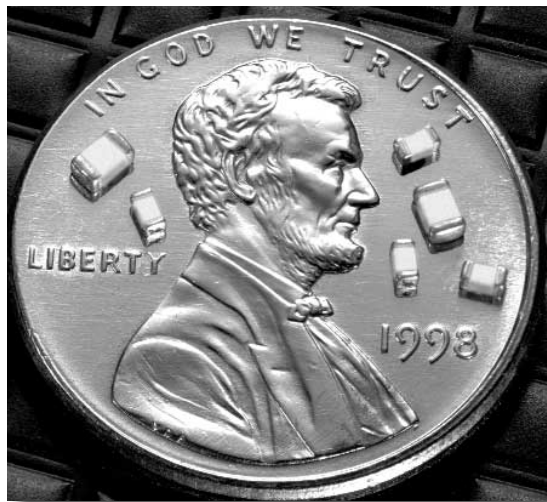


# High Frequency Ceramic Chip Inductors



High frequency multi-layer chip inductors feature a monolithic body made of low loss ceramic and high conductivity metal electrodes to achieve optimal high frequency performance. These RF chip inductors are compact in size (0201 - 0805) and feature tin plated nickel barrier terminations and tape and reel packaging which makes them ideal for small size/high volume wireless applications.

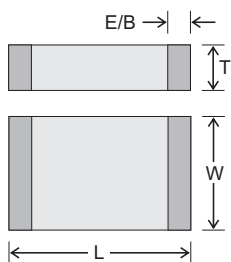
## APPLICATIONS

- CELL/PCS RF Modules
- Broadband Components
- RF Transceivers
- Wireless LAN
- RFID
- Custom Applications

## PRODUCT RANGE SUMMARY

| EIA SIZE (mm) | SIZE CODE | L RANGE      | Q FACTOR (Min.) | SRF (Typ.)       | TEMPERATURE      |
|---------------|-----------|--------------|-----------------|------------------|------------------|
| 0201 (0603)   | L-05      | 1.0 - 33 nH  | 4 (100 MHz)     | >21 GHz (1.0 nH) | -40°C to + 100°C |
| 0402 (1005)   | L-07      | 1.0 - 120 nH | 8 (100 MHz)     | >21 GHz (1.0 nH) | -40°C to + 100°C |
| 0603 (1608)   | L-14      | 1.0 - 220 nH | 12 (100 MHz)    | >23 GHz (1.0 nH) | -40°C to + 100°C |
| 0805 (2012)   | L-15      | 1.5 - 680 nH | 8 (100 MHz)     | >21 GHz (1.5 nH) | -40°C to + 100°C |

## MECHANICAL CHARACTERISTICS



|           | <b>0201 (0603)</b>       | <b>0402 (1005)</b>      | <b>0603 (1608)</b>      | <b>0805 (2012)</b>      |
|-----------|--------------------------|-------------------------|-------------------------|-------------------------|
|           | Inches mm                | Inches mm               | Inches mm               | Inches mm               |
| Length    | .023 ±.0015" (0.6 ±0.04) | .040 ±.004" (1.00 ±.10) | .063 ±.006" (1.60 ±.15) | .079 ±.008" (2.00 ±.20) |
| Width     | .012 ±.0013" (0.3 ±0.03) | .020 ±.004" (0.50 ±.10) | .031 ±.006" (0.80 ±.15) | .047 ±.008" (1.20 ±.20) |
| Thickness | .012 ±.0013" (0.3 ±0.03) | .020 ±.004" (0.50 ±.10) | .031 ±.006" (0.80 ±.15) | .033 ±.008" (0.85 ±.20) |
| End Band  | .006 ±.002" (0.15 ±0.05) | .009 ±.004" (0.23 ±.10) | .012 ±.008" (0.30 ±.20) | .020 ±.012" (0.50 ±.30) |

## HOW TO ORDER



| DEVICE   | SIZE   | TYPE    | VALUE     |
|----------|--|---------|-----------|
| Inductor | 05 = 0201<br>07 = 0402<br>14 = 0603<br>15 = 0805 | Ceramic | See Table |



| TOLERANCE                             |
|---------------------------------------|
| S = ± 0.3 nH for values 1.0 to 5.6 nH |
| K = ± 10% for values 3.9 nH and above |
| J = ± 5% for values 6.8 nH and above  |



| TAPE & REEL CODE |      |          |          |
|------------------|------|----------|----------|
| Size             | Code | Tape     | Reel Qty |
| 0201             | T    | Paper    | 15,000   |
| 0402             | T    | Paper    | 10,000   |
| 0603             | E    | Embossed | 4,000    |
| 0805             | E    | Embossed | 4,000    |

