

## FEATURES

HFI chip inductors are Jaro's line of high frequency ceramic chip inductors. We have developed highly reliable and versatile chip inductors that will meet your high frequency design requirements.

### • High Frequency Range

HFI chip inductors have a ceramic material construction that extends the effective frequency range to 10GHz.

### • Multiple Size Availability

HFI chip inductors are available in three compact sizes: 060303, 100505, 160808 and 201209.

### • High Q characteristics

H-series HFI chip inductors exhibit higher Q at high frequency.

## APPLICATIONS

HFI chip inductors can be used in a variety of electronics including:

- Cellular Phones
- Pager
- High-Speed Communication Devices
- WALN and RF module

## PRODUCT IDENTIFICATION

1      2      3      4      5      6  
HFI - 160808 - 1N2 S □ □ -P

Product Code

Dimensions (in mm)

Inductance Code

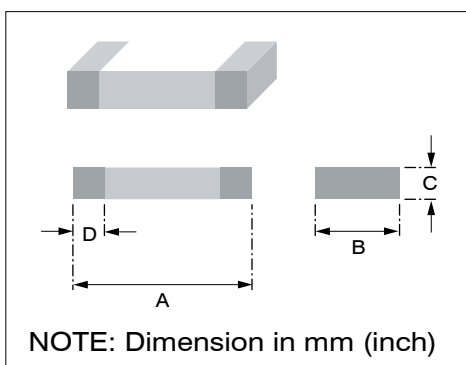
Tolerance Code

Pattern Code

RoHS Code

| Code | Tolerance          |
|------|--------------------|
| G    | $\pm 2\%$          |
| J    | $\pm 5\%$          |
| K    | $\pm 10\%$         |
| C    | $\pm 0.2\text{nH}$ |
| S    | $\pm 0.3\text{nH}$ |

## PRODUCT DIMENSIONS



| PRODUCT NO.          | A                                       | B                                           | C                                           | D                                        |
|----------------------|-----------------------------------------|---------------------------------------------|---------------------------------------------|------------------------------------------|
| HFI-201209<br>(0805) | $2.0 \pm 0.20$<br>( $0.079 \pm 0.008$ ) | $1.2 \pm 0.20$<br>( $0.047 \pm 0.008$ )     | $0.9 \pm 0.20$<br>( $0.035 \pm 0.008$ )     | $0.5 \pm 0.30$<br>( $0.020 \pm 0.012$ )  |
| HFI-160808<br>(0603) | $1.6 \pm 0.15$<br>( $0.063 \pm 0.006$ ) | $0.8 \pm 0.15$<br>( $0.031 \pm 0.006$ )     | $0.8 \pm 0.15$<br>( $0.031 \pm 0.006$ )     | $0.3 \pm 0.20$<br>( $0.012 \pm 0.008$ )  |
| HFI-100505<br>(0402) | $1.0 \pm 0.10$<br>( $0.039 \pm 0.004$ ) | $0.5 \pm 0.10$<br>( $0.020 \pm 0.004$ )     | $0.5 \pm 0.10$<br>( $0.020 \pm 0.004$ )     | $0.25 \pm 0.10$<br>( $0.010 \pm 0.004$ ) |
| HFI-060303<br>(0201) | $0.6 \pm 0.03$<br>( $0.024 \pm 0.001$ ) | $0.33\text{max.}$<br>( $0.012\text{max.}$ ) | $0.33\text{max.}$<br>( $0.012\text{max.}$ ) | $0.15 \pm 0.05$<br>( $0.006 \pm 0.002$ ) |

