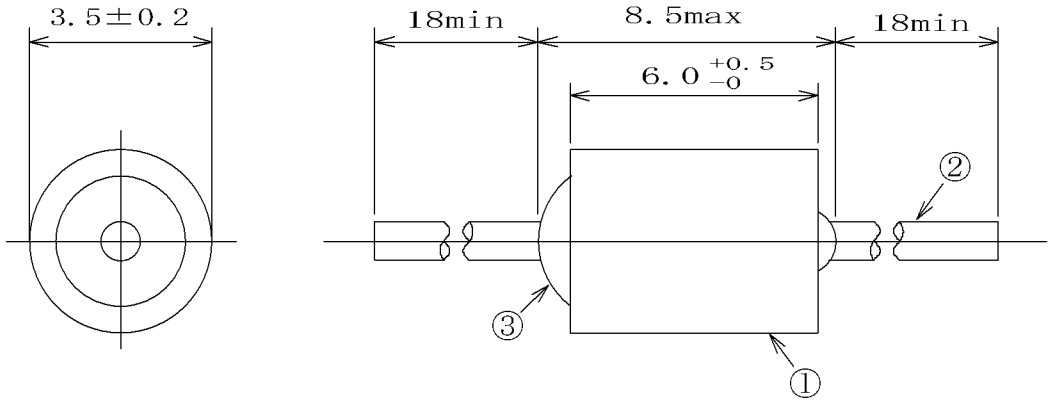
SPECIFICATION

Description　　Ferrite Bead Inductor

Product code　　FBA04 HA 600 NA － 00
①　②　③　④　⑤　⑥

① Type　② Impedance Frequency Characteristics
③ Impedance value　④ Configuration symbol (Bulk products : NA)
⑤ Wire Diameter　⑥ Auxiliary symbols

Structual Specification
Configuration・Dimension



(Unit: mm)

Tolerance unless otherwise specified: ±0.2
Appearance : There is practically no harmful defect

Materials

	Structual parts	Materials
1	Core	Ferrite Core
2	Lead Wire	Solder Plated Copper (Sn/Cu) φ0.65
3	Adhesive	Epoxy Resin

A. Rating

	Items	Standard Value	
1	Rated Current	DC 7Amax	No external abnormality and no disconnection observed After 30minuts loading, measurement of value shall be within ±20% of the initial characteristics. No external abnormality and disconnection observed. However, electrical charactistics during current flow are beyond the scope of guarantee.

Operating temperature range　−25～+85℃
Storage temperature range　−40～+85℃

B. Test condition

Standard tests shall be conducted at 5-35 ℃ and a relative humidity of 45-85 %.
If any doubtful result is obtained, conduct the relevant test again at 23±2 ℃ and a relativ humidity of 60-70 %. Unless otherwise specified, all tests shall be conducted under standard conditions.

C. Electrical Specification

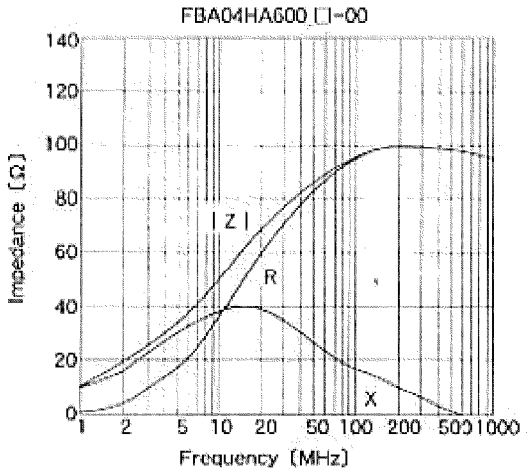
Product code	Impedance	Measuring frequency	Resistance	Insulation Resistance	Adhesive Color Code
FBA04HA600NA-00	60Ωmin	50MHz	10mΩmax	1MΩmin	Pink

Impedance　Equipment : RF Impedance Analyzer 4191A(HP)
Test Fixture : 16092A
Resistance　Equipment : DC Volt Meter
Insulation Resistance　Equipment : Insulation Resistance Meter
(These beads shall be measured between the lead and the side of the bead, using.)
Conduct measurement of electrical characteristics after applying DC 100V for 60 sec.

