

## 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
- Compliant to RoHS directive 2002/95/EC



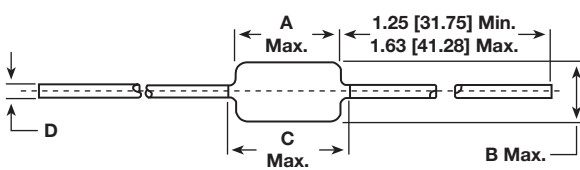
**RoHS**  
COMPLIANT

### 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 $\mu$ H = + 35 °C at + 90 °C ambient | - 55 °C to 125 °C           |



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

**Notes**<sup>(1)</sup> Measured with full length lead<sup>(2)</sup> Rated DC current based on maximum temperature rise as shown in table

**STANDARD ELECTRICAL SPECIFICATIONS**

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

**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 $\mu$ H       | $\pm 10 \%$          | ER           | e2                            |
|-------|------------------|----------------------|--------------|-------------------------------|
| MODEL | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC LEAD (Pb)-FREE STANDARD |

**GLOBAL PART NUMBER**

|          |          |          |          |              |          |                  |          |          |                      |
|----------|----------|----------|----------|--------------|----------|------------------|----------|----------|----------------------|
| <b>I</b> | <b>R</b> | <b>0</b> | <b>2</b> | <b>E</b>     | <b>R</b> | <b>1</b>         | <b>0</b> | <b>0</b> | <b>K</b>             |
| MODEL    |          |          |          | PACKAGE CODE |          | INDUCTANCE VALUE |          |          | INDUCTANCE TOLERANCE |



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