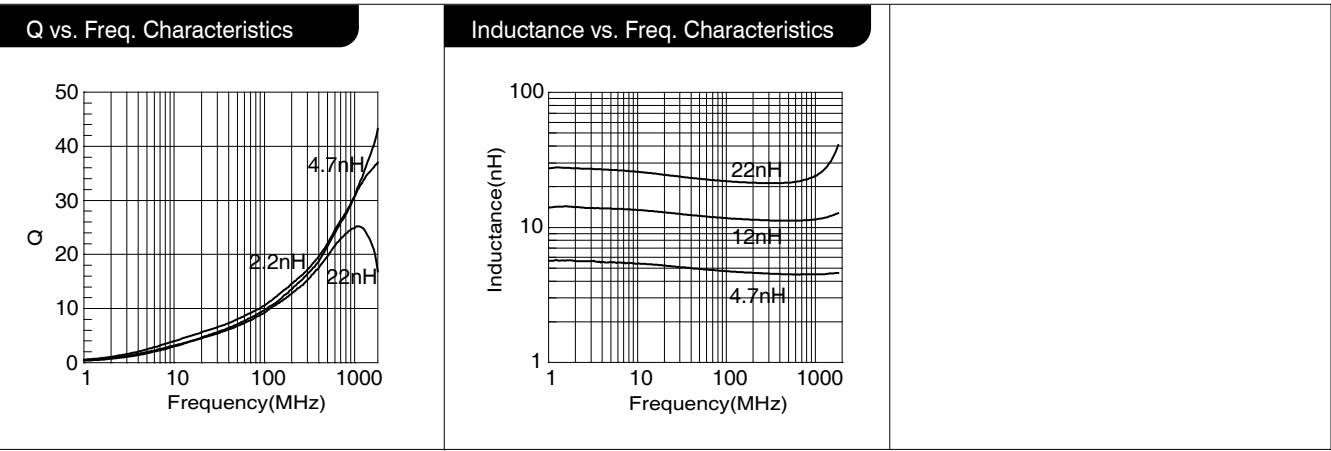
## ■ PRODUCT SPECIFICATIONS

| PART NUMBER     | Inductance<br>(nH)<br>at 100 MHz | Tolerance | Q Min.     | Q Typical  |            |            | S.R.F.(MHz)<br>Min. | R <sub>DC</sub> (Ω)<br>Max. | Rated Current<br>(mA) Max. |
|-----------------|----------------------------------|-----------|------------|------------|------------|------------|---------------------|-----------------------------|----------------------------|
|                 |                                  |           | 100<br>MHz | 100<br>MHz | 500<br>MHz | 800<br>MHz |                     |                             |                            |
| HFI-060303-0N3□ | 0.3                              | C         | 4          | 5          | 13         | 18         | 10000               | 0.07                        | 250                        |
| HFI-060303-0N4□ | 0.4                              | C         | 4          | 5          | 13         | 18         | 10000               | 0.07                        | 250                        |
| HFI-060303-0N5□ | 0.5                              | C         | 4          | 5          | 13         | 18         | 10000               | 0.08                        | 250                        |
| HFI-060303-0N6□ | 0.6                              | C         | 4          | 5          | 13         | 18         | 10000               | 0.08                        | 250                        |
| HFI-060303-0N7□ | 0.7                              | C         | 4          | 5          | 13         | 18         | 10000               | 0.09                        | 250                        |
| HFI-060303-0N8□ | 0.8                              | C         | 4          | 5          | 13         | 18         | 10000               | 0.10                        | 250                        |
| HFI-060303-0N9□ | 0.9                              | C         | 4          | 5          | 13         | 18         | 10000               | 0.10                        | 250                        |
| HFI-060303-1N0□ | 1.0                              | C,S       | 4          | 5          | 15         | 19         | 10000               | 0.14                        | 250                        |
| HFI-060303-1N1□ | 1.1                              | C,S       | 4          | 6          | 15         | 20         | 10000               | 0.14                        | 250                        |
| HFI-060303-1N2□ | 1.2                              | C,S       | 4          | 6          | 15         | 20         | 10000               | 0.14                        | 250                        |
| HFI-060303-1N3□ | 1.3                              | C,S       | 4          | 6          | 15         | 20         | 10000               | 0.14                        | 250                        |
| HFI-060303-1N5□ | 1.5                              | C,S       | 4          | 6          | 15         | 20         | 10000               | 0.18                        | 230                        |
| HFI-060303-1N6□ | 1.6                              | C,S       | 4          | 6          | 15         | 20         | 10000               | 0.18                        | 230                        |
| HFI-060303-1N8□ | 1.8                              | C,S       | 4          | 6          | 15         | 20         | 10000               | 0.19                        | 200                        |
| HFI-060303-2N0□ | 2.0                              | C,S       | 4          | 6          | 15         | 20         | 8800                | 0.20                        | 200                        |
| HFI-060303-2N2□ | 2.2                              | C,S       | 4          | 6          | 15         | 20         | 8800                | 0.22                        | 200                        |
