

MGB Series

Specification

Product Name	Chip Ferrite Bead For GHz Range
Series	MGB Series
Size	MGB1005 G



MGB SERIES (Chip Ferrite Bead for GHz Range) Engineering Specification

Features and Application

- Effectively filtering capability over a wide range of frequency (Several MHz to GHz)
- Monolithic inorganic material construction
- Closed magnetic circuit avoids crosstalk
- Excellent solderability and heat resistance
- High reliability

RF and wireless communication, information technology equipment which includes computer, laptop, telecommunications, radar detectors, automotive electronics, cellular phones, pagers, audio equipment, PDAs, keyless remote system and Navigator systems

1. PART NUMBER AND CHARACTERISTICS TABLE

Part No.	Impedance(Ω) \pm 25% @ 100MHz	Impedance(Ω) \pm 40% @ 1GHz	DCR(Ω) (Max.)	Rated Current (mA)
MGB1005G601FBP	600	1400	0.85	300
MGB1005G102YBP	1000	2000	1.25	250
	Test Level : 250 mV			
Test Instrument :	<ul style="list-style-type: none"> • Agilent E4991A RF Impedance / Material Analyzer • HP4338B Milliohmmeter • Agilent 5071C S-Parameter Network Analyzer 			

** For special part number which is not shown in the above table, please refer to appendix.

2. PART NUMBER CODE

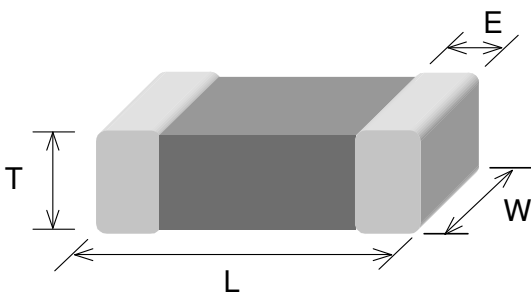
MGB 1005 G 60 1 F B P
 1 2 3 4 5 6 7 8

- 1 Series Name
- 2 Size Code: the first two digitals : length(mm), the last two digitals : width(mm)
- 3 Material Code
- 4 Impedance(Ω) $\pm 25\%$ } (ex : 601=600 Ω)
- 5 Fixed Decimal Point }
- 6 Rated Current Code

C=100mA	D=150mA	E=200mA	F=300mA	G=400mA
H=500mA	L=1000mA	M=1500mA	N=2000mA	Y=250mA

- 7 Soldering : Green Parts: B— Lead-Free for whole chip
- 8 Packaging: P - Embossed paper tape, 7" reel.

3. SHAPES AND DIMENSIONS

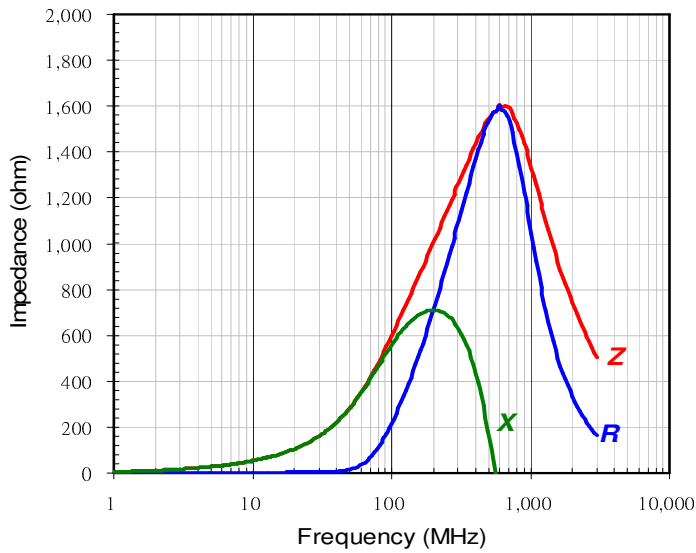


TYPE	100505 (EIA 0402)
L	1.00 \pm 0.10
W	0.50 \pm 0.10
T	0.50 \pm 0.10
E	0.25 \pm 0.10
Unit	mm