## 0201 INDUCTANCE RANGE / ELECTRICAL CHARACTERISTICS

**Inductance Range: 1.0 - 33 nH**

**Quality Factor: 4 (100 MHz)**

**SRF >21 GHz (1.0 nH)**

Please contact the factory for detailed 0201 performance specifications

## 0402 INDUCTANCE RANGE / ELECTRICAL CHARACTERISTICS

| Part Number | Inductance | Tolerance     | Q (Min.) | L/Q Freq. | Typical SRF | DC Resistance Max | Rated Current |
|-------------|------------|---------------|----------|-----------|-------------|-------------------|---------------|
| L-07C1N0S_- | 1.0 nH     | ± 0.3 nH      | 8        | 100 MHz   | >15000 MHz  | 0.12 Ω            | 300 mA        |
| L-07C1N2S_- | 1.2 nH     | ± 0.3 nH      | 8        | 100 MHz   | >15000 MHz  | 0.12 Ω            | 300 mA        |
| L-07C1N5S_- | 1.5 nH     | ± 0.3 nH      | 8        | 100 MHz   | >15000 MHz  | 0.13 Ω            | 300 mA        |
| L-07C1N8S_- | 1.8 nH     | ± 0.3 nH      | 8        | 100 MHz   | 14000 MHz   | 0.14 Ω            | 300 mA        |
| L-07C2N2S_- | 2.2 nH     | ± 0.3 nH      | 8        | 100 MHz   | 12000 MHz   | 0.16 Ω            | 300 mA        |
| L-07C2N7S_- | 2.7 nH     | ± 0.3 nH      | 8        | 100 MHz   | 9500 MHz    | 0.17 Ω            | 300 mA        |
| L-07C3N3_-  | 3.3 nH     | ± 0.3 nH      | 8        | 100 MHz   | 8500 MHz    | 0.19 Ω            | 300 mA        |
| L-07C3N9_-  | 3.9 nH     | ± 0.3 nH ±10% | 8        | 100 MHz   | 7000 MHz    | 0.22 Ω            | 300 mA        |
| L-07C4N7_-  | 4.7 nH     | ± 0.3 nH ±10% | 8        | 100 MHz   | 6000 MHz    | 0.24 Ω            | 300 mA        |
| L-07C5N6_-  | 5.6 nH     | ± 0.3 nH ±10% | 8        | 100 MHz   | 5400 MHz    | 0.27 Ω            | 300 mA        |
| L-07C6N8_-  | 6.8 nH     | ±5% ±10%      | 8        | 100 MHz   | 5000 MHz    | 0.32 Ω            | 250 mA        |
| L-07C8N2_-  | 8.2 nH     | ±5% ±10%      | 8        | 100 MHz   | 4600 MHz    | 0.40 Ω            | 250 mA        |
| L-07C10N_-  | 10.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 3700 MHz    | 0.45 Ω            | 250 mA        |
| L-07C12N_-  | 12.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 3200 MHz    | 0.50 Ω            | 250 mA        |
| L-07C15N_-  | 15.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 3100 MHz    | 0.60 Ω            | 250 mA        |
| L-07C18N_-  | 18.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 2900 MHz    | 0.65 Ω            | 200 mA        |
| L-07C22N_-  | 22.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 2100 MHz    | 0.80 Ω            | 200 mA        |
| L-07C27N_-  | 27.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 1900 MHz    | 0.90 Ω            | 200 mA        |
| L-07C33N_-  | 33.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 1600 MHz    | 1.00 Ω            | 200 mA        |
| L-07C39N_-  | 39.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 1400 MHz    | 1.20 Ω            | 150 mA        |
| L-07C47N_-  | 47.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 1200 MHz    | 1.30 Ω            | 150 mA        |
| L-07C56N_-  | 56.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 1100 MHz    | 2.00 Ω            | 150 mA        |
| L-07C68N_-  | 68.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 1000 MHz    | 2.20 Ω            | 100 mA        |
| L-07C82N_-  | 82.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 900 MHz     | 2.50 Ω            | 100 mA        |
| L-07CR10_-  | 100 nH     | ±5% ±10%      | 8        | 100 MHz   | 850 MHz     | 2.50 Ω            | 100 mA        |