| HFI-060303-2N4□ | 2.4                              | C,S       | 4          | 6          | 15         | 20         | 8300                | 0.24                        | 200                        |
| HFI-060303-2N7□ | 2.7                              | C,S       | 5          | 6          | 16         | 20         | 7700                | 0.25                        | 200                        |
| HFI-060303-3N0□ | 3.0                              | C,S       | 5          | 6          | 16         | 20         | 7200                | 0.28                        | 180                        |
| HFI-060303-3N3□ | 3.3                              | C,S,K     | 5          | 6          | 16         | 20         | 6700                | 0.30                        | 180                        |
| HFI-060303-3N6□ | 3.6                              | C,S,K     | 5          | 6          | 16         | 20         | 6400                | 0.30                        | 170                        |
| HFI-060303-3N9□ | 3.9                              | C,S,K     | 5          | 7          | 16         | 20         | 6000                | 0.30                        | 170                        |
| HFI-060303-4N3□ | 4.3                              | C,S,K     | 5          | 7          | 16         | 20         | 5700                | 0.40                        | 150                        |
| HFI-060303-4N7□ | 4.7                              | C,S,K     | 5          | 7          | 16         | 20         | 5300                | 0.40                        | 150                        |
| HFI-060303-5N1□ | 5.1                              | C,S,K     | 5          | 7          | 16         | 20         | 5000                | 0.40                        | 150                        |
| HFI-060303-5N6□ | 5.6                              | C,S,K     | 5          | 7          | 16         | 20         | 4200                | 0.40                        | 150                        |
| HFI-060303-6N2□ | 6.2                              | G,J,K     | 5          | 7          | 16         | 20         | 3800                | 0.44                        | 150                        |
| HFI-060303-6N8□ | 6.8                              | G,J,K     | 5          | 7          | 16         | 20         | 3500                | 0.50                        | 150                        |
| HFI-060303-7N5□ | 7.5                              | G,J,K     | 5          | 7          | 15         | 20         | 3300                | 0.53                        | 150                        |
| HFI-060303-8N2□ | 8.2                              | G,J,K     | 5          | 7          | 15         | 20         | 3200                | 0.55                        | 150                        |
| HFI-060303-9N1□ | 9.1                              | G,J,K     | 5          | 6          | 15         | 20         | 3000                | 0.62                        | 150                        |
| HFI-060303-10N□ | 10                               | G,J,K     | 5          | 7          | 15         | 19         | 2800                | 0.65                        | 150                        |
| HFI-060303-12N□ | 12                               | G,J,K     | 5          | 7          | 14         | 18         | 2400                | 0.70                        | 100                        |
| HFI-060303-15N□ | 15                               | G,J,K     | 5          | 7          | 14         | 18         | 2200                | 0.80                        | 100                        |
| HFI-060303-18N□ | 18                               | G,J,K     | 5          | 7          | 14         | 18         | 2100                | 0.90                        | 100                        |

