



# Inductors, Epoxy Conformal Coated, Uniform Roll Coated, Axial Leded



## ELECTRICAL SPECIFICATIONS

**Inductance tolerance:**  $\pm 1\%$ ,  $\pm 3\%$ ,  $\pm 5\%$ ,  $\pm 10\%$ ,  $\pm 20\%$   
other tolerances available on request

**Insulation resistance:** 1000 M $\Omega$  minimum per MIL-STD-202, method 302, test condition B

**Dielectric strength:** 1000 V<sub>AC</sub> per MIL-STD-202, method 301

## MATERIAL SPECIFICATIONS

**Coating:** epoxy-uniform roll coated

**Lead:** tinned copper

## MECHANICAL SPECIFICATIONS

**Terminal strength:** 5 pounds pull per MIL-STD-202, method 211, test condition A

**Weight:** IR-2 = 0.30 g maximum

IR-4 = 0.65 g maximum

## FEATURES

- Flame-retardant coating
- Color band identification
- Excellent environmental characteristics
- Uniform coating is excellent for automatic insertion
- Comparable in quality to molded chokes at a lower price
- Epoxy coating is more durable than lacquer coated models, yet is priced comparably
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT

## TEST EQUIPMENT (1)

- H/P 4342A Q-meter
- Measurements corporation megacycle meter, model 59
- Wheatstone bridge

### Note

(1) Test procedures per MIL-PRF-15305.

| DIMENSIONS in inches [millimeters] |                 |                 |                  |  |
|------------------------------------|-----------------|-----------------|------------------|--|
|                                    |                 |                 |                  |  |
| MODEL                              | A (MAX.)        | B (MAX.)        | C (MAX.)         | D  |
| IR-2                               | 0.260<br>[6.60] | 0.120<br>[3.05] | 0.330<br>[8.38]  | 0.0200 $\pm$ 0.0015<br>[0.508 $\pm$ 0.038] |
| IR-4                               | 0.385<br>[9.78] | 0.180<br>[4.57] | 0.440<br>[11.18] | 0.025 $\pm$ 0.002<br>[0.635 $\pm$ 0.051]   |

| ENVIRONMENTAL PERFORMANCE    |            |                         |
|------------------------------|------------|-------------------------|
| TEST                         | CONDITIONS | SPECIFICATIONS          |
| Barometric Pressure          | C          | MIL-STD-202, method 105 |
| Thermal Shock                | A-1        | MIL-STD-202, method 107 |
| Flammability                 | -          | MIL-STD-202, method 111 |
| Overload                     | -          | MIL-PRF-15305           |
| Low Temperature Storage      | -          | MIL-PRF-15305           |
| Resistance to Soldering Heat | A          | MIL-STD-202, method 210 |
| Resistance to Solvents       | -          | MIL-STD-202, method 215 |

| MAXIMUM TEMPERATURE RISE |   |                             |
|--------------------------|---|-----------------------------|
| MODEL                    |   | OPERATING TEMPERATURE RANGE |
| IR-2                     | 0.1 $\mu$ H to 1.0 $\mu$ H = +35 °C at +90 °C ambient     | -55 °C to 125 °C            |
|                          | 1.2 $\mu$ H to 27 $\mu$ H = +15 °C at +90 °C ambient      | -55 °C to 105 °C            |
|                          | 33 $\mu$ H to 1000 $\mu$ H = +15 °C at +90 °C ambient     | -55 °C to 105 °C            |
| IR-4                     | 0.15 $\mu$ H to 4.7 $\mu$ H = +35 °C at +90 °C ambient    | -55 °C to 125 °C            |
|                          | 5.6 $\mu$ H to 33 $\mu$ H = +15 °C at +90 °C ambient      | -55 °C to 105 °C            |
|                          | 36 $\mu$ H to 240 $\mu$ H = +15 °C at +90 °C ambient      | -55 °C to 105 °C            |
|                          | 270 $\mu$ H to 1800 $\mu$ Hfie = +35 °C at +90 °C ambient | -55 °C to 125 °C            |