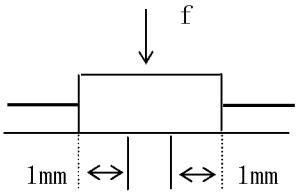
D. Impedance Frequency Characteristics(Typical)

Equipment : RF Impedance Analyzer 4191A(HP) its equivalent

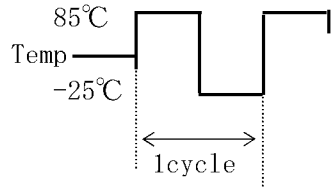
Test Fixture : 16092A(HP



E. Mechanical Specification

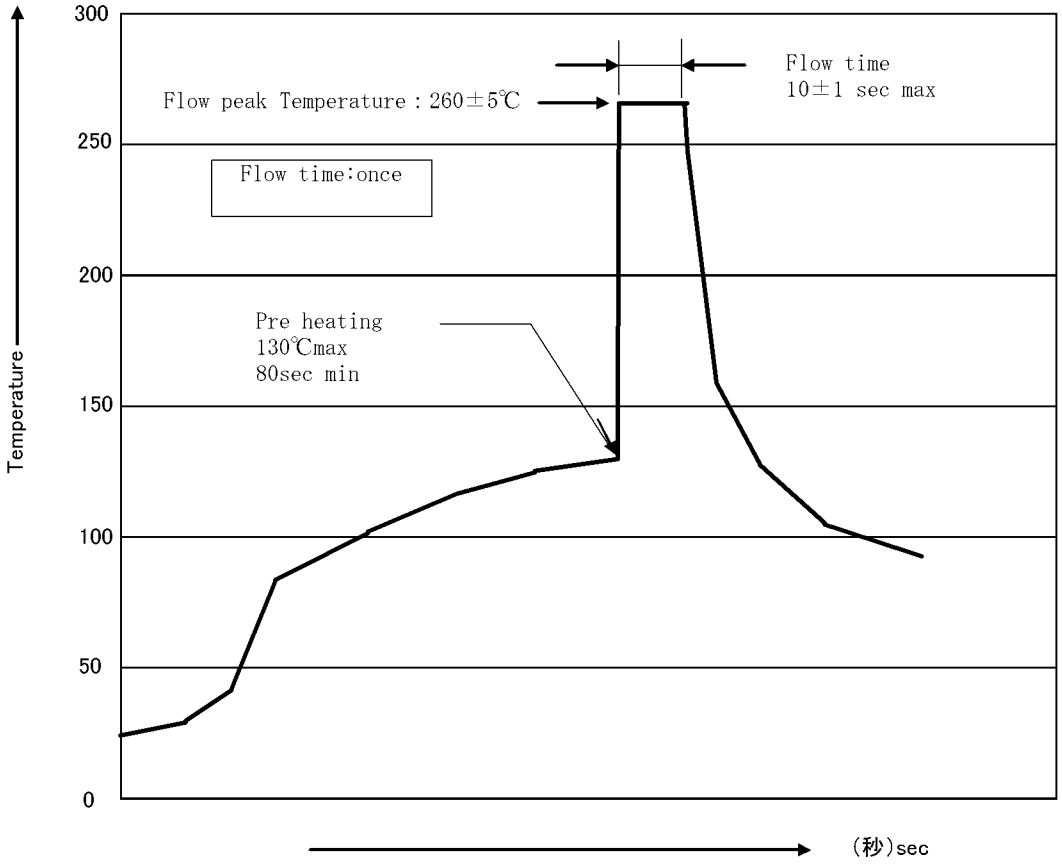
	Items	Specifications	Test Condition
1	Tensile strength of lead wire	After this test, all devices must Conform to the mechanical specification.	A bead shall be fixed and static loaded 20±1N (2.0±0.1 kgf) in axial direction of lead wire in 10±1 seconds. (JIS C0051.2.5.2)
2	Bending strength of lead wire	After this test, all devices must Not be disconnected	A bead shall be fixed and static loaded 5N(0.51 kgf) force in axial direction of lead wire, and a bead shall be bended 90 and bended 90 against After this test (JIS C0051 4.5.)
3	Shearing Strength	Neither harmful damage such as crack, nor breaking wire	A bead shall be fixed and static loaded 50±3N(5.1±0.3kgf) shearing direction in 30±1sconds as showing figure. 

F. Reliability

	Items	Specifications	Test Condition
1	Solderbility	The dipped surface of the wire shall be at least 90%covered with new solder coating.	The wire of products are immersed for 3±1 seconds in molten solder(JIS Z3282 H63A) at temperature of 230±5℃. (JIS C0050)
2	Resistance to Soldering Hest	No abnormality observed. To be within ±20% of the initial characteristic value.	These devices must withstand immertion of terminals for 3±1 seconds in molten solder at temperature of 350±5℃, and for 10±1 seconds in molten solder at temperature of 260±5℃ (JIS C0050) Allow it to stand at room temperature for 3h, then measure.
3	Heat Shock		All devices shall be tested 5 cycles continuous operation with the following ambient cycle: Allow it to stand At Room Temperature for 3h, then measure. 
4	Damp Heat		Place the sample in a thermo hygrostat oven at 60±2℃ and a relative humidity of 90-95% for 1000h, take the sample out, allow it to stand at room temperature for 3h, then measure. (JIS C0022)
5	Resistance to Vibration	No breaking of wire No abnormality observed. To be within ±20% of the initial characteristic value.	Conform to JIS C0040 Vibration type : Class A Vibration directions X, Y, and Z each for 2h (total 6h) Vibration frequency : 10-55-10 Hz (1 min) Full amplitude : 1.5 mm Product hold : Solder on PC board.
6	Solvent Proof	No abnormality observed. To be within ±20%of the initial characteristic value.	After the test of "JIS C0052 Method I ", all devices must conform to be the electrical and mechanical specification. The solvent test: Aceton and Tri-chloro-ethilene. Allow it to stand At Room Temperature for 3h, then measure.