PRODUCT SPECIFICATIONS

| PART NUMBER     | Inductance<br>(nH)<br>at 100 MHz | Tolerance | Q Min.     | Q Typical  |            |            | S.R.F.(MHz)<br>Min. | R <sub>DC</sub> (Ω)<br>Max. | Rated Current<br>(mA) Max. |
|-----------------|----------------------------------|-----------|------------|------------|------------|------------|---------------------|-----------------------------|----------------------------|
|                 |                                  |           | 100<br>MHz | 100<br>MHz | 500<br>MHz | 800<br>MHz |                     |                             |                            |
| HFI-060303-22N□ | 2.2                              | G,J,K     | 5          | 7          | 14         | 18         | 1800                | 1.20                        | 100                        |
| HFI-060303-27N□ | 27                               | G,J,K     | 4          | 6          | 14         | 16         | 1800                | 1.80                        | 50                         |
| HFI-060303-33N□ | 33                               | G,J,K     | 4          | 6          | 12         | 14         | 1700                | 2.10                        | 50                         |
| HFI-060303-39N□ | 39                               | G,J,K     | 4          | 6          | 12         | 14         | 1500                | 2.40                        | 50                         |
| HFI-060303-47N□ | 47                               | G,J,K     | 4          | 6          | 11         | 13         | 1300                | 2.80                        | 50                         |