| STANDARD ELECTRICAL SPECIFICATIONS |           |          |        |                              |                               |              |                                      |               |
|------------------------------------|-----------|----------|--------|------------------------------|-------------------------------|--------------|--------------------------------------|---------------|
| MODEL                              | IND. (μH) | TOL. (%) | Q MIN. | TEST FREQUENCY L AND Q (MHz) | SRF MIN. (MHz) <sup>(1)</sup> | DCR MAX. (Ω) | RATED DC CURRENT (mA) <sup>(2)</sup> |               |
| IR-2                               | 0.10      | ± 10     | 40     | 25.0                         | 680.0                         | 0.08         | 1350                                 | PHENOLIC CORE |
| IR-2                               | 0.12      | ± 10     | 40     | 25.0                         | 640.0                         | 0.09         | 1270                                 |               |
| IR-2                               | 0.15      | ± 10     | 38     | 25.0                         | 600.0                         | 0.10         | 1200                                 |               |
| IR-2                               | 0.18      | ± 10     | 35     | 25.0                         | 550.0                         | 0.12         | 1105                                 |               |
| IR-2                               | 0.22      | ± 10     | 33     | 25.0                         | 510.0                         | 0.14         | 1025                                 |               |
| IR-2                               | 0.27      | ± 10     | 33     | 25.0                         | 430.0                         | 0.16         | 960                                  |               |
| IR-2                               | 0.33      | ± 10     | 30     | 25.0                         | 410.0                         | 0.22         | 815                                  |               |
| IR-2                               | 0.39      | ± 10     | 30     | 25.0                         | 365.0                         | 0.30         | 700                                  |               |
| IR-2                               | 0.47      | ± 10     | 30     | 25.0                         | 330.0                         | 0.35         | 650                                  |               |
| IR-2                               | 0.56      | ± 10     | 30     | 25.0                         | 300.0                         | 0.50         | 545                                  |               |
| IR-2                               | 0.68      | ± 10     | 28     | 25.0                         | 275.0                         | 0.60         | 495                                  |               |
| IR-2                               | 0.82      | ± 10     | 28     | 25.0                         | 250.0                         | 0.85         | 415                                  |               |
| IR-2                               | 1.0       | ± 10     | 25     | 25.0                         | 230.0                         | 1.00         | 385                                  |               |
| IR-2                               | 1.2       | ± 10     | 25     | 7.9                          | 150.0                         | 0.18         | 590                                  | IRON CORE     |
| IR-2                               | 1.5       | ± 10     | 28     | 7.9                          | 140.0                         | 0.22         | 535                                  |               |
| IR-2                               | 1.8       | ± 10     | 30     | 7.9                          | 125.0                         | 0.30         | 455                                  |               |
| IR-2                               | 2.2       | ± 10     | 30     | 7.9                          | 115.0                         | 0.40         | 395                                  |               |
| IR-2                               | 2.7       | ± 10     | 37     | 7.9                          | 100.0                         | 0.55         | 355                                  |               |
| IR-2                               | 3.3       | ± 10     | 45     | 7.9                          | 90.0                          | 0.85         | 270                                  |               |
| IR-2                               | 3.9       | ± 10     | 45     | 7.9                          | 80.0                          | 1.0          | 250                                  |               |
| IR-2                               | 4.7       | ± 10     | 45     | 7.9                          | 75.0                          | 1.2          | 230                                  |               |
| IR-2                               | 5.6       | ± 10     | 50     | 7.9                          | 65.0                          | 1.8          | 185                                  |               |
| IR-2                               | 6.8       | ± 10     | 50     | 7.9                          | 60.0                          | 2.0          | 175                                  |               |
| IR-2                               | 8.2       | ± 10     | 55     | 7.9                          | 55.0                          | 2.7          | 155                                  |               |
| IR-2                               | 10.0      | ± 10     | 55     | 7.9                          | 50.0                          | 3.7          | 130                                  |               |
| IR-2                               | 12.0      | ± 10     | 45     | 2.5                          | 40.0                          | 2.7          | 155                                  |               |
| IR-2                               | 15.0      | ± 10     | 40     | 2.5                          | 35.0                          | 2.8          | 150                                  |               |
| IR-2                               | 18.0      | ± 10     | 50     | 2.5                          | 30.0                          | 3.1          | 145                                  |               |
| IR-2                               | 22.0      | ± 10     | 50     | 2.5                          | 25.0                          | 3.3          | 140                                  |               |
| IR-2                               | 27.0      | ± 10     | 50     | 2.5                          | 20.0                          | 3.5          | 135                                  |               |
| IR-2                               | 33.0      | ± 10     | 45     | 2.5                          | 24.0                          | 3.4          | 130                                  | FERRITE CORE  |
