客戶名稱 CUSTOMER ： Qisda

Document No.: 00031XXXXXXX
Approval Sheet Rev.: A0
Spec. Rev. : A19

# 承　認　書

# APPROVAL SHEET

產品品名/Product Model No. : MHC1608S101QBP

客戶料號/Customer No. :

發行日期/ Issue Date : 2022/05/13

承認日期/ Approved Date :

**Approved by customer: (signing or stamping here)**

佳邦科技股份有限公司
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# Chip Ferrite Bead for High Current (MHC-S Series) Engineering Spec.

RoHS

This product belongs to the 3C and industrial grade standard, not for automotive application. If customer privately uses to automotive parts and results in any consequences, INPAQ is not responsible for after-sales service, thank you!

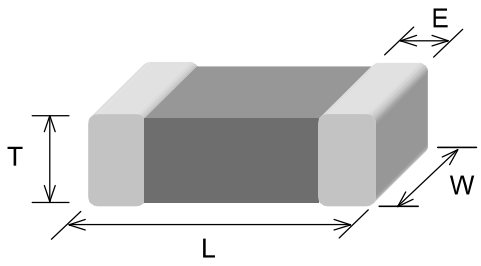
## ■ FEATURES

- Combination of high frequency noise suppression with capability of handing high current
- The current rating up to 6 Amps with low DCR

## ■ APPLICATIONS

- High current DC power lines
- Circuits where a stable ground in unavailable

## ■ SHAPES AND DIMENSIONS




| TYPE | 1608 (EIA 0603) |
|---|---|
| L | 1.60±0.15 |
| W | 0.80±0.15 |
| T | 0.80±0.15 |
| E | 0.30±0.20 |
| Unit | mm |

## ■ PART NUMBER CODE

| MHC | 1608 | S | 10 | 1 | Q | 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) ± 25%
5 Fixed Decimal Point
(ex：121 = 120Ω；600 = 60Ω)
6 Rated Current Code

| | | | |
|---|---|---|---|
| L=1000mA | M=1500mA | N=2000mA | P=2500mA |
| Q=3000mA | R=4000mA | U=5000mA | W=6000mA |

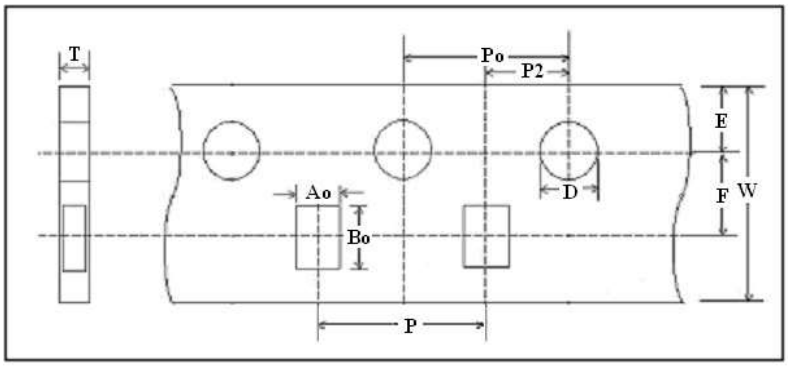
7 Soldering: Green Parts: A— Soldering Lead-Free B— Lead-Free for whole chip
8 Packaging: P - Paper tape, 7" reel.

## ■ PRODUCT DETAIL

| Part No. | Impedance (Ω) +/-25% | Test Freq. (MHz) | DCR(Ω) (Max.) | Rated Current (mA) |
|---|---|---|---|---|
| MHC1608S101QBP | 100 | 100 | 0.04 | 3000 |
| | •Test Level：250 mV | | | |
| Test Instruments： | •HP4291B RF IMPEDANCE / MATERIAL ANALYZER or EQUIVALENT<br>•HP4338A/B MILLIOHMMETER<br>•Agilent E5071C ENA SERIES NETWORK ANALYZER<br>•HP6632B SYSTEM DC POWER SUPPLY | | | |