TYPICAL ELECTRICAL CHARACTERISTIC CURVES



# HFI SERIES-100505

High Frequency Ceramic Chip Inductors

CUTTING-EDGE TECHNOLOGIES OF EMI/EMC SOLUTIONS

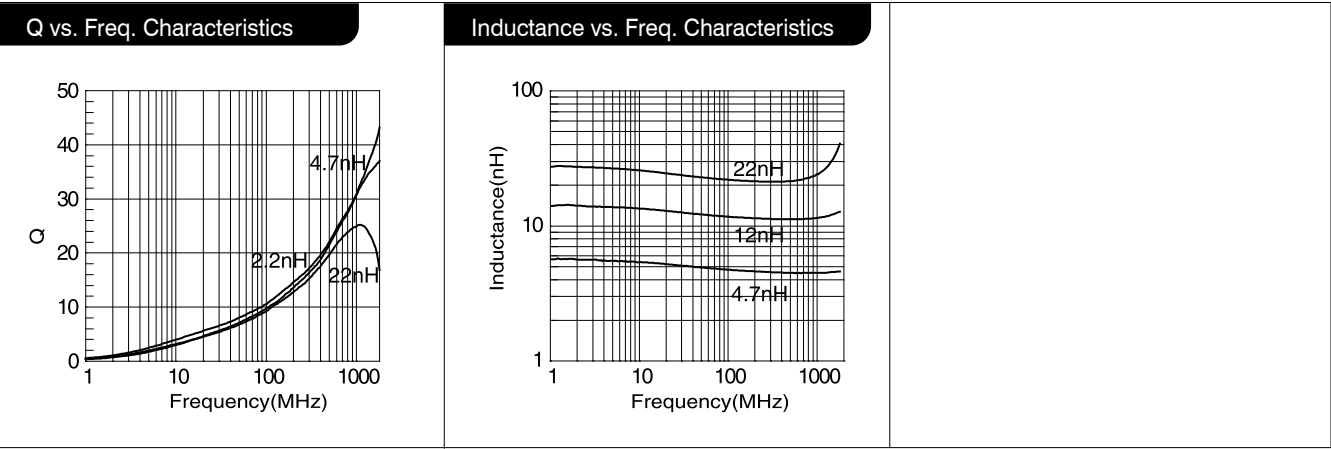
## ■ PRODUCT SPECIFICATIONS

| PART NUMBER     | INDUCTANCE<br>(nH)<br>AT 100 MHz | Q Min. | Q Typical | S.R.F.(MHz)<br>Min. | R <sub>DC</sub> (Ω)<br>Max. | I <sub>DC</sub> (mA)<br>Max. |      |  |
|-----------------|----------------------------------|--------|-----------|---------------------|-----------------------------|------------------------------|------|--|
|                 |                                  | 100MHz | 800 MHz   |                     |                             |                              |      |  |
| HFI-100505-1N0□ | 1.0                              | 8      | 43        | 10000               | 0.12                        | 300                          |      |  |
| HFI-100505-1N1□ | 1.1                              |        |           |                     | 0.13                        |                              |      |  |
| HFI-100505-1N2□ | 1.2                              |        |           |                     |                             |                              |      |  |
| HFI-100505-1N3□ | 1.3                              |        | 41        | 6000                | 0.14                        |                              |      |  |
| HFI-100505-1N5□ | 1.5                              |        |           |                     | 0.16                        |                              |      |  |
| HFI-100505-1N6□ | 1.6                              |        |           |                     |                             |                              |      |  |
| HFI-100505-1N8□ | 1.8                              |        |           |                     | 0.17                        |                              |      |  |
| HFI-100505-2N0□ | 2.0                              |        | 36        |                     | 0.19                        |                              |      |  |
| HFI-100505-2N2□ | 2.2                              |        |           |                     |                             |                              |      |  |
| HFI-100505-2N4□ | 2.4                              |        | 5000      | 0.22                |                             |                              |      |  |
| HFI-100505-2N7□ | 2.7                              |        |           | 38                  | 0.24                        |                              |      |  |
| HFI-100505-3N0□ | 3.0                              |        |           | 37                  |                             |                              |      |  |
| HFI-100505-3N3□ | 3.3                              |        | 4000      | 0.27                |                             |                              |      |  |
| HFI-100505-3N6□ | 3.6                              |        |           | 0.32                |                             |                              |      |  |
| HFI-100505-3N9□ | 3.9                              |        |           |                     |                             |                              | 32   |  |