## 0603 INDUCTANCE RANGE / ELECTRICAL CHARACTERISTICS

| Part Number | Inductance | Tolerance     | Q (Min.) | L/Q Freq. | Typical SRF | DC Resistance Max | Rated Current |
|-------------|------------|---------------|----------|-----------|-------------|-------------------|---------------|
| L-14C1N0S_- | 1.0 nH     | ± 0.3 nH      | 8        | 100 MHz   | >17000 MHz  | 0.10 Ω            | 300 mA        |
| L-14C1N2S_- | 1.2 nH     | ± 0.3 nH      | 8        | 100 MHz   | >17000 MHz  | 0.10 Ω            | 300 mA        |
| L-14C1N5S_- | 1.5 nH     | ± 0.3 nH      | 8        | 100 MHz   | >17000 MHz  | 0.10 Ω            | 300 mA        |
| L-14C1N8S_- | 1.8 nH     | ± 0.3 nH      | 8        | 100 MHz   | 13000 MHz   | 0.10 Ω            | 300 mA        |
| L-14C2N2S_- | 2.2 nH     | ± 0.3 nH      | 8        | 100 MHz   | 12000 MHz   | 0.15 Ω            | 300 mA        |
| L-14C2N7S_- | 2.7 nH     | ± 0.3 nH      | 8        | 100 MHz   | 8600 MHz    | 0.15 Ω            | 300 mA        |
| L-14C3N3_-  | 3.3 nH     | ± 0.3 nH      | 8        | 100 MHz   | 6500 MHz    | 0.20 Ω            | 300 mA        |
| L-14C3N9_-  | 3.9 nH     | ± 0.3 nH ±10% | 8        | 100 MHz   | 6300 MHz    | 0.20 Ω            | 300 mA        |
| L-14C4N7_-  | 4.7 nH     | ± 0.3 nH ±10% | 8        | 100 MHz   | 5400 MHz    | 0.20 Ω            | 300 mA        |
| L-14C5N6_-  | 5.6 nH     | ± 0.3 nH ±10% | 8        | 100 MHz   | 4600 MHz    | 0.25 Ω            | 300 mA        |
| L-14C6N8_-  | 6.8 nH     | ±5% ±10%      | 8        | 100 MHz   | 4500 MHz    | 0.30 Ω            | 300 mA        |
| L-14C8N2_-  | 8.2 nH     | ±5% ±10%      | 8        | 100 MHz   | 3800 MHz    | 0.33 Ω            | 300 mA        |
| L-14C10N_-  | 10.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 3700 MHz    | 0.35 Ω            | 300 mA        |
| L-14C12N_-  | 12.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 3200 MHz    | 0.40 Ω            | 300 mA        |
| L-14C15N_-  | 15.0 nH    | ±5% ±10%      | 8        | 100 MHz   | 2900 MHz    | 0.45 Ω            | 300 mA        |
| L-14C18N_-  | 18.0 nH    | ±5% ±10%      | 10       | 100 MHz   | 2100 MHz    | 0.50 Ω            | 300 mA        |
| L-14C22N_-  | 22.0 nH    | ±5% ±10%      | 10       | 100 MHz   | 2100 MHz    | 0.55 Ω            | 300 mA        |
| L-14C27N_-  | 27.0 nH    | ±5% ±10%      | 10       | 100 MHz   | 2000 MHz    | 0.60 Ω            | 300 mA        |
| L-14C33N_-  | 33.0 nH    | ±5% ±10%      | 10       | 100 MHz   | 1600 MHz    | 0.65 Ω            | 300 mA        |
| L-14C39N_-  | 39.0 nH    | ±5% ±10%      | 10       | 100 MHz   | 1500 MHz    | 0.70 Ω            | 300 mA        |
| L-14C47N_-  | 47.0 nH    | ±5% ±10%      | 12       | 100 MHz   | 1200 MHz    | 0.90 Ω            | 300 mA        |
| L-14C56N_-  | 56.0 nH    | ±5% ±10%      | 12       | 100 MHz   | 1100 MHz    | 1.00 Ω            | 300 mA        |
| L-14C68N_-  | 68.0 nH    | ±5% ±10%      | 12       | 100 MHz   | 1000 MHz    | 1.10 Ω            | 300 mA        |
| L-14C82N_-  | 82.0 nH    | ±5% ±10%      | 12       | 100 MHz   | 850 MHz     | 1.20 Ω            | 300 mA        |
| L-14CR10_-  | 100 nH     | ±5% ±10%      | 12       | 100 MHz   | 750 MHz     | 1.20 Ω            | 300 mA        |
| L-14CR12_-  | 120 nH     | ±5% ±10%      | 8        | 50 MHz    | 700 MHz     | 1.30 Ω            | 300 mA        |
| L-14CR15_-  | 150 nH     | ±5% ±10%      | 8        | 50 MHz    | 650 MHz     | 1.40 Ω            | 300 mA        |
| L-14CR18_-  | 180 nH     | ±5% ±10%      | 8        | 50 MHz    | 550 MHz     | 1.50 Ω            | 300 mA        |
| L-14CR22_-  | 220 nH     | ±5% ±10%      | 8        | 50 MHz    | 450 MHz     | 1.70 Ω            | 300 mA        |