## ■ TAPE AND REEL SPECIFICATIONS

### PAPER CARRIER

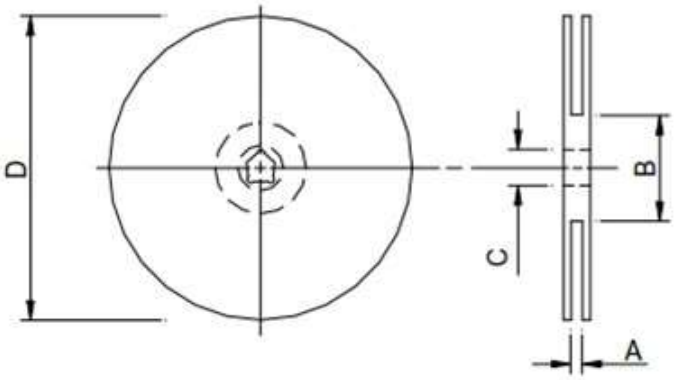



## ■ TAPING DIMENSIONS

Unit: mm

| Size | **1608** |
|---|---|
| Symbol | PAPER |
| W | 8.00±0.10 |
| P | 4.00±0.10 |
| E | 1.75±0.10 |
| F | 3.50±0.10 |
| D | 1.56±0.10 |
| D1 | NA |
| Po | 4.00±0.10 |
| Po10 | NA |
| P2 | 2.00±0.10 |
| Ao | 1.05±0.05 |
| Bo | 1.85±0.05 |
| Ko(T) | 0.95±0.05 |
| t | NA |

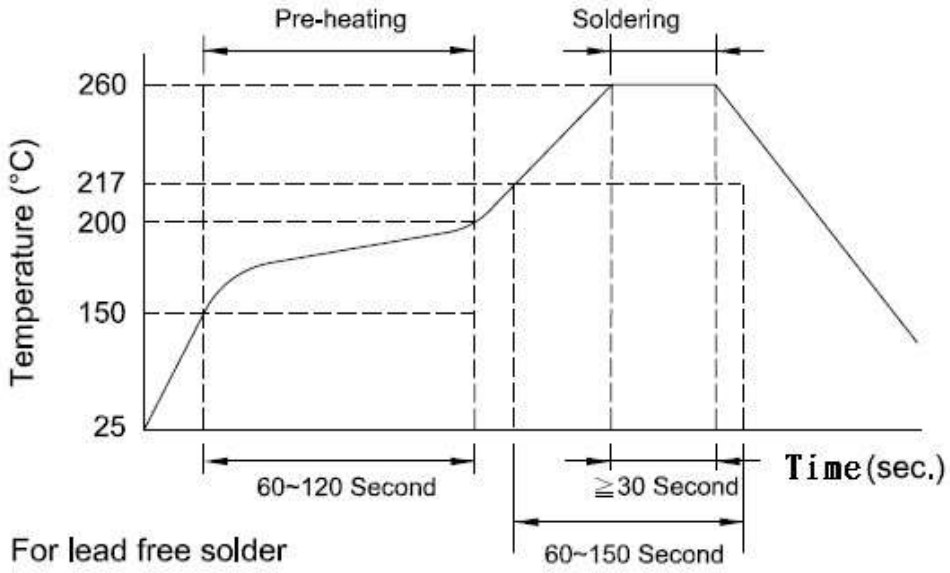
## ■ REEL DIMENSIONS



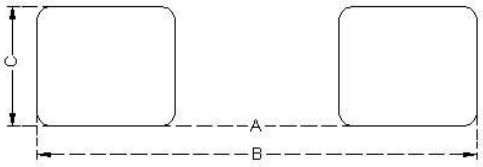

| Type | 7" |
|---|---|
| A(mm) | 10±1.5 |
| B(mm) | 50 or more |
| C(mm) | 13.2±1.0 |
| D(mm) | 178±2.0 |

| 7" Reel Packaging Quantity | |
|---|---|
| PART SIZE (EIA SIZE) | **1608 (0603)** |
| Qty.(pcs) | 4,000 |
| BOX | 5 reels / inner box |

## ■ RECOMMENDED SOLDERING CONDITIONS



## ■ LAND PATTERNS FOR REFLOW SOLDERING




## ■ SOLDER LAND INFORMATION

Unit: mm (inches)

| Size | A | B | C |
|---|---|---|---|
| 1608 | 0.7<br>(0.028) | 1.8 ~ 2.0<br>(0.071 ~ 0.079) | 0.7<br>(0.028) |