| HFI-100505-4N3□ | 4.3                              |        | 37        | 3900                | 0.35                        |                              |      |  |
| HFI-100505-4N7□ | 4.7                              |        |           |                     | 0.37                        |                              |      |  |
| HFI-100505-5N1□ | 5.1                              |        |           |                     | 0.40                        |                              |      |  |
| HFI-100505-5N6□ | 5.6                              |        | 35        |                     |                             |                              |      |  |
| HFI-100505-6N2□ | 6.2                              |        | 34        | 3700                | 0.42                        |                              |      |  |
| HFI-100505-6N8□ | 6.8                              |        |           |                     | 0.50                        |                              |      |  |
| HFI-100505-7N5□ | 7.5                              |        |           |                     | 0.55                        |                              |      |  |
| HFI-100505-8N2□ | 8.2                              |        |           | 3500                | 0.65                        |                              |      |  |
| HFI-100505-9N1□ | 9.1                              |        | 31        |                     | 0.80                        |                              |      |  |
| HFI-100505-10N□ | 10.0                             |        |           |                     | 0.90                        |                              |      |  |
| HFI-100505-12N□ | 12.0                             |        | 3400      | 1.00                |                             |                              |      |  |
| HFI-100505-15N□ | 15.0                             |        |           | 30                  |                             |                              | 1.20 |  |
| HFI-100505-18N□ | 18.0                             |        |           |                     |                             |                              | 1.30 |  |
| HFI-100505-22N□ | 22.0                             |        | 1200      |                     | 200                         |                              |      |  |
| HFI-100505-27N□ | 27.0                             |        |           |                     |                             | 28                           |      |  |
| HFI-100505-33N□ | 33.0                             |        |           |                     |                             | 26                           |      |  |
| HFI-100505-39N□ | 39.0                             |        | 900       |                     |                             |                              |      |  |
| HFI-100505-47N□ | 47.0                             |        |           |                     |                             | 24                           |      |  |
|                 |                                  |        | 23        |                     |                             |                              |      |  |

