

# HI 1005 Series

## High Frequency Multilayer Chip Inductors

### Features

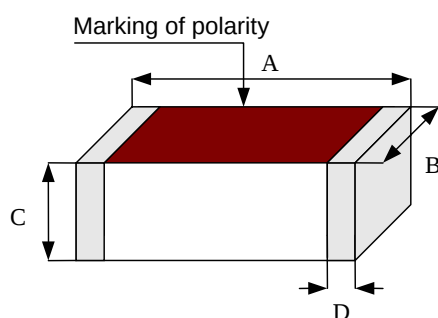
- ❖ Monolithic structure ensuring high performance and reliability.
- ❖ High frequency applications up to 6GHz.

### Applications

- ❖ RF modules for telecommunication systems including GSM, PCS, DECT, WLAN, Bluetooth, etc.



### Shape and Dimensions



Unit : mm (inch)

| TYPE | EIA Code | A               | B               | C               | D                |
|------|----------|-----------------|-----------------|-----------------|------------------|
| 1005 | 0402     | 1.00<br>±0.10   | 0.50<br>±0.10   | 0.50<br>±0.10   | 0.23<br>±0.10    |
|      |          | (.040<br>±.004) | (.020<br>±.004) | (.020<br>±.004) | (.0092<br>±.004) |

\* Marking of polarity indicating the magnetic flux direction is taped upward.

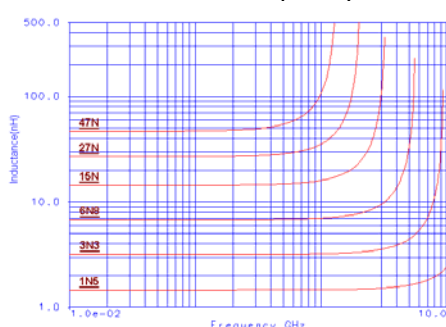
### Part Number

**HI**   **1005**   **-**   **1**   **C**   **4N7**   **□**   **□**   **□**  
 ①   ②   ③   ④   ⑤   ⑥   ⑦   ⑧

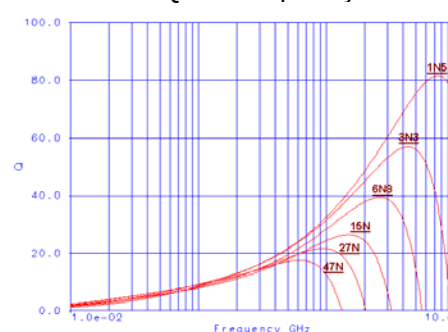
|              |                                    |                        |                                      |
|--------------|------------------------------------|------------------------|--------------------------------------|
| ① Type       | HI :High Frequency Inductors       | ② Dimensions ( L × W ) | 1.0 × 0.5 mm                         |
| ③ Circuit    | 1 : Single                         | ④ Material Code        | B (lead-containing)<br>C (lead-free) |
| ⑤ Inductance | 4N7=4.7nH<br>47N=47nH<br>R10=100nH | ⑥ Tolerance            | S:±0.3nH,<br>J:±5%,      K:±10%      |
| ⑦ Marking    | M: With marking                    | ⑧ Packaging            | T: Tape & Reel<br>B: Bulk            |