## ■ RELIABILITY AND TEST CONDITION

| Test item | Test condition | Criteria |
|---|---|---|
| **Thermal Shock** | a. Temperature : -40 ~ +85°C<br>b. Cycle : 100 cycles<br>c. Dwell time : 30minutes<br>d. Measurement : at ambient temperature 24 hrs after test completion | a. No mechanical damage<br>b. Impedance value should be within ± 20 % of the initial value |
| **Operational Life** | a. Temperature : 125°C ± 5°C<br>b. Test time : 1000 hrs<br>c. Apply current : full rated current<br>d. Measurement : at ambient temperature 24 hrs after test completion | a. No mechanical damage<br>b. Impedance value should be within ± 20 % of the initial value |
| **Rated Current Test** | a. Apply current : full rated current / 5min | Temperature rise should be less than 40°C |

| Test item | Test condition | Criteria |
|---|---|---|
| **Biased Humidity** | a. Temperature : 40°C ± 2°C<br>b. Humidity : 90 ~ 95 % RH<br>c. Test time : 1000 hrs<br>d. Apply current : full rated current<br>e. Measurement : at ambient temperature 24 hrs after test completion | a. No mechanical damage<br>b. Impedance value should be within ± 20 % of the initial value |
| **Resistance to Solder Heat** | a. Solder temperature : 260 ± 5°C<br>b. Flux : Rosin<br>c. DIP time : 10 ± 1 sec | a. More than 95 % of terminal electrode should be covered with new solder<br>b. No mechanical damage<br>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 paralle1 to the substrate<br>b. Apply force(F) : 5 N<br>Test time : 10 sec | a. No mechanical damage<br>b. Soldering the products on PCB after the pulling test force > 5 N |
| **Steam Aging Test** | a. Temperature : 93°C<br>b. Test time : 8 hrs<br>c. Solder temperature : 235 ± 5°C<br>d. Flux : Rosin<br>e. DIP time : 5 ± 1 sec | More than 95 % of terminal electrode should be covered with new solder |

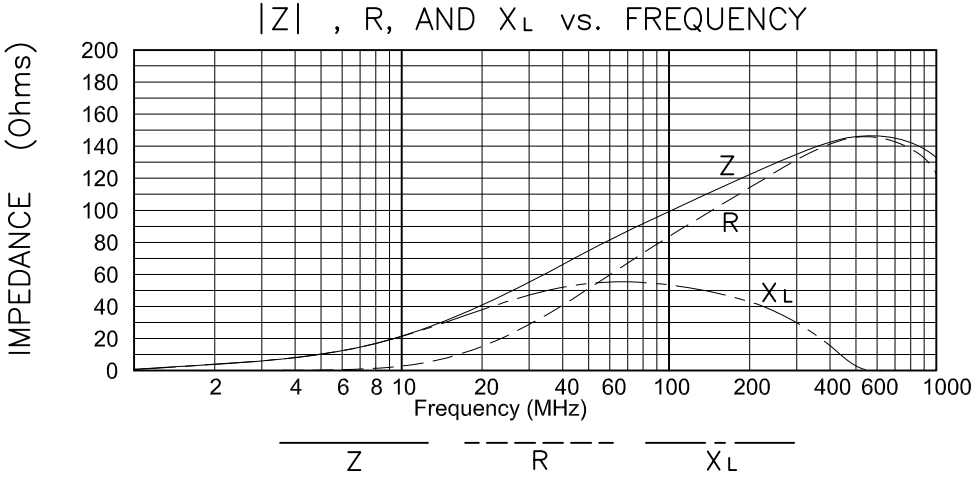
## ■ GENERAL TECHNICAL DATA

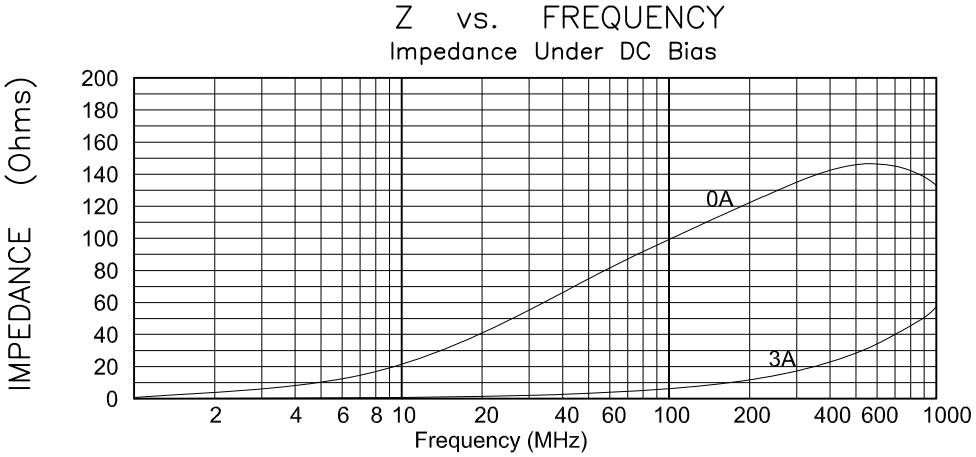
Operating temperature range： - 55℃ ~ +125℃
Storage Condition：Less than 40℃ and 70% RH
Storage Time：12 months Max.
Soldering method：Reflow