PRODUCT SPECIFICATIONS

| PART NUMBER     | Inductance (nH)<br>at 100 MHz | Q Min.  | Q Typical | S.R.F.(MHz)<br>Min. | R <sub>DC</sub> (Ω)<br>Max. | Rated Current (mA) Max. |
|-----------------|-------------------------------|---------|-----------|---------------------|-----------------------------|-------------------------|
|                 |                               | 100 MHz | 800 MHz   |                     |                             |                         |
| HFI-100505-56N□ | 56.0                          | 8       | 21        | 750                 | 1.40                        | 200                     |
| HFI-100505-68N□ | 68.0                          |         | 19        |                     |                             | 180                     |
| HFI-100505-82N□ | 82.0                          |         | 16        | 600                 | 1.60                        | 150                     |
| HFI-100505-R10□ | 100.0                         |         | -         |                     |                             | 100                     |
| HFI-100505-R12□ | 120.0                         |         | -         |                     |                             |                         |

TYPICAL ELECTRICAL CHARACTERISTIC CURVES

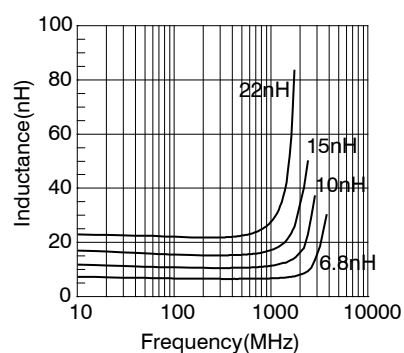


## ■ PRODUCT SPECIFICATIONS

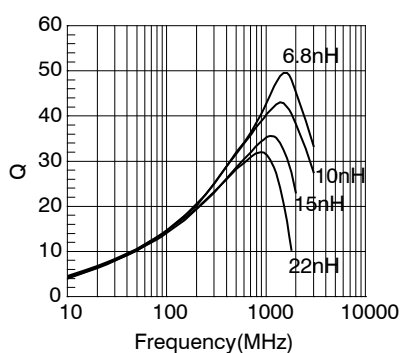
| PART NUMBER     | INDUCTANCE<br>(nH)<br>AT 100 MHz | Q Min. | Q Typical | S.R.F.(MHz)<br>Min. | R <sub>DC</sub> (Ω)<br>Max. | I <sub>DC</sub> (mA)<br>Max. |      |     |
|-----------------|----------------------------------|--------|-----------|---------------------|-----------------------------|------------------------------|------|-----|
|                 |                                  | 100MHz | 800 MHz   |                     |                             |                              |      |     |
| HFI-160808-1N0□ | 1.0                              | 8      | 47        | 6000                | 0.10                        | 1000                         |      |     |
| HFI-160808-1N2□ | 1.2                              |        |           |                     |                             |                              |      |     |
| HFI-160808-1N5□ | 1.5                              |        |           |                     |                             |                              |      |     |
| HFI-160808-1N8□ | 1.8                              |        |           |                     |                             |                              |      |     |
| HFI-160808-2N2□ | 2.2                              | 10     | 49        |                     | 4000                        |                              | 0.13 | 600 |
| HFI-160808-2N7□ | 2.7                              |        | 48        |                     |                             |                              |      |     |
| HFI-160808-3N3□ | 3.3                              |        | 51        |                     |                             |                              |      |     |
| HFI-160808-3N9□ | 3.9                              |        | 48        |                     |                             |                              |      |     |
| HFI-160808-4N7□ | 4.7                              |        | 12        | 46                  | 0.20                        | 500                          |      |     |
| HFI-160808-5N6□ | 5.6                              |        |           | 46                  | 0.23                        |                              |      |     |
| HFI-160808-6N8□ | 6.8                              |        |           | 48                  | 0.25                        |                              |      |     |
| HFI-160808-8N2□ | 8.2                              |        |           | 50                  | 0.28                        |                              |      |     |
| HFI-160808-10N□ | 10.0                             | 47     |           | 0.30                |                             |                              |      |     |
| HFI-160808-12N□ | 12.0                             | 45     |           | 0.35                |                             |                              |      |     |
| HFI-160808-15N□ | 15.0                             | 48     |           | 0.40                |                             |                              |      |     |
| HFI-160808-18N□ | 18.0                             | 47     |           | 0.45                | 3500                        |                              | 0.50 | 400 |
| HFI-160808-22N□ | 22.0                             | 49     |           |                     |                             |                              |      |     |
| HFI-160808-27N□ | 27.0                             | 47     |           |                     |                             |                              |      |     |
| HFI-160808-33N□ | 33.0                             | 46     |           |                     |                             |                              |      |     |
| HFI-160808-39N□ | 39.0                             | *8     | 39        | 1100                | 0.65                        | 500                          |      |     |
| HFI-160808-47N□ | 47.0                             |        | 37        | 900                 | 0.70                        |                              |      |     |
| HFI-160808-56N□ | 56.0                             |        | 36        | 700                 | 0.75                        |                              |      |     |
| HFI-160808-68N□ | 68.0                             |        | 36        | 600                 | 0.85                        |                              |      |     |
| HFI-160808-82N□ | 82.0                             |        | 29        | 600                 | 0.95                        | 300                          |      |     |
| HFI-160808-R10□ | 100.0                            |        | 16        | 500                 | 1.0                         |                              |      |     |
| HFI-160808-R12□ | 120.0 at 50MHz                   |        | 17        | 400                 | 1.20                        |                              |      |     |
| HFI-160808-R15□ | 150.0 at 50MHz                   |        | -         |                     | 1.30                        |                              |      |     |
| HFI-160808-R18□ | 180.0 at 50MHz                   | -      | 400       | 1.50                |                             |                              |      |     |
| HFI-160808-R22□ | 220.0 at 50MHz                   | -      |           |                     |                             |                              |      |     |
| HFI-160808-R27□ | 270.0 at 50MHz                   | -      |           |                     |                             |                              |      |     |