G.Soldering Condition

Flow soldering Recommended temperature profile



Iron tip temperature

350℃max/ Within 3sec

Solder iron is assumed to be 30W or less and there must not be abnormal pressurizing in the lead terminal.

H. Packaged Specifications

h-1 Packing Type

Packing Type	Configuration	Configuration symbol	Standard quantity	Remarks
Bag	Bulk	NA	1000PCS. / Bag	

h-2 Package Markings

1. Customer product name
2. Supplier product name
3. Lot No.
4. Quantity

Ⅰ. Production base

JAPAN : TAIYO YUDEN CO., LTD. 【Gunma-Ken】

KOREA : KOREA TONGYANG YUDEN CO., LTD.

CHINA : TAIYO YUDEN (TIANJIN) ELECTRONICS CO., LTD.

J. Environmental destruction material existence

Environmental Load (Destructive) Substances And Harmful Substances

In the manufacture of the product, our company's processes (including those of all cooperative and associated companies of ours) do not employ environmental load (destructive) substances or harmful substances (ozone layer depletion substances, special bromine flame retardant substances, heavy metals, etc.) indicated within the frame below.We have also confirmed that the purchased materials do not contain any of such substances.

(1)Ozone Layer Depletion Substances
CFC－11,12,13,111,112,113,114,115,211,212,214,215,216,217
Halon 1211,1301,2402
Carbon Tetrachloride
1,1,1, -Trichloroethane (Methyl Chloroform)

(2)Special Bromine Flame-Retardant Substances
PBBEs (PBBO,PBDO,PBDPO,PBDE,PBDPE,DBDO) OBDO,TBDO,PBB

(3)Heavy Metals(Definitions)
Mercury and its compounds, lead and its compounds,cadmium and its compounds, hexavalent chromium compounds.

(4)Others
Asbestos, arsenic and its compounds cyanogens and compounds
PCB (Polychorinated Biphenyl)
Trichloroethylene, tetrachloroethylene, amine compounds

K. Storage

To maintain the solderability of terminal electrodes and to keep the packing material in Good condition, temperature and humidity in the storage area should be controlled.

Recommended conditions.

Ambient temperature　　0 ～ 40 ℃

Humidity　　Below 70 % RH

The ambient temperature must be kept below 30 ℃. Even under ideal storage conditions, solderability of products electrodes may decrease as time passes, so inductors should be used within 6 months from the time of delivery.

[SPECIAL NOTICE]

■All of the contents specified here are subject to change without notice due to technical improvements, etc. Therefore, please check latest version of the components specifications carefully before practical application or usage of the components.
Please note that Taiyo Yuden Co., Ltd. shall not be responsible for any defects in products or equipment incorporating such products, which are caused under the conditions other than those specified in this specification or individual specification.

■Please conduct validation and verification of products in actual condition of mounting and operating environment before commercial shipment of the equipment.

■All electronic components in this specification are developed, designed and intended for use in general electronics equipment.(for AV, office automation, household, office supply, information service, telecommunications, (such as mobile phone or PC) etc.).
Before incorporating the components or devices into any equipment in the field such as transportation,(automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network (telephone exchange, base station) etc. which may have direct influence to harm or injure a human body, please contact Taiyo Yuden Co., Ltd. for more detail in advance.
Do not incorporate the products into any equipment in fields such as aerospace, aviation, nuclear control, submarine system, military, etc. where higher safety and reliability are especially required.
In addition, even electronic components or functional modules that are used for the general electronic equipment, if the equipment or the electric circuit require high safety or reliability function or performances, a sufficient reliability evaluation check for safety shall be performed before commercial shipment and moreover, due consideration to install a protective circuit is strongly recommended at customer's design stage.

■The contents of this specification are applicable to the products which are purchased from our sales offices or distributors (so called "TAIYO YUDEN's official sales channel").
It is only applicable to the products purchased from any of TAIYO YUDEN's official sales channel.

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