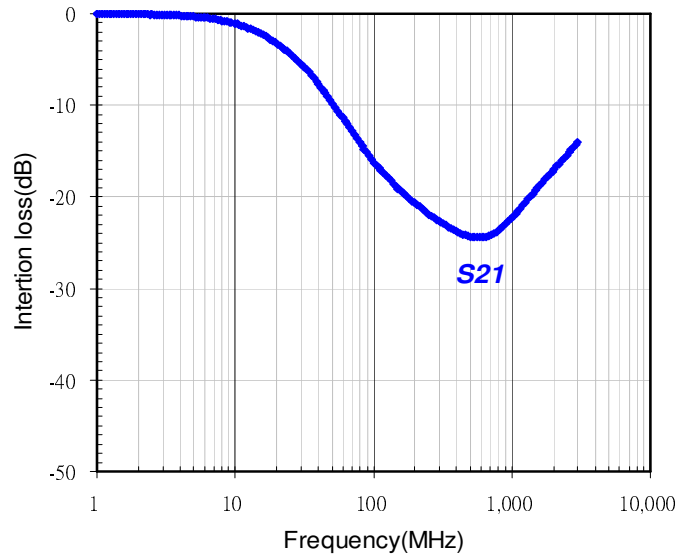
4. TYPICAL CHARACTERISTIC

MGB1005G601

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

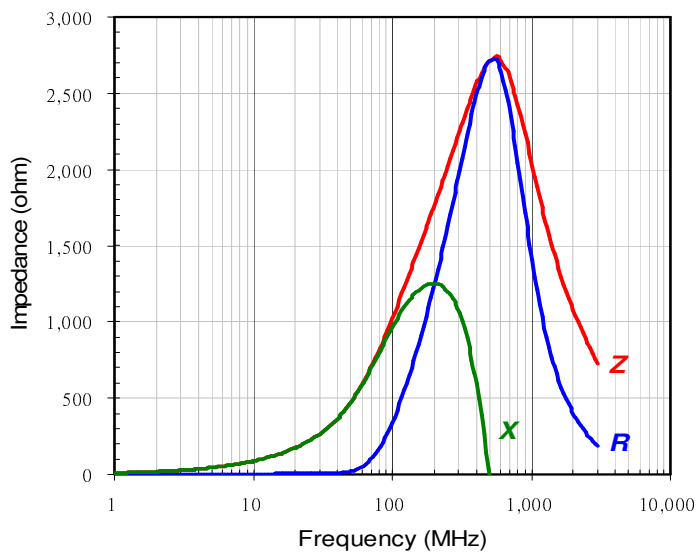


INSERTION LOSS vs. FREQUENCY CHARACTERISTICS

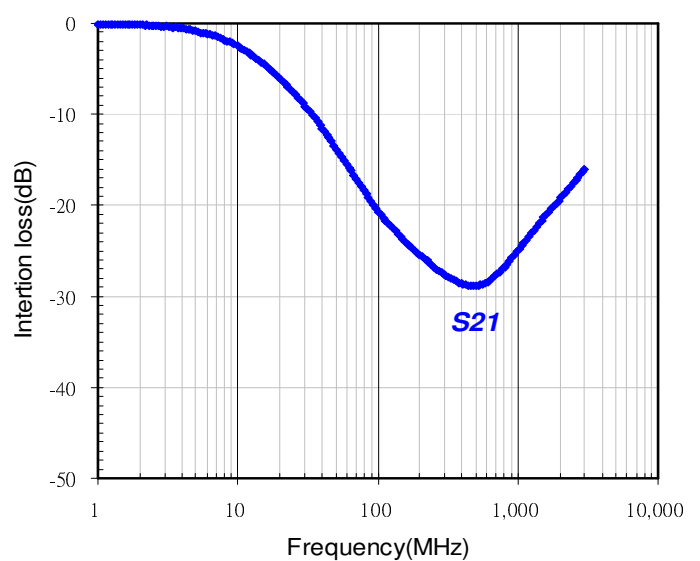


MGB1005G102

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

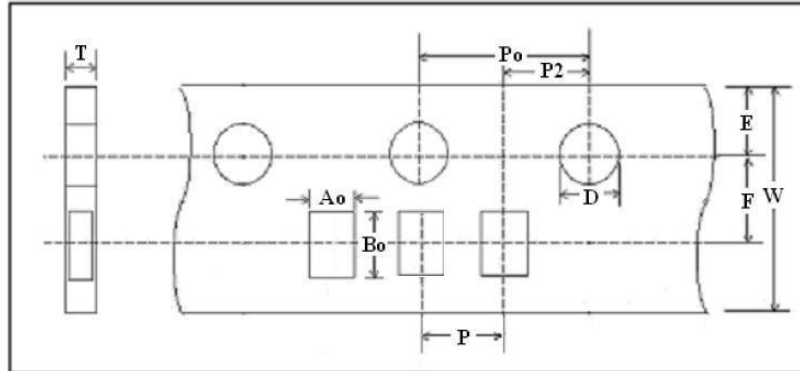


INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



5. TAPE AND REEL SPECIFICATIONS

PAPER CARRIER

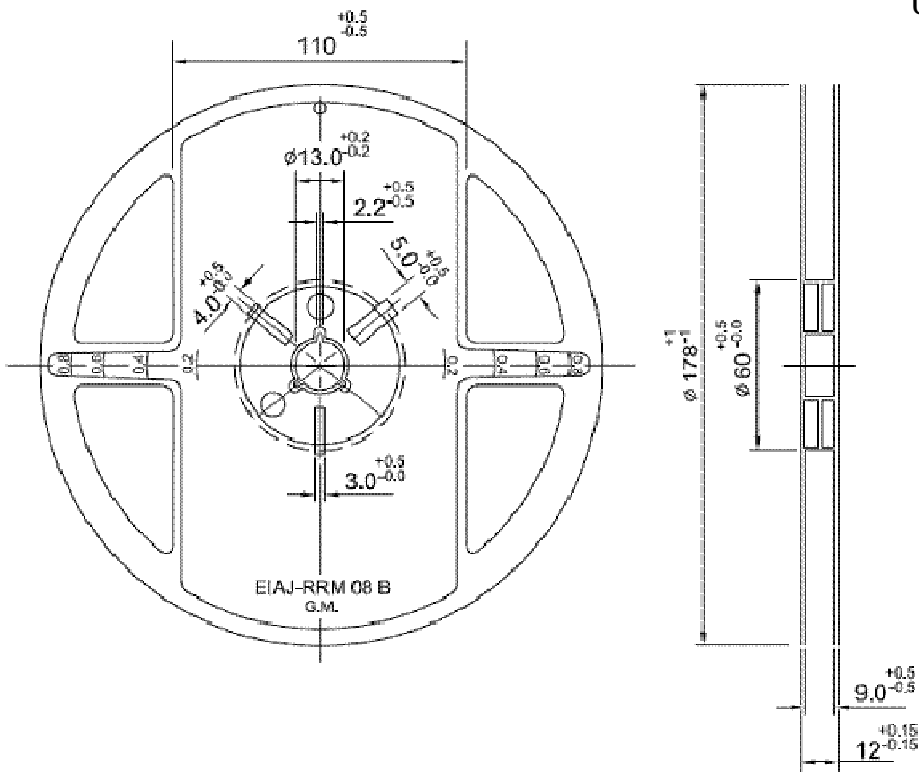


6. TAPING DIMENSIONS

Size(mm)	100505
Symbol	PAPER
W	8.00 ± 0.10
P	2.00 ± 0.05
E	1.75 ± 0.05
F	3.50 ± 0.05
D	1.55 ± 0.05
D1	NA
Po	4.00 ± 0.10
Po10	NA
P2	2.00 ± 0.05
Ao	0.62 ± 0.03
Bo	1.12 ± 0.03
Ko(T)	0.60 ± 0.03
t	NA