## 0805 INDUCTANCE RANGE / ELECTRICAL CHARACTERISTICS

| Part Number | Inductance | Tolerance     | Q (Min.) | L/Q Freq. | Typical SRF | DC Resistance Max | Rated Current |
|-------------|------------|---------------|----------|-----------|-------------|-------------------|---------------|
| L-15C1N5S_- | 1.5 nH     | ± 0.3 nH      | 10       | 100 MHz   | >6000 MHz   | 0.10              | 300 mA        |
| L-15C1N8S_- | 1.8 nH     | ± 0.3 nH      | 10       | 100 MHz   | >6000 MHz   | 0.10              | 300 mA        |
| L-15C2N2S_- | 2.2 nH     | ± 0.3 nH      | 10       | 100 MHz   | >6000 MHz   | 0.10              | 300 mA        |
| L-15C2N7S_- | 2.7 nH     | ± 0.3 nH      | 12       | 100 MHz   | >6000 MHz   | 0.12              | 300 mA        |
| L-15C3N3_-  | 3.3 nH     | ± 0.3 nH      | 12       | 100 MHz   | >6000 MHz   | 0.13              | 300 mA        |
| L-15C3N9_-  | 3.9 nH     | ± 0.3 nH ±10% | 12       | 100 MHz   | 5600 MHz    | 0.15              | 300 mA        |
| L-15C4N7_-  | 4.7 nH     | ± 0.3 nH ±10% | 12       | 100 MHz   | 5500 MHz    | 0.20              | 300 mA        |
| L-15C5N6_-  | 5.6 nH     | ± 0.3 nH ±10% | 12       | 100 MHz   | 4700 MHz    | 0.23              | 300 mA        |
| L-15C6N8_-  | 6.8 nH     | ±5% ±10%      | 15       | 100 MHz   | 3900 MHz    | 0.25              | 300 mA        |
| L-15C8N2_-  | 8.2 nH     | ±5% ±10%      | 15       | 100 MHz   | 3200 MHz    | 0.28              | 300 mA        |
| L-15C10N_-  | 10.0 nH    | ±5% ±10%      | 15       | 100 MHz   | 3100 MHz    | 0.30              | 300 mA        |
| L-15C12N_-  | 12.0 nH    | ±5% ±10%      | 15       | 100 MHz   | 2800 MHz    | 0.35              | 300 mA        |
| L-15C15N_-  | 15.0 nH    | ±5% ±10%      | 15       | 100 MHz   | 2400 MHz    | 0.40              | 300 mA        |
| L-15C18N_-  | 18.0 nH    | ±5% ±10%      | 15       | 100 MHz   | 2100 MHz    | 0.45              | 300 mA        |
| L-15C22N_-  | 22.0 nH    | ±5% ±10%      | 15       | 100 MHz   | 2000 MHz    | 0.50              | 300 mA        |
| L-15C27N_-  | 27.0 nH    | ±5% ±10%      | 15       | 100 MHz   | 1800 MHz    | 0.55              | 300 mA        |
| L-15C33N_-  | 33.0 nH    | ±5% ±10%      | 15       | 100 MHz   | 1700 MHz    | 0.60              | 300 mA        |
| L-15C39N_-  | 39.0 nH    | ±5% ±10%      | 18       | 100 MHz   | 1400 MHz    | 0.65              | 300 mA        |
| L-15C47N_-  | 47.0 nH    | ±5% ±10%      | 18       | 100 MHz   | 1200 MHz    | 0.70              | 300 mA        |
| L-15C56N_-  | 56.0 nH    | ±5% ±10%      | 18       | 100 MHz   | 1000 MHz    | 0.75              | 300 mA        |
| L-15C68N_-  | 68.0 nH    | ±5% ±10%      | 18       | 100 MHz   | 900 MHz     | 0.80              | 300 mA        |
| L-15C82N_-  | 82.0 nH    | ±5% ±10%      | 18       | 100 MHz   | 900 MHz     | 0.85              | 300 mA        |
| L-15CR10_-  | 100 nH     | ±5% ±10%      | 18       | 100 MHz   | 700 MHz     | 0.90              | 300 mA        |
| L-15CR12_-  | 120 nH     | ±5% ±10%      | 13       | 50 MHz    | 600 MHz     | 0.95              | 300 mA        |
| L-15CR15_-  | 150 nH     | ±5% ±10%      | 13       | 50 MHz    | 500 MHz     | 1.00              | 300 mA        |
| L-15CR18_-  | 180 nH     | ±5% ±10%      | 13       | 50 MHz    | 430 MHz     | 1.10              | 300 mA        |
| L-15CR22_-  | 220 nH     | ±5% ±10%      | 12       | 50 MHz    | 400 MHz     | 1.20              | 300 mA        |
| L-15CR27_-  | 270 nH     | ±5% ±10%      | 12       | 50 MHz    | 340 MHz     | 1.30              | 300 mA        |
| L-15CR33_-  | 330 nH     | ±5% ±10%      | 12       | 50 MHz    | 320 MHz     | 1.50              | 300 mA        |
| L-15CR39_-  | 390 nH     | ±5% ±10%      | 10       | 50 MHz    | 270 MHz     | 1.60              | 300 mA        |
| L-15CR47_-  | 470 nH     | ±5% ±10%      | 10       | 50 MHz    | 250 MHz     | 1.80              | 300 mA        |
| L-15CR56_-  | 560 nH     | ±5% ±10%      | 10       | 50 MHz    | 230 MHz     | 2.50              | 300 mA        |
| L-15CR68_-  | 680 nH     | ±5% ±10%      | 10       | 50 MHz    | 180 MHz     | 3.00              | 300 mA        |