## ■ TYPICAL ELECTRICAL CHARACTERISTIC CURVES

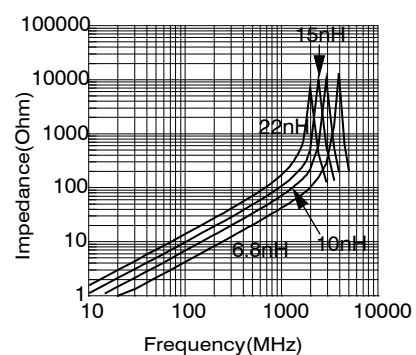
Inductance vs. Freq. Characteristics



Q vs. Freq. Characteristics



Impedance vs. Freq. Characteristics



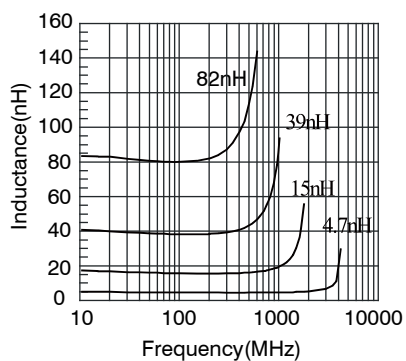
## ■ PRODUCT SPECIFICATIONS

| PART NUMBER     | INDUCTANCE<br>(nH)<br>AT 100 MHz | Q Min.           | Q Typical | S.R.F.(MHz)<br>Min. | R <sub>DC</sub> (Ω)<br>Max. | I <sub>DC</sub> (mA)<br>Max. |
|-----------------|----------------------------------|------------------|-----------|---------------------|-----------------------------|------------------------------|
|                 |                                  | 100MHz<br>*50MHz | 800 MHz   |                     |                             |                              |
| HFI-201209-1N5□ | 1.5                              | 10               | 61        | 4000                | 0.10                        | 300                          |
| HFI-201209-1N8□ | 1.8                              |                  | 55        |                     |                             |                              |
| HFI-201209-2N2□ | 2.2                              |                  | 53        |                     |                             |                              |
| HFI-201209-2N7□ | 2.7                              | 12               | 56        |                     | 0.13                        |                              |
| HFI-201209-3N3□ | 3.3                              |                  | 47        |                     |                             |                              |
| HFI-201209-3N9□ | 3.9                              |                  | 54        |                     | 0.15                        |                              |
| HFI-201209-4N7□ | 4.7                              | 15               | 55        | 3500                | 0.20                        |                              |
| HFI-201209-5N6□ | 5.6                              |                  | 60        | 3200                | 0.23                        |                              |
| HFI-201209-6N8□ | 6.8                              |                  | 63        | 2800                | 0.25                        |                              |
| HFI-201209-8N2□ | 8.2                              |                  |           | 2400                | 0.28                        |                              |
| HFI-201209-10N□ | 10.0                             |                  | 60        | 2100                | 0.30                        |                              |
| HFI-201209-12N□ | 12.0                             |                  |           | 1900                | 0.35                        |                              |
| HFI-201209-15N□ | 15.0                             |                  | 63        | 1600                | 0.40                        |                              |
| HFI-201209-18N□ | 18.0                             |                  |           | 1500                | 0.45                        |                              |
| HFI-201209-22N□ | 22.0                             | 18               | 60        | 1400                | 0.50                        |                              |
| HFI-201209-27N□ | 27.0                             |                  | 58        | 1300                | 0.55                        |                              |
| HFI-201209-33N□ | 33.0                             |                  | 55        | 1200                | 0.60                        |                              |
| HFI-201209-39N□ | 39.0                             |                  | 47        | 1000                | 0.65                        |                              |
| HFI-201209-47N□ | 47.0                             |                  | 43        | 900                 | 0.70                        |                              |
| HFI-201209-56N□ | 56.0                             |                  | 39        | 800                 | 0.75                        |                              |
| HFI-201209-68N□ | 68.0                             | *13              | 30        | 700                 | 0.80                        |                              |
| HFI-201209-82N□ | 82.0                             |                  | -         | 600                 | 0.90                        |                              |
| HFI-201209-R10□ | 100.0                            |                  | -         |                     |                             |                              |
| HFI-201209-R12□ | 120.0 at 50 MHz                  |                  | -         | 500                 | 0.95                        |                              |
| HFI-201209-R15□ | 150.0 at 50 MHz                  | -                | 1.00      |                     |                             |                              |
| HFI-201209-R18□ | 180.0at 50 MHz                   | -                | 400       | 1.10                |                             |                              |
| HFI-201209-R22□ | 220.0 at 50 MHz                  | *12              | -         | 350                 | 1.20                        |                              |
| HFI-201209-R27□ | 270.0 at 50 MHz                  |                  | -         | 300                 | 1.30                        |                              |
| HFI-201209-R33□ | 330.0 at 50 MHz                  |                  | -         | 250                 | 1.40                        |                              |
| HFI-201209-R39□ | 390.0 at 50 MHz                  | *10              | -         |                     | 1.30                        |                              |
| HFI-201209-R47□ | 470.0 at 50 MHz                  |                  | -         | 200                 | 1.50                        |                              |

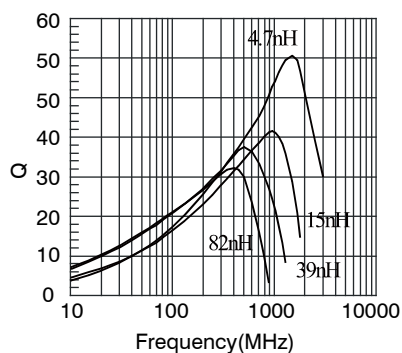


## ■ TYPICAL ELECTRICAL CHARACTERISTIC CURVES

Inductance vs. Freq. Characteristics



Q vs. Freq. Characteristics



Impedance vs. Freq. Characteristics