| IR-2                               | 39.0      | ± 10     | 45     | 2.5                          | 22.0                          | 3.6          | 125                                  |               |
| IR-2                               | 47.0      | ± 10     | 45     | 2.5                          | 20.0                          | 4.5          | 110                                  |               |
| IR-2                               | 56.0      | ± 10     | 45     | 2.5                          | 18.0                          | 5.7          | 100                                  |               |
| IR-2                               | 68.0      | ± 10     | 50     | 2.5                          | 15.0                          | 6.7          | 92                                   |               |
| IR-2                               | 82.0      | ± 10     | 50     | 2.5                          | 14.0                          | 7.3          | 88                                   |               |
| IR-2                               | 100.0     | ± 10     | 50     | 2.5                          | 13.0                          | 8.0          | 84                                   |               |
| IR-2                               | 120.0     | ± 10     | 30     | 0.79                         | 12.0                          | 13.0         | 66                                   |               |
| IR-2                               | 150.0     | ± 10     | 30     | 0.79                         | 11.0                          | 15.0         | 61                                   |               |
| IR-2                               | 180.0     | ± 10     | 30     | 0.79                         | 10.0                          | 17.0         | 57                                   |               |
| IR-2                               | 220.0     | ± 10     | 30     | 0.79                         | 9.0                           | 21.0         | 52                                   |               |
| IR-2                               | 270.0     | ± 10     | 30     | 0.79                         | 8.0                           | 25.0         | 47                                   |               |
| IR-2                               | 330.0     | ± 10     | 30     | 0.79                         | 7.0                           | 28.0         | 45                                   |               |
| IR-2                               | 390.0     | ± 10     | 30     | 0.79                         | 6.5                           | 35.0         | 40                                   |               |
| IR-2                               | 470.0     | ± 10     | 30     | 0.79                         | 6.0                           | 42.0         | 36                                   |               |
| IR-2                               | 560.0     | ± 10     | 30     | 0.79                         | 5.0                           | 46.0         | 35                                   |               |
| IR-2                               | 680.0     | ± 10     | 30     | 0.79                         | 4.0                           | 60.0         | 30                                   |               |
| IR-2                               | 820.0     | ± 10     | 30     | 0.79                         | 3.8                           | 65.0         | 29                                   |               |
| IR-2                               | 1000.0    | ± 10     | 30     | 0.79                         | 3.4                           | 72.0         | 28                                   |               |
| IR-4                               | 0.15      | ± 20     | 50     | 25.0                         | 525.0                         | 0.03         | 2450                                 | PHENOLIC CORE |
| IR-4                               | 0.22      | ± 20     | 50     | 25.0                         | 450.0                         | 0.055        | 1810                                 |               |
| IR-4                               | 0.33      | ± 20     | 45     | 25.0                         | 360.0                         | 0.09         | 1400                                 |               |
| IR-4                               | 0.47      | ± 20     | 45     | 25.0                         | 310.0                         | 0.12         | 1225                                 |               |
| IR-4                               | 0.56      | ± 10     | 50     | 25.0                         | 280.0                         | 0.135        | 1150                                 |               |
| IR-4                               | 0.68      | ± 10     | 50     | 25.0                         | 250.0                         | 0.15         | 1100                                 |               |
| IR-4                               | 0.82      | ± 10     | 50     | 25.0                         | 220.0                         | 0.22         | 900                                  |               |
| IR-4                               | 1.0       | ± 10     | 50     | 25.0                         | 200.0                         | 0.29         | 785                                  |               |
| IR-4                               | 1.2       | ± 10     | 33     | 7.9                          | 180.0                         | 0.42         | 650                                  |               |
| IR-4                               | 1.5       | ± 10     | 33     | 7.9                          | 160.0                         | 0.50         | 600                                  |               |
| IR-4                               | 1.8       | ± 10     | 33     | 7.9                          | 150.0                         | 0.65         | 525                                  |               |
| IR-4                               | 2.2       | ± 10     | 33     | 7.9                          | 135.0                         | 0.95         | 435                                  |               |
| IR-4                               | 2.7       | ± 10     | 33     | 7.9                          | 120.0                         | 1.20         | 385                                  |               |
| IR-4                               | 3.3       | ± 10     | 33     | 7.9                          | 110.0                         | 2.00         | 300                                  |               |
| IR-4                               | 3.9       | ± 10     | 33     | 7.9                          | 100.0                         | 2.30         | 280                                  |               |
| IR-4                               | 4.7       | ± 10     | 33     | 7.9                          | 90.0                          | 2.60         | 260                                  |               |