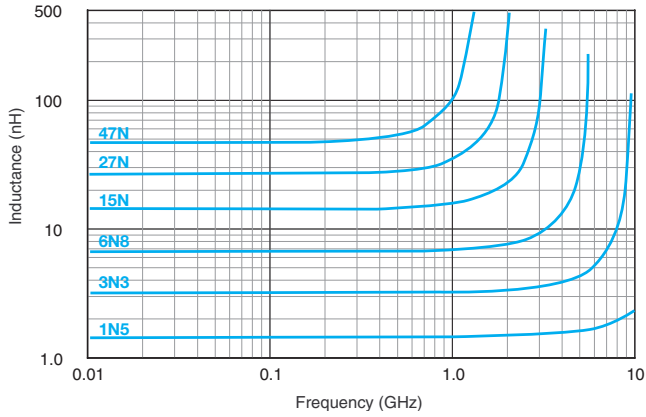
## PART NUMBER CROSS REFERENCE

|                        | JOHANSON                   | TOKO                          | TAIYO YUDEN                  | TDK                           | MURATA                         | BOURNS                        |
|------------------------|----------------------------|-------------------------------|------------------------------|-------------------------------|--------------------------------|-------------------------------|
| <b>0402</b><br>L Range | L-07C1N2ST<br>1.0 - 47 nH  | LL1005-FH1N2S<br>1.0 - 100 nH | HK10051N2S-T<br>1.0 - 120 nH | MLK1005S1N2ST<br>1.0 - 100 nH | LQG10A1N2S00T1<br>1.2 - 33 nH  | CI100505-1N2D<br>1.0 - 100 nH |
| <b>0603</b><br>L Range | L-14C1N2ST<br>1.0 - 220 nH | LL1608-FH1N2S<br>1.2 - 100 nH | HK16081N2S-T<br>1.0 - 220 nH | MLG1608B1N2ST<br>1.0 - 100 nH | LQG11A1N2S00T1<br>1.2 - 100 nH | CI160808-1N2D<br>1.0 - 100 nH |
| <b>0805</b><br>L Range | L-15C1N5ST<br>1.5 - 470 nH | LL2012-FH1N5S<br>1.5 - 680 nH | HK21251N5S-T<br>1.5 - 470 nH |                               |                                | CI201210-1N5D<br>1.5 - 270 nH |