### Typical Electrical Characteristics

L vs. Frequency



Q vs. Frequency



## Specifications

| Part Number     | Inductance (nH)    | Q Min. | L/Q Freq. (MHz) | R <sub>DC</sub> (Ω) Max. | S.R.F. (MHz) Typ. | I <sub>DC</sub> (mA) Max. | Q'ty/ Reel (pcs) |
|-----------------|--------------------|--------|-----------------|--------------------------|-------------------|---------------------------|------------------|
| HI1005-1_1N0_M_ | 1.0 ± 0.3          | 8      | 100             | 0.12                     | >15000            | 300                       | 10,000           |
| HI1005-1_1N2_M_ | 1.2 ± 0.3          | 8      | 100             | 0.12                     | >15000            | 300                       |                  |
| HI1005-1_1N5_M_ | 1.5 ± 0.3          | 8      | 100             | 0.13                     | >15000            | 300                       |                  |
| HI1005-1_1N8_M_ | 1.8 ± 0.3          | 8      | 100             | 0.14                     | 14000             | 300                       |                  |
| HI1005-1_2N2_M_ | 2.2 ± 0.3          | 8      | 100             | 0.16                     | 12000             | 300                       |                  |
| HI1005-1_2N7_M_ | 2.7 ± 0.3          | 8      | 100             | 0.17                     | 9500              | 300                       |                  |
| HI1005-1_3N3_M_ | 3.3 ± 0.3 or ± 10% | 8      | 100             | 0.19                     | 8500              | 300                       |                  |
| HI1005-1_3N9_M_ | 3.9 ± 0.3 or ± 10% | 8      | 100             | 0.22                     | 7000              | 300                       |                  |
| HI1005-1_4N7_M_ | 4.7 ± 0.3 or ± 10% | 8      | 100             | 0.24                     | 6000              | 300                       |                  |
| HI1005-1_5N6_M_ | 5.6 ± 0.3 or ± 10% | 8      | 100             | 0.27                     | 5400              | 300                       |                  |
| HI1005-1_6N8_M_ | 6.8 ± 5% or ± 10%  | 8      | 100             | 0.32                     | 5000              | 250                       |                  |
| HI1005-1_8N2_M_ | 8.2 ± 5% or ± 10%  | 8      | 100             | 0.40                     | 4600              | 250                       |                  |
| HI1005-1_10N_M_ | 10 ± 5% or ± 10%   | 8      | 100             | 0.45                     | 3700              | 250                       |                  |
| HI1005-1_12N_M_ | 12 ± 5% or ± 10%   | 8      | 100             | 0.50                     | 3200              | 250                       |                  |
| HI1005-1_15N_M_ | 15 ± 5% or ± 10%   | 8      | 100             | 0.60                     | 3100              | 250                       |                  |
| HI1005-1_18N_M_ | 18 ± 5% or ± 10%   | 8      | 100             | 0.65                     | 2900              | 200                       |                  |
| HI1005-1_22N_M_ | 22 ± 5% or ± 10%   | 8      | 100             | 0.80                     | 2100              | 200                       |                  |
| HI1005-1_27N_M_ | 27 ± 5% or ± 10%   | 8      | 100             | 0.90                     | 1900              | 200                       |                  |
| HI1005-1_33N_M_ | 33 ± 5% or ± 10%   | 8      | 100             | 1.00                     | 1600              | 200                       |                  |
| HI1005-1_39N_M_ | 39 ± 5% or ± 10%   | 8      | 100             | 1.20                     | 1400              | 150                       |                  |
| HI1005-1_47N_M_ | 47 ± 5% or ± 10%   | 8      | 100             | 1.30                     | 1200              | 150                       |                  |
| HI1005-1_56N_M_ | 56 ± 5% or ± 10%   | 8      | 100             | 2.00                     | 1100              | 150                       |                  |
| HI1005-1_68N_M_ | 68 ± 5% or ± 10%   | 8      | 100             | 2.20                     | 1000              | 100                       |                  |
| HI1005-1_82N_M_ | 82 ± 5% or ± 10%   | 8      | 100             | 2.50                     | 900               | 100                       |                  |
| HI1005-1_R10_M_ | 100 ± 5% or ± 10%  | 8      | 100             | 2.50                     | 850               | 100                       |                  |
| HI1005-1_R12_M_ | 120 ± 5% or ± 10%  | 8      | 100             | 2.50                     | 750               | 100                       |                  |

Operating Temperature Range : -40 ~ +100 °C

Storage Temperature Range : +5 ~ +35 °C, Humidity 45~75%RH

Storage Period: 12 months max.

Test Method : L and Q : HP 4291B (+16192A)  
 S.R.F. (Self Resonant Frequency) : HP 8722D  
 R<sub>DC</sub> (DC Resistance) : HP 4338B  
 I<sub>DC</sub> (Rated Current) : HP 4284A

## Notes

❖ The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

### Advanced Ceramic X Corp.

16 Tzu Chiang Road, Hsinchu Industrial District Hsinchu Hsien 303, Taiwan

TEL:886-3-5987008 FAX:886-3-5987001

E-mail: [acx@acxc.com.tw](mailto:acx@acxc.com.tw)

<http://www.acxc.com.tw>