Notes

- (1) Measured with full length lead
- (2) Rated DC current based on maximum temperature rise as shown in table



| STANDARD ELECTRICAL SPECIFICATIONS |           |          |        |                              |                               |              |                                      |
|------------------------------------|-----------|----------|--------|------------------------------|-------------------------------|--------------|--------------------------------------|
| MODEL                              | IND. (μH) | TOL. (%) | Q MIN. | TEST FREQUENCY L AND Q (MHz) | SRF MIN. (MHz) <sup>(1)</sup> | DCR MAX. (Ω) | RATED DC CURRENT (mA) <sup>(2)</sup> |
| IR-4                               | 5.6       | ± 10     | 45     | 7.9                          | 60.0                          | 32.0         | 495                                  |
| IR-4                               | 6.8       | ± 10     | 50     | 7.9                          | 55.0                          | 0.50         | 395                                  |
| IR-4                               | 8.2       | ± 10     | 50     | 7.9                          | 50.0                          | 0.60         | 360                                  |
| IR-4                               | 10.0      | ± 10     | 55     | 7.9                          | 45.0                          | 0.90         | 290                                  |
| IR-4                               | 12.0      | ± 10     | 65     | 2.5                          | 42.0                          | 1.10         | 265                                  |
| IR-4                               | 15.0      | ± 10     | 65     | 2.5                          | 40.0                          | 1.40         | 240                                  |
| IR-4                               | 18.0      | ± 10     | 75     | 2.5                          | 34.0                          | 2.25         | 185                                  |
| IR-4                               | 22.0      | ± 10     | 75     | 2.5                          | 30.0                          | 2.50         | 175                                  |
| IR-4                               | 27.0      | ± 10     | 60     | 2.5                          | 25.0                          | 2.60         | 170                                  |
| IR-4                               | 33.0      | ± 10     | 65     | 2.5                          | 19.0                          | 3.0          | 165                                  |
| IR-4                               | 36.0      | ± 5      | 60     | 2.5                          | 15.5                          | 2.50         | 180                                  |
| IR-4                               | 39.0      | ± 5      | 60     | 2.5                          | 14.5                          | 2.60         | 176                                  |
| IR-4                               | 43.0      | ± 5      | 60     | 2.5                          | 13.7                          | 2.70         | 172                                  |
| IR-4                               | 47.0      | ± 5      | 55     | 2.5                          | 13.0                          | 2.75         | 170                                  |
| IR-4                               | 51.0      | ± 5      | 55     | 2.5                          | 12.7                          | 2.85         | 167                                  |
| IR-4                               | 56.0      | ± 5      | 55     | 2.5                          | 12.0                          | 3.0          | 164                                  |
| IR-4                               | 62.0      | ± 5      | 55     | 2.5                          | 11.5                          | 3.15         | 160                                  |
| IR-4                               | 68.0      | ± 5      | 55     | 2.5                          | 11.0                          | 3.30         | 156                                  |
| IR-4                               | 75.0      | ± 5      | 55     | 2.5                          | 10.5                          | 3.70         | 147                                  |
| IR-4                               | 82.0      | ± 5      | 50     | 2.5                          | 10.3                          | 3.90         | 143                                  |
| IR-4                               | 91.0      | ± 5      | 50     | 2.5                          | 10.0                          | 4.30         | 136                                  |
| IR-4                               | 100.0     | ± 5      | 50     | 2.5                          | 9.5                           | 4.50         | 133                                  |
| IR-4                               | 110.0     | ± 5      | 60     | 0.79                         | 8.9                           | 4.90         | 128                                  |
| IR-4                               | 120.0     | ± 5      | 65     | 0.79                         | 8.7                           | 5.20         | 124                                  |
| IR-4                               | 130.0     | ± 5      | 65     | 0.79                         | 8.5                           | 5.45         | 121                                  |
| IR-4                               | 150.0     | ± 5      | 65     | 0.79                         | 8.0                           | 6.05         | 114                                  |
| IR-4                               | 160.0     | ± 5      | 65     | 0.79                         | 7.5                           | 6.40         | 111                                  |
