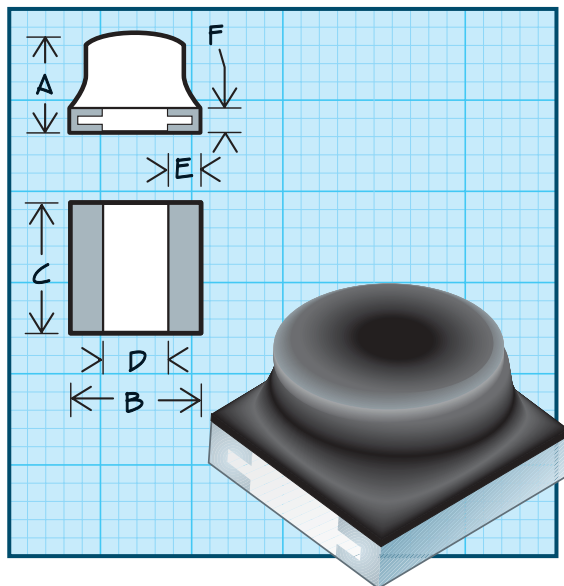


# Series 103

## Micro i® Chip Inductors



**Military Specifications** MIL-PRF-83446/4

### Physical Parameters

|   | Inches            | Millimeters      |
|---|-------------------|------------------|
| A | 0.075 Max.        | 1.91 Max.        |
| B | 0.100 ± 0.010     | 2.54 ± 0.25      |
| C | 0.100 ± 0.010     | 2.54 ± 0.25      |
| D | 0.050 Min.        | 1.27 Min.        |
| E | 0.015 Min. (Typ.) | 0.38 Min. (Typ.) |
| F | 0.020 Max. (Typ.) | 0.51 Max. (Typ.) |

**Weight Max.** (Grams) 0.03

**Current Rating at 90°C Ambient** 35°C Rise

**Operating Temperature Range** -55°C to +125°C

**Maximum Power Dissipation at 90°C** 0.135 Watts

### Termination Finish Options (Part # Code)

Gold over Nickel (Standard): As shown.

Tin/Lead over Nickel: Add suffix "S" to part # (e.g., 103-102KS).

Mil type "A:" Gold over Nickel (Standard)

Mil type "B" or "F:" Tin/Lead (solder) over Nickel.

### Mechanical Configuration

Units are epoxy encapsulated.

Contact areas for reflow soldering are gold plated per MIL-G-45204 Type 1-Grade A. Internal connections are thermal compression bonded.

**Packaging** Tape & reel (8mm): 7" reel, 2000 pieces max.; 13" reel, 8000 pieces max.

**Made In the U.S.A.**

PART NUMBER

MIL DASH #

INDUCTANCE  
(µH) see Note 3

TOLERANCE

Q MINIMUM

TEST FREQUENCY (MHz)

SRF MINIMUM (MHz)

DC RESISTANCE  
MAXIMUM (OHMS)

CURRENT RATING  
MAX. (mA)

### M83446/4- SERIES 103 PHENOLIC CORE

|            |       |       |       |    |      |      |       |      |
|------------|-------|-------|-------|----|------|------|-------|------|
| 103-100(*) | 30/37 | 0.010 | ± (*) | 60 | 50.0 | 2700 | 0.060 | 1270 |
| 103-120K   | 38    | 0.012 | ± 10% | 57 | 50.0 | 2450 | 0.069 | 1190 |
| 103-150(*) | 31/39 | 0.015 | ± (*) | 55 | 50.0 | 2200 | 0.078 | 1110 |
| 103-180K   | 40    | 0.018 | ± 10% | 52 | 50.0 | 2000 | 0.093 | 1030 |
| 103-220(*) | 32/41 | 0.022 | ± (*) | 50 | 50.0 | 1800 | 0.108 | 950  |
| 103-270K   | 42    | 0.027 | ± 10% | 49 | 50.0 | 1625 | 0.114 | 925  |
| 103-330(*) | 33/43 | 0.033 | ± (*) | 48 | 50.0 | 1450 | 0.120 | 900  |
| 103-390K   | 44    | 0.039 | ± 10% | 45 | 50.0 | 1335 | 0.133 | 860  |
| 103-470(*) | 34/45 | 0.047 | ± (*) | 42 | 50.0 | 1220 | 0.145 | 820  |
| 103-560K   | 46    | 0.056 | ± 10% | 39 | 50.0 | 1110 | 0.170 | 760  |
| 103-680(*) | 35/47 | 0.068 | ± (*) | 36 | 50.0 | 1000 | 0.195 | 705  |
| 103-820K   | 48    | 0.082 | ± 10% | 34 | 50.0 | 915  | 0.212 | 675  |
| 103-101(*) | 36/49 | 0.100 | ± (*) | 32 | 50.0 | 830  | 0.230 | 650  |