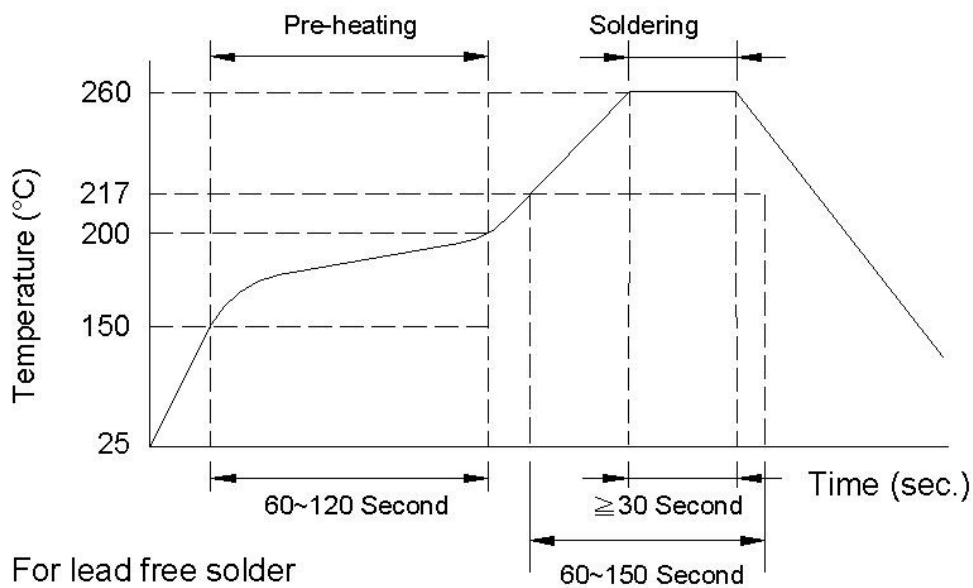
7. REEL DIMENSIONS

Unit : mm

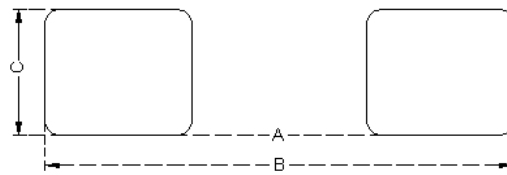


7" Reel Packaging Quantity	
Part Size (EIA Size)	1005 (0402)
Qty.(pcs)	10,000
BOX	5 reels / inner box

8. RECOMMENDED SOLDERING CONDITIONS



9. LAND PATTERNS FOR REFLOW SOLDERING



Size(mm)	A	B	C
1005	0.4 ~ 0.6	1.6 ~ 2.6	0.4 ~ 0.7
EIA 0402	(0.015 ~ 0.023)	(0.063 ~ 0.102)	(0.016 ~ 0.027)

10. RELIABILITY AND TEST CONDITION

Test item	Test condition	Criteria
Temperature Cycle	<ul style="list-style-type: none"> a. Temperature : -40 ~ +85°C b. Cycle : 100 cycles c. Dwell time : 30minutes d. Measurement : at ambient temperature 24 hrs after test completion 	<ul style="list-style-type: none"> a. No mechanical damage b. Impedance value should be within $\pm 20\%$ of the initial value
Operational Life	<ul style="list-style-type: none"> a. Temperature : 125°C \pm 5°C b. Test time : 1000 hrs c. Apply current : full rated current d. Measurement : at ambient temperature 24 hrs after test completion 	<ul style="list-style-type: none"> a. No mechanical damage b. Impedance value should be within $\pm 20\%$ of the initial value
Biased Humidity	<ul style="list-style-type: none"> a. Temperature : 40°C \pm 2°C b. Humidity : 90 ~ 95 % RH c. Test time : 1000 hrs d. Apply current : full rated current e. Measurement : at ambient temperature 24 hrs after test completion 	<ul style="list-style-type: none"> a. No mechanical damage b. Impedance value should be within $\pm 20\%$ of the initial value

Test item	Test condition	Criteria
Resistance to Solder Heat	a. Solder temperature : $260 \pm 5^{\circ}\text{C}$ b. Flux : Rosin c. DIP time : 10 ± 1 sec	a. More than 95 % of terminal electrode should be covered with new solder b. No mechanical damage c. Impedance value should be within ± 20 % of the initial value
Adhesive Test	a. Reflow temperature : 245°C It shall be Soldered on the substrate applying direction parallel to the substrate b. Apply force(F) : 5 N c. Test time : 10 sec	a. No mechanical damage b. Soldering the products on PCB after the pulling test force > 5 N
Rated Current Test	a. Apply current : full rated current / 5min	Temperature rise should be less than 25°C

11. GENERAL TECHNICAL DATA

Operating temperature range : $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

Storage Condition : Less than 40°C and 70% RH

Storage Time: 6 months Max.

Soldering method: Reflow