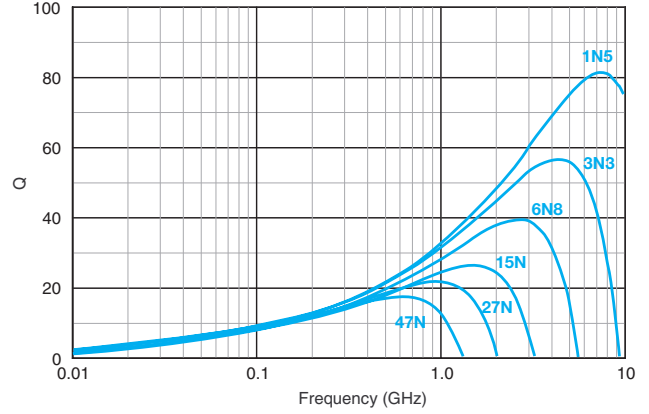
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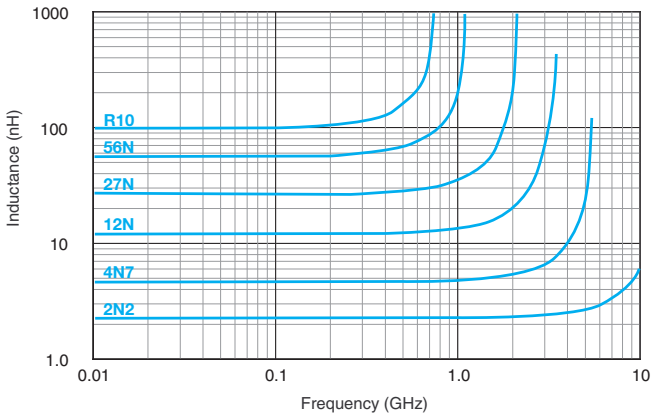
INDUCTANCE VS FREQUENCY: SIZE 0402



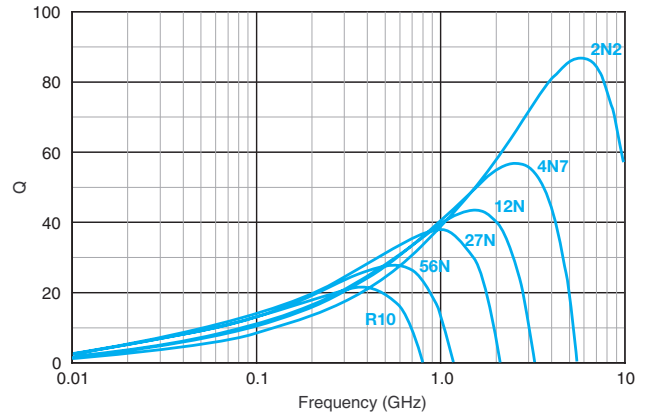
Q VS FREQUENCY: SIZE 0402



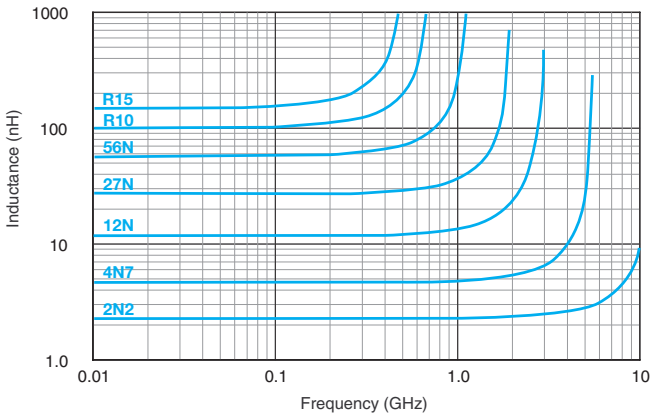
INDUCTANCE VS FREQUENCY: SIZE 0603



Q VS FREQUENCY: SIZE 0603



INDUCTANCE VS FREQUENCY: SIZE 0805



Q VS FREQUENCY: SIZE 0805