### M83446/4- SERIES 103 FERRITE CORE

|          |    |      |       |    |      |     |       |     |
|----------|----|------|-------|----|------|-----|-------|-----|
| 103-121K | 01 | 0.12 | ± 10% | 30 | 25.0 | 750 | 0.125 | 880 |
| 103-151K | 02 | 0.15 | ± 10% | 25 | 25.0 | 650 | 0.175 | 745 |
| 103-181K | 03 | 0.18 | ± 10% | 25 | 25.0 | 550 | 0.200 | 695 |
| 103-221K | 04 | 0.22 | ± 10% | 25 | 25.0 | 450 | 0.220 | 665 |
| 103-271K | 05 | 0.27 | ± 10% | 25 | 25.0 | 375 | 0.230 | 650 |
| 103-331K | 06 | 0.33 | ± 10% | 25 | 25.0 | 300 | 0.235 | 645 |
| 103-391K | 07 | 0.39 | ± 10% | 22 | 25.0 | 235 | 0.240 | 635 |
| 103-471K | 08 | 0.47 | ± 10% | 22 | 25.0 | 215 | 0.260 | 610 |
| 103-561K | 09 | 0.56 | ± 10% | 22 | 25.0 | 195 | 0.278 | 590 |
| 103-681K | 10 | 0.68 | ± 10% | 22 | 25.0 | 175 | 0.520 | 435 |
| 103-821K | 11 | 0.82 | ± 10% | 22 | 25.0 | 160 | 0.530 | 430 |
| 103-102K | 12 | 1.0  | ± 10% | 22 | 25.0 | 145 | 0.540 | 425 |
| 103-122K | 13 | 1.2  | ± 10% | 22 | 7.9  | 130 | 0.740 | 360 |
| 103-152K | 14 | 1.5  | ± 10% | 22 | 7.9  | 115 | 0.840 | 340 |
| 103-182K | 15 | 1.8  | ± 10% | 22 | 7.9  | 105 | 0.920 | 325 |
| 103-222K | 16 | 2.2  | ± 10% | 22 | 7.9  | 85  | 1.00  | 310 |
| 103-272K | 17 | 2.7  | ± 10% | 24 | 7.9  | 77  | 1.15  | 290 |
| 103-332K | 18 | 3.3  | ± 10% | 24 | 7.9  | 70  | 1.40  | 260 |
| 103-392K | 19 | 3.9  | ± 10% | 24 | 7.9  | 68  | 1.55  | 250 |
| 103-472K | 20 | 4.7  | ± 10% | 24 | 7.9  | 60  | 1.80  | 230 |
| 103-562K | 21 | 5.6  | ± 10% | 22 | 7.9  | 55  | 2.00  | 220 |
| 103-682K | 22 | 6.8  | ± 10% | 22 | 7.9  | 50  | 2.20  | 210 |
| 103-822K | 23 | 8.2  | ± 10% | 22 | 7.9  | 48  | 2.50  | 195 |
| 103-103K | 24 | 10.0 | ± 10% | 24 | 7.9  | 40  | 3.45  | 165 |
| 103-123K | 25 | 12.0 | ± 10% | 25 | 2.5  | 35  | 3.80  | 160 |
| 103-153K | 26 | 15.0 | ± 10% | 25 | 2.5  | 30  | 5.60  | 135 |
| 103-183K | 27 | 18.0 | ± 10% | 25 | 2.5  | 28  | 5.80  | 130 |
| 103-223K | 28 | 22.0 | ± 10% | 25 | 2.5  | 25  | 6.40  | 125 |
| 103-273K | 29 | 27.0 | ± 10% | 25 | 2.5  | 22  | 6.90  | 120 |

Parts listed above are QPL/MIL qualified

**Notes** 1) Designed specifically for reflow soldering and other high temperature processes with metalized edges to exhibit solder fillet. 2) Self Resonant Frequency (SRF) Values above 250 MHz are calculated and for reference only. 3) (\*) - MS slash numbers available in 20% (Suffix "M") and 10% (Suffix "K") tolerances.