| IR-4                               | 180.0     | ± 5      | 65     | 0.79                         | 7.0                           | 6.75         | 108                                  |
| IR-4                               | 200.0     | ± 5      | 65     | 0.79                         | 6.5                           | 7.10         | 106                                  |
| IR-4                               | 220.0     | ± 5      | 65     | 0.79                         | 6.2                           | 7.45         | 103                                  |
| IR-4                               | 240.0     | ± 5      | 65     | 0.79                         | 5.9                           | 7.80         | 101                                  |
| IR-4                               | 270.0     | ± 5      | 65     | 0.79                         | 5.7                           | 11.0         | 129                                  |
| IR-4                               | 300.0     | ± 5      | 65     | 0.79                         | 5.4                           | 11.5         | 125                                  |
| IR-4                               | 330.0     | ± 5      | 65     | 0.79                         | 5.1                           | 12.0         | 123                                  |
| IR-4                               | 360.0     | ± 5      | 65     | 0.79                         | 4.8                           | 15.5         | 108                                  |
| IR-4                               | 390.0     | ± 5      | 65     | 0.79                         | 4.5                           | 16.3         | 105                                  |
| IR-4                               | 430.0     | ± 5      | 65     | 0.79                         | 4.2                           | 17.1         | 102                                  |
| IR-4                               | 470.0     | ± 5      | 65     | 0.79                         | 3.9                           | 17.9         | 100                                  |
| IR-4                               | 510.0     | ± 5      | 65     | 0.79                         | 3.7                           | 18.8         | 98                                   |
| IR-4                               | 560.0     | ± 5      | 65     | 0.79                         | 3.5                           | 24.7         | 85                                   |
| IR-4                               | 620.0     | ± 5      | 65     | 0.79                         | 3.3                           | 25.9         | 83                                   |
| IR-4                               | 680.0     | ± 5      | 55     | 0.79                         | 3.1                           | 27.2         | 81                                   |
| IR-4                               | 750.0     | ± 5      | 55     | 0.79                         | 2.9                           | 28.6         | 79                                   |
| IR-4                               | 820.0     | ± 5      | 55     | 0.79                         | 2.7                           | 30.0         | 77                                   |
| IR-4                               | 910.0     | ± 5      | 55     | 0.79                         | 2.5                           | 31.5         | 76                                   |
| IR-4                               | 1000.0    | ± 5      | 55     | 0.79                         | 2.3                           | 33.1         | 74                                   |
| IR-4                               | 1100.0    | ± 5      | 30     | 0.25                         | 2.1                           | 43.5         | 64                                   |
| IR-4                               | 1200.0    | ± 5      | 30     | 0.25                         | 2.0                           | 45.7         | 63                                   |
| IR-4                               | 1300.0    | ± 5      | 30     | 0.25                         | 1.9                           | 49.0         | 61                                   |
| IR-4                               | 1500.0    | ± 5      | 30     | 0.25                         | 1.8                           | 52.5         | 59                                   |
| IR-4                               | 1600.0    | ± 5      | 30     | 0.25                         | 1.7                           | 54.0         | 58                                   |
| IR-4                               | 1800.0    | ± 5      | 30     | 0.25                         | 1.6                           | 56.7         | 56                                   |

IRON CORE

**Notes**

- (1) Measured with full length lead
- (2) Rated DC current based on maximum temperature rise as shown in table

| ORDERING INFORMATION |                  |                      |              |                                |
|----------------------|------------------|----------------------|--------------|--------------------------------|
| IR-2                 | 10 μH            | ± 10 %               | ER           | e2                             |
| MODEL                | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC® LEAD (Pb)-FREE STANDARD |

| GLOBAL PART NUMBER |   |   |                      |
|--------------------|---|---|----------------------|
| I                  | R | 0 | 2                    |
| MODEL              |   |   |                      |
| E                  | R |   |                      |
| PACKAGE CODE       |   |   |                      |
| 1                  | 0 | 0 |                      |
| INDUCTANCE VALUE   |   |   |                      |
|                    |   |   | K                    |
|                    |   |   | INDUCTANCE TOLERANCE |



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