# MHC 1608S 101QBP

## ELECTRICAL CHARACTERISTICS:

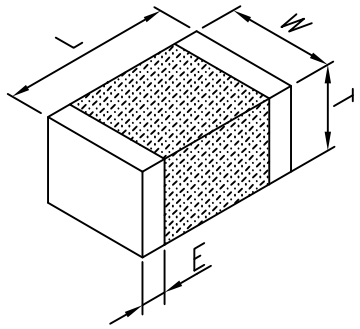
| | Z @ 100MHz (Ohms) | DCR (Ohms) | Rated Current |
|---|---|---|---|
| Nominal | 100 | | |
| Minimum | 75 | | |
| Maximum | 125 | 0.04 | 3000mA |




Agilent 4291B RF Impedance/Material Analyzer
HP 16192A Fixture

OSC level : 250 mV



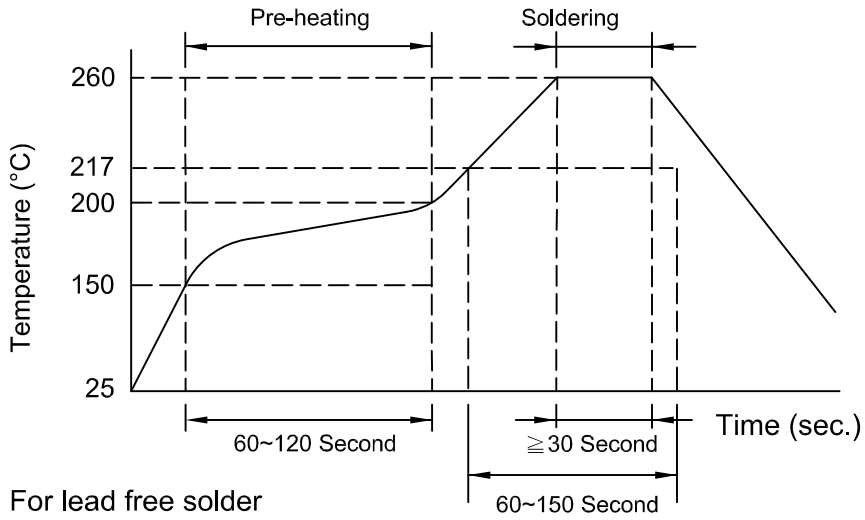

## PHYSICAL DIMENSIONS:

L 1.60(0.063) ±0.150(0.006)
W 0.80(0.031) ±0.150(0.006)
T 0.80(0.031) ±0.150(0.006)
E 0.30(0.012) ±0.200(0.008)

NOTES: UNLESS OTHERWISE SPECIFIED
1.-All edges and corners must be rounded.
2.-Dimensions are in millimeters (inches)
3.-Taped and Reeled per current EIA specification.

## RECOMMENDED SOLDERING CONDITIONS

Reflow Soldering




For lead free solder

| | APPROVER | DATE | 2010/03/11 |
|---|---|---|---|
| | Sharon | CFM. | |

# 出貨包裝規格-軒慶



貼標籤




裝入六角盒



紙箱 A 大



裝入紙箱
(外箱貼標籤)

| | | | |
|---|---|---|---|
| UNLESS OTHER SPECIFIED TOLERANCES ON：<br>X=±　X.X=±　X.XX=<br>ANGLES=±　HOLEDIA=± | | 佳邦科技股份有限公司<br>INPAQ TECHNOLOGY CO.,Ltd | |
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| TITLE：一般出貨包裝規格 | | DOCUMENT NO. PKS000000680 | PAGE REV. A0 |

# 出貨包裝規格-軒慶

## 包裝材料:




800000204403 六角盒



800001815101 紙箱 A 大(370*370*265mm)

| | | | |
|---|---|---|---|
| UNLESS OTHER SPECIFIED TOLERANCES ON：<br>X=± X.X=± X.XX=<br>ANGLES=± HOLEDIA=± | | 佳邦科技股份有限公司<br>INPAQ TECHNOLOGY CO.,Ltd | |
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